Deloitte.

Power to the fleet

Choosing the best charging infrastructure and commercial ecosystem for your electric vehicles

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Introduction

Commercial vehicles account for 20% of all vehicles in Canada yet generate more than 60% of the country's road transport emissions.[1] The push to decarbonize commercial vehicle transportation is on—enabled by advances in zero-emission technology, charging and fuelling infrastructure technology, and innovative business models. It's further supported by government regulation. Canada is among the 33 national governments that have signed the Memorandum of Understanding on Zero-Emission Medium- and Heavy-Duty Vehicles, as of November 2023, committing to work together to reach 30% zero-emission new vehicle sales by 2030 and 100% zero-emission new truck and bus sales by 2040.[2]

As the market penetration of electric vehicles (EV) increases, a growing number of fleet owners and operators are buying electric trucks and other vehicles. Many of them are trying to figure out how they'll charge their new electric fleets, asking questions such as:

- Should we build our own charging infrastructure or use one of the external charging systems being developed?
- If we build our own, how would we pay for it? Who could we partner with to defray costs?
- Do our existing facilities have enough electrical capacity to expand? If not, what are our options?
- How will EVs impact our current business operations?

Charging infrastructure challenges were identified as one of the most significant constraints in the transition to EVs at Deloitte's 2023 Future of Transport Forum, which brought together participants from provincial and federal governments, commercial fleet owners, consumer product organizations, vehicle original equipment manufacturers (OEMs), utility providers, and EV supply equipment (EVSE) providers.[3]

Battery EVs aren't the only zero-emission option

Fleet owners and operators tend to look at battery-based EVs (BEVs) as their main choice for reducing emissions, but there are other important developments in zero-emission technology. For example, hydrogen fuel cell electric vehicles (FCEVs) may be an attractive option for some applications and in geographic locations where relying solely on battery technology won't meet business needs, such as for long-range transportation. We focus on BEVs in this paper because the implementation requirements and total cost of ownership are understood, and the technology is moving into the market at a rapid pace. Scaling up FCEV adoption will depend on the amount of hydrogen production and availability of refuelling facilities in the future.

ElectrifiedGrid

One of the major challenges fleet owners and operators are encountering as they electrify their commercial fleets is the need to upgrade their distribution infrastructure to support increased electricity loads. Some companies face waits of a few years for necessary service upgrades, while others expect to wait even longer for the distribution network itself to complete larger infrastructure upgrades upstream.

To address this issue, Deloitte has developed ElectrifiedGrid, a digital solution that utilities can use to predict and address infrastructure capacity constraints before they occur. Leveraging economic modelling, market insights, and other approaches, ElectrifiedGrid enables utilities to help their customers with energy-transition journeys by accelerating fleet operator engagement and identifying the most suitable sites for electrification infrastructure.

Natural Resources Canada (NRCan) estimates there will be just over a million EVs on Canadian roads by 2025, up from only 203,150 in 2020.[4] This surge will require an increase in both public and private charging infrastructure, which may strain existing electrical grids *(see Figure 1)*.

In a 2022 NRCan survey assessing the grid's readiness for the uptake of EVs, respondents—including utility providers, technology companies, regulators, industry associations, distribution utilities, and customers—were clearly concerned that the existing grid infrastructure was already under strain due to climate change. The respondents also predicted a rising need for investments in grid readiness to ensure EV-related loads can be supplied reliably. Yet with finite capital, utilities must be strategic in deciding where to upgrade.[5]

Fleet decarbonization is a complex process. It involves and impacts many parties across a large ecosystem, including vehicle manufacturers, energy companies, governments, organized networks, and researchers *(see Figure 2)*. That's why it's critical for fleet owners and operators to avoid taking a siloed approach to planning and deploying electrification infrastructure. They need to involve their ecosystem partners from the outset, and then work in tandem to ensure a successful outcome.

