



The State of Fleet EV Adoption: Insights from a Survey of NAFA Membership

SECTION I: Introduction

The journey to achieving net zero emissions can be formidable, especially for those responsible for vehicle fleets. However, a recent survey reveals an increasing number of fleet managers recognize the economic and environmental benefits of transitioning to electric vehicles (EVs) and are moving forward with electrification plans.

Despite their higher initial cost, EVs have a lower total cost of ownership (TCO) compared to vehicles with internal combustion engines (ICE) thanks to reduced fuel and maintenance expenses. Additionally, federal and state incentives, such as tax credits from the Inflation Reduction Act, offset the cost of EV charging infrastructure that's required for fleet electrification. It is anticipated that the financial benefits of EVs will be further enhanced as technological improvements reduce the cost of batteries, and subsequently, the cost of the vehicles themselves.

Road transportation currently accounts for about [21% of global CO emissions](#). The electrification of vehicles not only reduces these emissions but is also essential for the transition to a [sustainable](#) transportation sector. Electrification is particularly critical in reducing the emissions of medium-duty (MD) and heavy-duty (HD) trucks, which are significantly less fuel-efficient and emit about [five times](#) more carbon dioxide per vehicle than do Class 1 or 2 passenger vehicles ([six](#) miles per gallon for a Class 8 truck compared to 25 miles per gallon for a Class 1 or 2 vehicle). As such, the transition of the entire transportation sector, from Class 1 through Class 8, is vital to achieving the U.S. government's goal of a [net-zero emissions economy by 2050](#).

EVs also offer a better driver experience thanks to reduced emissions, quiet operation, more responsive acceleration and regenerative braking, which can extend an EV's total range.

Fleet managers face several challenges on their electrification journey. For example, finding EVs that meet a fleet's functional needs is often difficult because market demand is outpacing supply. They must also manage long vehicle delivery delays due to industry [supply chain](#) issues.

Additionally, investing in and planning the logistics for EV charging infrastructure can be complex. The EV transition requires more than simply replacing ICE vehicles with electric models; it necessitates a complete overhaul of fleet vehicle

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The State of EV Fleets

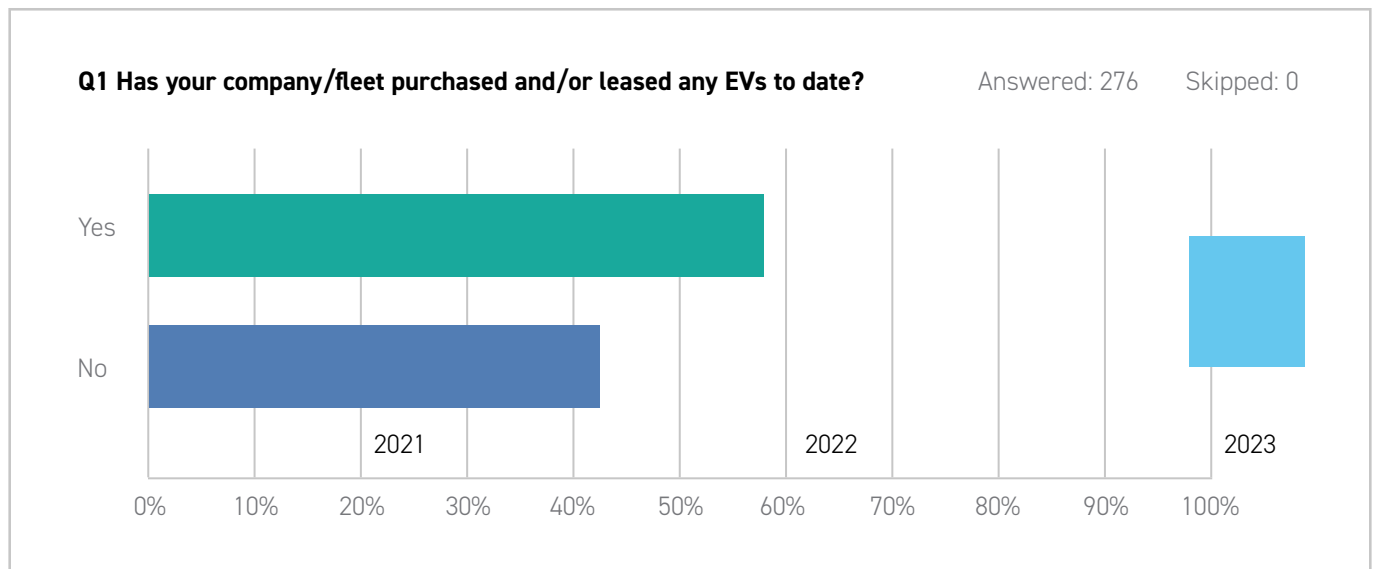
Electrada, a Charging-as-a-Service solutions provider, conducted a survey in conjunction with the National Association of Fleet Administrators (NAFA) in November of 2023 to gauge fleet managers' attitudes towards electrification. Nearly 280 NAFA members responded to the survey, which explored current fleet electrification levels, future acquisition plans, electrification timelines, and common pain points faced during the electrification process.

