E-Fleet Pilot: Non-confidential Final Outcomes Report

Title Page

Project Title: ENMAX E-Fleet Pilot
Lead Institution: ENMAX Power Corporation
Project End Date: 14-Apr-23
TRL at Project initiation: 8
TRL at Project completion: 9
ERA Funding Amount: $851,290.39
Project Value: $1,713,547.37

Project description with high level results:

ENMAX Power Corporation (EPC) became the first utility in Canada to introduce medium-duty (MD) electric vehicles (EVs) to its fleet. The pilot project involved testing two fully electric cube vans in EPC's operational environment. The project monitored truck capacity, performance, battery life, and charging infrastructure to evaluate viability and identify any infrastructure barriers.

The pilot successfully demonstrated the feasibility, performance, and cost-effectiveness of MD electric vehicles. Valuable insights were gained into the challenges and opportunities of electric vehicle operations, including charging infrastructure and supply chain considerations. These findings will accelerate the adoption of EVs among municipal and commercial fleet operators, contributing to greenhouse gas reduction efforts and fostering a more sustainable transportation system in Alberta.

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4. Executive Summary

The E-Fleet Pilot project aimed to evaluate the feasibility and performance of Class 6 medium-duty (MD) electric vehicles (EVs) in a real-life operational environment. The project involved the design, procurement, and implementation of two electric trucks and associated charging infrastructure. The project team closely monitored and analyzed various performance metrics, including truck capacity, battery life, and charging infrastructure, to understand the technology's viability and charging needs.

The pilot demonstrated that the EVs performed as expected, achieving impressive energy usage of 1.21 kWh per km with over 11,000 kms of driving. Environmental benefits were observed, with 16.07 tonnes of GHGe reductions and 9,608.3L of diesel fuel savings.

The project also fostered innovation, skill development, and collaboration among stakeholders. With these findings, ENMAX Power Corporation (EPC) is well-positioned to share insights with other fleet operators, encouraging broader EV adoption and contributing to further greenhouse gas reductions in Alberta.

5. Project Description

Introduction

With commercial trucks not yet reaching the broader piloting stage, EPC had a unique opportunity in 2019 to demonstrate the viability of Class 6 Medium Duty (MD) electric trucks in real-life utility applications. EPC worked with Glover International and Navistar (Chassis Manufacturer) through the prototype phase to meet the design requirements for the implementation of two MD electric trucks into the EPC Fleet. This project offered many benefits to EPC as we move forward towards our ESG goals. Some of these benefits included:

- **GHG reductions**
- **Economic benefits beyond pilot**: Early indications from the data suggest a lower total cost of ownership (TCO) over the asset lifecycle.
- **Improved fleet**: reduced noise from idling, improved air quality resulting in reduced crew exposure to tailpipe emissions
- **Sharing of learnings**: data and information will be provided to other utilities, municipalities, and fleet operators to increase the adoption curve of Class 6 medium duty vehicles.

Background

EPC currently operates a fleet of 450 commercial vehicles and ancillaries, which consumes approximately 0.3 million liters of gasoline and 1.0 million liters of diesel fuel annually, resulting in 3,416 CO2e tonnes of GHG emissions. Within the EPC fleet, 28 per cent are classified as medium duty vehicles, which typically travel an average of 10,000 kms per year and consume around 4,300 L of diesel annually. EPC classifies MD vehicles as those vehicles registered as operating between 8,000 and 11,794kg.

EPC and Navistar worked together on the implementation of the pilot program, which involved testing Navistar's innovative technology in real-world operational environments. This technology uses a single chassis as the foundation for various types of vehicles, such as bucket trucks and waste trucks.

Key Vendors

- **Glover International Trucks** specializes in the sale, leasing, rental, and maintenance of heavy-duty trucks and trailers. They offer a range of new and used trucks from brands such as International, Isuzu, and Hino, as well as parts and accessories for trucks. Glover International Trucks also provides repair and maintenance services for trucks and trailers, including diagnostic testing, engine repair, and collision repair.

- **Navistar International Corporation** is a company that produces and sells a range of commercial trucks, buses, and military vehicles. They are known for their International brand of trucks and have a presence in over 90 countries worldwide. Navistar is committed to developing innovative technologies for their vehicles, such as electric and hybrid powertrains, advanced safety features, and connected vehicle solutions. They are actively involved in research and development efforts to improve the efficiency and performance of their trucks and to meet the evolving needs of the trucking industry.

6. Project Work Scope

Overall Project achievements relative to stated objective and performance metrics

The pilot project had four key objectives. The objectives and results are listed below:

Objective #1: Design, procure and implement two electric trucks and associated charging infrastructure

The project involved installing two 24KW chargers and one 120KW direct-current fast charger (DCFC) for electric trucks. The 24KW chargers were completed on October 31, 2021, while the 120KW DCFC was commissioned on February 24, 2022, due to supply chain issues. The transformer for the 24KW chargers was installed in the vehicle bay near the charging units without major issues. The run from the electrical room was at the building voltage and did not experience any issues during planning or construction.