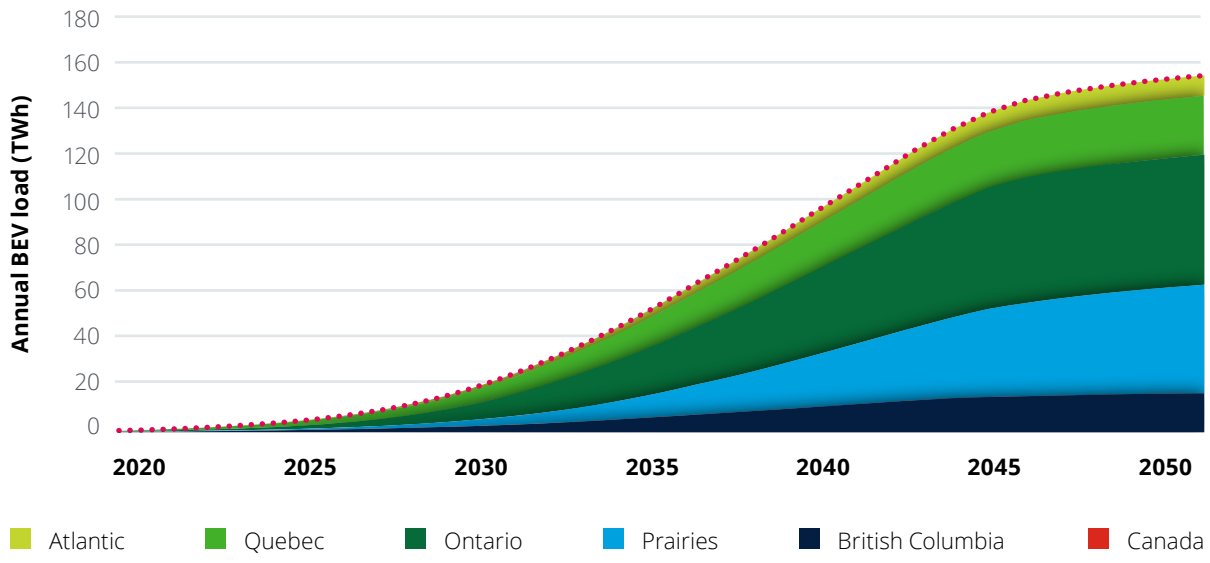

Figure 1: Charging load forecast across Canada for all EVs
Source: Natural Resources Canada

