

# Small Businesses and the Clean Vehicle Transition

*Barriers, Opportunities, and a Just Path Forward in North Denver and Commerce City*



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environmental justice and policy  
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## Project Partners

**GreenLatinos** is an active community of Latino/a/x leaders, emboldened by the power and wisdom of our culture, united to demand equity and dismantle racism, resourced to win our environmental, conservation, and climate justice battles, and driven to secure our political, economic, cultural, and environmental liberation. The GreenLatinos Colorado team focuses on environmental and climate justice issues facing Colorado's Latino/a/x and other disproportionately impacted communities. Their victories have helped create equitable policies in the Colorado state legislature and through the Colorado Public Utilities Commission.

**The Community Collaborative Research Center (CCRC) at the University of Colorado Denver**, co-led by Dr. Carrie Makarewicz, is an interdisciplinary team of social and physical scientists committed to community-engaged research methods that foreground the importance of partnerships and community voices in research design, from early scoping through evaluation.

**The Dickinson Lab at the Colorado School of Public Health**, led by Dr. Katherine Dickinson, works across disciplines and with communities and decision-makers to advance environmental and climate justice. The lab uses social science tools to study environmental policies and interventions locally and internationally.

**Dr. Rio Martinez is a Principal Consultant with Rooted Power Collective (RPC)**, an energy, climate resiliency, and environmental justice firm based in Colorado. RPC's multidisciplinary team leverages technical expertise to provide electrification and clean energy solutions tailored to an organization's needs through grant writing, technical assistance, and capacity building.

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## Artificial Intelligence (AI) Disclosure

AI tools, including ChatGPT Edu and Claude, were used in the preparation of this report. Specifically, we used ChatGPT Edu to assist with the analysis and synthesis of interview data. Claude was used for portions of the report's formatting, including designing charts for the survey results, and to fact-check one of the author's handwritten notes from the Intermountain West Electric Freight Symposium against the 330-page slide deck of the detailed presentations from the symposium. The study authors fully reviewed and edited all of the text for accuracy and clarity.

# INTRODUCTION

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Vehicle emissions contribute to local air pollution and health burdens for communities near highways, along with greenhouse gas levels that drive global climate change. A substantial portion of these vehicle emissions come from commercial vehicles. Businesses of all sizes rely on vehicles to transport people and goods, serving a wide variety of functions. Caterers use mid-sized vehicles to transport food and linens from the kitchen to events, electricians, plumbers, and Heating and Cooling specialists use large vans or trucks to carry specialized tools and materials from warehouses to clients, and mill workers need box trucks to carry finished products to their new homes. Transitioning these and other types of commercial vehicles to cleaner models has the potential to generate substantial environmental and health benefits.

To date, clean vehicle policies and outreach have focused on personal electric vehicles and companies with large vehicle fleets, while small businesses (those with fewer than 25 employees and 10 vehicles) have received relatively little attention. Understanding the key drivers and barriers to cleaner-vehicle adoption among small businesses is a gap. While small businesses have fewer vehicles, they collectively represent a large sector and thus a substantial opportunity to impact overall emissions. Further, some of their transition hurdles and operational needs may be easier to overcome than those of large companies with heavy-duty and semitrucks, which are more expensive and have fewer EV equivalents.

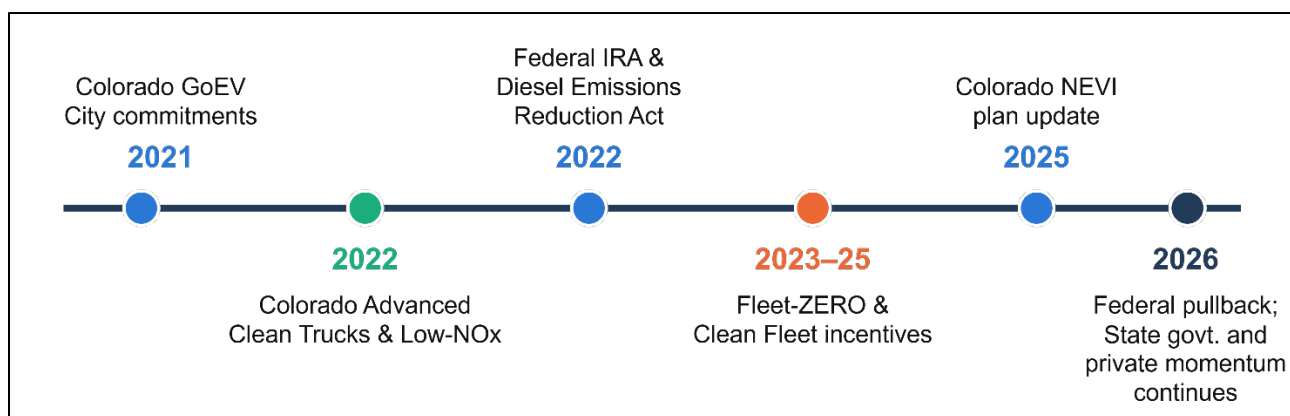
Including small businesses in the transition to cleaner vehicles is also a fairness and just-transition issue. Since using cleaner vehicles also has benefits for business owners, vehicle operators, other employees, and community members near concentrations of small businesses, it is unfair to leave small businesses and the proximate residents who could benefit out of the transition.

Colorado's North Denver/Commerce City (NDCC) region is a prime example of a community that is heavily impacted by transportation, industrial facilities, and diesel vehicle emissions. Located at the intersection of three major highways (I-25, I-70, and I-270), the NDCC region houses roughly 50,000 people and covers approximately 30 square miles, including areas within the City and County of Denver and Commerce City, in Adams County. Approximately 4,100 businesses, including about 2,900 with 10 or fewer employees, are located in this region (Esri Business Analyst, 2023). The movement of goods and services in and out of this "inland port" generates significant economic benefits for the broader region and state, while workers and residents of the NDCC region bear the cumulative environmental health burden of working and living close to heavily trafficked roadways and polluting facilities (Dickinson et al., 2022). While diesel trucking is responsible for a large portion of the air quality burden, all the vehicle movements contribute to poor air quality and congestion: tens of thousands of trucks travel through NDCC daily, and dozens of truck fleets have hubs in the area. Transitioning to cleaner vehicles has the potential to improve environmental quality, promote public health for

residents and workers, and support economic development and economic mobility for disproportionately impacted communities within NDCC and beyond.

Through a collaboration between academic researchers at the University of Colorado's Denver and Anschutz campuses and environmental leaders at GreenLatinos, this project sought to gather information on small businesses' perspectives, experiences, and needs regarding the transition to cleaner vehicles. Ultimately, this information can help to identify pathways that can support economic mobility and community development across multiple scales.

## The Opportunity



Source: Based on the authors' analysis of state and federal actions and private sector development

Over the past several years, state and federal policies have set the transition to clean trucking in motion, with Colorado serving as a leader in the Mountain West region. The state's Advanced Clean Trucks (ACT) and Low NOx rule, adopted in 2022, mandates an increase in the manufacture and sale of zero-emission trucks while strengthening emissions standards for heavy-duty vehicles. To support these targets, the state has incentive programs for early adopters, including the Clean Fleet Enterprise, as well as the Fleet-ZERO program to incentivize the development of charging infrastructure. At the federal level, the Diesel Emissions Reduction Act and Inflation Reduction Act incentivized early adopters of cleaner trucking technologies under the Biden administration. While many provisions of these policies have been canceled or rolled back by the current Trump administration, some of the momentum they generated in the private sector has continued since manufacturers had already invested in EV technologies, and those with European operations are subject to the European Union's stricter standards. The challenge now is to ensure the equitable and effective implementation of these initiatives, i.e., *a just transition*. **Specifically, how can we ensure that NDCC small business owners, workers, and community members have equitable access to the potential benefits of cleaner trucking?** Robust community-engaged science is an essential component of this transition.

The project described here builds on multiple years of engagement with key partners in the clean trucking transition beginning with advocacy for Colorado’s ACT rule. During the rule-making, GreenLatinos Colorado co-hosted and attended multiple community-focused events to learn from affected community members and the trucking sector about the proposed rule and its impacts.

Simultaneously, Green Latinos and the Dickinson Lab worked together over multiple years to produce a joint study, *“Who Bears the Cost? North Denver Environmental Justice Report and Data Audit”*, that documents the cumulative burdens borne by NDCC communities from zoning policies and inequitable enforcement of environmental laws. The report was released in 2022 and received significant media attention, amplifying ongoing calls for action from NDCC community members, and contributing to other efforts, such as the memorandum of understanding with the US EPA to improve enforcement of environmental laws in disproportionately impacted communities like NDCC (U.S. Environmental Protection Agency, 2022; Colorado Department of Public Health and Environment, n.d.-a) The report also highlighted the transportation sector’s outsized role in environmental impacts for the region, which led our team to the clean and electric trucking transition.

Since the end of 2022, through additional support and partnership from the CU Denver Community Collaborative Research Center (CCRC), our collaborative team has worked with community members, public agencies, and the private sector to understand barriers and opportunities to adopt cleaner vehicles. This included an NDCC community and trucking industry worker town hall in Fall 2023 to seek input on and interest in the research project design and to share clean trucking information and resources. At the same time, we conducted informal interviews with “coaches” and affiliates connected to the Colorado ReCharge program, a Colorado Energy Office (CEO) initiative that works to advance the adoption of electric vehicles across the state.

Separately, CCRC faculty members at CU Denver, and Ean Tafoya at GreenLatinos, connected with scientists working on transportation energy at the National Renewable Energy Laboratory (NREL) (renamed as the National Lab of the Rockies in 2025). Tafoya was in NREL’s 2023 Executive Energy Leadership Program, where he engaged with the lab’s scientists on their large energy modeling efforts to estimate emissions and energy use in the transportation sector and the benefits of transitioning vehicles to clean technologies. The CCRC connected with anthropologists and other scientists at NREL working on energy in the mobility and building sectors. Insights, perspectives, and relationships from this formative work informed the research design for the work described in this report.

## Key Findings at a Glance

Figure 1. Survey participant responses on EV awareness and willingness to adopt



Source: study participants

To gain firsthand knowledge of small business owners' perspectives related to clean vehicles, we surveyed 27 small businesses in the North Denver and Commerce City region, conducted in-depth interviews with three of them, interviewed six background experts and key informants, and attended the 2026 Intermountain West Electric Freight Symposium. Five findings stand out.

1. These businesses' fleets are predominantly **light-duty and "return-to-base,"** which makes them among the best-suited candidates for electrification.
2. Nearly half of all firms (13 of 27) would consider switching to an EV at some point, including 7 of the 17 smallest firms (ten or fewer employees) and 6 of the 10 larger firms.
3. The barriers they rated most important were **concrete and answerable**, i.e., purchase price, driving range, capability, and maintenance, rather than cultural resistance.
4. **Awareness of targeted incentives is very low:** only 19% had heard of the state's Fleet-ZERO charging grant.
5. In the near term, they are **roughly twice as likely to replace a vehicle with a newer diesel or gas model as with an EV (Figure 1)**, which makes timely, trusted, and tailored outreach and programs especially important.

Together these findings reframe small businesses not merely as an overlooked group but as an actionable, near-term opportunity population for the regional clean-vehicle transition.

# BACKGROUND RESEARCH

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## Clean and Zero-Emissions Vehicles

The term “clean vehicle” refers to a vehicle that does not burn carbon-based fuel in an engine to generate power to move itself, as a traditional internal combustion engine does, but instead uses an *alternative fuel*. While many alternative fuels contain carbon-based materials, including recycled or renewable fuels (DOE, 2026), we focus our study on fuels that do not generate CO<sub>2</sub> when powering a vehicle. Vehicles that don’t emit CO<sub>2</sub> are also called zero-emission vehicles. Additionally, zero-emissions vehicles do not generate particulate matter (i.e., PM<sub>2.5</sub>) or other side products from fuel combustion.

The two primary types of zero-emission vehicles are electric vehicles (EVs) and hydrogen fuel cell vehicles (FCEVs). EVs are powered by electricity generated by battery discharge and do not operate by combustion at any point. The electricity used to charge the battery is supplied from an electric utility grid via public or at-home/on-site charging stations. FCEVs are vehicles that are fueled by the electricity produced by the combustion of hydrogen which is the reaction of hydrogen (H<sub>2</sub>) and oxygen (O<sub>2</sub>) in a fuel cell. Since the only product of hydrogen combustion is water (H<sub>2</sub>O), no CO<sub>2</sub> or PM<sub>2.5</sub> is emitted during operation. FCEVs are supplied with H<sub>2</sub> at designated charging stations that are being deployed along the Colorado Front Range. There are several ways of producing H<sub>2</sub> for use at charging stations. One typical method is by using the electricity provided by the utility grid, to convert water into oxygen and hydrogen (the reverse process of the fuel cell engine). While EVs and FCEVs are technologies that can rely solely on electricity, another type of clean vehicle is a hybrid vehicle. Hybrid vehicles contain an internal combustion engine (ICE) *and* a battery, whereby the battery is charged when the vehicle breaks are applied.

When cleaner vehicles, such as EVs, FCEVs, or hybrids, replace an internal combustion engine (ICE) vehicle on the road, they reduce levels of pollution where they are driven. In considering the full lifecycle of EV batteries, the emissions produced are less than the emissions generated from driving an internal combustion engine vehicle. Beginning from the manufacturing process, and depending on make and model, the CO<sub>2</sub> emitted from producing one EV battery is equivalent to driving between 2,500 to 60,000 miles with a gas-powered vehicle (MIT, 2025). On average, commercial delivery trucks drive about 11,000 miles per year while semi-trucks average close to 60,000 miles per year (Alternative Fuels Data Center, n.d.-b). Therefore, the CO<sub>2</sub> produced per battery is similar to the CO<sub>2</sub> produced by most commercial vehicles from driving for one year. The energy used to charge an EV or FCEV from grid-supplied electricity is most often sourced from a mix of fossil fuel and renewable power plants. The process of end-of-life EV battery treatment is less well known, as there are not enough older EVs ready to be decommissioned for thorough study. Of the limited decommissioned battery stock, use cases have shown applications both for reuse and recycling (DOE, 2026). Batteries unusable for vehicles often have 70% of their capacity remaining and have been shown to be useful for energy storage

applications. In terms of recycling the metals and other chemicals, there is smelting, chemical leaching, or direct recycling of materials, where smelting is the most energy intensive and chemical leaching requires a negligible amount of energy. However, there is ongoing support for battery reuse/recycling innovation and research as more EV batteries reach the end of their life.

## **Model Availability, Cost, and Charging Considerations**

Though most people think of EVs as passenger vehicles, at the time of this report, models for all weight classes and vehicle types are available in EV options, and many are available in FCEV options as well. A review of the library of EV and FCEV options in the Alternative Fuels Data Center shows a wide variety of vehicles of different make, ranges, battery capacity, and charge time that are currently on the market. The up-front cost of EVs can be significantly more or less costly than their ICE counterparts. However, in total cost comparison, light and medium-duty EVs such as pickup trucks and cargo vans are equally, if not more, cost competitive compared to the ICE equivalent over a 10-year period. Electric cargo vans, Class 6-7 box trucks, and pickup trucks are currently the most cost competitive compared to the ICE equivalents, with some even providing savings (HDT, 2021). By 2030, it is expected that more medium and heavy-duty EVs, such as long-haul and regional distribution trucks, will reach parity with ICE equivalents, mainly due to battery pack costs declining by about 25% in the next 10 years. The uncertainty in future gasoline and diesel prices may also make EVs more competitive from a total cost basis.

