



June 26, 2023

Ministry of Energy, Mines and Low Carbon Innovation
Email: ZEVRegulation@gov.bc.ca

Re: [B.C. Medium- and Heavy-Duty Zero-Emission Vehicles: 2023 Consultation Paper](#)

The Canadian Propane Association (CPA) thanks the Ministry of Energy, Mines and Low Carbon Innovation for the opportunity to comment on *B.C. Medium- and Heavy-Duty Zero-Emission Vehicles: 2023 Consultation Paper*.

The CPA represents over 400 companies in every region of the country. Our members include propane producers, wholesale marketers, transporters, retail marketers and Manufacturers of Appliances, Cylinders and Equipment (MACE) across Canada. Propane is produced, transported, and distributed across the province and we appreciate government's engagement efforts.

Propane is one of the cleanest and most versatile energy sources in existence. Canadian propane is a low-carbon, affordable, reliable, and versatile energy source that is safe and abundantly available. BC is one of the largest propane producers and the Canadian Energy Regulator states that total natural gas liquid (NGL) production is expected to grow 70% by 2050, predominately due to natural gas growth from the Montney formation in BC.¹ Mainly as a byproduct of natural gas, an increasing amount of propane produced and consumed across Canada will come from BC.

BC is also the leading Canadian export jurisdiction for propane to overseas markets. These exports have grown steadily over the past decade, spurred by strong domestic propane production and access to new markets. In early 2017, propane started being exported directly from Canada to non-U.S. markets, enabled by the completion of two propane marine export terminals located near Prince Rupert, BC. In March 2021, exports to non-U.S. destinations reached an all-time high while in June 2021, exports to non-U.S. destinations surpassed exports to the U.S. for the first time.² Canadian propane is increasingly displacing higher emission sources of energy such as biomass and coal, in countries such as Japan, Korea and Mexico.

Propane is already recognized by governments around the world for the contribution it can make toward improved indoor and outdoor air quality and reduced greenhouse gas emissions, as evidenced under Canada's *Alternative Fuels Act*.³ Supplying affordable, reliable, and clean energy will continue to be the goal of Canada's propane industry. Our sector supports over 3,000 jobs across BC and generates almost \$261 million in annual taxes and royalties - contributing \$658 million to BC's GDP in 2018 alone.

As BC looks for ways to reduce emissions propane can play an important role as a clean and affordable energy source. Propane offers an immediate benefit of a 25% reduction in GHG when used as a transportation fuel in place of gas or diesel. The Federal Government, as part of its

¹ [CER – Canada's Energy Future 2021 - Results \(cer-rec.gc.ca\)](#)

² [Canadian Energy Regulator](#)

³ [Alternative Fuels Act \(justice.gc.ca\)](#)

Regulatory Impact Assessment Analysis (Analysis) has recently noted that “the transition to ZEVs will be challenging for northern and remote communities.”⁴ The Analysis also noted that the affordability of ZEVs is a key concern and transportation policy should consider the needs of rural residents and low-income groups. The CPA notes that propane is an alternative energy source that would alleviate some of the affordability and reliability concerns for BC’s rural and remote communities and would immediately reduce transportation emissions.

Flexible Outcomes Based Policies

The CPA does not support a transportation plan with a singular “one size fits all” approach. Rather, the CPA encourages the BC government to implement a flexible, outcome-based policy that is technology neutral and supports decarbonization pathway opportunities, alongside affordability and reliability considerations to ensure a low emission, reliable and affordable provincial transportation system for both the urban and rural areas of the province.

As part of the Federal Government’s Emissions Reduction Plan consultation, stakeholders have recently voiced their concern with Zero Emission Vehicle (ZEV) transportation mandates stating that “Indigenous partners have expressed concerns with increased ZEV adoption, due to little or no access to ZEV charging stations in a large number of Indigenous communities, which are located in northern, rural, and remote regions, and the cost of ZEVs.”⁵ There has also been recognition from the federal government that consideration to the barriers (e.g., charging infrastructure availability, affordability, regional climates) to ZEV uptake in underserved neighborhoods and in rural and remote regions is a key component of any transportation policy. The federal government has also recently noted that increasing vehicle prices are “expected to have a disproportionate impact on low-income households.”