The trucks were received by Navistar International and quickly turned over to Glover for the installation of the EPC specified van body. Each van body had four (4) 300W solar panels mounted on top to trickle charge a separate battery that powered auxiliary lights, heaters, microwaves, and small tool loads. The battery capacity was four (4) 615AH (12V) batteries. The separate battery was added due to concerns of energy needs of the cabin.

Objective #2: Monitor and analyze truck capacity, performance, battery, charging infrastructure performance, and usage schedule during the pilot to understand the technology viability in a real-life operational environment and charging needs, and to identify infrastructure barriers to adoption.

Truck Capacity and Performance: The EPC specified van body was successfully installed and the trucks performed as expected during the pilot. The vehicles closely met performance expectations, with energy

usage at 1.21 kWh per km, which was slightly above the project target of 1 kWh per km. Vehicle maintenance costs were 27.4 per cent lower than the project target and maintenance downtime was 8.5 per cent lower than the project target.

Battery performance: While EV battery degradation is a concern, the data provided by the OEM vehicle systems did not show a reduction in battery health. According to the manufacturer, the reported battery health did not reduce over the year, this meant that battery health is still shown at 100 per cent and degradation was less than the 10 per cent project target. However, EPC was challenged during two particularly cold periods which saw a reduction of 51% per cent of the normally obtained range during those periods.

Charging infrastructure: EPC has developed a thorough comprehension of the process involved in the installation of EV chargers. Charger maintenance costs were 9.13 per cent less than the project target. The average time to charge was 2.98 hours which was 9.02 hours less than the project target.

Infrastructure Barriers: As discussed in *Section 8: Lessons Learned,* the main barriers for charging infrastructure were supply chain challenges, and software compatibility. Both problems were mitigated during the course of the project, and EPC does not anticipate these to be long-term barriers to MD EV adoption.

Usage Schedule: The average distance traveled per operating day aligned with anticipated route planning and the associated charger use was less than anticipated.

Viability in a real-life operational environment: The trucks and associated charging infrastructure exceeded expectations on each of the project metrics that were identified in the project scope. Barriers and lessons learned have contributed greater knowledge to EPC and do not present insurmountable obstacles to larger-scale deployment. Overall, the E-fleet vehicles demonstrated efficiency and reliability, validating their suitability for daily operations

Objective #3: Assess any major deficiencies and corrective measures associated with electric fleet vehicles.

The most significant deficiency associated with MD electric fleet vehicles highlighted by the pilot was their reliability in cold weather. During extreme cold periods (below -30C) we saw a 51 per cent reduction in range. This range reduction will compound with the depletion of the battery age (battery degradation) and potentially leave less range during extremely cold events.

This pilot provided essential data and information on cold weather operation for future planning purposes. As a result of this pilot, EPC is planning to explore a number of additional strategies to optimize EV performance. These strategies include, but are not limited to, pre-conditioning the vehicle cabin, encouraging energy-efficient driving habits, strategically planning charging schedules and routes, and exploring vehicles with more efficient cabin-heating technology.

Objective #4: Share the results with other municipal and commercial fleet operators to help increase the adoption of electric vehicles (EVs) and contribute to additional GHG reductions in Alberta.

The results of the project were shared with multiple other municipal and commercial fleet operators a number of times throughout the pilot. Additionally, EPC is continuing conversations with industry peers

through a variety of channels to discuss industry advancements and best practices. Several notable presentations and tours included:

May 26, 2022: ENMAX Corporation's Manager, Corporate Mobile Fleet presented the E-Fleet Project to more than four Canadian Utilities Fleet Management groups. The presentation was successful and spurred significant conversations. The conversation resulted in a spin-off of a monthly Zero Emissions Fleet Roundtable with Canadian Utility Fleet Managers

June 1st, 2022: EPC hosted several City of Calgary Council members on a tour of the EV Fleet vehicles

June 3rd, 2022: EPC presented the E-Fleet project on the Sustainable Transportation Panel at the Inventures conference.

July 26th, 2022: The President and Operations Executive from an Alberta Medium and Heavy-duty truck service chain were given a tour.

September 21st, 2022: ENMAX Corporation Board Members were given tour of vehicles and presentation on the strategy, timelines, and preliminary results of the pilot.