EV charging equipment, also referred to as electric vehicle supply equipment (EVSE), comes in a variety of different types based on business and fleet needs. There are three levels of chargers: Level 1 (L1), Level 2 (L2), and Direct Current Fast Chargers (DCFC). L1 is primarily used for residential purposes and requires the longest time to charge. L2 charges faster than the L1 and is often used for commercial applications, and DCFC charges the fastest with 90 mi of range per 20 minutes of charging time. The costs for a single port of each type are \$300-\$1,500 for L1, \$400-\$6,500 for L2, and \$10,000-\$40,000 for DCFC (DOE, 2015). The price range for each level depends on the features built into the charging units. Specifically, charging ports can be network-connected to a computer that collects data and operates various controls.

Costs for EV supply infrastructure (EVSI), which refers to the charging infrastructure and its installation, includes the process of interconnection in which the charging port must be connected to the grid's power supply. The EVSI cost can vary widely depending on site needs, such as trenching, electric upgrades, labor, etc. L2 installations average about \$2,000-\$3,000 and DCFC installations average about \$25,000 (with a wide range). In-depth cost breakdowns of L1, L2, and DCFC chargers can be found (DOE, 2015).

## **Existing Research on Small Business Transitions to EVs**

Electric vehicles can have a lower total cost of ownership (TCO) than comparable diesel vehicles, largely through reduced fuel and maintenance costs (Office of the Secretary, 2023,

p. 4), and commercial pickups and vans in particular are increasingly cost-competitive (Mitra EV, 2026a). Yet the upfront cost, implementation, and day-to-day operation of EVs can pose significant challenges for small businesses. Companies with a small fleet face a unique set of barriers that turn an otherwise attractive option into a high-stakes decision. A single EV can represent a large share of a small fleet, with each vehicle playing an outsized role in operations. Without spare vehicles or a financial cushion, a vehicle that does not meet a business's needs can put the business itself at risk, which makes the first purchase feel especially consequential (Wong, 2022).

Small- and medium-sized businesses (SMBs) make up an estimated 99% of U.S. fleet operators, yet they have received little attention in EV policy and market strategies (Mitra EV, 2026a). Commercial EV adoption remains low overall: electric trucks accounted for about 2% of U.S. commercial vehicle sales in 2023 (Mathrani, 2024). Mitra EV (2026a) estimates that adoption among SMB fleets is likely well below that level, while noting that little data exists. Earlier studies of small trucking fleets found that awareness of zero-emission trucks is widespread but superficial, and that small fleets face greater barriers than large fleets because they have less capital, less staff capacity to research vehicles and apply for grants, and fewer backup vehicles (Brito, 2022; Wong, 2022).

The most recent large study of SMB fleets was conducted by Mitra EV as part of Project REEF, supported by \$1 million in 2024 federal funding from the U.S. Department of Energy and carried out in partnership with Clean Cities and Communities coalitions in California, Colorado, Georgia, and Ohio (Mitra EV, 2026a, 2026b). The study combined 24 interviews with owners and managers of light- to medium-duty (Class 2b–6) fleets in home-service industries with an online survey of 293 fleet operators. Only 26% of respondents felt highly knowledgeable about EVs. Colorado respondents reported the lowest knowledge of the four states (50% not knowledgeable) and the lowest intent to electrify (21% likely to adopt, compared with 39% overall) (Mitra EV, 2026a).

Another implementation challenge is the limited range of configurations available from Original Equipment Manufacturers (OEMs). Small businesses rely on an enormous variety of vehicle types, which means they need a wide range of cargo capacities, dimensions, and niche buildouts. Today's EV market does not offer the same breadth of specialized platforms or upfitting compatibility that ICE vehicles have accumulated over decades, such as vans suited to caterers, HVAC technicians, home remodelers, or food trucks. Only one-third of SMB fleet owners in the Mitra EV survey were satisfied with the type, size, or hauling power of available commercial EVs (Mitra EV, 2026a). As a result, many trades and service firms cannot easily find an electric model that meets their operational requirements at a price they can afford, even if they are otherwise motivated to electrify.

Business owners also struggle to find and interpret the patchwork of federal, state, and utility incentives. Grant programs are time-consuming to navigate, and larger fleets with more staff are better positioned to monitor and apply for funding quickly (Brito, 2022; Wong, 2022). Meanwhile, "upfront costs are among the most cited barriers preventing personal and commercial EV purchases" (Office of the Secretary, 2023, p. 6). Nearly half of

SMB fleet owners in the Mitra EV survey said EVs cost more upfront than conventional vehicles (Mitra EV, 2026a).

Charging adds a further burden. Only 10% of SMB fleet owners view charging as inexpensive or straightforward, and most expect installation to be a lengthy process that often requires costly power upgrades (Mitra EV, 2026a). Public charging, with small stalls and inconsistent access, rarely works for commercial fleets (Mitra EV, 2026a). Many small fleets park on the street or rent space in a shared yard, which leaves them either unable to install charging or dependent on a landlord to do so (Brito, 2022; Wong, 2022). A small operator can therefore be forced to shoulder the entire infrastructure burden without the economies of scale that large fleets enjoy. However, this isn't an issue if they don't have heavy-duty vehicles to charge.

Finally, beyond cost, small fleets struggle with the complexity of electrification: researching vehicles, installing chargers, and navigating utilities and incentives (Mitra EV, 2026a). Fleets with fewer trucks were more likely than larger fleets to cite a lack of time and capacity to research EVs as a barrier (Wong, 2022). In a small survey of truck operators, drivers in smaller fleets were more concerned about a lack of technical support than drivers in larger fleets (about 70% vs. 50%; Brito, 2022). These firms often operate with lean office staff and no dedicated fleet managers, so even modest increases in coordination for things like telematics (remote tracking of vehicles), driving training, charging schedules, billing, and uptime, can strain their capacity and make the return on investment feel uncertain, even when fuel and maintenance savings are compelling.

## **Federal Policies and Programs for Electric Vehicles**

### **Federally Supported Efforts: Drive Clean Colorado**

Clean Cities and Communities is a coalition of the DOE Transportation Technology Office and community organizations across the country, providing energy and climate-related technical assistance. Drive Clean Colorado (DCC) is a DOE-designated coalition of Clean Cities and Communities. DCC is a non-profit serving as a major resource to individuals, businesses, municipalities, and non-profits in the state by delivering clean transportation, technical assistance, education, and programs. They work directly with fleet operators to demystify the process of switching to EVs and vehicle availability, help identify funding and incentives, and make specific decisions on EV fleet needs. Through the ReCharge program, DCC offers one-on-one coaching where they help participants understand funding opportunities and eligibility requirements, connect to utilities, and installers, and how to navigate and take advantage of the resources available. The ReCharge program has also conducted fleet assessments to determine the specific vehicle utilization and operating needs so the coaches can make recommendations on chargers and which EVs or cleaner drivetrain vehicles will be a good fit. In addition to the ReCharge program, DCC hosts peer working groups, hosts/tables community events, including bilingual, culturally relevant events tailored to specific communities, and their website is a hub for information about making the switch to EVs.

## State of Colorado's Policies and Programs for Electric Vehicles

The freight industry in Colorado is expected to increase 105% by weight and 66% by dollar in the next 25 years, making it 8th for states with the largest change in future freight activity (TRIP, 2023; CDOT, 2024). Although this increase in activity benefits all Colorado residents and the economy, the costs fall more heavily on areas near traffic corridors, including NDCC. As traffic congestion is also expected to rise, vehicles will spend more time on the road per distance traveled, compounding total greenhouse gas (GHG) emissions and the associated environmental and health consequences for neighboring communities. With the I-70/270/I-25 corridor in North Denver (i.e. the “Mousetrap”) being one of the most congested areas in the state, it will continue to see disproportionate environmental and health impacts with increasing freight activity (Dickinson et al., 2022). Furthermore, much of the in-state trucking industry is centered in the NDCC, adding to the area’s vulnerability.

To address these local and global impacts of vehicle freight, Colorado has been a national leader in advancing a transition towards cleaner vehicles. In total, **Colorado has 78 laws and incentives related to electric and zero-emissions vehicles, in addition to private sector, utility, local government, and cross-sectoral initiatives.** Table 1 summarizes supports and incentives most impactful and relevant for small- to medium-sized businesses.

**Table 1.** Summary of financial support and incentives from the State of Colorado, Xcel, and United Power utilities for electric and zero-emissions vehicles.

| Program                                       | Type of Support                                                                            | Monetary Value                                      |
|-----------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Clean Fleet Planning, Research and Evaluation | Technical assistance for scoping a transition to clean fleets                              | N/A                                                 |
| Clean Fleet Vehicle & Technology Grant        | Grant funding for EV purchasing and pilot projects                                         | \$50,000-\$450,000 per vehicle                      |
| Heavy Duty Diesel Vehicle Replacement         | Grant funding to replace diesel vehicles 9 years and older with a model from 2018 or later | Varies                                              |
| Innovative Truck Credit                       | Tax credit                                                                                 | \$750-\$8,000                                       |
| Fleet-Zero                                    | Grant for EV charging infrastructure                                                       | L2: \$7,000<br>DCFC: \$40,000                       |
| Charge Ahead Colorado                         | Grant for EV charging infrastructure                                                       |                                                     |
| Fleet Electrification Advisory Program (Xcel) | Technical assistance for scoping a transition to clean fleets                              | N/A                                                 |
| EV Supply Infrastructure (Xcel)               | Rebate for EV charging infrastructure                                                      | L2: \$5,835 (\$11,670)<br>DCFC: \$18,250 (\$36,500) |
| EV Supply Equipment (Xcel)                    | Rebate for EV charging equipment                                                           | L2: \$1,250                                         |
| United Power Charger Rebates                  | Rebate for EV charging infrastructure and equipment                                        | Must contact for details                            |

## Colorado Clean Truck Strategy

Colorado has enacted policies to drive the adoption of EVs by businesses. Beginning in 2023, the Colorado Air Quality Control Commission changed air quality regulation in three rules for clean trucking that aimed to reduce vehicle emissions and promote improved air quality for communities adjacent to heavy traffic zones (CDPHE, 2026). First, the Advanced Clean Trucks (ACT) Rule is a market-based approach that requires manufacturers to sell an increasing number of medium and heavy-duty EVs each year, to 30% of sales by 2030, and 100% of sales by 2050. Second, the Heavy-Duty Low Nitrogen Oxides Rule requires heavy duty vehicle manufacturers to develop engines that produce 90% less NO<sub>x</sub> (another GHG) for vehicles over 14,000 lbs. Lastly, the Large Entity Reporting Rule requires fleet operators of 20 or more vehicles to submit information such as vehicle type, class, use, and plans for sustainability/reduced emissions, so that the state can understand fleet needs for transitioning to zero-emissions vehicles.

To alleviate the cost of investing in clean fleets, Colorado offers tax incentives as well as technical assistance and grants through Clean Fleet Enterprise programs. The current tax incentives (2026) are \$750 for light duty, \$4,000 for medium duty, and \$8,000 for heavy

duty vehicles. Clean Fleet Enterprise offers grants for a variety of projects, including zero-emissions vehicle purchases for local governments, non-profits, and for-profits with fleets of 1 or more vehicles. As on-site charging is often a necessity that can be a significant added cost depending on fleet needs, Colorado offers grant funding through the Fleet-Zero and Charge Ahead Colorado programs. Both programs offer funding for the cost of charging equipment and installation for Level 2 and DC Fast Chargers (DCFC), with the requirement of a 10-20% match by the applicant.

### **Private Sector: New Day Hydrogen FCEV**

While EVs have been popularized in the market of light weight vehicles, FCEVs may be an even better fit for Class 8 long-haul applications, as they are more cost effective than EVs, and in some cases, diesel as well (MIT, 2023). One of the major hurdles holding businesses back from their investment is the lack of hydrogen fueling infrastructure in the state, let alone the country— California is the only state that has built out FCEV infrastructure. New Day Hydrogen is a company seeking to make big changes for hydrogen infrastructure in Colorado. With a \$9M grant from the Federal Highway Administration, New Day Hydrogen is partnering with Colorado State University to build three FCEV hydrogen charging hubs along the I-25 corridor. The charging hubs will be located in Fort Collins, Denver Metro, and Pueblo. NDH is active in educating businesses and municipalities about the FCEV technology and helping fleets make educated decisions about investing in FCEV fleets. It is anticipated that Commerce City will be the Denver Metro location, and that all three hubs will be operational by fall of 2027, though plans have not been finalized at the time of this report.

### **Utilities**

The two energy utilities serving NDCC, Xcel and United Power, both provide resources for EVs. Both utilities offer rebates on all or parts of costs associated with L2 and DCFC charging, and Xcel offers a technical assistance program. The rebate programs by Xcel are the EV Supply Infrastructure rebate (EVSI) and the EV Supply Equipment rebate (EVSE). EVSI covers \$5,835 (L2) and \$18,250 (DCFC) for the installation of electricity infrastructure and interconnection costs, while EVSE covers \$1,250 of the cost of purchasing L2 chargers. The EVSE rebate will also cover \$17,500 to \$40,000 for DCFCs that are made publicly available. The Xcel rebates are double the value for projects located in areas classified as Disproportionately Impacted Communities, which most of NDCC falls under. Also, Xcel's rebate values are much greater for charging ports that are made public. United Power offers rebates for chargers and charging infrastructure for >1 vehicle upon request. Xcel's Fleet Electrification Advisory Program (FEAP) offers technical assistance to fleets of five or more for planning the transition to EV fleets, from which vehicles to purchase to charging site design. The program is at no charge to the customer, and applications are accepted as funding becomes available. For project planning, Xcel also has a free interactive Fleet Assessment Tool that compares the 10-year cost projections calculated for ICE vs EV and FCEVs so businesses can see savings or losses directly (Xcel EV Solutions, 2026).

## Local Policy

Twelve Colorado local governments have established or have begun creating an EV transition plan including Denver, Colorado Springs, Longmont, and Pueblo. In Denver, any ICE city-owned vehicle in need of decommissioning must be replaced by an equivalent EV, and codes for new buildings or major renovation construction on multifamily or workplace buildings mandate the inclusion of charging stations. Additionally, Denver and others such as Fort Collins, Boulder County, Summit County, and the City of Golden became members of the GoEV City campaign, which is a commitment to a 100% zero-emissions fleet by 2050 (SWEEP, 2021). Denver also has promoted charging infrastructure via the Mobility Incentive Program that provides funding to install L1 charging stations at multifamily buildings, and installation of public L2 chargers across the city, including the Central Park and Montbello recreation centers.

Among the cities located in the NDCC area, Commerce City has taken initiative towards reducing vehicle emissions for their fleet operations. First, upon renewal of Commerce City's contract with refuse company Republic Services, the company will deploy all-electric fleets. Second, Commerce City was accepted to participate in Xcel's Partners in Energy, a program which provides technical assistance towards planning and creating a roadmap for energy projects. The goal at Commerce City is to produce an EV readiness plan to electrify the city's fleets, which would be complemented by policies mandating public EV charging stations. The development of the EV readiness plan has taken place largely around education and engagement with city departments and the larger community to assess the level of awareness around EVs.