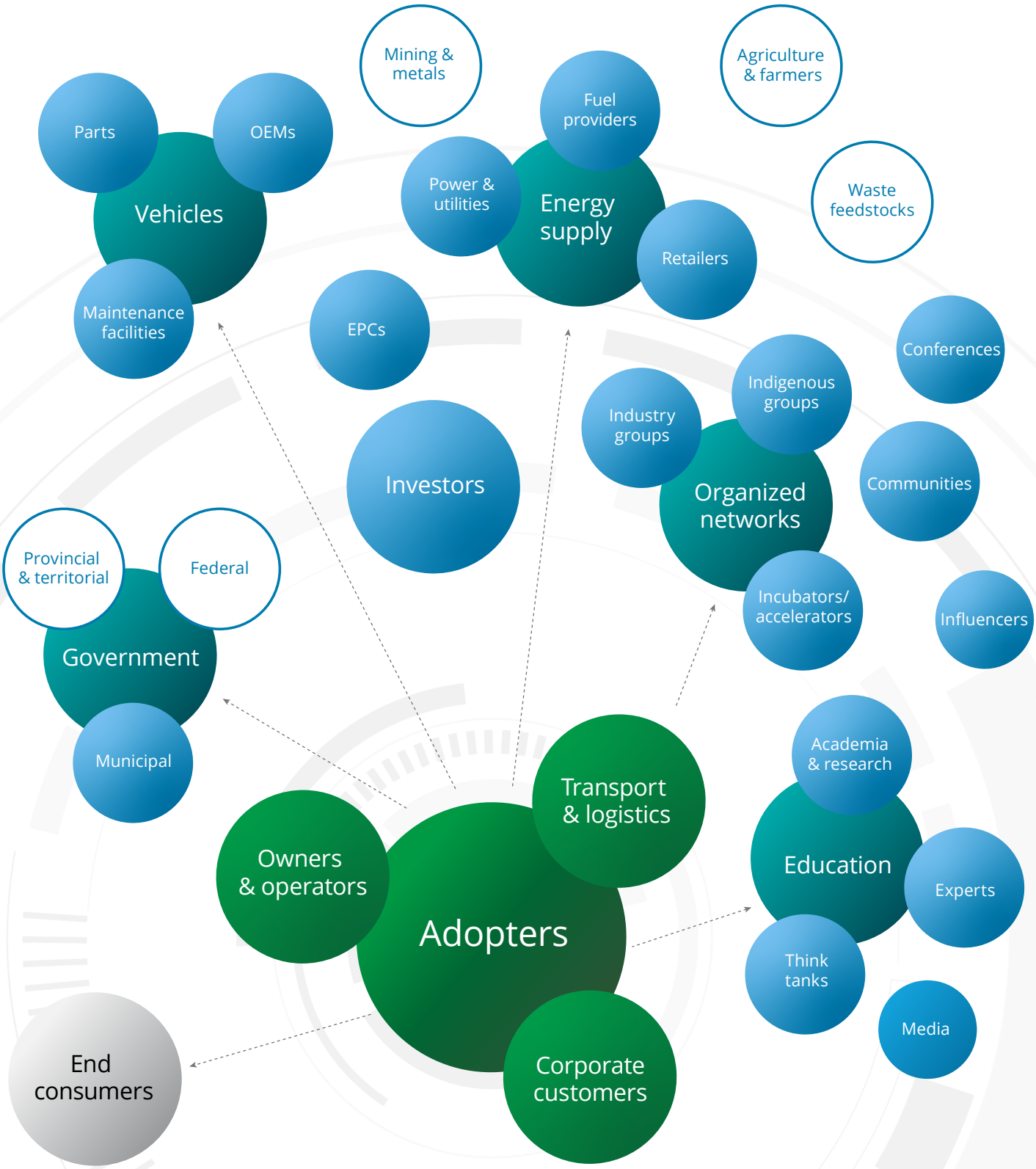

Figure 2: Participants in the zero-emission commercial vehicle ecosystem

Behind the fence—or outside it?

In selecting the optimal charging infrastructure for an electrified commercial fleet, fleet owners and operators need to understand the difference between charging solutions behind the fence and those outside the fence. Choosing one approach over the other will largely depend on the nature of the organization's business operations.

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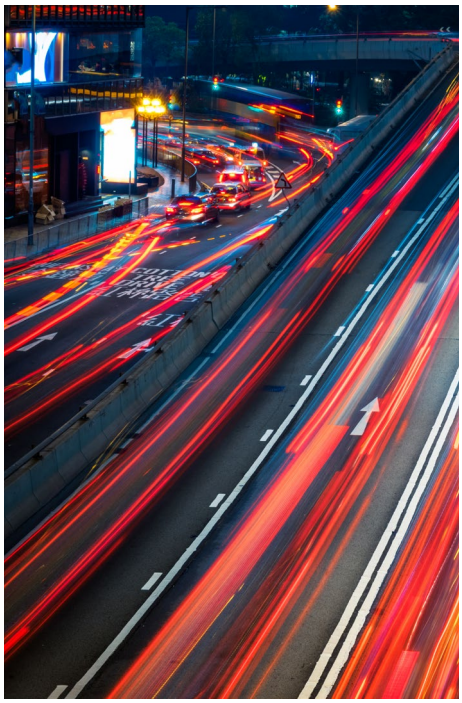
Behind-the-fence charging is when a fleet owner or operator develops private infrastructure at its own facilities or properties to charge its own vehicles. This approach is well suited for fleets that generally return to base and require conventional charging, as compared to fleets that require opportunity charging on the road throughout the day, much as traditional gas- and diesel-powered vehicles might need to stop to refuel.

Outside-the-fence charging, in contrast, relies on public charging infrastructure or other innovative charging models developing across North America, such as depot or highway charging. These solutions may be better suited for fleets that travel long distances and require opportunity charging en route, or for smaller fleet owners and operators that can't afford the large capital investment to develop and deploy their own infrastructure.

Both approaches are complex, and organizations shouldn't attempt either on their own. Whether building private, behind-the-fence infrastructure or incorporating existing or planned outside-the-fence infrastructure into fleet operations, companies should ensure they team up with other ecosystem parties.



Conventional versus opportunity charging

Conventional	Opportunity
• Requires a facility, depot, or other location where commercial EVs can charge for at least eight hours; typically overnight, after drivers complete a full-day shift.	• Requires fast (up to 350 kW) or ultrafast (more than 350 kW) chargers to quickly charge commercial EVs during stops along a route or when opportunity arises (e.g., driver's rest stop or meal break).
• The lower-strength Level 2 chargers may be suitable for conventional charging operations.	• Similar to refuelling a conventional internal combustion vehicle; stops must be quick to enable the driver to return to the road as soon as possible.
• More suited to fleets with vehicles that return to base each day and can be charged overnight before the next day's shifts (e.g., courier companies in urban areas).	• More suited to regional or long-haul trucking fleets that often travel long distances, which requires vehicles to recharge in short intervals along the way.

Behind-the-fence charging: key considerations

Fleet owners and operators taking a behind-the-fence approach should consult with a variety of organizations to ensure the charging infrastructure is successfully installed and deployed: local utilities, electrical contractors and engineers, EVSE providers, facility and property managers, and construction firms.

Electrical capacity and potential upgrades

Before adding chargers to their facilities, fleet operators and owners need to thoroughly understand the electrical capacity of both the facilities and the local grid *(see figure 3)*. Depending on the size of the facility and the number and type of chargers being added, the electrical grid may require an upgrade before completing installation and commissioning chargers.