Metrics

Success Metric	Project Target	Project Results	Comments
Downtime (excluding remediation of major deficiencies)	<10%	1.5%	Maintenance and remediation of any issues were primarily scheduled outside of crew-working or project hours.
Battery Degradation	<10% over pilot period	0%	Using data provided by the OEM, the batteries are still shown at 100% health, indicating no battery degradation during the pilot period.
# of days where enroute charging is required	<10%	0%	There was only one example of enroute charging reported during the project. This occurred on one of the coldest days of the year and with a larger than normal route driven (116 KM).
Vehicle Maintenance Costs (% of baseline ICE costs)	<80%	52.6%	Included all maintenance as per the National Safety Code and Alberta's Commercial vehicle regulations.

Time to Charge	<12 hours	Avg 2.98 hours	Results exclude sessions less than 10 minutes of top-up charge.
Charger Maintenance Costs	<10% installation costs	0.87%	There was $2,769.13 in charger maintenance costs. This equated to 0.87% of the installation costs.

Table 1: Metrics

Analysis of Results

The E-fleet team worked to set up a simple and interactive dashboard using the data from the telemetric device on-board the vehicles. This dashboard provided the following insights:

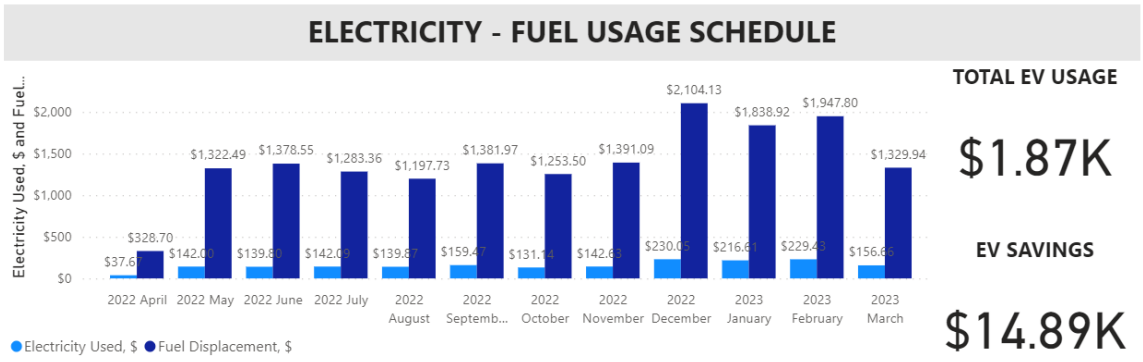

Figure 1 Electricity - fuel usage schedule

- "Fuel" (energy source) was a savings for EPC

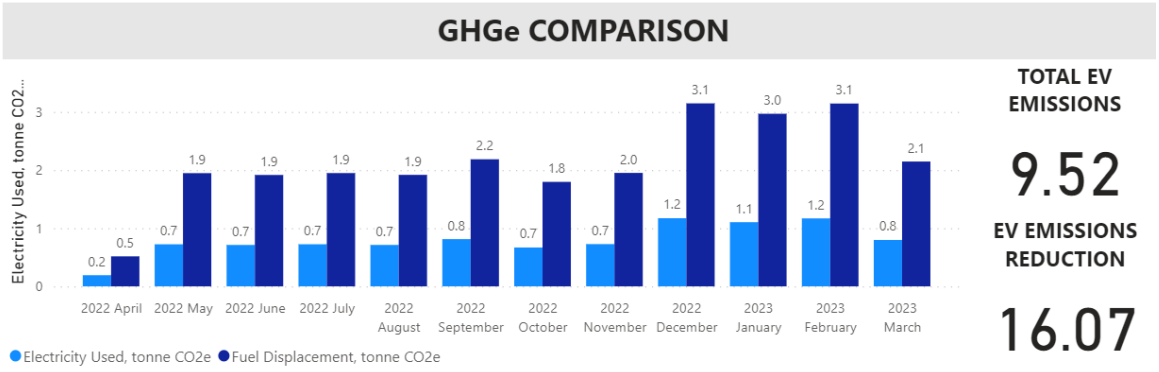

Figure 2: GHGe comparison

- **GHGe Comparison**: The Green House Gas Equivalent comparison was tracked throughout the lifetime of the project.