## Cross-Sector Collaboration: States, Private Industry, and Nonprofits

In April 2026, the National Laboratory of the Rockies (NLR) hosted the Intermountain West Electric Freight Symposium in Golden, Colorado, organized by the National Association of State Energy Officials (NASEO) and the State of Colorado (Intermountain West Electric Freight Symposium, 2026). Our project team attended this event to understand the current efforts of other states and industry actors.

The day offered a useful snapshot of where the market for electric medium- and heavy-duty vehicles stands. Even as the federal government steps back from vehicle electrification, state agencies, multi-state coalitions, utilities, nonprofits, and private fleets are continuing to build the infrastructure, tools, and financing models the transition requires. The discussion is summarized below across three groups of actors, followed by its implications for small businesses at the center of this report.

## Highlights from the April 2026 Intermountain West Freight Symposium

### *Participants*

- 104 attendees from 68 organizations, including state agencies from 7 states (Intermountain West Electric Freight Symposium, 2026)

### *Public and Private Sector investments and activity*

- Tesla: new semi will have a 300–500-mile range (Intermountain West Electric Freight Symposium, 2026)
- Zeem Solutions: fast charging depots, hundreds of thousands charging sessions, in operation at LAX, Sea-Tac, and Port of Long Beach, and expanding to other sites (Zeem Solutions, 2026)
- Nevoya: fully electric third-party trucking company (Center for Green Market Activation, 2026)
- Sysco electric-semi: Total Cost of Ownership (TCO) is ~\$450,000–\$500,000 (Intermountain West Electric Freight Symposium, 2026)
- Clean Corridor Coalition: MD, CT, DE, NJ, and agencies along I-95: \$249M invested in 24 sites and 450 charging ports (U.S. Environmental Protection Agency, 2024)
- West Coast Corridor: \$102M, 2,500 miles (California Department of Transportation, 2024).
- Greenlane Infrastructure: building a nationwide charging network (Greenlane, 2023)

### *Research and tools to support the transition*

- **Edison Electric Institute (EEI)**: 650+ utility EV programs, including rates, incentives and rebates, and fleet advisory services, updated quarterly (Edison Electric Institute, n.d.; Intermountain West Electric Freight Symposium, 2026).
- **National Lab of the Rockies**: EVI-X modeling suite (National Laboratory of the Rockies, n.d.)
- **Electric Power Research Institute (EPRI)**: energy modeling tools cover utilities providing 40% of the medium- and heavy-duty EV demand (Electric Power Research Institute, n.d.; Intermountain West Electric Freight Symposium, 2026)
- **CalStart's ZET Ahead dashboard** details supportive activity (e.g., goals, grants, policies, projects) in all 50 states (CALSTART, 2025)

## Private sector: issues and opportunities

The private sector is moving, even though it is under financial and operational strain. Large fleets are already deploying: Sysco built a semi-charging plant with substantial support from Xcel Energy; Tesla is launching a Nevada-built electric semi with a 300-to-500-mile range served by roughly fifty public “megacharger” sites (none yet in Colorado); and depot operators such as Zeem Solutions are running shared charging hubs at Los Angeles International airport (LAX), the Port of Long Beach, and Seattle-Tacoma Airport (Sea-Tac)

that serve everything from rideshare cars to Class 8 tractors (Intermountain West Electric Freight Symposium, 2026). The LAX depot alone has logged more than 350,000 charging sessions as of May 2026, which Zeem describes as one of the highest-throughput commercial charging facilities in the United States (Zeem Solutions, 2026).

Economics, however, remains the central obstacle. At the Intermountain West Electric Freight Symposium, Jessie Lund, the Senior Program Director of the National Association of State Energy Officials (NASEO) noted that total cost of ownership (TCO) and driver experience are genuine selling points—electric trucks can reduce driver turnover—but electricity rates and upfront costs still do not pencil out on their own. Each of Sysco’s electric semis carried a TCO of roughly \$450,000–\$500,000 (about \$250,000–\$300,000 for the truck and \$150,000–\$200,000 for charging), and even ten years of fuel savings were not enough to justify the switch without incentives. The combined federal excise and state sales tax burden of nearly 20% on Class A trucks further adds to the upfront purchase cost. Operators at the symposium described a long list of barriers: volatile energy prices and tariffs that have pushed some charging companies into bankruptcy, unreliable public charging (in a Sysco pilot only one of five public chargers worked, leaving a driver paid \$50 an hour idle for three hours and delaying deliveries), scrapping incentives that do not apply to leased vehicles, weight and bridge restrictions on heavier battery-electric trucks, and service-level-agreement failures when charging time cut into delivery windows, an issue noted by a large retailer at the symposium (Intermountain West Electric Freight Symposium, 2026).

At the same time, the opportunity is real and growing. PepsiCo, which runs about 20,000 shipments a month and has committed to a 40% emissions reduction by 2030, sees roughly 3,000 diesel loads it could shift to electric or third-party electric carriers such as Nevoja, which has a fully electric fleet (Center for Green Market Activation, 2026; Intermountain West Electric Freight Symposium, 2026). Fleets that “return-to-base” to park and charge overnight on off-peak power offer near-term opportunities for the transition. Business models are adapting to the up-front hurdle as well: depot operators like Zeem Solutions now fund the capital costs themselves under five- to ten-year agreements, explicitly built to “meet TCO without incentives” (Intermountain West Electric Freight Symposium, 2026).

## **State and multi-state collaboration supporting the marketplace**

State governments, working across state lines and directly with private companies, are quietly filling the space the federal government is vacating. The nonprofit CalStart’s research on state activities shows every state is doing something, including states like Texas and Georgia, and its Zero Emissions Trucking (ZET) “ZET Ahead” dashboard catalogs the specifics—from New Jersey’s \$165 million ZET voucher pilot to Massachusetts’s target of 30% zero-emission medium- and heavy-duty sales by 2030 (CALSTART, 2025; Intermountain West Electric Freight Symposium, 2026). Multi-state corridor coalitions provide connective tissue. The Clean Corridor Coalition (C3) links New Jersey, Connecticut, Delaware, and Maryland along the I-95 corridor through a \$249 million build-out of 24 sites and 450 charging ports (Clean Corridor Coalition, n.d.; U.S. Environmental Protection Agency, 2024). California, Oregon, and Washington are coordinating a \$102 million West

Coast corridor plan spanning 2,500 miles of I-5 and connecting highways (California Department of Transportation, 2024). The Great Plains Institute (GPI) convenes agencies across Illinois, Michigan, Minnesota, and Wisconsin with an explicit goal of long-term stewardship of the infrastructure (Intermountain West Electric Freight Symposium, 2026).

Colorado has its own clean-energy transportation initiatives, including the Colorado Electric Vehicle Coalition (CEVC) bringing together utilities, auto manufacturers, dealers, trade groups, government, nonprofits, academia, and other advocates to support the state's electrification goals and develop policy, studies, and standards (Colorado Energy Office, n.d.-a). State DOTs and commerce departments in Washington, New Mexico, and elsewhere are running charging studies and setting zero-emission-truck targets, while utilities partner on the grid side. Xcel's EV fleet certification work spans eight states and starts deliberately small, mapping supply constraints with the state's Public Utilities Commission (PUC), before scaling, on the premise that there is more usable capacity on the grid than people assume if load is managed across the day (Intermountain West Electric Freight Symposium, 2026).

The key strategy for state actions is leverage, which is often the case for public investments. A small amount of state funding can unlock a large amount of private capital, especially when the work is framed as energy resilience and economic development (rather than climate alone), which can weather the political winds. The coordination challenge is significant, however, because multiple very different actors—fleets, manufacturers, utilities, state regulators, and end users—must be aligned, and shifting technical standards (the NEVI standard, the NACS connector, the move to megawatt charging) make that harder (Intermountain West Electric Freight Symposium, 2026).

### **Nonprofits and researchers filling the gap**

A layer of nonprofits and research organizations is doing connective and analytical work that neither states nor companies can do alone. CalStart, a thirty-year-old national nonprofit, maintains a ZET Ahead Dashboard of every state's incentives, a funding-finder tool for states, and a demand-aggregation effort (CALSTART, 2025). In its symposium presentation, "We're Closer Than You Think," CalStart argued the transition is further along than commonly assumed (Intermountain West Electric Freight Symposium, 2026). Greenlane Infrastructure—a joint venture of Daimler Truck North America, NextEra Energy, and BlackRock—is building a nationwide charging network for zero-emission commercial vehicles (Greenlane, 2023), while the separate PACT coalition (Powering America's Commercial Transportation) unites some twenty-one companies and partners across the value chain—truck manufacturers, energy producers such as BC Hydro, large retailers including Amazon and Walmart, and even engineering and construction firms such as Burns & McDonnell—to advocate for the policy support and grid investment the transition requires (Powering America's Commercial Transportation, n.d.). The Edison Electric Institute maintains an EV program database of utility incentives and rebates and pursues policy advocacy (Edison Electric Institute, n.d.), and the Center for Green Market Activation (GMA) aggregates demand across groups of shippers (Center for Green Market Activation, 2026).

Ann Xu’s firm, ElectroTempo, uses AI-driven geospatial forecasting built on satellite imagery of some 10,000 sites to locate truck fleets where they actually operate (which is often not where they are registered), then models lifetime cost and total cost of ownership to bring hub developers, fleets, and shippers together (Intermountain West Electric Freight Symposium, 2026). Xu’s Colorado hub-siting study for the Colorado Energy Office (CEO) and Colorado Department of Transportation (CDOT) benchmarks a viable charging hub at roughly 2.8 megawatts (about eight fast chargers) and phases Denver-metro and I-25 sites first, ahead of the Colorado Energy Office’s new Fleet-ZERO Charging Hub and medium- and heavy-duty corridor incentives, launched in 2026 (Colorado Energy Office, n.d.-b). The National Laboratory of the Rockies’ (NLR) EV modeling suite and the Electric Power Research Institute (EPRI) eRoadMAP and GridFAST tools—which now cover utilities serving nearly 40% of all medium- and heavy-duty vehicle activity—give planners a shared view of where charging load will land when the trucks are parked or mobile (Electric Power Research Institute, n.d.; Intermountain West Electric Freight Symposium, 2026; National Laboratory of the Rockies, n.d.). CalStart’s ZET Scale demand-aggregation effort has assembled 13 major brands representing more than nine million truckloads of committed demand and in September 2026 placed an order for about 2,500 battery-electric Class 8 trucks (CALSTART, 2026; Intermountain West Electric Freight Symposium, 2026). The Seattle Latino Chamber’s marketing plan for small businesses on Washington’s EV program is an example of a locally scaled EV adoption program (Intermountain West Electric Freight Symposium, 2026).

## What about Small Businesses? A Crucial Gap

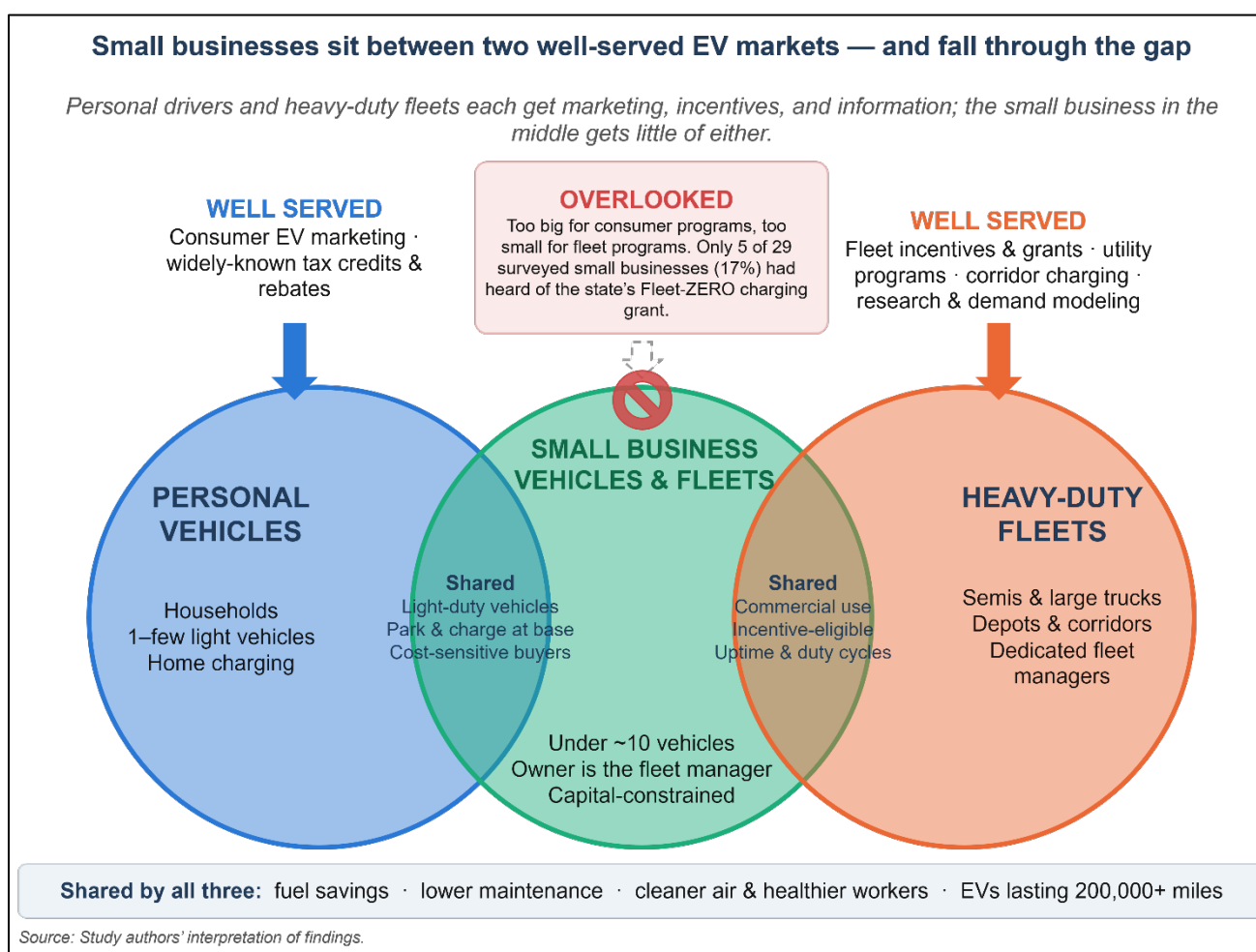
For all the momentum, the conversation at the Intermountain West Electric Freight Symposium was almost entirely about Class 8 semis and large fleets—Sysco, PepsiCo, Walmart, Amazon—and at times about data centers, a significant related issue in the discussion of grid capacity (Intermountain West Electric Freight Symposium, 2026). Since the conference focused on heavy freight movements, very small businesses (fewer than 25 employees and fewer than 10 vehicles, operating lighter vehicles) were not included in the discussion, except in NLR’s EVI-X suite. In some ways, these businesses are like the sidewalks and bike lanes of the transportation system: overlooked in transportation models when targeting air quality improvements in transportation demand measurements, yet these businesses could benefit from EV savings and provide air quality benefits once they reach a critical mass. In small numbers, they could help utilize excess grid capacity in the evening hours, as largely “return to base” vehicles. At a minimum, they should not impact the grid if they convert their fleets to EVs.

This report addresses that gap (see Figure 1). The forces that make the switch hard for a fleet of Class 8 semi-trucks point the other way for a small operator: lighter vehicles are cheaper and simpler to electrify, they often already fit the ideal “return-to-base,” overnight-charging profile, and their smaller charging needs could actually help states and utilities like Xcel Energy guarantee the local demand that makes community charging hubs viable. For these reasons, utilities and the public sector should be reaching out to small businesses as an important part of the EV ecosystem.