Propane is a low emission energy source that can immediately lower transportation emissions by 26%. Auto propane vehicles can be ordered directly from the manufacture, or conversions to existing vehicles can also generally be completed quickly and typically costs well under \$10,000. This is important when considering that EVs currently cost approximately \$13,000 more than equivalent gas-powered cars and does not include the cost of purchasing a level 2 fast charger (~\$870) and installation costs for EV home-charging stations. After conversion, vehicle and fleet owners can expect to see a significant cost savings as propane consistently costs less than gasoline or diesel. Not to mention, propane is a cleaner energy source, so the engine will be less costly to maintain than a diesel engine because propane vehicles do not require the expensive exhaust after-treatment systems diesel engines need to meet emission standards. Compared to gasoline, propane won’t degrade or prematurely wear engine component parts like gasoline can. When properly maintained, propane has fewer residual contaminants in the oil that can damage engines, and there is also less carbon build-up on the valves that naturally occur in gasoline engines. Companies such as Rousch and Cummins are already beginning to produce propane engine platforms as auto propane users also enjoy a longer life cycle with much lower maintenance costs.

We support a provincial transportation policy and regulatory structure that promotes flexible and cost-effective compliance pathways, encourages investment in emission reduction technologies. The Net-Zero Advisory Body recently stated that “addressing emissions from the heavy-duty vehicle and freight sectors – including rail, aviation and marine – would require different

⁴ [Canada Gazette, Part I, Volume 156, Number 53: Regulations Amending the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations](#)

⁵ [Emissions Reduction Plan](#)



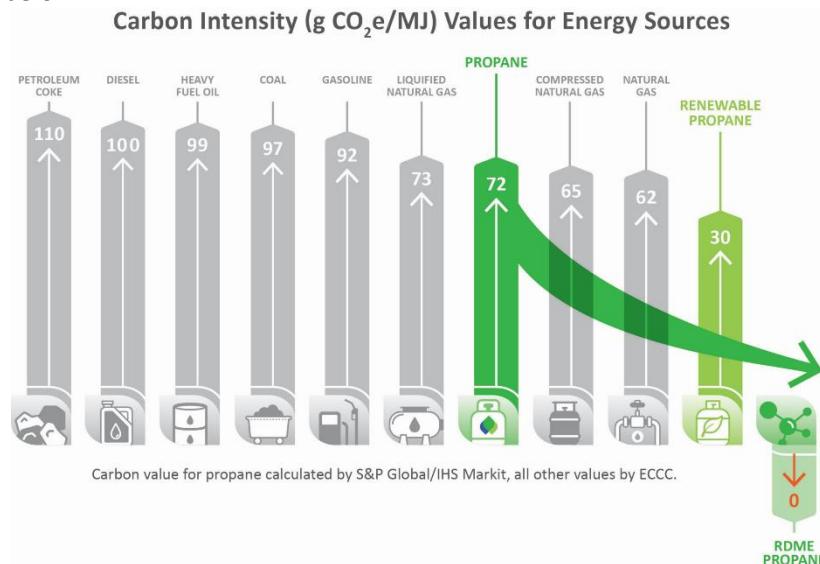
approaches.”⁶ And Electricity Canada recently stated that “electricity systems are capital intensive and evolve at a slow pace.” Government would be well served to support and incent low emission pathways that best serve the respective communities and their distinctive energy requirements in an affordable and reliable manner. Propane is available now to reduce transportation emissions that can and should be part of this emission reduction pathway. The CPA believes that setting ambitious and achievable emissions reductions standards, paired with meaningful policy flexibility to accommodate a diverse array of compliance strategies, is an appropriate approach for bringing continued environmental progress in an affordable manner.