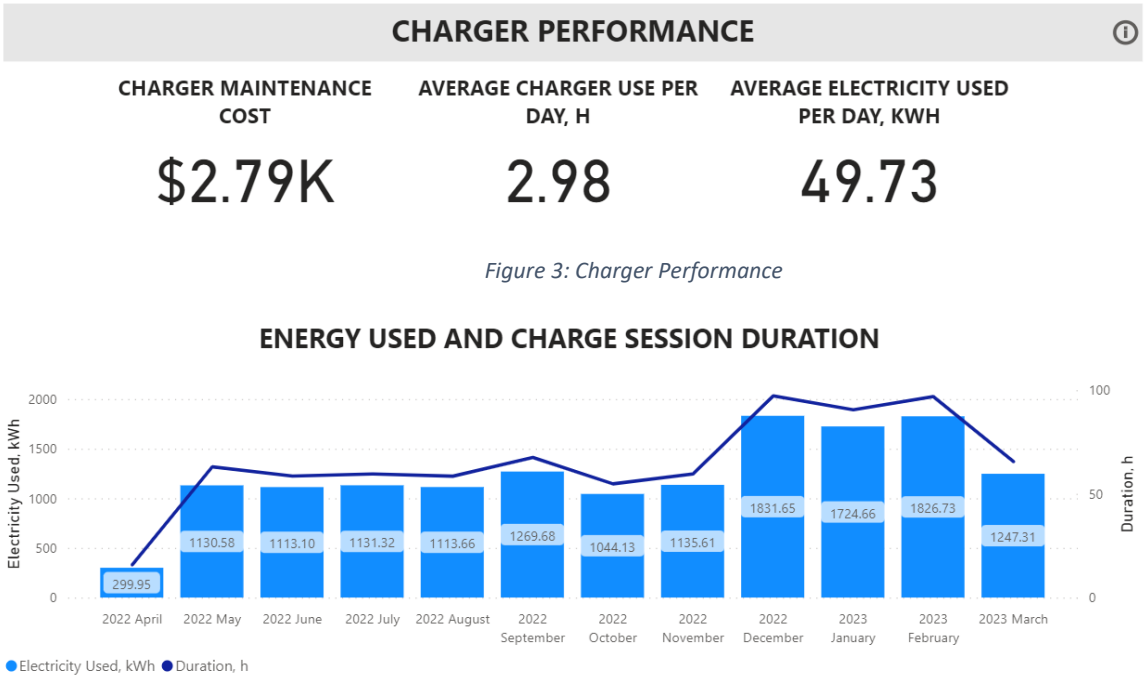

Figure 3: Charger Performance

Figure 4: Energy used and charge session duration

Charger performance:

- **Duration of charging directly matched the amount of energy transferred to the vehicles**, indicating consistent energy transfer without any variance in energy flow. This consistency is a positive sign for the reliability and stability of the charging infrastructure, which is crucial for the long-term success of any EV fleet.
- **Increased energy consumption and charger usage in colder months:** this directly correlated with the ambient temperature noted in the performance metrics. This increased energy usage can be attributed to several factors. First, cold temperatures can reduce the efficiency of EV batteries, leading to a decrease in the vehicle's overall range. Second, additional energy may be required to heat the cabin, resulting in higher energy consumption.

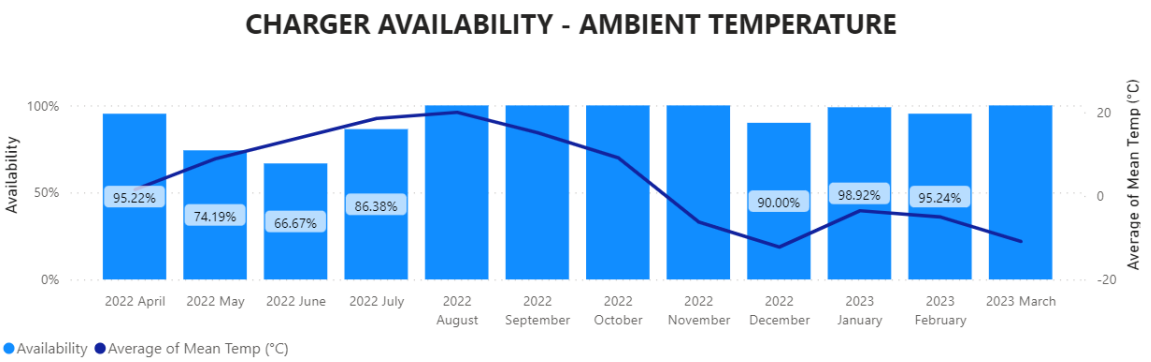

Figure 5: Charger availability – ambient temperature

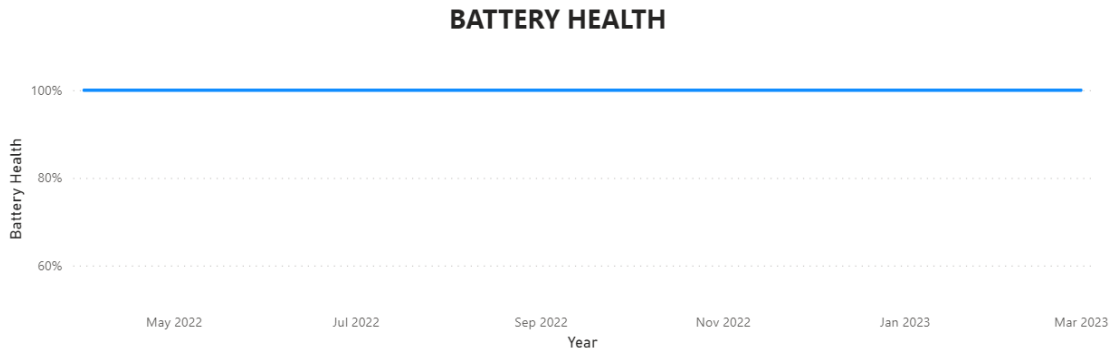

Figure 6: Battery Health

- **Battery Health**: According to the manufacturer, the reported battery health did not reduce over the year and aligned with what was expected. While EV battery degradation is a concern, the data provided by the OEM vehicle systems did not show a reduction in battery health.