With the right information and incentives, EV conversion can be easier or more favorable for a very small business: electric vehicles are expected to run past 200,000 miles, indicating a growing large used EV market, cutting the cost and downtime of gas, maintenance, and frequent vehicle turnover; they reduce employees' exposure to diesel and gasoline fumes; and they contribute to cleaner air in the communities where their businesses operate.

**The infrastructure, incentives, and coordination that states, utilities, nonprofits, and researchers are building can support the small-business transition—but only if the conversation is broadened to include the small businesses currently sitting in the gap in the middle of the market.**

**Figure 2. The small business EV gap**



*Small businesses share benefits and challenges with both personal-vehicle owners and heavy-duty fleets, yet receive far less of the marketing, incentives, and information*

# METHODS

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## STUDY AT A GLANCE



Study area ZIP codes: 80022 · 80216 · 80229 · 80640 (North Denver & Commerce City)

## Study Area & Small Business Identification

This study was conducted in the North Denver and Commerce City regions of Denver, which are identified as significant hotspots for urban diesel emissions. The area hosts between 2,000 and 8,000 businesses, necessitating substantial movement of goods and services, thus characterizing it as an “inland port” (Data Axle, 2022). Additionally, this region is traversed by three major highways, accommodating hundreds of thousands of vehicles daily (CDOT, 2022).

To define our study area, we drew on the findings from the report “Who Bears the Cost” (Dickinson et al., 2022), which details the transportation sector's environmental impacts in this region. This analysis highlighted four key zip codes that form the boundaries of our study area: 80022, 80229, 80640, and 80216.

We selected North American Industry Classification System (NAICS) codes for industries likely to rely on vehicles in their business operations (Table 2) and sought to identify small businesses in these sectors within the study area. Using the U.S. Small Business Administration’s criteria for small businesses, we defined our target population as businesses with annual revenue under \$7.5 million and fewer than 100 employees (SBA, 2025).

**Table 2. NAICS codes included in the study population**

| NAICS Code | Definition                                 |
|------------|--------------------------------------------|
| 336        | Transportation Equipment Manufacturing     |
| 484        | Truck Transportation                       |
| 488        | Support Activities for Transportation      |
| 7223       | Special Food Services                      |
| 236        | Construction of Buildings                  |
| 238        | Specialty Trade Contractors                |
| 424        | Merchant Wholesalers, Nondurable Goods     |
| 492        | Couriers and Messengers                    |
| 624        | Social Assistance                          |
| 541870     | Advertising Material Distribution Services |
| 561740     | Carpet and Upholstery Cleaning Services    |

We used the Esri Business Analyst database from 2023 to identify all businesses within our target zip codes. We filtered the dataset based on our target characteristics, including NAICS codes, employee size, and total annual revenue. While the Esri database provided essential information such as business names, addresses, zip codes, NAICS codes, employee size, and annual revenue, it did not provide contact information.

We partnered with a Computer Science student at the University of Colorado Denver to acquire the necessary contact information through web scraping. Using the business names and addresses, we scraped URLs and extracted email addresses from the corresponding websites, resulting in 572 email addresses. We then conducted an additional web scrape to gather phone numbers for cold calling.

## Data Collection

To collect data from small businesses, we developed a survey to administer via emails, phone calls, and conference intercepts.

### Survey of Small Businesses

#### *Survey Development*

The survey development process involved collaboration through a Google Document, which facilitated the drafting, structuring, and revision stages among our research team (including university and GreenLatinos partners), the Colorado Energy Office, and a public relations firm working with CEO on their EV outreach. Following the completion of the initial draft, the survey was integrated into Qualtrics for survey administration. A beta test

was then conducted with small-business owners in our network who were not involved in the project. Feedback obtained during this testing phase was systematically incorporated into both the Google document and the final Qualtrics survey version. A translated version of the survey was developed by GreenLatinos and integrated into Qualtrics, with language selection available via a drop-down box.

The structure of the survey questions was designed to maximize information collection while minimizing respondent fatigue. We employed a diverse mix of question formats, including multiple-choice, text-entry, form fields, matrix tables, and Likert-scale questions regarding their perceptions of benefits and costs. The multiple-choice questions were structured to allow for either one or multiple responses (select all that apply), along with an “other” option with text entry to capture additional responses outside the specified choices. The full survey instrument is available in Appendix A.

### ***Survey Dissemination***

In addition to the business database for phone and email outreach, we collaborated with various organizations to disseminate our survey through their newsletters. These partners consisted of the Colorado Office of Economic Development and International Trade’s Minority Business Office, the Adams County Commissioners, the Denver District 9 City Council, and the Colorado Department of Public Health and the Environment’s (CDPHE) Green Business Network.

### ***Outreach Events***

Our team also took part in two Drive Clean Colorado events, where we distributed fliers featuring our project description and survey link to attendees: the Ride & Drive in Englewood on February 27, 2025, and the Drive Clean Summit in October 2023 and 2025. Unfortunately, very few small businesses attended these events.

Our project partners, GreenLatinos, further extended our reach by conducting door-to-door canvassing in the target zip codes, successfully reaching over 2,000 households with these fliers.

### ***Email Distribution***

On September 25, 2025, we used an Outlook mail merge to send an invitation to take the intercept survey to the 572 businesses from the Esri business database for which we had email addresses. Six email addresses were invalid (undeliverable - bounce back replies). We received 7 responses over the next three weeks, after which a follow-up reminder email was sent to the remaining 556 businesses on October 14, yielding 2 additional responses. In total, this email-based recruitment thus yielded a 1.6% response rate (9 valid responses out of 565 apparently valid/delivered emails).

### ***Cold Calls: Attempts versus yield***

Given the modest yield from email-based outreach, we next attempted to reach businesses through an intensive cold calling campaign. From our full set of 572 small businesses, one business was selected from each zip code within each industry, resulting in a total of 255 businesses. This subset was randomized using the `=rand()` function, resulting in a final list

of 255 businesses for outreach about our survey via phone and email. Team members were able to complete cold call attempts to 249 of these businesses. The yield from that volume of outreach was modest: only 122 answered the phone call, and from that, just 11 agreed to complete the survey. Most calls resulted in no answer or voicemail, and a substantial subset connected with someone who could not transfer us to the appropriate decision-maker. Further, 39 businesses reported owning no vehicles, 22 were too large to qualify, roughly 31 were not headquartered in North Denver, 14 had closed, and 16 declined outright—so the great majority of the list was ineligible or unreachable before a survey was ever possible. Ultimately, only 11 of the 249 cold calls reached the correct person and produced a completed survey (4% completed response rate). This response rate was higher than the email-only response rate, but at a substantially greater cost in personnel effort.

### ***Additional Survey Outreach Methods Attempted and Considered***

In light of the limited response from email and phone-based recruitment, we considered a few other methods to reach businesses and recruit participants:

**Social Media:** On January 29, GreenLatinos posted an ad on their social media with a link to the survey (Figure 3). Within 24 hours, we received 723 survey responses. A quick examination made it clear that many, if not all, of these responses were from bots rather than legitimate business respondents. This continued even after we added a screening ReCaptcha questions in Qualtrics meant to filter out non-human respondents. These survey responses were often accompanied by emails to our research team requesting prompt payment of the survey incentive (\$10). In response, we closed the survey and sent an email to all of the addresses provided by the respondents requesting that they call one of our team member's office number and leave a brief message with their name and business name to verify that they were a legitimate survey respondent. We did not receive any verification calls and subsequently omitted all of these survey responses from our analysis.

**Figure 3.** Digital flyer to publicize the survey



**Digital Ads:** We also looked into digital advertising and text messages, but it was difficult to target and costly. We determined the cost was beyond our study budget and not worth the risk.

**USPS Mailing:** We worked with the campus mailing system for research purposes and the cost estimate was similar to the digital ads analysis. The costs versus the expected response rate to a postcard or envelope did not seem worthwhile.

### **Follow-up Interviews with Small Business Survey Respondents**

In total, our email, intercept, and cold call outreach yielded complete, valid responses from 27 small business respondents. Of these, 10 indicated that they would be willing to complete a follow-up interview to share additional information about their business and vehicle needs and preferences. In April, we reached out to 9 of the 10 (the 10th was a Spanish speaker, and we did not have staff available to conduct a follow up interview in Spanish). Three of the nine responded to the interview invitation and completed interviews with members of our study team.

## Key Informant / Organizational Interviews

We also interviewed 6 organizations involved in assisting communities (including individuals, municipalities, businesses, nonprofits, and industry associations) in the Denver Metro Area to plan, make informed decisions about their fleet transitions, and understand available funding. The group of interviewees consisted of utilities, local government staff, non-profits, and private industry, and represented a range of experience with business contacts, specifically regarding EVs/FCEVs. We asked them about their role in supporting small businesses, where they've gained their knowledge, the state of electrification in the Denver Metro Area, how they are involved in small-business engagement, the market for EVs and the uptake of EVs among small businesses, and perceived barriers and challenges.

# RESULTS

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## Online Survey

Our analysis of completed small business surveys includes **27 businesses**. Sample sizes and item-level counts range from about 21 to 27 since respondents were allowed to skip individual items. The following are key results related to the business characteristics of survey participants, and the motivators and barriers to cleaner vehicle adoption.

### Small Business Characteristics: Size, Industries, and Vehicle Fleets

The survey sample skews to small business size (Table 3) and light duty vehicles: **17 of 27** report **10 or fewer employees**, the median fleet is **3 vehicles**, and most concentrate in a broad **Production/Industrial/Trades** group (18), with a smaller **Light/Transport** group (7) with vehicle transportation needs for delivery, distribution, or client visits, and just two in **Office/Professional**.

**Table 3.** Business size, by number of employees

| Size category                      | Total    |
|------------------------------------|----------|
| Less than or equal to 10 employees | 17 (63%) |
| More than 10 employees             | 10 (37%) |

Within the three broader industry groupings, participants fall into more specific sub-industries, and several checked multiple industry classifications, such as construction, electrical, and plumbing, noting they were general contractors or multi-purpose construction, building systems, and remodeling companies (Figure 4).

**Figure 4. Industries of respondents**

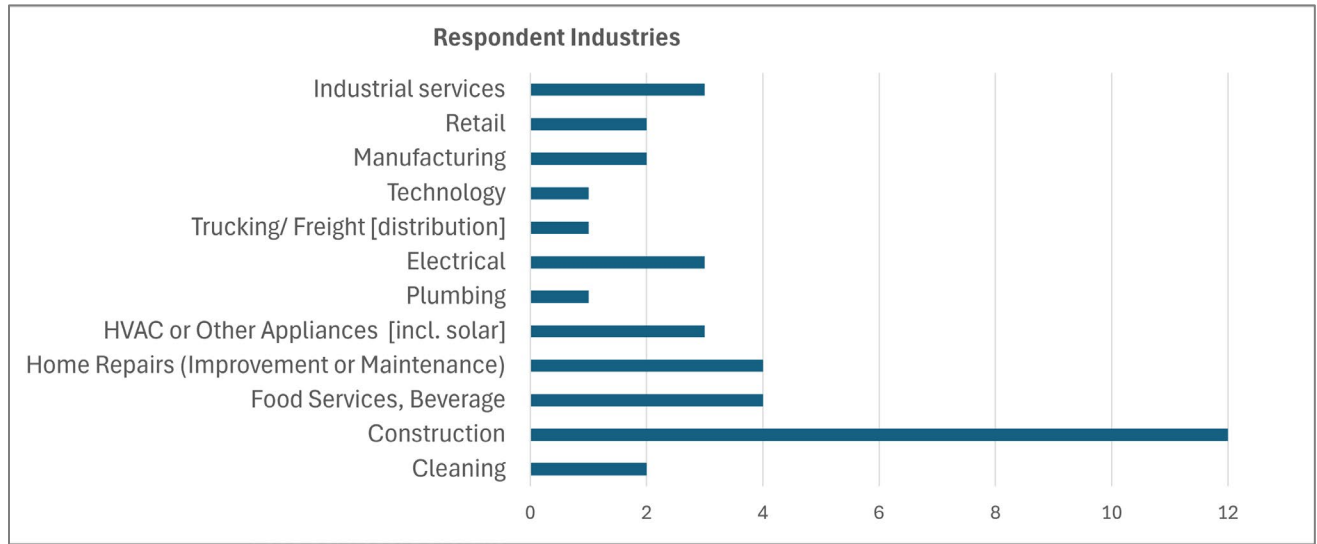


**Table 4. Industry category relative to vehicle-fleet needs**

| Major industry category         | Avg. # of Vehicles                              | Avg. # of Employees*                              | # of Businesses |
|---------------------------------|-------------------------------------------------|---------------------------------------------------|-----------------|
| Light/office                    | 0                                               | 5                                                 | 2               |
| Light/transport                 | 2                                               | 7                                                 | 7               |
| Production/Industrial           | 10                                              | 13                                                | 18              |
| <b>Total / Average / Median</b> | <b>187</b><br><b>7 avg.,</b><br><b>3 median</b> | <b>~288</b><br><b>11 avg.,</b><br><b>8 median</b> | <b>27</b>       |

\*Note: This is an estimate based on the median value of the employee size category the respondent chose, 1 to 5, 6 to 10, 11 to 20, 21+.

In total, the businesses we surveyed operate **187 vehicles** (including forklifts) (Table 4). Of these, **73% of these are light-duty** (sedans, pickups, SUVs, and vans), with pickup trucks alone accounting for 102 vehicles (Table 5). **Only 25% are medium- or heavy-duty.** Most drive their vehicles short distances and less than the average 200 miles a day for a typical EV charge.

Only **7 of 25 responses (28%)** reported that any of their vehicles regularly travel more than 200 miles per day. This is a slightly lower share than the Colorado respondents reported in the Mitra-EV report for the Clean Cities & Communities survey, 31% traveled 300 or more miles per day.

**Table 5. Vehicle fleet size and vehicle types by number of businesses**

| Vehicle type   | # businesses with vehicle type | Total # of vehicles in sample | Share of vehicles |
|----------------|--------------------------------|-------------------------------|-------------------|
| Pick-up trucks | 17                             | 102                           | 55%               |
| Vans / SUVs    | 9                              | 26                            | 14%               |
| Medium-duty    | 8                              | 29                            | 16%               |
| Heavy-duty     | 4                              | 18                            | 10%               |
| Sedans         | 6                              | 9                             | 5%                |
| Other          | 3                              | 3                             | 2%                |
| <b>TOTAL</b>   | <b>N/A</b>                     | <b>187</b>                    | <b>100%</b>       |

Fleet age adds an opportunity for these companies to convert. The largest cohort operates vehicles seven to 11 years old, from **2015–2019 (14 businesses)**, with **another seven businesses in the 12–16-year-old range, 2010–2014 range (Figure 5)**. Thus, a meaningful share of these fleets is entering the replacement window now. However, in a later question, most reported that they would replace their current vehicle with a gas or diesel vehicle in the near term.