NAFA members manage the mobility requirements of commercial, public safety, transportation, military, government, university and corporate entities in North America and around the world. Because they are typically responsible for acquiring, operating, maintaining, repairing and fueling their organization's fleets, and therefore managing all associated risks, they are uniquely positioned to provide a snapshot of the state of fleet electrification today. The findings reveal the thought processes, obstacles, and opportunities fleet managers encounter as they transition their fleets to EVs.

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SECTION II: Fleet Managers are investing in EVs, with the majority focused on class 1 and 2

The survey revealed significant adoption of EVs by fleet managers in recent years with over half (57.61%) of respondents reporting they have already incorporated EVs into their fleets. More than 20% of respondents have between 50 and 500 EVs actively in service with an additional 3% expecting their electric fleets to expand within the next 6-9 months as EVs already on order arrive.



A vast majority (93.2%) of these investments to date have been in Class 1 and 2 electric light duty vehicles, including minivans, passenger vehicles, pickup trucks, and utility vans. This aligns with current U.S. electric car market dynamics, where the Class 1 and 2 vehicle segment is the largest, valued at approximately \$93 billion as of 2024. The market, which includes both passenger cars and commercial vehicles, is projected to grow at a rate of 18% over the next five years and could reach \$211 billion.

The preference for Class 1 and 2 vehicles among fleet managers can be attributed to their versatility, lower barriers to entry, availability, total range and cost-effectiveness compared to EVs in classes 3-8. Furthermore, these vehicles tend to cover shorter distances and return to a depot daily, simplifying charging logistics. Fleet owners may also believe that investing in charging infrastructure for these smaller and lighter vehicles will be more economical.

Small gains for medium- and heavy-duty EVs

The adoption of medium- and heavy-duty EVs has been more gradual. The U.S. electric truck market, which includes light-, medium- and heavy-duty vehicles, was valued at [\\$17.8 billion](#) in 2022 and is expected to grow at a rate of 14% between 2023 and 2032. Despite the critical need to reduce emissions from larger vehicles, which as noted earlier emit about [five times](#) more carbon dioxide per vehicle than passenger vehicles, only 16.3% of respondents have invested in Class 3-5 medium-duty EVs, and a mere 6.8% in class 6-8 heavy-duty EVs. Respondents indicated that high vehicle costs and slower technological advancements in battery life and vehicle features contribute to the cautious pace of electrification in these segments.

Moreover, the electrification of medium- and heavy-duty fleets can necessitate a more comprehensive and complex charging infrastructure, presenting additional challenges to adoption. However, incentives and innovations, along with solutions provided by Charging-as-a-Service providers, offer potential pathways to overcoming these barriers.

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A broad approach to electrification

The survey also highlighted a broader interest in electrification, with some fleet managers investing in electric vehicles, such as yard tractors, for drayage and manufacturing tasks. This indicates a diverse approach to adopting electric mobility solutions.