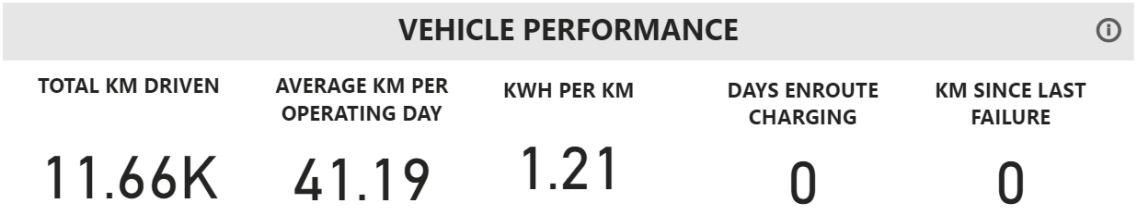

Figure 7: Vehicle performance

- **Vehicle performance**: The E-fleet vehicles closely met performance expectations, with energy usage at 1.21 kWh per km, only slightly above the estimated 1 kWh. Additionally, the average distance traveled per operating day aligned with anticipated route planning.

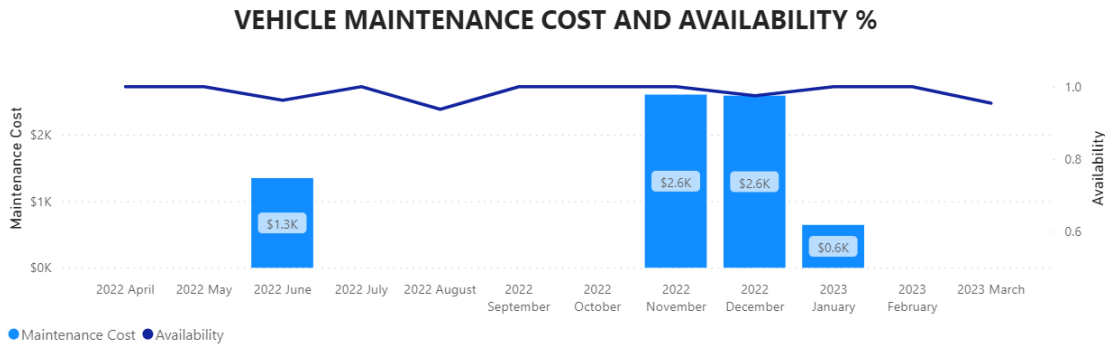

Figure 8: Vehicle maintenance cost and availability (%)

- **Maintenance costs**: EVs have fewer moving parts compared to their internal combustion engine (ICE) counterparts. For example, EVs don't require oil changes, transmission fluid replacements, or exhaust system maintenance. This simplicity results in lower overall maintenance costs. Furthermore, EVs use regenerative braking systems, which can help extend the life of the brake pads and reduce the frequency of brake maintenance. The electric drivetrain and battery systems in EVs tend to be more durable than ICE vehicles' engines and transmissions. This increased durability often translates into a longer vehicle lifespan, reducing the need for costly repairs or replacements. The pilot project provided EPC with early indications that that there will be lower cost of ownership, however a longer-term analysis is needed to understand the full difference in total cost of ownership.

7. Commercialization

Discussion of any advancements made toward commercialization, commercial deployment, or market adoption

EPC has made significant contributions in commercializing the use of electric medium-duty vehicles in its fleet. As a result of this being a first-in-Canada demonstration project, EPC garnered significant interest from various stakeholders regarding pilot learnings. The pilot demonstrated that Class 6 vehicles reduce GHG emissions and have the potential to be cost-effective and operationally feasible. EPC also measured various factors to demonstrate the effectiveness of using EVs, showing that this was a viable and practical solution that could benefit commercial fleet operators.

Description of technology advancement over the course of the Project

Executing the E-Fleet Pilot project played a crucial role in advancing the operation of the medium-duty EV from **TRL 8 to TRL 9**. Here's how:

- **Real-world testing**: The pilot project provided the opportunity to test the medium-duty EVs in real-world operational conditions, including various driving scenarios, traffic conditions, and weather situations. This allowed the vehicles to demonstrate their reliability and performance

under typical daily use, moving them from a proven technology to a fully validated and operationally ready solution.