**Figure 5. Comparison of vehicle types to vehicle age**

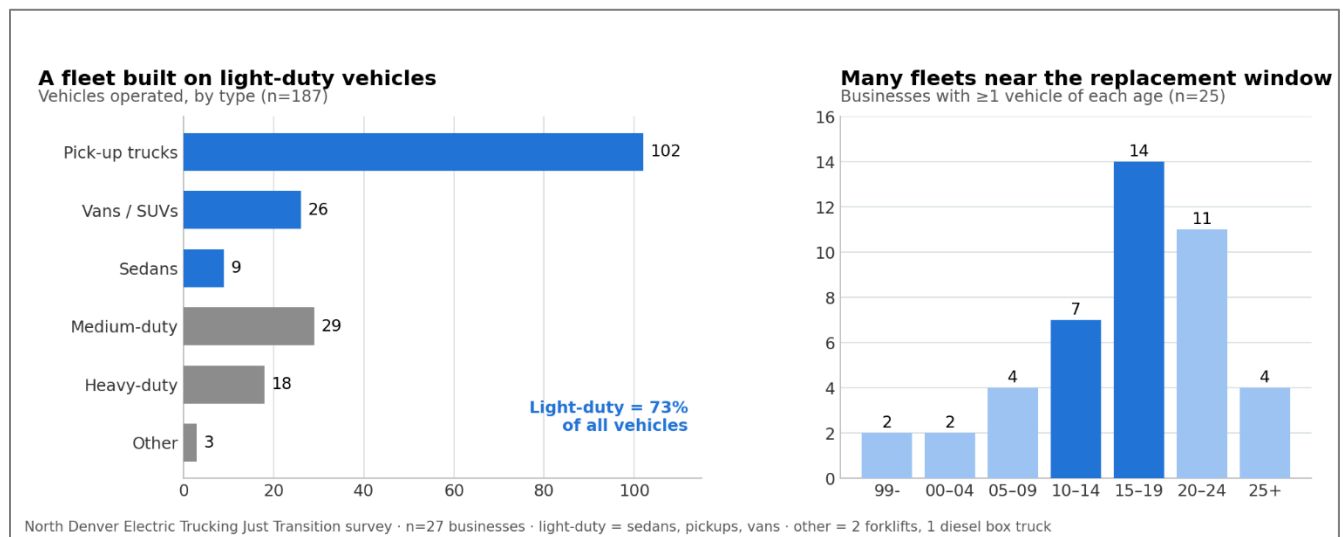


**Table 6.** Businesses reporting at least one vehicle in each model-year range (n = 25).

| Model-year range | # of Businesses |
|------------------|-----------------|
| 1999 or older    | 2               |
| 2000–2004        | 2               |
| 2005–2009        | 4               |
| 2010–2014        | 7               |
| 2015–2019        | 14              |
| 2020–2024        | 11              |
| 2025 or newer    | 4               |

### **Cleaner Vehicle Adoption Motivators: Fuel Savings Leads**

We asked respondents to rate the importance to them of different potential benefits of switching from gas/diesel vehicles to EVs (Figures 6-7). **Cost savings on fuel are the top motivator at 67%** (16 of 24) and stand clearly above the rest. Reduced maintenance (55%), employee health (55%), family/community health (52%), and performance (50%) form a middle tier; environmental benefit (48%) and incentive savings (48%) are not far from the top reasons. In practical terms, outreach is likely to be most effective when it leads with cost savings rather than environmental messaging: the health and air-quality benefits matter to these owners, but they are not what owners rank first.

### **Barriers: Top Concerns are Functional and Answerable**

Respondents also rated the importance of different potential concerns related to switching to EVs (Figures 6-7, Table 7). The top barriers are not soft resistance to the idea, instead they are fact based upon the functionality, performance, cost, range, maintenance, payload, and charging, indicating awareness and knowledge about EVs is rather general and not technical or specific.

**Figure 6. Share of respondents rating each benefit and concern**

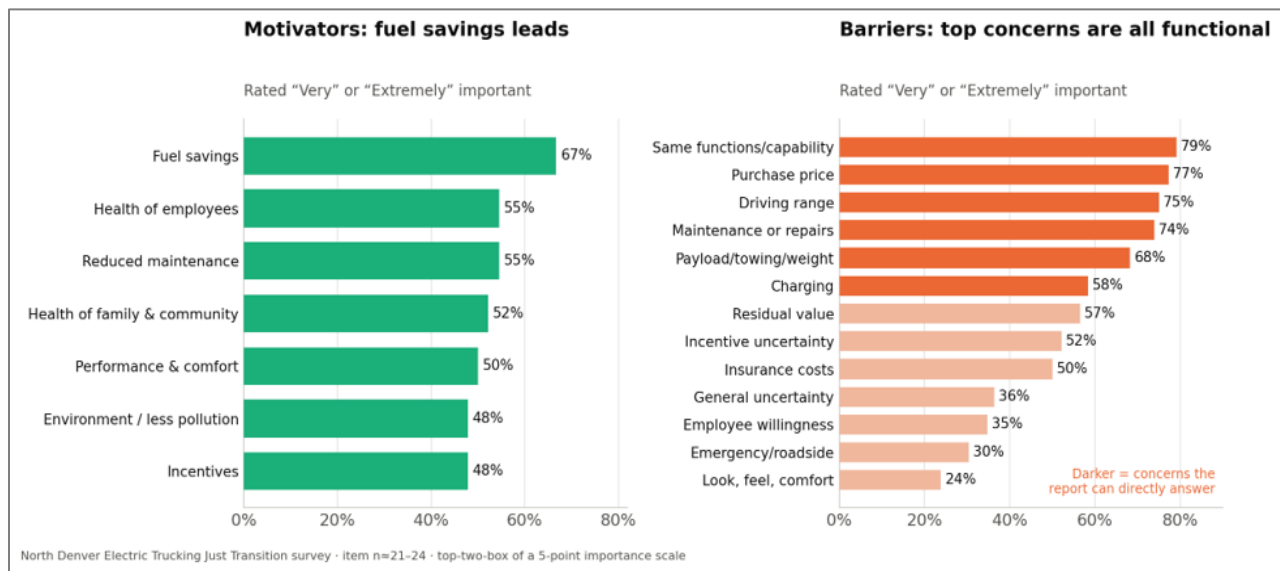


**Figure 7. Full distribution of importance ratings for benefits and concerns**

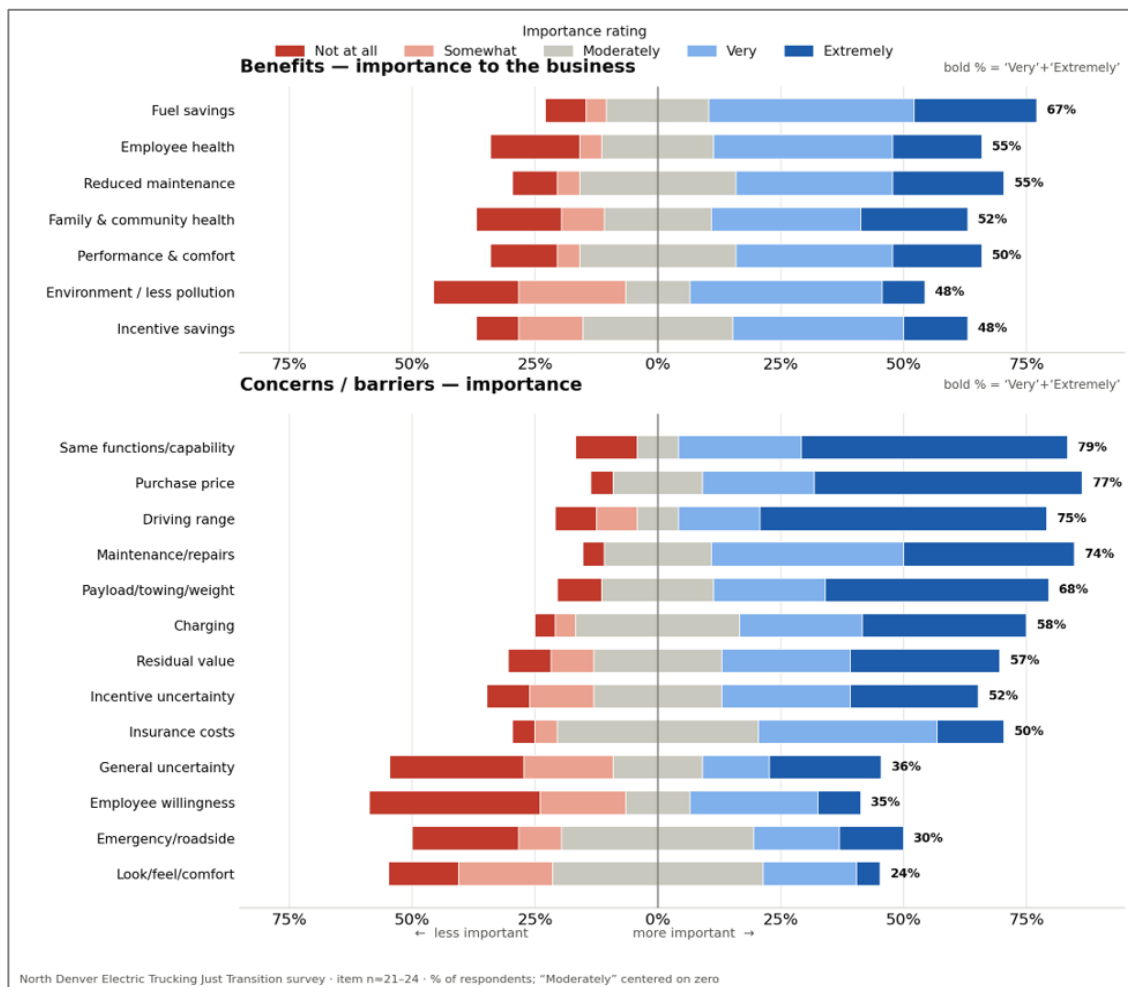


**Table 7. Percent Reporting Very or Extremely Important, by Concern**

| Concern                           | % high | Implications for messaging, outreach, and program design                                                                                                                                            |
|-----------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Can it do the same job            | 79%    | With 73% of their fleets light-duty, this may be easily answered.                                                                                                                                   |
| Purchase price                    | 77%    | To offset the purchase price, more information is needed on incentives (awareness of CO programs is low), the 200,000-mile lifespan of vehicles, and TCO is lower than diesel/gas.                  |
| Driving range                     | 75%    | Only 28% report ever exceeding 200 mi/day and most have return-to-base charging, so range may not be an issue if the average range is communicated.                                                 |
| Maintenance or repairs            | 74%    | Since maintenance or repairs also fell under top two benefits, this high concern may point to uncertainty and confusion about different types of maintenance and repairs and the service providers. |
| Payload / towing / weight         | 68%    | This is a real concern for those with heavy duty vehicles, but LD vehicles may need more information tied to their actual payload needs.                                                            |
| Charging<br>(when/where/how long) | 58%    | Better communication on charging infrastructure for overnight, park-at-base, is needed to lower this concern for the majority of respondents.                                                       |

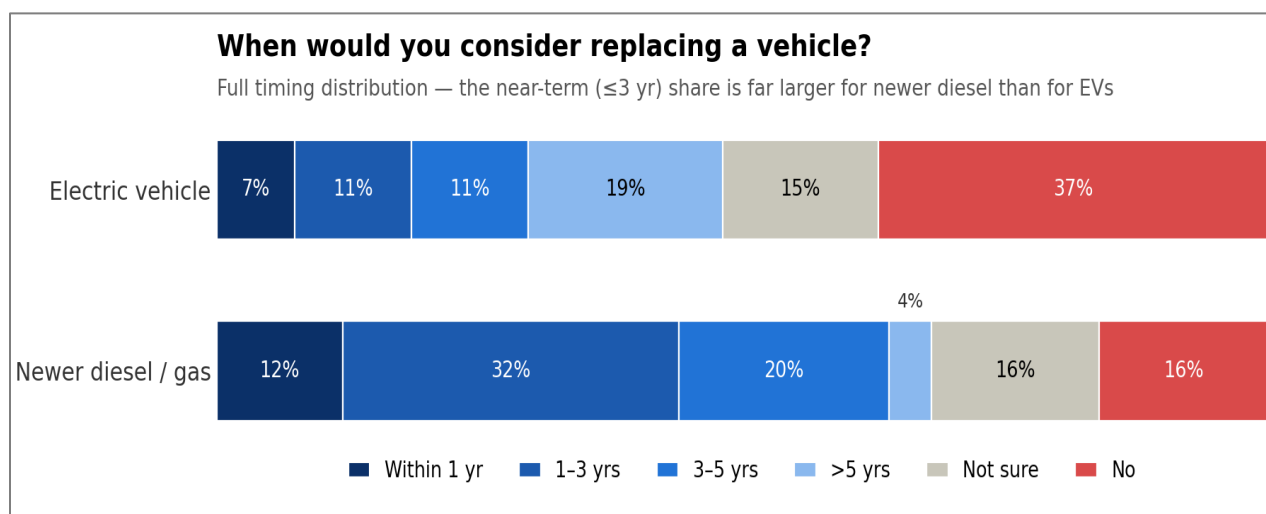
By contrast, the **lowest-rated concerns are mostly softer issues, except for emergency/roadside (30%)**, such as look and comfort (24%), employee willingness (35%), and general uncertainty (36%) (Figure 6).

### ***Willingness to Adopt: Near-term EV Purchase Intentions are Low***

Respondents were asked whether they would consider replacing their gas/diesel vehicles with EVs or with cleaner gas or diesel models over different time horizons (Figure 8). Small businesses are twice as ready to buy newer diesel as EVs. Willingness to **ever** replace with an EV is nearly split: **13 of 27 (48%)** say yes at some horizon, but **near-term** intent (within 3 years) is only **19%**. For **newer diesel/gas** vehicles, **any horizon** willingness is **68%**, and **near-term intent jumps to 44%**. Given the aging fleets documented above, the default replacement these businesses are about to purchase is a newer combustion vehicle, not an EV.

These patterns point to a timing challenge. The moment to encourage a shift to an EV is in the next replacement cycle, and at present, most businesses are on track to choose a newer gas or diesel vehicle instead. The survey data suggests this is largely due to awareness and lack of easily obtained factual information tailored to their needs, rather than a considered rejection of EVs.

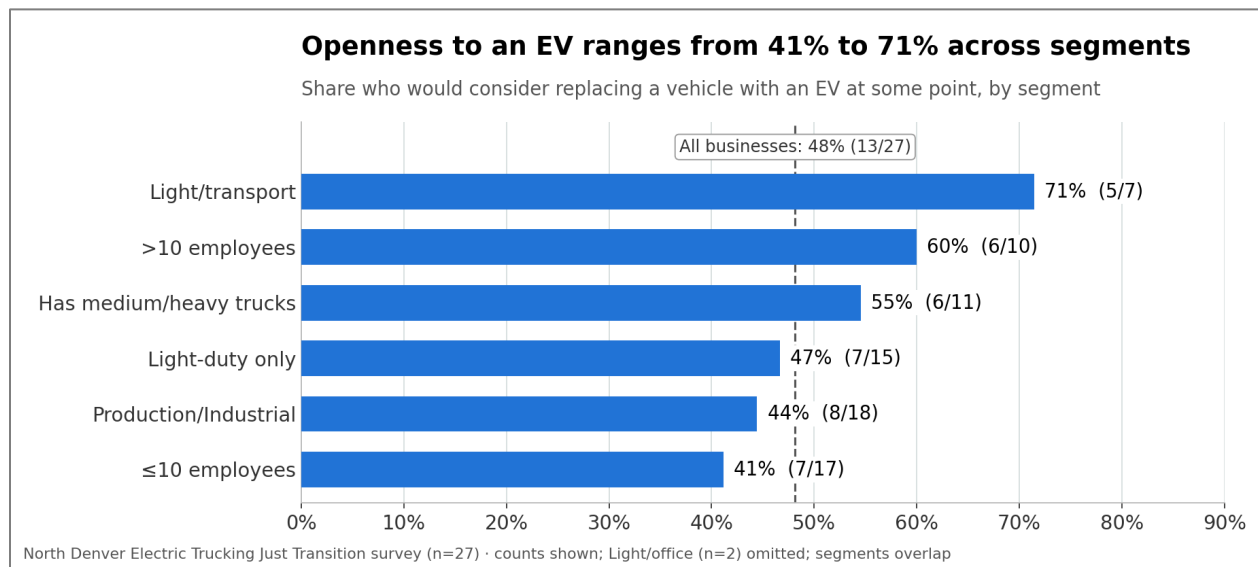
**Figure 8. When businesses would consider replacing a vehicle:**



Interest in switching also varies by business type, ownership of medium- or heavy-duty vehicles, and company size (Figure 9). The differences are modest, however, and with so few businesses in each segment in the survey, our results are suggestive rather than generalizable to other businesses.