SECTION III: Near-term EV investments are expected to slow, but the next wave of purchases is on the horizon

Looking ahead, only 27% of participants plan to further invest in electrifying their fleets within the next year, as compared to the 58% of respondents that have already acquired EVs. This suggests a near-term reduction in the pace of electrification, though it's important to note that several respondents report that they do intend to pursue EV investments over a longer time frame.

The bulk (82.76%) of these near-term investments will continue to focus on Class 1 and 2 vehicles. However, there is a

noticeable shift towards larger vehicles, with a higher percentage of fleet managers planning to invest in medium- and heavy-duty trucks. Specifically, 17.24% aim to acquire Class 3-5 vehicles within the next year, an increase from the current 16.3% who have made such investments. Likewise, interest in Class 6-8 EVs is growing, with 10.34% of respondents planning to lease or make a purchase in the next year, up from 6.8% who have already done so. It is precisely a subset of these vehicles, specifically Class 3-6, that are prime candidates for electrification now, given they typically run route cycles of 200 miles or less per day, according to Electrada's recent White Paper on Fleet Electrification, which was founded on data collected from the 2023 National Private Truck Council (NPTC) Benchmarking Survey Report.



Common Challenges

Fleet managers face several obstacles on the electrification journey. Over half of the respondents (54.51%) pointed to the scarcity of models that meet their fleet's range requirements, and nearly 30% noted a lack of models with the features and functionalities they desired.

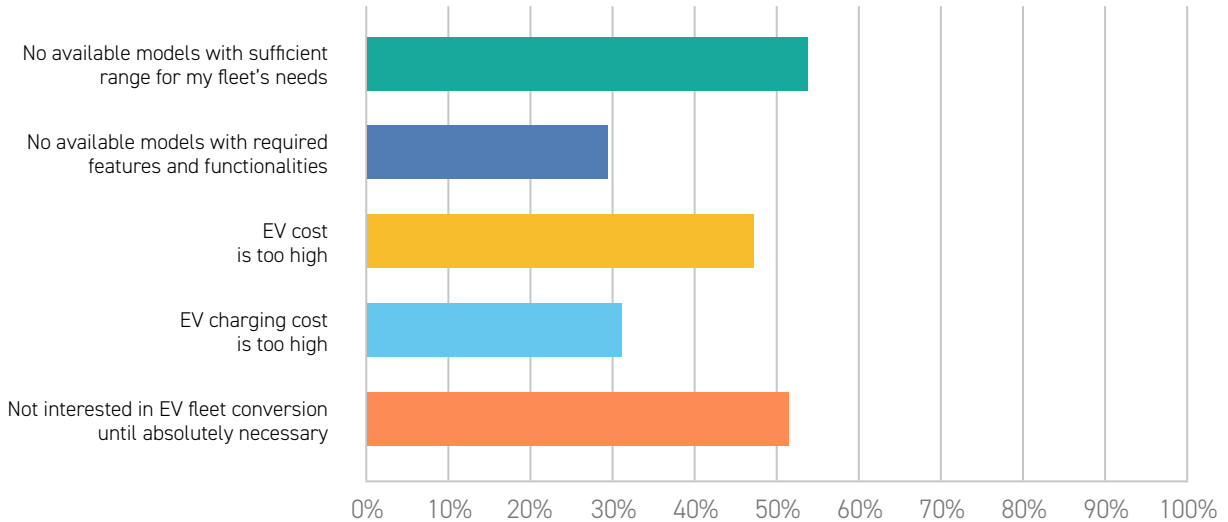
Cost issues are also significant, with just over 47% identifying the high cost of EVs as a major barrier, and nearly 31% citing the expenses associated with charging being prohibitively high.

Resistance to pressures coming from regulatory bodies or customers demanding electrification further complicates matters. Given that technological evolution is slow in some sectors, it's perhaps not surprising that a slight majority (51.47%) of survey participants are not yet convinced about the need to transition to EVs, either because they don't see the immediate value, they doubt the cost-effectiveness of EV technology, or they question the longevity of the electrification trend.