- **Integration with existing systems**: During the pilot, EPC integrated the EVs into existing fleet management systems, assessing how well the EVs could be incorporated into the organization's operations, maintenance schedules, and charging infrastructure.
- **Addressing range anxiety**: The pilot project provided the opportunity to address concerns related to the range of the EVs. By demonstrating that the EVs could efficiently complete daily tasks without running out of battery power, the project helped build confidence in the technology and increased its readiness level.
- **Demonstrating cost-effectiveness**: By operating the EVs during the pilot, EPC was able to gather data on the cost-effectiveness of the technology in terms of fuel savings and reduced maintenance costs.

8. Lessons Learned

Delays or obstacles encountered during the Project

During the COVID-19 pandemic, lead times on electrical infrastructure became significantly longer. The challenges posed by the pandemic and supply chain constraints impacted numerous industries, including manufacturing, logistics, and construction, which contributed to delays in the development and installation of electrical infrastructure.

Charging Infrastructure

A dedicated 75KW transformer was installed to feed the 2x24KW chargers. This was a good exercise to evaluate the needs of charging infrastructure and how the current draws work in practice. No observable events occurred on the newly installed transformer such as overheating, or strain caused from high in-rush currents for the electric vehicle supply equipment.

Charger Reliability: Throughout the course of the E-Fleet Pilot project, several valuable lessons were learned, particularly in relation to the reliability of charging infrastructure. At the start of the project, the reliability of both 24kW and DC Fast Chargers was found to be a challenge. A key aspect of this issue was the distinction between software and hardware reliability. It became evident that the software component of the charging systems was the primary cause of the initial reliability concerns. As the project progressed, it was crucial to address these software issues to improve the overall performance and dependability of the charging infrastructure. By resolving the software-related problems, the reliability of the charging stations improved, enabling a more seamless integration of the EVs into daily operations.

The required maintenance cost was covered by the manufacturer under warranty.

As a result of the challenges described above, charger availability was low near the start of the pilot, however once the issues were mitigated the chargers operated near 100 per cent.

EV range

The EVs performed as expected during the majority of the year. The two trucks were assigned to different duties to provide diversity and understand how they would work for each role in operations.

EPC was challenged during two particularly cold periods which saw a reduction of 51 per cent of the normally obtained range. This reduction, coupled with inevitable battery degradation is something to be considered in future planning.

There was only one instance during the pilot that required additional intervention. During a cold period, one of the EVs had depleted its battery to 4 per cent and stopped at the ENMAX Place DCFC because there was not enough energy to get the crew back to South Service Centre, which is the home base for the vehicles. As a result of the cold, the charger malfunctioned, and the Fleet team decided to tow the truck back to SSC to reduce the likelihood of battery damage while troubleshooting the charger issues.

To address this challenge, EPC recommend implementing strategies to optimize EV performance during colder months. These could include:

- **Pre-conditioning** the vehicle cabin while connected to the charger, so that the energy required for heating is drawn from the grid instead of the battery, preserving the vehicle's range.
- Encouraging drivers to adopt **energy-efficient driving habits**, such as gradual acceleration and smooth braking, which can help conserve energy and extend the range of the vehicle in cold weather conditions.
- **Strategically planning charging schedules** in relation to operational conditions.
- Consider vehicles with more efficient cabin-heating technology.

Efficient operation

The EVs demonstrated impressive efficiency. Electricity usage was as expected for EVs of the size in the pilot. We achieved an average of ~1.1 KWh per km in the summer months and ~1.4 KWh per km in the colder winter months for an average of 1.21 KWh per km in the year.

Planned Maintenance

It was observed that there was no specific planned maintenance schedule for the EVs provided by the manufacturer. In response to this, the project team decided to adopt the same maintenance schedule as the internal combustion engine (ICE) line of medium-duty vehicles within the fleet. This decision was made to ensure that the EVs were properly maintained and monitored, despite the lack of an established EV-specific maintenance plan.

Idle Time

Fuel usage displacement was the biggest insight for stakeholders of the project. It was determined that idle time in an EV platform has a far lower impact on the vehicle and therefore cost to operate. The total fuel displaced was 9,608.3L of diesel.

9. Environmental Benefits

The project aimed to reduce GHG emissions by replacing traditional internal combustion engine vehicles with electric-powered vehicles. The result was 16.07 tonnes of GHGe reductions over the course of the project. Table 3 provides a comprehensive representation of these findings, demonstrating the success of the pilot and its potential for informing future EV initiatives.

It is estimated that up to 40 per cent of the emission reductions were due to the lack of idling of the EV. In situations where an EV is not moving, the energy loads are far less than the idling needs of an internal combustion vehicle. This was compounded due to one of the vehicles operating primarily in the Downtown Network. This fleet vehicle typically drives to the downtown core and stays on site for the duration of the day, then drives back to the bus barn.