CPA Recommendation #1: The Government of BC allow a variety of compliance pathways to meet the transportation sector emissions reduction goals. To ensure an equitable energy transformation, propane should be considered a low carbon pathway as part of the CTAP.

Propane’s Decarbonization Pathway

Propane produced and consumed in BC has a carbon intensity comparable to natural gas⁷ - converting vehicles to propane is an immediate and cost-effective way to reduce transportation emissions with minimal conversion costs. On average, compared to diesel, propane emits 74% less NOx and 81% less particulate matter (on a well to wheels basis).⁸ LPG is the most prevalent unblended alternative fuel in the world with over 27 million vehicles in use today⁹ and an increase of 40% in global consumption over the past 10 years. Propane infrastructure is already readily available with 721 fueling stations across Canada, and 147 fueling stations across BC alone.¹⁰

Our sector continues to evolve, looking at improving existing technology, such as creating more efficient engines, using propane in combination with electric motors in a hybrid model or switching to direct injection engines that produce substantially lower emissions. With further innovation on the horizon, such as renewable propane and renewable dimethyl ether blending propane can play an important role in immediately reducing the transportation sector’s emissions, as highlighted below.



⁶ [Emissions Reduction Plan](#)

⁷ [Canadian Propane Association](#)

⁸ [World LPG Association](#)

⁹ [Autogas - WLPGA](#)

¹⁰ [Canadian Propane Association](#)



Renewable propane is already being produced in the U.S. and Europe. Unlike conventional propane, renewable propane can be made from a variety of renewable feedstocks. The most common form of renewable propane today is a by-product of renewable diesel and sustainable aviation fuel made primarily from plant and vegetable oils, animal fats, or used cooking oil. Renewable propane can be used alone or in blends with other renewable or low-carbon energy - including conventional propane - to further reduce carbon emissions without sacrificing performance. By 2050, renewable propane could meet half the world's demand for propane, according to the World LP Gas Association.¹¹

Propane can also be blended with renewable dimethyl ether (rDME), a sustainable fuel source that is produced from renewable feedstocks, such as dairy waste and biogas, or landfills. Compared to diesel and heating oil, rDME has close to 100% GHG emission reductions and can be produced from multiple renewable feedstocks including waste streams and residues, with a low GHG footprint.

Both renewable propane and an rDME blend can be “drop-in” replacement fuels. According to the Propane Education Research Council, a blend of 30% conventional propane, 50% renewable propane and 20% rDME can lower propane's carbon intensity to 0 g/MJ by 2030, with the ability to achieve a negative carbon intensity by 2050.¹²

We need to ensure that clean energy is accessible to everyone, and propane should be part of the decarbonization pathways conversation especially for the transportation sector. Overly prescriptive and complex regulations will result in higher energy costs for consumers across the province, especially those who live in rural and remote areas who may not have the same energy choices and transportation needs as consumers living in urban centers. As opposed to further administrative burden, the CPA recommends that the BC Government apply an incentive-based approach, as was recently demonstrated in the U.S. Inflation Reduction Act, where the following was proposed:

- Alternative Fuel Tax Credit (\$0.37 credit for each gallon of propane sold in the transportation sector, including off-road vehicles like forklifts)
- Extension of second-generation biofuel incentives (applies to the production of rDME, which can be deployed to reduce the carbon intensity of both conventional and renewable propane)
- Alternative fuel refueling property credit
- Clean fuel production tax credit (encourage more production of renewable propane, rLPG)
- Energy infrastructure reinvestment financing (this provision may be utilized for funding for LPG/rLPG along with DME/rDME infrastructure)