Figure 3: A closer look at EV charging types[6]

Charging type	Speed	Estimated charge time (at 40 kWh)	Use cases
Level 1 (AC)	1–2 kW	22–40 hours	Home, emergency backup, and trickle charging
Level 2 (AC)	3–22 kW	2–15 hours	Overnight and public charging
Level 3 (DC fast charger)			
Overnight charge	15–150 kW	15–90 minutes	Depot and public charging
Opportunity (fast)	150 - 350 kW	15–30 minutes	Public, depot, and on-highway charging

Understand the fleet's electrical demand

From the start, owners and operators need to know the electrical demand of all the vehicles in their return-to-base fleets.

This involves analysis of fleet utilization data to understand each vehicle's typical daily range, and then using that baseline and parameters such vehicle battery size and charger capacity to estimate its state-of-charge at day's end. Charger capacity can be used to calculate how many kilowatt-hours (KWh) it will likely take to recharge each vehicle overnight, ideally during lower-cost off-peak electricity hours. High-utilization vehicles may require companies to install more Level 3 DC fast-charging equipment to ensure they are ready for work the next day, while other vehicles may be recharged using Level 2 chargers.

Sources: The International Council on Clean Transport, Electric Vehicle Energy Storage Company

Engage with electricity utilities early

Organizations should contact their local electricity utility company to better understand the levels of electrical demand at their facility or facilities. Early outreach and collaboration are key to avoiding potentially costly and lengthy delays if the utility needs to make significant upgrades to accommodate a facility's electrical needs. Many Canadian utility companies have dedicated EVSE programs and teams to support fleet owners and operators throughout a charging infrastructure project.

Working with a utility offers several benefits[7]:

- Site-level information about grid limitations, upgrade needs, and electricity supply costs at the facility
- Early identification of grid update requirements, enabling better project planning and collaborative discussion of payment structures for the system upgrade
- In some cases, financial rebate programs and additional financial support for developing EV supply equipment, which can mitigate some of the costs

Connect with electrical contractors and engineers

Working with an electrical contractor or electrical engineering firm is also essential for any organization taking a behind-the-fence approach.[8] They can assess each facility's transformer size, its maximum monthly electrical demand, the location of electrical panels, and the number of open slots in each panel. This information, along with facility electrical and architectural drawings, will help to ascertain the scale and cost of site-level electrical upgrades and the most suitable placement of EVSE.

Determine the need for EV load management systems

Depending on how much electricity will be needed to power a fleet and the electrical capacity of the facilities and local grid, companies may want to consider installing EV-charging load management systems to help balance the daily energy demand and prevent electrical loads from reaching capacity.

These systems, which are typically software, communicate with one another through Open Charge Point Protocol (OCPP) networks or Wi-Fi. Load management systems can help fleet owners and operators reduce costs by charging vehicles at off-peak hours and by efficiently managing EVSE electrical demand, which can help prevent the need for costly facility electrical upgrades.

They are particularly beneficial in facilities where fleet owners intend to charge a significant number of vehicles at the same time. Fleet owners and operators should discuss load management systems with their electrical engineering firm or contractor to determine which supplier best fits their specific operations.

Explore whether microgrid solutions can play a role

For facilities approaching their maximum electrical capacity, microgrid solutions can help alleviate grid strain and help reduce electricity costs by using renewable energy. A microgrid is a self-contained electrical grid that operates independently of the main "macro-grid" transmission system, using renewable energy sources (e.g., through solar panels) and batteries to generate and store energy. It offers an alternative way to increase a site's capacity and can supply additional energy.[9]

A microgrid can help strengthen the business case for charging infrastructure, as it can provide electricity for a fixed fee and enable fleet owners to avoid utilities' peak pricing. While some owners may choose to set up their own microgrid solution, others may opt to avoid the cost and complexity of doing so and work with an experienced provider of microgrid and microgrid management solutions.

Bi-directional charging—in which vehicles serve as mobile battery storage and use vehicle-to-grid charging to supply additional power to facilities or the grid[10]—is also being explored as a viable addition to a microgrid ecosystem. In April 2022, the US Department of Energy and its national labs signed a memorandum of understanding (MOU) with an ecosystem of state and local governments, utilities, and private entities to launch several pilots to help determine the feasibility of integrating bi-directional charging into existing energy infrastructure.[11] The purpose of the pilots is to help organizations understand the business case for the technology, accelerate its integration into existing infrastructure, learn about challenges and barriers they may face during the integration process, and understand the cybersecurity implications. While this MOU is set to expire in April 2024, its renewal is a possibility.