The vehicles produced zero emissions at the tailpipe however the electricity sourced was from our South Service Centre location. The carbon mix of electricity in Alberta is tracked by the AESO and a typically intensity level is ~400-500 gCO_2eq/kWh. See the emission reduction breakdown for both MD EVs below.

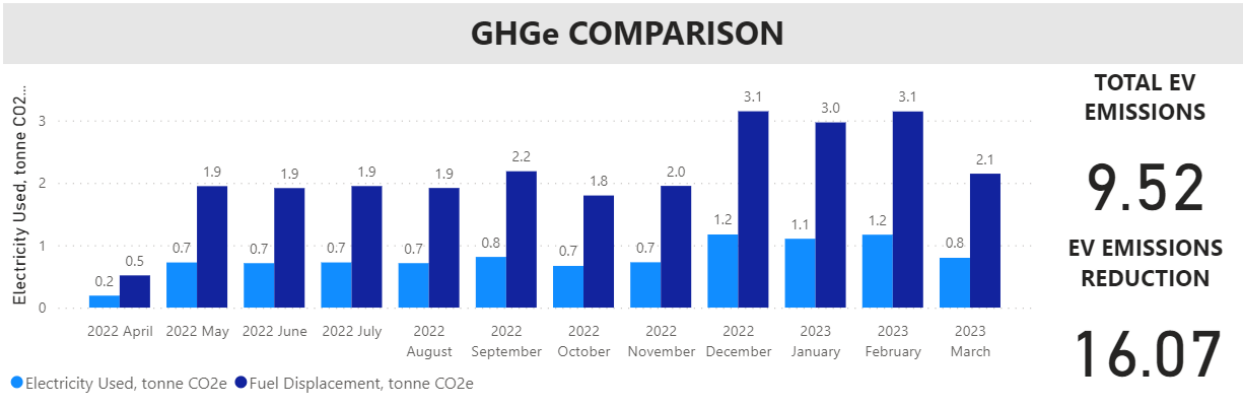

Figure 9: GHGe Comparison

Electricity used: A simple measure of the amount of electricity used by the vehicles and converted to display the emissions produced in accordance with the assumed carbon intensity of electricity available at the ENMAX South Service Centre.

Fuel Displacement: The total fuel displaced was 9,608.3L of diesel. A comparative measure of the number of KMs and time on the road converted to emissions produced in accordance with historical data from our fleet of similar ICE vehicles. The displacement of emissions is a critical metric in assessing the environmental benefits of using EVs. By comparing the emissions produced by the medium-duty EVs to those of equivalent ICE vehicles, EPC can quantify the reduction in GHGs.

The data presented in the graph demonstrates the positive environmental impact of adopting EVs for fleet operations.

10. Overall Conclusions

In conclusion, the E-Fleet Pilot project has successfully demonstrated the viability of EVs for medium-duty fleet applications. The project involved the design, procurement, and implementation of two electric trucks and the associated charging infrastructure, providing a solid foundation for assessing EV performance in a real-life operational environment. The project saw the trucks operate for over 11,000 kms resulting in over 16 tonnes of direct GHGe emission reductions and 9,608.3L of fuel being displaced.

Throughout the pilot, critical aspects such as truck capacity, performance, battery life, and charging infrastructure performance were closely monitored and analyzed. This comprehensive evaluation allowed the project team to gain a thorough understanding of the technology's viability and charging requirements, ensuring that EVs could meet the demands of daily operations.

Any deficiencies encountered during the pilot were carefully assessed, and corrective measures were implemented to address these challenges. This process has provided valuable insights and best practices that can be used to further enhance electric fleet vehicle performance and reliability.

Crucially, the results of the E-Fleet pilot project will be shared with other municipal and commercial fleet operators, contributing to the increased adoption of EVs across Alberta. By fostering a collaborative approach and sharing knowledge and experiences, the project can play a vital role in driving additional GHG reductions in the province, paving the way for a cleaner, more sustainable transportation system.

11. Communications Results

Communications activities undertaken during the Project

A key aspect of the project was to involve the public, various municipalities, and peer commercial fleet operators to foster awareness, support, and engagement with the initiative. This was done in various ways, including traditional and social media campaigns, conference speaking opportunities, and participation in local events.