As illustrated by a 2022 study by S&T Consultants Inc (using the GHGenius model), the lifecycle analysis results state that propane, renewable propane and renewable DME all provide immediate and clear emissions reductions compared to gasoline or diesel fuel. The reductions from the two renewable fuels are quite significant as compared to gasoline and diesel fuel specifically. Propane engines are 90% cleaner than mandated standards, with effectively zero particulate matter emissions and 96% fewer NOx emissions than clean diesel engines. The latest propane engine technology is classified as near-zero and has moved this fuel option even closer to achieving zero

¹¹ [NREL Study: Refineries Increase Revenue and Reduce Carbon Footprint with Renewable Propane | PERC](#)

¹² [Renewable Propane | PERC](#)



emissions levels. With the adoption of propane as a vehicle fuel for light and medium duty applications specifically, it is a seamless transition for our sector when adding renewables to the stream with no change to the vehicle or infrastructure.

CPA Recommendation #2: The Government of BC adopt an incentive-based approach to support conversion to propane for medium and large heavy-duty vehicles.

To immediately reduce transportation emissions, the provincial government should work with cities and businesses to incentivize transportation fleets conversion to propane, specifically for medium and heavy-duty vehicles. The infrastructure is already available, and this conversion can be done to existing as well as new fleets with minimal cost and time constraints, as noted above.

The propane refueling infrastructure is also designed to scale and can easily adapt to the varying needs of any fleet. The low-cost conversion and filling options infrastructure makes it an ideal energy source for many leading companies across the province, including UPS, the cities of Nanaimo, Chilliwack, Richmond, and Langley,

The propane sector faces numerous regulatory challenges stemming from overlapping and duplicative government permitting and regulatory processes. The CPA encourages the provincial government to identify and reduce administrative red tape, in alignment with provincial objectives, specifically for the propane sector.

CPA Recommendation #3: The CPA recommends that the Government of BC work with the CPA and its BC members to identify areas of administrative duplication and collaborate to create enhanced regulatory harmonization and streamlining.

Conclusion

The CPA agrees with the goal of reducing emissions. We are committed as an industry to continuing to demonstrate our responsibility to both the environment and the economy as BC moves towards a clean energy future. Propane provides an affordable option to immediately reduce transportation emissions in alignment with the CleanBC goals. The government must be aware of the high costs of ZEVs and associated infrastructure, these costs are not insignificant to families across BC who are already facing record high costs for essential goods and overall inflation pressures. Ensuring a provincial transportation policy includes propane will ensure an equitable transportation transition for all constituents, not just those living in urban centers.

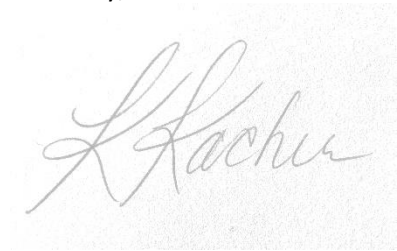
No single entity can, on its own, permanently get BC to net-zero emissions. Success depends on setting the right framework and moving in a consistent and practicable direction via regulations, standards, and incentives. The CPA encourages the government to ensure that low emission transportation pathways include alternative fueled vehicles that demonstrate emissions reductions. This would allow for renewable fuel blends, and any fuel advancements, such as hydrogen, the opportunity to continue their support of the ongoing work to reduce harmful emissions. When you factor in the cost of a new vehicle and the costs for fuel, fluids, maintenance and repairs, propane has one of the lowest costs for the lifetime of the vehicle, providing a short return on investment.

The CPA encourages the Ministry of Energy, Mines and Low Carbon Innovation to further collaborate with the propane sector to seek opportunities for investment and partnership to



support a future that includes propane, especially as it pertains to medium and heavy-duty zero emission vehicle and the future of transportation for BC. The CPA looks forward to discussing this submission at your earliest convenience.

Sincerely,

A handwritten signature in cursive script, appearing to read "K. Kachur", is centered within a light gray rectangular box.

Katie Kachur
Vice President, Government Relations, West
Canadian Propane Association