Two other replacement decisions stand out. First, **firms with more than 10 employees are more willing to consider an EV (60%, 6 of 10) than those with 10 or fewer (41%, 7 of 17).** At the same time, larger firms are also *more ready* to purchase a newer diesel or gas vehicle as their replacement (78%, 7 of 9, vs. 63%, 10 of 16), which suggests the gap may reflect more frequent fleet replacement (and more capital) among larger firms rather than a stronger preference for EVs. Size also overlaps heavily with truck ownership: 8 of the 10 larger firms own medium- or heavy-duty trucks. Second, owners of medium/heavy trucks are not much more willing to purchase an EV than lighter duty owners (55% vs. 47%), but their slightly higher share in this study may be due to the nature of companies that owned medium/heavy duty trucks, on average they had 16 employees, compared to seven employees at companies that only had light duty vehicles, which may indicate capital availability, or firm age since larger firms may be more established.

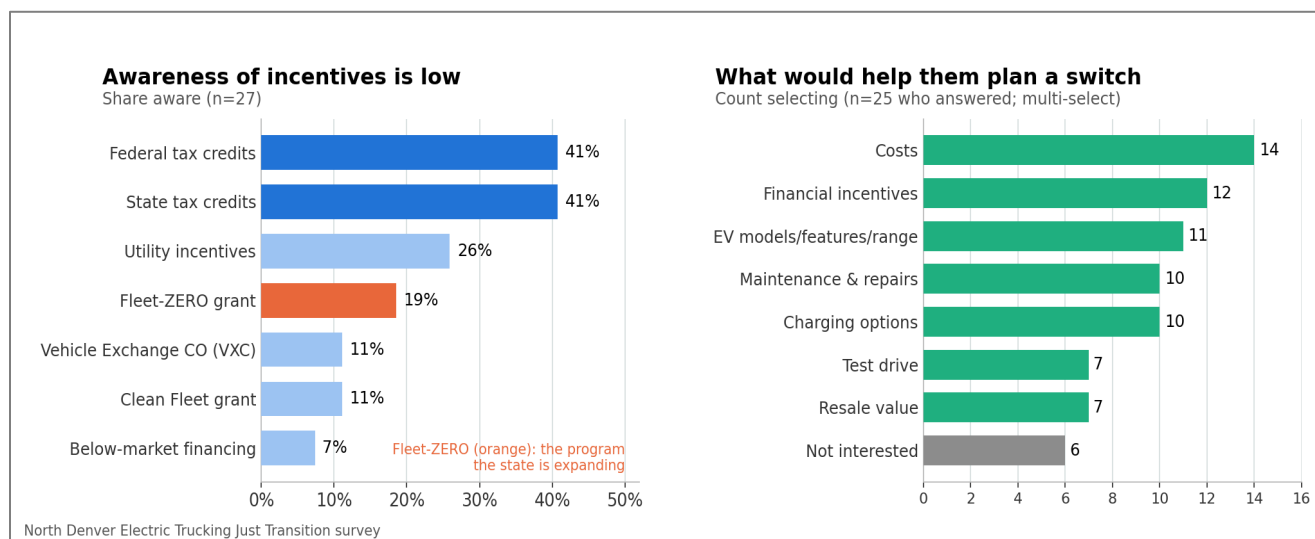
**Figure 9. Share that would consider an EV at some point, by business segment**



### **Information Needed: Awareness Gap**

According to their answers to the previous questions, the small businesses we surveyed saw potential benefits to EV adoption but also had concerns related largely to function and performance of available EV models. Overall, few businesses were considering replacing their vehicles with EVs in the near term, but about half would consider switching in the longer term. We also asked about awareness of current incentive programs and what information might help to create a transition plan.

**Figure 10.** Incentive awareness (only 19% had heard of Fleet-ZERO) and the information businesses say would help them plan a switch.



Incentive awareness is low and is primarily limited to the two federal and state tax credits (Figure 10). Only about **41% had heard of state or federal tax credits**, while a much smaller share were aware of the more specific programs, such as Vehicle Exchange, Clean Fleet, and Below Market financing, just 7% to 11%. Aligned with this finding of an incentive awareness gap, when asked what types of information would help them to create an EV transition plan, cost and financial incentive information were selected by most, 14 and 12 of the 25 businesses who responded.

This echoes a theme from the regional freight symposium: the **Fleet-ZERO program** the state is about to expand is known to only **5 of 27** of the exact types of businesses the program is meant to reach. Because purchase prices are among the top barriers and financial incentives are among the most-requested types of information, the State needs to first address the overall awareness gap and accompany information about newly expanded incentives with other EV information.

## Small Business Interviews

In April 2026, study team members conducted follow-up interviews with three small businesses that had responded to the intercept survey: an audiovisual design-and-installation company, an employee-owned land-surveying firm, and a catering business. The summaries below draw out what the three had in common and where they differed on each topic; the full per-business responses appear in Appendix B.

### 1. Business Overview

The three businesses differ substantially in industry and size but share a common reliance on company vehicles as essential work tools rather than employee transportation. All primarily serve customers within the Denver metropolitan area and depend on

transporting specialized equipment to client sites, though the type of equipment and operational demands vary across industries.

## ***2. Vehicle Needs and Use Requirements***

All three rely on their vehicles as mobile work platforms, and daily travel was generally local and modest — from multiple local stops to trips of roughly 15–50 miles — suggesting that driving range is not the primary barrier to electrification. Instead, respondents emphasized reliability, cargo and payload capacity, secure equipment storage, and charging logistics. **For small commercial fleets, successful adoption will depend less on extending driving range than on ensuring vehicles can reliably meet the practical demands of daily operations.**

## ***3. Interest in Cleaner Vehicles***

All three business operators were open to cleaner vehicles and framed adoption as a practical business decision rather than an ideological one. Because their existing fleets still meet operational needs, there is little urgency to replace them; they would consider cleaner vehicles when future models offer an acceptable combination of performance, affordability, and long-term value. **Reluctance to adopt reflects the timing of business investment decisions rather than resistance to technology itself.**

## ***4. Perceived Benefits and Concerns Related to EVs***

Respondents consistently named reduced fuel and maintenance costs as the main advantages but questioned whether those benefits yet offset higher purchase prices and operational uncertainty. Their concerns focused less on electrification itself than on whether available vehicles could meet business needs — charging infrastructure, vehicle capability, battery longevity, and total cost of ownership — and two also wanted better information about EVs' environmental lifecycle. **Improving vehicle capability and reducing operational uncertainty may do more to encourage adoption than expanding financial incentives alone.**

## ***5. Experience with EV Adoption***

None of the respondents had operated electric vehicles within their own businesses and none knew of other small businesses that had adopted EVs; their perceptions were shaped by personal vehicle ownership, friends and family, or independent research. Those experiences were generally favorable, but respondents consistently distinguished passenger-vehicle use from the demands of a commercial fleet. **The absence of examples from businesses with similar operating requirements appears to reinforce uncertainty, highlighting the potential value of peer-to-peer demonstrations and case studies.**

## ***6. Interest in Assistance***

None expressed a strong need for general EV education. They preferred timely, practical information about vehicle availability, infrastructure, and incentive programs tied to future purchasing decisions. **Outreach may be most effective when it is aligned with fleet-replacement cycles and focused on decision-ready information rather than general awareness.**

## **7. Recommendations for Decisionmakers**

Respondents consistently recommended policies that reduce business risk rather than simply encourage purchases: financial assistance, improved charging infrastructure, stronger collaboration with manufacturers, and commercially viable vehicles that meet operational needs. **Adoption is more likely to accelerate when policy addresses the practical realities of small-business operations alongside broader environmental goals.**

## **8. Additional Concerns or Priorities**

All three business operators anticipated revisiting cleaner-vehicle options as technology, infrastructure, and economics evolve. None rejected the transition outright; instead, they described a willingness to adopt once cleaner vehicles can support daily operations without adding financial or operational risk — a period of strategic waiting, monitoring the market while postponing investment until the technology better fits their operations.

## **Overall Impression Across the Three Interviews**

Across three very different businesses, respondents evaluated cleaner vehicles using a remarkably similar framework centered on operational performance, financial risk, and long-term sustainability; environmental benefits were valued but not sufficient on their own to justify fleet replacement. The most striking pattern is that respondents described themselves as waiting rather than resisting: their current vehicles still meet their needs, and available cleaner options fall short on payload, cargo space, charging logistics, reliability, or cost-effectiveness. The transition, in their telling, is a question of timing and market readiness, not willingness.

# **Key-Informant Interview Findings**

## **Challenges of the EV Fleet Transition by Small/Medium-Sized Businesses**

Additional interviews conducted with key-informants in the EV space highlighted these actors' perceptions about key challenges of EV/FCEV uptake for small business fleets. These challenges included up-front cost, technology limitations, apparent lack of supporting examples, and infrastructure. For small-medium sized businesses (SMB), cost for the vehicles and charging units is the defining factor, despite there being state incentives and utility rebates. Medium-sized businesses with 5-10 vehicles are often in an access gap, where having fewer vehicles or having the financial capital of a larger business would make the transition easier. SMBs also have the cost barrier of staffing a role dedicated to doing research, applying for grants, and change management. Technology limitations and cost can be connected in that higher class long-haul vehicles remain financially unviable for businesses. For heavy-duty, long-haul, constant-use, and rural/remotely located fleets, range anxiety is also considered a significant technology limitation by SMB owners. On-site and regional charging logistics and infrastructure are barriers. Site capacity constraints and coordinating charging schedules, managing employee/driver charging cost reimbursement, zoning modifications, and space

requirements are all major concerns and challenges identified by the interviewees. In terms of FCEV adoption, a representative from New Day Hydrogen reported that business owners expressed an aversion to being an early adopter of the technology and would instead like to see more successful examples before making a commitment.

## **Solutions - Key Takeaways**

- Education plays a big role: cost savings, EV specifications, range, and alternative uses in addition to mobility (such as the ability to operate/charge tools using the vehicle battery) are all missing pieces of information for many SMBs. When people are made aware of the TCO and other benefits, the decision becomes clearer.
- Cost becomes less of a limitation when fleet operators can stack financial assistance and use public charging stations.
- Shorter range vehicles provide adequate equivalents to ICE vehicles in terms of cost parity and the availability of charging stations.
- Vehicle types such as buses, box trucks, refuse, and light-duty vehicles have or nearly have reached cost parity with ICE equivalents, making them an easier choice for small businesses.

## **Outreach Challenges and Best Practices**

A common thread in interviewee responses on outreach efforts is that establishing contact with businesses, especially small ones, is a significant challenge across regions and outreach type. For example, a response rate of 20% or lower is not uncommon for surveys, and events can have low attendance (though results are mixed). Outreach to businesses in rural areas can be an added challenge and must be treated with more intentionality. When contact is made, interviewers found that awareness levels were much lower for small businesses compared to those with larger fleets. Access points to education for SMB can be limited, since national fleet expos demonstrating the latest technologies are costly for registration and travel.

Providing equitable and accessible outreach begins with establishing trust and must be focused on educational programming. Most of the interviewees stated going through a Chamber of Commerce, municipalities, and established community groups, was more successful than cold contact and resulted in less disengagement. Strategic communications and clear messaging over a variety of channels maximize entry points. Surveys need to have concise and transparent intentions, and open-source tools and guides need to be centralized.

In terms of direct engagement, free and low-pressure educational events are received well and are more accessible. Specifically, people are less likely to turn away when there is a focus on the TCO and EV specs, rather than emissions and climate change. To maximize reach and equity, all outreach materials must be bilingual, culturally relevant, and tailored

to the regional business demographics. With these points taken into consideration, participants can be empowered with the information they need to make decisions about their fleets.

# DISCUSSION

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## The Central Mismatch: Businesses that would benefit most are served least

The small businesses at the center of this study are, on paper, strong candidates for electrification. Nearly three-quarters (73%) of the vehicles they operate are light-duty pickups, vans, and sedans, only about a quarter of businesses report any vehicle regularly traveling more than 200 miles in a day, and most park at a home or business base overnight, which is the “return-to-base” profile that makes charging simplest and least expensive. Proportionally, they stand to gain the most from the lower fuel, maintenance, and vehicle-turnover costs of EVs, and their employees and surrounding neighborhoods would benefit from reduced exposure to diesel and gasoline emissions. Yet they are the least likely of any vehicle market to be reached by the marketing, incentives, and information now flowing to personal-vehicle owners on one side and large commercial fleets on the other. As was clear from the Intermountain Electric Freight Symposium, these businesses are too small for the programs built around Class 8 fleets and too commercial for those built around individual consumers, and so they fall through the gap between the two market segments.

The survey data sharpened this mismatch. Awareness of targeted programs is strikingly low — only 19% of respondents had heard of the state’s Fleet-ZERO charging grant, the very program meant to reach commercial fleets. Near-term replacement intent also runs counter to the transition’s goals: 44% of respondents would consider replacing a vehicle with a newer diesel or gas model within three years, versus only 19% who would consider an EV in the near term, even though these SMB’s aging fleets are entering a replacement window.

Yet there seems to be potential for companies to transition to EVs, if the decision is supported. **Nearly half of the businesses surveyed (13 of 27) would consider an EV at some point, 41% of those with ten or fewer employees and 60% of the larger firms.** The barriers respondents rated most important were concrete and answerable, such as purchase price, driving range, capability, and maintenance, rather than the “soft” concerns such as employee willingness or comfort, look, and feel, which ranked near or at the bottom. These businesses do not appear to be ideologically opposed to electrification; they face specific, addressable obstacles.

## **An Outreach Challenge: Reaching small businesses is itself a barrier**

The outreach experience and the challenges our team faced reaching small businesses to collect information, described in the Methods section, is in itself one of this study's clearest findings. Our attempts to reach businesses via email, intercept surveys at EV events, flyers, and cold calling yielded a low number of successful contacts and a relatively modest sample of completed surveys and interviews on which to base our analysis. Yet, despite the small sample size, our findings yielded many of the same results as two larger national surveys of SMBs with sample sizes more than 10 times our size (Mitra EV, 2026a; Brito 2022), indicating the validity of the responses in our small sample.