Bi-directional charging offers numerous potential advantages[12]:

- Improved energy resilience, as fleet owners or operators may be able to power facilities using energy stored in their fleets' batteries during power outages
- Reduced costs, as bi-directional charging may enable more efficient charging overall
- Reduced capital expenditure, as less capital investment is required to upgrade a facility's electrical infrastructure
- Less strain on local electrical grids, as bi-directional charging lowers the facility's electricity demand
- Revenue generation, as in the future utilities may compensate fleet owners for sending electricity from their fleets to the grid

Research battery energy storage solutions

Fleet owners and operators can also augment their charging infrastructure with battery energy storage solutions (BESS)—rechargeable batteries that store energy from different sources, such as the local utility grid and microgrid solutions, and discharge it when needed. Combining a renewable energy solution (e.g., solar panels) and BESS can also add energy capacity to a facility and improve grid reliability overall, enabling fleet owners to charge the batteries at off-peak hours and to use that stored energy to charge vehicles during peak hours when a site's electrical capacity may be maxed out. BESS offer greater flexibility, more scalability, and higher efficiency at a lower cost than traditional energy solutions.[13]

Ownership considerations

Developing behind-the-fence charging infrastructure can be an expensive process, which is why it's important for fleet owners and operators to consider the type of ownership model that best fits their goals and situation, as well as the financing opportunities, grants, and incentives available. Some organizations may choose to own the full process of developing, procuring, installing, and maintaining charging infrastructure. Others may decide to fully outsource the process to a third party. And some may opt for a hybrid model, owning parts of the process while outsourcing others.

Full ownership

Some fleet owners or operators may have the in-house capabilities needed to own and manage the full process of developing a charging infrastructure network at their facilities. While this approach still requires an ecosystem, the organization has full autonomy over selecting who to work with and establishing the governance, policies, and processes needed to ensure the successful development of the network.

Taking full ownership of the process also requires high upfront capital expenditure—though if managed properly, it can result in long-term operational savings. This expenditure can be reduced with the help of any green financing mechanisms and government grants and incentives that are available, such as the bonds being offered by financial organizations and governments *(see "Finance: understanding social bonds").*

We estimate that over $3 billion in grants and incentives are available for zero-emission vehicle (ZEV) adoption and infrastructure development. NRCan's Zero Emission Vehicle Infrastructure Program, for example, has allocated $680 million to the development of charging infrastructure for ZEVs across Canada. Under the program's stream targeting owners and operators of ZEV infrastructure—such as a fleet owner building a behind-the-fence charging network—NRCan can contribute 50% of total project costs, up to $10 million per project.[14]

Provincial and territorial incentives may help fleet owners with nationwide operations decide where to start building their own charging infrastructure. For example, the BC government's CleanBC Go Electric Fleets program offers several rebates related to EVSE infrastructure development, such as facility assessments, facility and electrical infrastructure upgrades, and the purchase and installation of charging stations.

Ultimately, taking full ownership of behind-the-fence charging infrastructure can be costly and operationally challenging. Assembling the right ecosystem of partners can help reduce both the costs and complexity for fleet owners and operators determined to build their own solution.

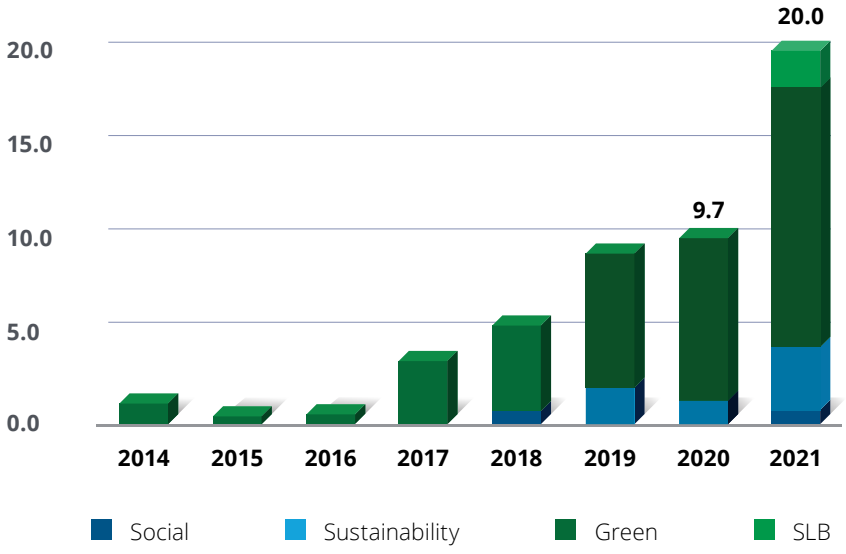


Figure 4: Share of annual bond issuance in Canada volume by label (%)
Source: BloombergNEF | **Note:** These are the latest figures available as of January 2024.