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**Q8 Please explain why you don't intend to purchase and/or lease any EVs within the next 12 months.
(check all that apply)**

Answered: 68 Skipped: 208



Infrastructure challenges represent another significant hurdle. Several respondents reported they have delayed or stopped their EV purchases due to concerns about securing the necessary charging infrastructure or doubts about their local utility's ability to support their EV initiatives. Fortunately, Charging-as-a-Service (CaaS) providers can help address these infrastructure concerns, simplifying the fleet electrification process.

SECTION IV: Leveraging Charging-as-a-Service (CaaS) expertise simplifies fleet electrification

CaaS solutions providers offer a comprehensive solution that simplifies the deployment and operation of EV charging infrastructure for fleets. An end-to-end service, some CaaS providers (such as Electrada) absorb 100% of the upfront capital costs for the charging infrastructure and equipment and promise a 99% operational uptime rate. They also offer predictable pricing models that insulate fleets from fluctuating energy costs, allowing fleets to budget for charging costs today and plan for the future. With a CaaS, these costs, as well as the operational and maintenance responsibilities associated with charging infrastructure, are included in one, straightforward monthly fee for fleets.

A CaaS provider leverages their [expertise](#) to fully optimize a fleet depot's on-site charging infrastructure, designing cost-effective [charging strategies](#), selecting optimal equipment and conducting upgrades and ongoing maintenance as part of a long-term contract. Sophisticated fleet management and monitoring tools offered by CaaS providers deliver real-time data that enables fleets to fully optimize their operations – and helps them create a [compelling financial case](#) for fleet electrification.

CaaS providers offer the most cost-effective, streamlined, and efficient approach to fleet electrification available today. They help fleets manage the complexities and minimize the cost of the process, enabling them to spend less than they would if they were to take a self-managed, or DIY approach. This approach frees a company to focus on its core competencies, which almost invariably aren't in electrical infrastructure and energy management.

Furthermore, an experienced CaaS provider can play a pivotal role in educating stakeholders about EV technologies, an essential factor for the successful implementation of electrification projects. Education is a core component of change management, helping drivers, fleet managers, and technicians become comfortable with this paradigm shift in transportation. By facilitating early involvement and understanding among a broad spectrum of stakeholders, potential delays and obstacles can be significantly reduced, ensuring a smoother transition.

Now is the time to electrify your fleet

It's a common misconception that EV charging costs will be substantially higher than the consumption of fossil fuels. However, when a proper EV charging infrastructure plan is designed, built, and operated by experts, electricity costs per mile can be considerably cheaper. This is especially true when comparing the price of electric fuel to that of the diesel consumed by traditional MD and HD trucks. Mordor Intelligence reports that in 2021 the average annual fuel cost for all-electric light duty vehicles was [\\$550 cheaper](#) than comparable gas-powered vehicles and \$1,150 less than those powered by diesel fuel. Furthermore, even with the volatility of electricity pricing, fleets who elect to work with CaaS providers that offer predictable pricing remain insulated from price swings, which cannot be said for those deploying either a DIY approach or for fueling ICE vehicles at the pump.

Medium-duty vehicles, in particular, are prime for electrification. While the list price of electric MD and HD trucks is higher than comparable fossil fuel-powered models, the additional cost can largely be offset through incentives and tax credits. In fact, McKinsey predicts the TCO for battery electric light commercial vehicles and MD trucks will be lower than the TCO of traditional ICE models by as soon as 2025. HD trucks are expected to be competitive by 2030.

For fleet managers that have yet to take advantage of the financial benefits of electrification, now is the opportune time to act. Thanks to a lower TCO, advancements in technology, and support from experienced CaaS providers, the transition has never been easier or more financially attractive.

About Electrada

Electrada's 360 CaaS is a seamless, cost-effective and reliable electric fuel solution that is fully capitalized, integrated, scalable, and offers a 99% uptime guarantee. [Get in touch](#) to learn more about Electrada's predictable pricing and industry-leading service level agreements that will give your fleet peace of mind and accelerate its electrification journey.

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