The following public appearances were held to educate and raise awareness of the pilot and MD EVs to the projects target audiences:

- May 26, 2022: Presentation, The E-Fleet Project was presented to more than four Canadian Utilities Fleet Management groups, spinning off a monthly Zero Emissions Roundtable with Canadian Utility Fleet Managers
- May 31st and June 1st, 2022: Exhibit at the City of Calgary Mayor's Environmental Expo (see below for additional details)
- June 1st, 2022: Tour, several City of Calgary Council members.
- June 3rd, 2022: Panelist, Inventures - Sustainable Transportation Panel
- June 4, 2022: Exhibit at the Charged Up, Calgary's Electric Vehicle Festival (see below for additional details)
- June 17th, 2022: Tour, Calgary board of Education and the Greener Learning Organization (see below for additional details)

- July 26th, 2022: Tour, President and Operations Executive from an Alberta Medium and Heavy-duty truck service chain
- September 10th, 2022: Exhibit at the ENMAX Rodeo and Safety Expo

Additional details on three key engagement activities:

- During the **Greener Learning and CBE tour**, the proposed agenda included several key points. At the outset, a comprehensive safety orientation was provided, which included an overview of the day's activities and a tailboard discussion. The tour showcased the different vehicle bays while outlining EPC 's electrification plans. The Heavy Vehicle garage was another highlight of the tour, featuring the pilot vehicles and chargers. Additionally, the 1937 ENMAX truck was showcased, and opportunities for engagement and discussion were encouraged. Finally, discussions were held on the prospects of future tours with students, identifying opportunities for informative and educational experiences.
- **Charger Up, Calgary's EV Festival**, hosted by Go Electric and the Electric Vehicle Society, aimed to create awareness around EVs by showcasing a wide range of converted EVs and currently available models. One of the highlights of the show was the EPC MD EV, which was prominently displayed and attracted a significant number of visitors. The event provided an opportunity to educate the public on the benefits of EVs, including their sustainability, lower operating costs, and reduced environmental impact. By showcasing a diverse range of electric vehicles, the EV roadshow aimed to encourage the adoption of this emerging technology and promote sustainable transportation options.

Communications Highlights

Media highlights (earned and news releases)

2022

- ENMAX adds two new electric vehicles, looking to electrify fleet by 2030
- ENMAX first utility in Canada to pilot medium-duty electric fleet vehicles
- The next wave of electric vehicles is coming – and it could be buses, semis and other large trucks

E-Fleet media round up, launch:

- ENMAX adds two new electric vehicles, looking to electrify fleet by 2030
  - *Calgary Herald/Calgary Sun*, Monday, April 11, 2022
- ENMAX plugs medium-duty electric vehicles into its Calgary fleet
  - *Global Calgary*, Monday, April 11, 2022
- ENMAX launches electric medium-duty trucks (link only accessible for 24 hours)
  - *CBC Calgary/CBC Edmonton* (TV), Tuesday, April 11, 2022
- ENMAX pilots electric medium-duty trucks
  - *Energi Media*, Monday, April 11, 2022
- ENMAX first utility in Canada to pilot medium-duty electric fleet vehicles
  - *Contify Energy News*, April 12, 2022
- ENMAX starts Canadian electric fleet vehicle pilot
  - *ATN Magazine* (Australia), April 11, 2022

Twitter

Figure 10: Tweets

Other communications material

The following was generated by ENMAX and provided as a summary of the pilot to stakeholders.

ENMAX Medium-Duty Electric Vehicles

ENMAX is the first utility in Canada to add medium-duty electric vehicles to its fleet, which will help us understand what we need to do to move towards full electrification. A fully electric fleet will reduce our carbon footprint and help us on the path to net zero.

ENMAX Power is piloting two Class 6 fully electric cube vans with a chassis from International and a body from ITB (pictured above). The pilot received $1.04 million in funding from Emissions Reductions Alberta and will run until April 2023.

> **"Our customers need us to be future-focused, ensuring that we can support them in their energy choices. This pilot will help us better understand the performance of electric vehicles and how they operate in the field."**
>
> **Jana Mosley, President, ENMAX Power**

Similar ENMAX projects

Charge up Pilot: This research involving 250 electric vehicle owners is helping ENMAX Power prepare for the expected growth in EV adoption while optimizing our electricity system to meet customer demand.

ENMAX Community Solar Fund: In partnership with The City of Calgary, ENMAX Energy is providing solar equipment and hiring tradespeople to install solar panels at community halls across Calgary, generating up to 100 per cent of the hall's annual electricity consumption.

Canada's first Hybrid Electric Gas Turbine: This innovative battery storage technology at our Crossfield Energy Centre serves as a model for other natural gas facilities across Canada and saves 45,000 tonnes of GHG emissions each year – the equivalent of taking 10,000 cars off the road.

This pilot was funded in part by Emissions Reduction Alberta.

EMISSIONS REDUCTION ALBERTA

Last updated: June 2022

Electric Vehicle Fast Facts:

50%
Estimated reduction in operating costs

4,300L
Estimated fuel saving per year

217km
Expected range on a full charge

210kWh
Lithium iron phosphate battery

1,200W
Solar on the roof helps charge the auxiliary batteries

Figure 11: ENMAX MD EV one pager