Finance: understanding social bonds

Companies may turn to sustainability-related debt instruments *(see figure 4)* to finance the building of EV charging infrastructure.[15]

- **Green bonds** are designed for financing new or existing projects or activities that have a positive environmental impact (e.g., clean transportation or renewable energy projects).
- **Social bonds** must be used to finance, or refinance, projects or activities that deliver a positive social outcome or tackle a social issue (e.g., projects aimed at marginalized communities).
- **Sustainability bonds** are issued to finance or refinance a mix of social and environmental projects (e.g., projects that would qualify for green or social bonds).
- **Sustainability-linked bonds (SLBs)** are linked to the issuer's achievement of climate or other sustainability goals, with the bond's coupon rising or falling depending on the issuer's progress toward those goals.

Outsourcing

Some fleet owners and operators may choose to outsource the development of charging infrastructure to a third party—often referred to as charging-as-a-service (CaaS) providers—that manages the entire process, working with an established ecosystem of organizations across the full value chain. This approach replaces the fleet owner's upfront capital expenditure with a monthly operational expense over a fixed period.

CaaS providers can be a valuable part of an organization's charging infrastructure ecosystem. For organizations with little experience developing and managing infrastructure, outsourcing to a third-party CaaS provider can open the door to a wealth of experience, essential expertise, and established relationships. German multinational Siemens, for example, supplies an end-to-end CaaS model for commercial fleets that includes intelligent planning of the charging infrastructure project, project execution, charging operations management software and services, and financing.

The company bundles the entire CaaS solution into a predictable monthly operational-expenditure model that allows fleet operators to scale their charging infrastructure quickly with lower risk.

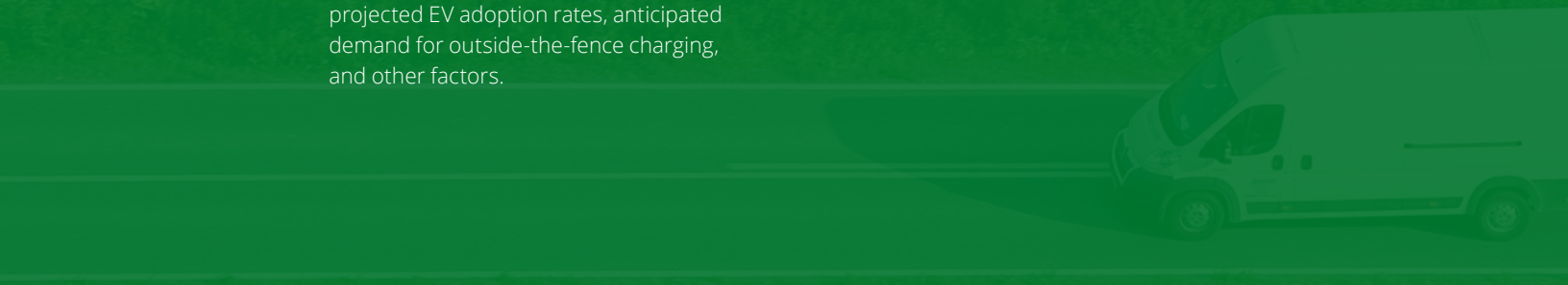
Working closely with a CaaS provider can also help organizations build up their internal capabilities as they observe the implementation of charging infrastructure and learn best practices. The potential downside to outsourcing charging infrastructure to a third-party CaaS provider is that the fixed monthly bill can be substantial, as it often bundles together EVSE development, procurement, operation, and maintenance.

The importance of an ecosystem approach for rural fleets

If a commercial fleet is operating in a rural environment, deploying behind-the-fence charging infrastructure becomes more challenging[16] and the number of outside-the-fence charging solutions may be limited. Electrical grids in rural areas are often less robust and typically require much more extensive upgrades to support EV charging infrastructure, increasing costs and reducing the likelihood that organizations will make investments. Because these factors reduce rural commercial fleet EV adoption, there's limited experience in permitting, planning, and installing rural EV infrastructure.

For rural-based or -oriented fleet owners and operators, an ecosystem approach is even more critical to overcoming these roadblocks. To access the required technical skill sets, they need to collaborate with charging station developers, utilities, and provincial, territorial, and federal government bodies, working with these and other experts to thoroughly analyze projected EV adoption rates, anticipated demand for outside-the-fence charging, and other factors.