Small-business owners juggle many priorities and reaching them by phone during business hours proved difficult; the great majority of the contact list was ineligible or unreachable before a survey was even possible. It was also unclear to us how many of the email addresses we got through our web scraping method may have reached our target survey respondents within a business: those with knowledge of the business's vehicle fleets and decision-making. In addition, the DriveClean events we attended had few small businesses in attendance, limiting opportunities for intercept surveys. For future projects with constrained staffing or timelines, reallocating effort toward mixed-channel engagement (verified email lists, social media, phone calls), recruitment at Chamber of Commerce events, or other small business gatherings, and prearranged appointments through trusted brokers, are likely to yield a higher proportion of substantive conversations than high-volume, unscheduled calls or emails.

We assert, however, that our outreach challenge was not simply a logistical issue of our study. It reflects a structural gap in the information ecosystem related to SMB information. The channels that efficiently reach large fleets, like trade associations, expos, dedicated fleet advisors, proprietary databases, and economic development agencies, largely bypass the small independent operator. Private industry, for example, has access to proprietary databases that depict small-business fleet ownership, use, and needs far more completely than public data can. One such tool, "CAB Advantage" (Central Analysis Bureau, founded in 1939), specializes in motor-carrier analysis and risk assessment, generating detailed "CAB Reports" on fleet structure, driver and vehicle data, and loss history for use by insurers. Companies that lease fleets to small businesses, such as Ryder, use these databases to identify and reach prospects, but the information in this database will not necessarily include SMBs with light duty fleets consisting of five or fewer vehicles. Public and nonprofit outreach efforts, which often have smaller budgets and staff, have no comparable instrument, which helps explain why small businesses are often not represented in the data and are hard to reach in practice.

## **Interlocking Barriers to EV Adoption: Fit, capital, and risk**

Despite the challenges we faced reaching small businesses, our survey, interviews, and key-informant conversations generated key insights into three interlocking barriers to EV

adoption among smaller businesses, particularly for this geographic area. **The first is vehicle fit.** An EV must do the job of hauling the correct payload, towing what needs towing, and accommodating specialized customizations while keeping drivers satisfied. A business with specialized needs, such as a caterer or a trades contractor, often cannot find an electric model that meets its operational requirements, even when the owner is otherwise motivated to electrify. Today's EV market does not yet offer the breadth of configurations at cost parity and local availability, compared to the ICE market.

**The second barrier is capital and the outsized role of each vehicle in a small fleet.**

Nationally, SMBs make up most fleet operators, yet EV adoption among them remains low. When a company owns only a handful of vehicles, a single EV represents a large share of the fleet, and a purchase that does not perform can jeopardize the business. This makes the decision feel existential rather than incremental, and it raises **the third barrier: risk.** Sunk costs in current vehicles, uncertain resale value, lease timelines, and the long payback period on charging infrastructure all compound the perceived risk of switching, even where the projected fuel, maintenance, and longevity savings are real. For an under-capitalized business, these uncertainties and risks are real barriers.

## **A Scattered Ecosystem: Pervasive information gaps create a difficult decision-making landscape**

Compounding these barriers is an ecosystem that is fragmented at exactly the points where a small business needs it to be simple. Choosing a vehicle, finding and financing it, installing charging, and identifying and claiming the patchwork of federal, state, and utility incentives are handled by different actors, with no single portal. Owners are generally not opposed to EVs; what they lack is trusted, consolidated, and detailed information across the vehicles' lifecycle. Several raised genuine questions about the full environmental picture, including where the electricity comes from and the emissions embedded in battery manufacturing. The current scattered ecosystem of information does not provide easily found answers to these types of questions, and they're often buried in technical reports unassociated with vehicle selection and financing. As a result, even motivated owners struggle to translate general willingness toward EVs into a concrete purchase.

This finding is consistent across all of our data collection. The survey shows that the information respondents most want is costs, financial incentives, EV models and range, charging options, and maintenance, which map precisely onto the barriers they rate most highly and onto the awareness gap documented above. For some small businesses, the outreach does not need to focus on persuasion but rather access to and coordination of all the information they need to make a decision. The ICE sector has worked to provide this information for decades. The auto industry is one of the largest advertisers in the world, in terms of dollars. Those advertisements and marketing include all the information a decision maker needs, and it's online, at dealerships, in magazines, on billboards, in their mailboxes, and other readily accessed places.

## Where to go from here? Supporting EV transitions for small, under-capitalized businesses

**A consolidated public-information and outreach campaign.** Asked what information would help them build a transition plan, respondents pointed first to costs and financial incentives, then to EV models, features, and range, charging options, and maintenance, and last to the total lifecycle environmental impacts. A single, trusted source that consolidates this information and connects owners to the incentives they are eligible for would meet a demand the market is currently failing to serve, particularly for the SMB segment. Because these businesses are hard to reach through broadcast channels, such a campaign should work through the trusted intermediaries that already interact with them: lenders, insurers, trade associations, Chambers of Commerce, and utilities. Drive Clean Colorado has a highly successful strategy that should be modeled elsewhere, focusing on long-term coaching and listening to businesses' concerns to bridge access gaps.

**A greater range of vehicles, including used EVs.** Wider OEM configurations for trades and service work would address the fit barrier directly. In the nearer term, the emerging used-EV marketplace offers a promising path: as early fleet and consumer EVs reach resale, lower-cost vehicles with substantial remaining range will become available (Ryssdal & Hollenhorst, 2026), providing an option well-matched to capital-constrained operators who cannot absorb a new-vehicle premium. Opportunities to retrofit used EVs, such as side entry delivery trucks, and cargo vans, into custom buildouts for caterers, millworkers, HVAC technicians, and others should be explored.

### AN EMERGING OPPORTUNITY: USED EVs

As early fleet and consumer EVs reach resale, lower-cost vehicles with substantial remaining range are coming to market — well matched to capital-constrained small operators who cannot absorb a new-vehicle price premium.

*Source: Ryssdal & Hollenhorst, 2026*

**Shared and utility-supported charging.** Because most of these fleets return to base and charge overnight, they are well-suited to managed, off-peak charging, and their smaller, predictable loads could help utilities guarantee the local demand that makes community and shared depots viable. Utility programs such as Xcel's Fleet Electrification Advisory Program and infrastructure rebates lower the up-front hurdle, but they must be made visible and navigable to operators who lack dedicated fleet staff.

**Hydrogen for the heavier subset.** For the minority of small businesses with heavier-duty or longer-haul needs that battery-electric vehicles do not yet serve well, hydrogen fuel-cell vehicles may be a better fit as regional fueling infrastructure develops, such as the I-25 corridor hubs described above.

# CONCLUSION

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The transition to cleaner trucking is already underway. Even as federal support has receded, states, utilities, nonprofits, researchers, and private companies are continuing to build the infrastructure, incentives, financing models, vehicles, and planning tools the shift requires, momentum evident at the Intermountain West Electric Freight Symposium in April 2026. But that momentum is organized almost entirely around two markets: individual consumers and large commercial fleets. The very small businesses in between, with fewer than roughly ten vehicles and ten employees, are largely absent from the marketing, incentive design, and even the models used to plan the transition. While some may be able to glean the necessary information from the other two markets, because their needs and resources are different, the lack of specific information will push them toward ICE vehicles when they need to replace their current aging fleets.

This report sought to understand the needs and perspectives of small businesses in the North Denver and Commerce City region, and the evidence points in a consistent direction. Most of their fleets are predominantly light-duty and return-to-base, which makes them among the best-suited candidates for electrification, and they stand to gain proportionally the most from lower fuel, maintenance, and vehicle turnover costs while reducing the diesel and gasoline emissions their workers and neighbors are exposed to. Yet only a small share is aware of the programs designed to help them, and in the near term they are roughly twice as likely to replace a vehicle with a newer diesel or gas model as with an EV. Their reluctance is not ideological or focused on soft issues. Nearly half of the firms, including about two in five of the smallest, would consider switching, and respondents named obstacles such as purchase price, driving range, capability, maintenance, and the difficulty of finding a vehicle that fits the job. These barriers are concrete and, for the most part, answerable.

The main takeaway from this study is that the gap is one of access, information, cost, and fit rather than willingness. Reaching these businesses is genuinely hard: the channels and databases that efficiently connect large fleets to vehicles, financing, and incentives do not reach the smallest businesses (less than 10 employees). Further, the ecosystem an owner must navigate to make a switch is fragmented at every step. Closing the gap will therefore require deliberate inclusion:

- consolidated and trusted information, including about Colorado's incentives, and how they can be combined with federal and state incentives, delivered through the intermediaries that small businesses already rely on;
- a wider range of vehicles than the medium-heavy-duty range, and for customizable light duty vehicles, including lower-cost used EVs;
- shared and utility-supported charging matched to their return-to-base patterns; and
- programs that address capital, risk constraints, and disruptions to operations that make each vehicle decision consequential for a small firm.

A just transition to greener vehicles for the North Denver and Commerce City region depends on widening the conversation to include these businesses. Doing so is not only a matter of equity. **Because their vehicles are the cheapest and simplest to electrify and their overnight charging can take advantage of existing grid capacity, rather than strain the grid,** small businesses represent one of the most actionable near-term opportunities in the regional clean-trucking transition. The findings from this study provide guidance on where the next steps in outreach, program design, and further research should begin.

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# APPENDIX A. SMALL BUSINESS EV SURVEY

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**Study Title:** North Denver Electric Trucking Just Transition Engagement

**Principal Investigator:** Katherine Dickinson, PhD

**COMIRB No:** 25-0387

**Version Date:** 19 December 2025

You are being asked to participate in this survey because you have been identified as someone with knowledge about using multiple vehicles to operate your business.

This survey will take about 10 minutes and will ask you some questions about your business and your perspectives related to electric vehicles. If you participate, you will receive a \$10 Tango gift card usable with over 1,000 retailers.

Possible risks will be minimal. Some questions could make you uncomfortable. There are risks of possible loss of confidentiality in participating in surveys. Every effort will be made to protect your privacy and confidentiality by deidentifying any results. All data will be stored on secure servers and only accessible by the authorized research personnel. There may be risks the researchers have not thought of.

This study is not designed to benefit you directly. The goal for this research is to help gather perspectives to inform a just transition for Denver's trucking industry and prioritize benefits for workers, small business owners, and community members in impacted areas. This study is funded by the Gates Family Foundation.

You have a choice about participating. You do not have to participate if you do not want to.

The data we collect will be used for this study, but may also be important for future research. If information that identifies you is removed from the data, your data may be used for future research or distributed to other researchers for future study without additional consent.

If you have questions, you can contact Dr. Katherine Dickinson at (720) 505-3958 or [Katherine.Dickinson@cuanschutz.edu](mailto:Katherine.Dickinson@cuanschutz.edu).

You may have questions about your rights as someone in this study. If you have questions, you can call COMIRB (the responsible Institutional Review Board) at (303) 724-1055.

**Verify that you are human to continue.**

**I have read the above informed consent and:**

- I agree to participate in this research study
- I do not agree to participate in this research study

**Name**

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**Email**

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### Phone Number (Optional)

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What is the name of your business?

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What is the zip code for your business?

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Do you operate any of the following types of vehicles for your business? Select all that apply.

- Diesel Vehicles
- Gasoline Vehicles
- Electric Vehicles
- I do not operate any vehicles for my business
- Other, please describe:

In what city does your business operate?

*Dropdown menu*

In what industry does your business operate? Select all that apply.

- |                                             |                            |
|---------------------------------------------|----------------------------|
| • Cleaning                                  | • HVAC or Other Appliances |
| • Construction                              | • Landscaping              |
| • Delivery                                  | • Pest Control             |
| • Food Services                             | • Plumbing                 |
| • Healthcare                                | • Trucking/Freight         |
| • Home Repairs (Improvement or Maintenance) | • Other, Please Describe:  |

How many people does your business currently employ? Please include the owner and any family members working for your business.

- 1-5
- 6-10
- 11-20
- 21+

Do any of your vehicles regularly travel more than 200 miles per day?

- Yes
- No

Please indicate how many of each of the following vehicles types you use for your business. Enter '0' or leave blank if a vehicle type is not used.

- Sedans \_\_\_\_\_
- Pick-Up Trucks \_\_\_\_\_
- Vans/ SUVs \_\_\_\_\_
- Medium Duty Trucks (e.g. Box Trucks, Walk-Ins, Bucket Trucks) \_\_\_\_\_
- Heavy Duty Trucks (e.g. Dump Trucks, Semi-Trucks, Tractors) \_\_\_\_\_
- Other, Please Describe: \_\_\_\_\_

**How old are your vehicles? Select all that apply.**

- 1999 or Older
- 2000-2004
- 2005-2009
- 2010-2014
- 2015-2019
- 2020-2024
- 2025 or Newer

**Electric vehicles are often charged when not in use. Do your business vehicles consistently park in the same location? Select all that apply.**

- Yes, on the business property
- Yes, at employee homes
- No
- Other, please describe:

**Are your vehicles parked for at least an hour every day (including overnight)?**

- Yes, all of them are parked for at least an hour
- Yes, some of them are parked for at least an hour, but some are not
- No, none of them
- Other, please describe:

*Replacing older gas/diesel vehicles with electric vehicles or newer diesel vehicles (2009 or newer) can improve the health and well-being of your employees and the surrounding community, while also reducing maintenance and operating costs. The following questions aim to gather your views on transitioning to cleaner vehicle options.*

**Many businesses note the following potential benefits of switching from gas/diesel vehicles to EVs. How important would each benefit be for you/ your business?**

|                                                      | Not at all important | Slightly important | Moderately important | Very important | Extremely important |
|------------------------------------------------------|----------------------|--------------------|----------------------|----------------|---------------------|
| Cost savings on fuel                                 |                      |                    |                      |                |                     |
| Cost savings from incentive programs                 |                      |                    |                      |                |                     |
| Reduced maintenance                                  |                      |                    |                      |                |                     |
| Environmental benefits and reduced pollution         |                      |                    |                      |                |                     |
| Health benefits for your employees                   |                      |                    |                      |                |                     |
| Health benefits for your family and community        |                      |                    |                      |                |                     |
| Vehicle performance, comfort, and driving experience |                      |                    |                      |                |                     |

**Business owners also have some concerns about transitioning to EVs. How important are each of the following concerns or barriers if you were to switch from gas/diesel vehicles to EVs for your business?**

|                                                                     | Not at all important | Slightly important | Moderately important | Very important | Extremely important |
|---------------------------------------------------------------------|----------------------|--------------------|----------------------|----------------|---------------------|
| Ability of EVs to perform the same functions as my current vehicles |                      |                    |                      |                |                     |
| Access to emergency services/ roadside assistance                   |                      |                    |                      |                |                     |
| Charging (when, where, and how long)                                |                      |                    |                      |                |                     |
| Driving range (miles)                                               |                      |                    |                      |                |                     |
| Employees'/Drivers' willingness to use EVs                          |                      |                    |                      |                |                     |
| General uncertainty about owning and operating an EV                |                      |                    |                      |                |                     |
| Insurance costs                                                     |                      |                    |                      |                |                     |
| Look, feel, and comfort                                             |                      |                    |                      |                |                     |
| Maintenance or repairs                                              |                      |                    |                      |                |                     |
| Payload capacity, towing, or vehicle weight                         |                      |                    |                      |                |                     |
| Purchase price                                                      |                      |                    |                      |                |                     |
| Residual value                                                      |                      |                    |                      |                |                     |
| Uncertainty about continuing access to incentive programs           |                      |                    |                      |                |                     |

**How familiar are you with the types of Electric Vehicles (EVs) currently available?**

- Not familiar at all
- Somewhat unfamiliar
- Neutral
- Somewhat familiar
- Very familiar

**Are you aware of any of the following incentives for EVs or EV charging? Select all that apply.**

- State Tax Credits
- Federal Tax Credits (Expiring September 30, 2025)
- Utility Incentives
- (Fleet-ZERO) EV Charging Grant Program
- Clean Fleet Vehicle and Technology Grant Program
- Vehicle Exchange Colorado (VXC)
- Below-Market Rate Financing
- Other:

**Would you consider replacing any of your gas/diesel vehicles with EVs?**

- Yes, within the next year
- Yes, within the next 3 years
- Yes, within the next 5 years
- Yes, in more than 5 years
- I'm not sure
- No

**Would you consider replacing any of your gas/diesel vehicles with newer diesel or gas vehicles (2009+)?**

- Yes, within the next year
- Yes, within the next 3 years
- Yes, within the next 5 years
- Yes, in more than 5 years
- I'm not sure
- No

**If you were to consider EVs for your business, what information would help you create a transition plan? Select all that apply.**

- Costs
- EV models, features, and driving range
- EV charging options
- EV test drive
- Financial incentives
- Maintenance and repairs
- Resale value and depreciation
- I'm not interested in transitioning to EVs
- Other, Please Describe:

**Are you interested in participating in a paid follow-up interview to discuss your views and needs regarding transitioning to an EV or newer diesel vehicles?**

- Yes
- No

**What is your preferred contact method?**

- Email
- Phone

**Phone Number**

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**Do you have any questions or additional comments you'd like to share with us?**

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**Are there any other businesses you recommend we contact to take this survey or participate in a paid follow-up interview? If so, please provide their name and contact information.**

# APPENDIX B. FULL SMALL-BUSINESS INTERVIEW SUMMARIES

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In April of 2026, study team members (Dickinson and Martinez) conducted follow-up interviews with three small business owners or operators who had previously responded to our intercept survey. These interviews were conducted via Zoom; for two of the three (identified as R2 and R3 in the report that follows), the interviews were recorded and full transcripts were generated by Zoom. For the other respondent (R1), the interviewer did not record the interview but took notes. Team member Dickinson then used ChatGPT (edu version, accessed through CU Anschutz) to import the notes and transcripts from these three interviews along with the interview guide in order to produce a summary of each participant's responses along with comparison notes for each section and overall themes and conclusions sections. The report was iteratively edited for length and to include some interpretation of key themes.

## **1. Business Overview**

R1 works for a small audiovisual (A/V) design and installation company with 6–10 employees that designs and installs A/V systems for schools, houses of worship, and other organizations. Employees rely on company vehicles to transport tools, ladders, and installation equipment to client sites, making the fleet essential to daily operations.

R2 represents an employee-owned land surveying firm with approximately 65 employees and offices in north Denver, Boulder, and Longmont. The company provides boundary surveys, construction staking, and related professional services throughout the Denver metropolitan area. Field crews depend on company vehicles to transport personnel and specialized surveying equipment to job sites.

R3 owns a small catering business operating from a shared commercial kitchen in northeast Denver. The business primarily serves clients throughout the Denver metropolitan area, using company vans to transport prepared food together with catering equipment, linens, china, and other supplies required for events.

## **Comparison**

The three businesses differ substantially in industry and size but share a common reliance on company vehicles as essential work tools rather than simply employee transportation. All primarily serve customers within the Denver metropolitan area and depend on transporting specialized equipment to client sites, although the type of equipment and operational demands vary across industries.

## **2. Vehicle Needs and Use Requirements**

R1's company operates three gasoline vehicles—two cargo vans and one pickup truck—that function as mobile workspaces for transporting tools and installation equipment. Most

work occurs within the Denver metropolitan area, with occasional trips to locations such as Pueblo, Summit County, and Wyoming. Daily travel is typically 20–50 miles per vehicle, with multiple stops at customer sites rather than extended highway travel. Vehicles are fully owned and are parked either at the company shop or at employees' homes, allowing technicians to travel directly to job sites.

R2's company operates approximately 38 vehicles, primarily Toyota Tundra pickup trucks assigned to field crew chiefs. The trucks transport personnel, surveying equipment, and heavy materials to construction and survey sites throughout the Denver region. Most trips are relatively short—approximately 15–20 miles each way—although vehicles travel directly from employees' homes to job sites rather than reporting to the office. Employees keep company vehicles overnight to improve efficiency and reduce theft, vandalism, and other damage previously experienced at company facilities. Reliability, payload capacity, secure lockable storage, and durability remain the company's primary vehicle requirements.

R3's business operates two fully owned cargo vans used to transport food and catering equipment throughout the Denver metropolitan area. Most deliveries require 20–25 minutes of driving, with occasional longer trips to surrounding communities such as Littleton. Vehicle use declined during the COVID-19 pandemic, leaving both vans with relatively low mileage. Because parking at the shared commercial kitchen is limited and expensive, the vans are stored at the owner's residence. Dependable cargo capacity remains the business's highest priority.

### Comparison

Despite differences in fleet size and vehicle type, all three businesses rely on vehicles as mobile work platforms that support daily operations. Daily travel was generally local and relatively modest—typically ranging from multiple local stops to trips of approximately 15–50 miles or 20–25 minutes—suggesting that vehicle range alone may not be the primary barrier to electrification for these businesses. Instead, respondents consistently emphasized operational considerations, including reliability, cargo and payload capacity, secure equipment storage, charging logistics, and the ability to complete work without disrupting productivity. **These findings suggest that for small commercial fleets, successful adoption of cleaner vehicles will depend less on extending driving range than on ensuring vehicles can reliably meet the practical demands of daily business operations.**

### 3. Interest in Cleaner Vehicles

R1 expressed personal interest in cleaner vehicle technologies—particularly hybrids, which were viewed as offering fuel savings without the range and charging concerns associated with fully electric vehicles. However, vehicle purchasing decisions rest with the business owner, who is unlikely to replace the current fleet because it is fully paid off and well maintained. Adoption is therefore expected only when existing vehicles reach the end of their useful lives.

R2 reported strong organizational interest in cleaner vehicles and said the company has actively evaluated electric and hybrid options. However, currently available vehicles do not meet the firm's operational requirements for payload, reliability, off-road performance, and equipment storage. Although supportive of transitioning away from gasoline vehicles, the company intends to continue purchasing conventional trucks until commercially viable alternatives become available.

R3 also expressed a positive view of cleaner vehicles but described fleet replacement primarily as a financial decision. Because the business owns two reliable, low-mileage vans, replacing them before the end of their service life is difficult to justify. Future purchases will depend on purchase price, operating costs, and the expected return on investment.

### Comparison

All three respondents expressed openness to cleaner vehicle technologies and framed adoption as a practical business decision rather than an ideological one. Existing fleets continue to meet operational needs, reducing the urgency to replace them. Respondents consistently indicated they would consider cleaner vehicles when future models provide an acceptable combination of operational performance, affordability, and long-term value. **Collectively, these interviews suggest that reluctance to adopt cleaner vehicles reflects the timing of business investment decisions rather than resistance to the technology itself.**

### *4. Perceived Benefits and Concerns Related to EVs*

R1 identified lower fuel and maintenance costs, reduced emissions, and potential public health benefits as important advantages of cleaner vehicles. At the same time, the respondent questioned the full environmental lifecycle of electric vehicles, including battery manufacturing, electricity generation, and disposal. Practical concerns centered on purchase price, charging availability, driving range, towing capability, and the ability to complete workdays without operational disruption. Hybrid vehicles were viewed as a promising intermediate option.

R2 viewed fuel savings and reduced maintenance as meaningful benefits, particularly given the company's substantial annual fuel expenditures. However, incentives alone were considered insufficient if vehicles cannot perform required work. The respondent emphasized concerns about payload capacity, durability, battery longevity, charging logistics for employees working in the field, and uncertainty about future electricity costs. Despite these reservations, R2 expected vehicle technology to continue improving and remained optimistic about future adoption.

R3 likewise recognized the potential for lower fuel and maintenance costs, environmental benefits, and available incentives. However, the business case remains uncertain because existing vehicles are fully functional. Primary concerns included charging infrastructure, charging time, battery replacement costs, reduced cargo capacity in some vehicle models, and broader questions about the environmental impacts of battery production and disposal. Any future purchase would require clear evidence that long-term savings outweigh higher upfront costs.

## Comparison

Respondents consistently identified reduced fuel and maintenance costs as the primary advantages of cleaner vehicles but questioned whether those benefits currently offset higher purchase prices and operational uncertainty. Concerns focused less on electrification itself than on whether available vehicles could meet business needs. Common themes included charging infrastructure, vehicle capability, battery longevity, and total cost of ownership, while two respondents also sought better information about the environmental lifecycle of electric vehicles. **These findings suggest that improving vehicle capability and reducing operational uncertainty may be more influential in encouraging adoption than expanding financial incentives alone.**

### 5. Experience with EV Adoption

R1 had little direct experience with electric vehicles in a business setting but knew a personal EV owner whose positive experience—particularly reduced maintenance requirements—reinforced the perception that EVs may offer long-term advantages. Even so, the respondent remained uncertain whether current technology could meet the demands of the business.

Although R2 had limited firsthand exposure to commercial EVs, the respondent reported very positive experiences with a personal hybrid vehicle, citing its reliability and fuel economy. Despite closely following developments in the market, the respondent was unaware of electric pickup trucks that currently satisfy the operational demands of the company's fleet.

R3 knew several EV owners, including a family member who uses a Tesla for work. While that experience was generally positive, higher household electricity costs contributed to uncertainty about the financial advantages of EV ownership. Beyond personal examples and independent research, the respondent had little direct exposure to commercial fleet adoption.

## Comparison

None of the respondents had direct experience operating electric vehicles within their own businesses. Instead, perceptions were shaped by personal vehicle ownership, friends and family, or independent research. Although these experiences were generally favorable, respondents consistently distinguished between passenger vehicle use and the operational demands of commercial fleets. **The absence of examples from businesses with similar operating requirements appears to reinforce uncertainty about whether currently available cleaner vehicles are suitable for small commercial fleets, highlighting the potential value of peer-to-peer demonstration and case studies.**

### 6. Interest in Assistance

R1 expressed interest in learning more about cleaner vehicle technologies, incentives, and available resources but noted that vehicle purchasing decisions are made by the business owner. Educational opportunities would therefore be most useful if they coincided with an active vehicle replacement decision and included the owner in the process.

R2 expressed limited interest in additional education or networking because the company has already conducted extensive research and concluded that currently available vehicles do not meet its operational needs. However, the respondent welcomed updates on new commercial vehicle models that could satisfy the company's payload, durability, and reliability requirements.

R3 reported having already participated in educational opportunities, including an EV webinar, and felt reasonably well informed about available technologies and incentives. While interested in receiving updates on future incentive programs, the respondent concluded that current vehicle options and infrastructure do not yet provide a compelling business case.

### Comparison

None of the respondents expressed a strong need for general EV education. Instead, they preferred timely, practical information about vehicle availability, infrastructure improvements, and incentive programs that could support future purchasing decisions. **These responses suggest that outreach may be most effective when aligned with fleet replacement cycles and focused on decision-ready information rather than general awareness of cleaner vehicle technologies.**

### 7. Recommendations for Decisionmakers

R1 emphasized the importance of financial incentives, particularly rebates, tax credits, and assistance with charging infrastructure. Additional information about the environmental lifecycle and long-term costs of electric vehicles was also viewed as valuable for supporting informed business decisions.

R2 encouraged policymakers to prioritize commercially viable vehicle options before expecting widespread adoption. Recommendations included working more closely with manufacturers to develop vehicles that meet commercial fleet requirements, maintaining meaningful incentive programs, supporting long battery warranties, and improving charging technology.

R3 urged decisionmakers to avoid requiring businesses to adopt technologies before they are operationally and financially ready. In addition to purchase incentives, the respondent emphasized investments in charging infrastructure, electricity reliability, and implementation support, while also encouraging greater attention to the environmental lifecycle of electric vehicles.

### Comparison

Across interviews, respondents consistently recommended policies that reduce business risk rather than simply encourage cleaner vehicle purchases. Suggested approaches included financial assistance, improved charging infrastructure, stronger collaboration with manufacturers, and commercially viable vehicle options that meet operational needs. **Collectively, these interviews suggest that adoption is more likely to accelerate when policy addresses the practical realities of small business operations alongside broader environmental goals.**

## ***8. Additional Concerns or Priorities***

R1 reiterated that fleet replacement decisions are driven primarily by financial considerations. The business is likely to continue operating its current vehicles while monitoring improvements in vehicle technology, operating costs, and available incentives.

R2 expects to continue purchasing conventional pickup trucks until electric alternatives can reliably perform the same work. The respondent remained optimistic that technology will improve and expressed interest in learning about future commercial vehicle models that better meet the company's operational requirements.

R3 viewed the transition to cleaner vehicles as inevitable over the long term but emphasized that adoption will occur only when cleaner vehicles provide a clear economic and operational advantage. While acknowledging successful applications such as electric delivery vans and school buses, the respondent questioned whether those examples translate readily to the needs of small businesses.

### **Comparison**

All three respondents anticipated revisiting cleaner vehicle options as technology, infrastructure, and economics continue to evolve. None rejected the transition outright; instead, they described a willingness to adopt cleaner vehicles once those vehicles can support daily operations without increasing financial or operational risk. These interviews suggest that many small businesses are in a period of strategic waiting—monitoring the market while postponing investment until cleaner vehicle technologies better align with their operational realities.

## ***Overall Impression Across the Three Interviews***

Taken together, the interviews reveal a consistent pattern across three very different small businesses. Although respondents represented distinct industries with different vehicle requirements, they evaluated cleaner vehicle technologies using a remarkably similar decision framework centered on operational performance, financial risk, and long-term business sustainability. Environmental benefits were recognized and valued but were not sufficient on their own to justify fleet replacement.

Perhaps the most notable finding is that respondents consistently described themselves as waiting rather than resisting. Existing vehicles continue to meet business needs, while available cleaner vehicle options are viewed as falling short in one or more areas—including payload capacity, cargo space, charging logistics, reliability, or overall cost-effectiveness. The transition to cleaner commercial vehicles was therefore seen not as a question of willingness, but of timing and market readiness.

## ***Summary of interviews***

These interviews suggest that many small businesses are receptive to cleaner commercial vehicles but require stronger alignment between emerging technologies and the practical realities of business operations before adopting them. Across respondents, purchasing decisions were guided primarily by operational capability, reliability, total cost of

ownership, and confidence that new technologies would support—not disrupt—day-to-day work.

The findings also point to several opportunities for policymakers and industry partners. Continued advances in vehicle capability, charging infrastructure, and commercially relevant incentive programs are likely to be more influential than awareness campaigns alone. Respondents also highlighted the value of credible information about vehicle performance, lifecycle impacts, and real-world examples from businesses with similar operating needs.

Although based on only three interviews, these findings provide useful insight into how small businesses evaluate cleaner vehicle technologies. They suggest that accelerating adoption will require not only continued technological innovation but also policies and outreach strategies that reduce uncertainty, address operational constraints, and support business decision-making at the point when fleet replacement becomes a realistic option.