Following this analysis, fleet owners and operators can work with utilities to build robust, flexible, and scalable charging infrastructure that can adapt to future changes in EV adoption. They can also adopt microgrids and BESS solutions to strengthen the business case for building a behind-the-fence system and reduce dependence on electrical utilities. Fleet owners may also wish to co-locate charging stations with those of other organizations or collaborate with transit agencies for shared use of charging infrastructure.[17]



Outside-the-fence charging: key considerations

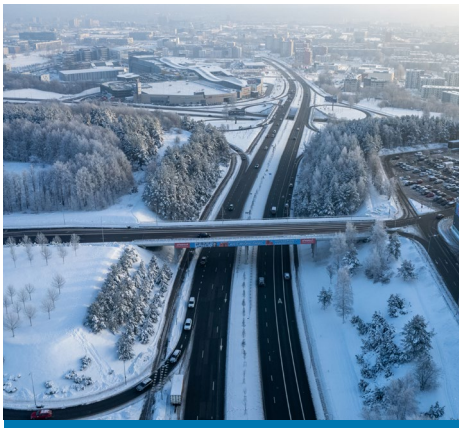
Fleet owners and operators can also consider the outside-the-fence public charging solutions that are developing across North America, including urban, on-highway, and depot charging. A study by US-based Atlas Public Policy notes that a significant ramp-up of charging infrastructure will be needed to meet the target of 100% electric medium- and heavy-duty vehicle sales by 2040, from at-home charging for pickups to depot charging for fleets and a range of on-highway and off-highway options.

In fact, outside-the-fence charging solutions will likely be the preferred option for some fleets, such as those of long-haul truck operators whose vehicles need charging stops en route to their destinations, smaller fleet operators without the budget for capital investment or the cashflow to handle additional operational expenses, and operators of long-range transit buses or coaches. As outside-the-fence charging solutions develop and expand, fleet owners and operators can consider how to incorporate them into their EV fleet charging plans.

Several outside-the-fence charging options in development across North America are receiving significant public and private capital investment. The US government has allocated US$7.5 billion through its Infrastructure Investment & Jobs Act and other programs, including US$5 billion for solutions such as the development of highway charging infrastructure through the National Electric Vehicle Infrastructure Formula Program.[18] As with behind-the-fence charging projects, building outside-the-fence charging infrastructure also benefits from—if not outright requires—an ecosystem of organizations and other parties coming together to design, plan, build, and operate the charging network. For fleet owners and operators seeking to use outside-the-fence charging, connecting to this ecosystem is critical.

Urban public charging infrastructure

Some fleets may be able to use urban public infrastructure to charge their vehicles, much as internal-combustion vehicles use public gas stations to refuel. NRCan reports there were at least 25,246 ports located at 10,425 charging stations across Canada as of December 1, 2023, a 30% increase in ports since December 2021. Approximately 17% of those charging stations were direct current (DC) fast chargers, which may be more useful to commercial fleet owners depending on the class of vehicles they operate.[19] DC fast chargers are suitable for passenger and light-duty vehicles but would not be sufficient to charge medium- or heavy-duty vehicles.



Federal support helps Parkland expand its public charging network

The Canadian government is an avid ecosystem partner in the development of urban public charging infrastructure. It encourages private sector investment in the space by de-risking development through green financing mechanisms, grants, and other incentives. One recipient is Parkland Corporation, which secured $210 million in financing from the Canadian Infrastructure Bank to help strengthen its public charging network in British Columbia and expand into other provinces with sufficient demand, such as Ontario and Quebec.[20] The loan's favourable financial terms de-risk the project, allowing the Calgary-based company to accelerate its expansion plans.

Electric-truck charging depot project moving forward in California

Diesel-powered drayage trucks involved in the short-haul movement of freight from ports are a major source of air pollution from the road transportation segment in California. The state has mandated that all drayage trucks must be zero-emission by 2035, with the transition for private and government fleets expected to begin as early as this year.

To tackle this challenge, Forum Mobility has formed a US$400-million joint venture with CBRE Investment Management and Homecoming Capital to develop a charging depot network to serve trucks heading from the Port of Oakland along Interstate 580, a common route for many commercial vehicle fleets.[22] In addition, electric transportation developer WattEV has attained a US$34-million federal grant through the California Transportation Commission to build and operate a large EV charging depot on 100 acres of land along Interstate 5, south of Sacramento International Airport.[23]

Daimler Trucks North America and Portland General Electric opened "Electric Island," a heavy-duty electric-truck charging site near Interstate 5 in Portland, in 2021. The site features eight high-power (~350kW) chargers, the majority of which are available for public use.[24]

Public charging depots

Built on private property and offering both conventional (eight hours plus) and opportunity charging services, public charging depots are another outside-the-fence business model that's developing. These sites are optimally located near electrical transmission lines and substations near major traffic arteries with high commercial vehicle traffic to minimize costs and boost charger usage.

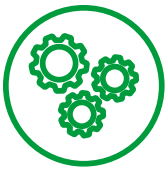
Developing public depot charging infrastructure also requires companies to form an ecosystem. Proactive engagement with local utilities is critical to optimize costs and project timelines because public charging depots are designed to charge a significant number of commercial vehicles with large batteries simultaneously, which can strain local grids. These depots are also limited in their ability to use existing infrastructure, creating opportunities to invest in real estate as well as owning and operating charging infrastructure.[21]

On-highway public charging

As the name suggests, on-highway public charging refers to charging sites located along a highway that offer both conventional and opportunity charging services. Many will use existing on-highway refuelling station networks and truck maintenance centres, and the primary users are expected to be long-haul trucks, long-distance buses, and some regional trucks. While site ownership opportunities are expected to be more limited due to existing infrastructure, the opportunities to own and operate charging infrastructure at these sites are abundant.[25]

Volvo Trucks building an electrified charging corridor for medium- and heavy-duty EVs in California

The electrification of road vehicles is driving a new era of partnerships that would have been surprising in the heyday of the internal combustion era. In July 2022, Volvo Trucks North America announced it was partnering with Volvo Financial Services, Volvo Technology of America, Shell Recharge Solutions, TEC Equipment, Affinity Truck Center, and Western Truck Center to develop a publicly accessible medium- and heavy-duty EV charging network from San Francisco to Los Angeles. The charging corridor aims to attract fleet owners that can't afford to build their own charging infrastructure, are piloting battery EVs, or simply need a location for their trucks to opportunity charge. The project is supported through a US$2-million grant from the California Energy Commission (CEC).[26]



Operational and technological considerations

Given the many emerging outside-the-fence charging models, fleet owners and operators need to ensure they understand how each model may impact their operations. For example, fleets using a depot charging network will require drivers to physically pick up their vehicles before they can start transporting cargo. This could reduce the number of hours drivers spend doing pickups and deliveries—and their earning potential, if they're compensated by distance travelled, creating a disincentive for them to drive an EV truck.

Adopting outside-the-fence charging solutions also makes route optimization and scheduling more complex, requiring organizations to update their transportation management system (TMS). To create efficient routes, a fleet operator's TMS must consider not only vehicle capacities, drivers' hours of service, and shipment delivery due dates, but also the ranges of the fleet's EVs and the locations and charging capacities of charging stations. As well, the TMS must integrate external data from outside-the-fence charging providers to assess real-time occupancy and then direct EV drivers to those stations with available charging spots to minimize charge-related waits and maximize asset utilization.

Interoperability—the ability for EV vehicles and charging stations to share information and work together, allowing drivers to seamlessly charge their vehicles—is another important technological consideration. It's vital for fleet owners and operators to know that the outside-the-fence charging infrastructure they intend to use will be compatible with their vehicles and meet the organization's operational needs. If, for example, fleet vehicles will require opportunity charging along their routes, it will be important to be able to access DC fast chargers or DC ultra-fast chargers.

As new standards *(see Figure 5)* become commercially available, the time needed to charge commercial vehicles will likely drop significantly, making it easier for fleets to incorporate outside-the-fence charging solutions into their operations.[27]

Using such infrastructure, however, raises privacy considerations for fleet owners. Public chargers may store sensitive user information, and this could make them targets for data breaches. Outside-the-fence charging providers must ensure they take steps to guard against cyber threats and data breaches to mitigate the risks and maintain the trust of fleet owners and other customers; these steps include the use of data encryption, secure communication channels, and strong user access controls.[28]

Standard name	Organization(s) in charge	Market	Maximum voltage and amperage	Maximum power	Timeline	Compatibility
CharIN's megawatt charging system	Industry task force set up by CharIN	Europe and North America	1,250V and 3,000A	3.75 Mw	Pilot projects in 2023, commercialization planned for 2024.	Compatible with the combined charging system (CSS) infrastructure.

Figure 5: New EV charging standards in development

Source: The International Council on Clean Transport, "Charging Solutions for Battery-Electric Trucks."

Don’t charge into action alone

Government mandates and technological improvements are driving commercial fleet owners and operators to start transitioning their fleets to zero-emission vehicles, such as battery EVs. But as they do, these organizations are immediately faced by one of the key challenges of the EV transition: the current lack of available charging infrastructure.

Some fleet owners may prefer to build their own charging networks, upgrading local grids and installing the necessary equipment at their own facilities. Some, especially those with long-haul fleets, may choose to rely on charging solutions beyond their yards, from urban public charging networks to depot charging and on-highway chargers, especially as these solutions expand and grow across North America. And still others will opt for a hybrid approach that combines both behind-the-fence and outside-the-fence charging to meet their fleet’s overall needs.

Yet no matter the approach chosen, establishing fleet charging infrastructure is a costly, complex endeavour—and no organization should try to do it alone. Connecting to an ecosystem of parties, from utilities and electrical contractors to government bodies and beyond, is critical to ensuring fleet owners and operators can develop and deploy the charging infrastructure needed to keep their electric fleets on the road and growing the business.

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