Minnesota Propane Association
Promoting smart energy

TO: Senator Nick Frentz
Chair John Marty and Members of the Senate Finance Committee

DATE: April 17, 2023

RE: SF2847; Omnibus Energy, Utilities, Environment and Climate Bill; Electric School Bus Rebates

On behalf of the Minnesota Propane Association (MPA), which represents propane marketers, suppliers, distributors and equipment manufacturers across the state, including in your Senate districts, we appreciate the opportunity to provide comments on SF2847. Our members provide clean-burning and critical energy to residential, commercial and agricultural customers across the North Star State. Minnesota's propane industry provides thousands of good-paying jobs and generates more than $2.5 billion in economic activity annually.[1]

Electric School Bus Rebates:

- Article 1, section 2, subdivision 2 (z), provides $2 million in 2024 for electric school bus grants under Minnesota Statutes, section 216B.1616.
- Article 1, section 2, subdivision 16, provides an additional $5 million for electric school bus grants under the same section.

Propane autogas is an alternative, which is both more efficient and less costly. Propane autogas vehicles are already operating safely and reliably in our communities. All over the country, propane autogas fuels light-duty fleets like law enforcement vehicles, taxicabs, and construction vehicles, medium-duty delivery vehicles, trucks, **as well as school buses and public transit.** The use of propane autogas in these vehicles virtually eliminates end-user nitrous oxide and greenhouse gas emissions, while offering reduced maintenance costs, more uptime, and easy refueling without the need for expensive infrastructure. These vehicles can make an immediate impact on a fleet's carbon footprint without impacting performance or adding significant operational costs**. We ask that propane autogas school buses be included as an option in the state rebate program.**

Select school districts throughout Minnesota are successfully operating propane autogas school buses today. One example is Crosby-Ironton School District. They use their propane buses extensively for daily routes, special needs and extracurricular activities including long distance travel for field trips across the state and even up to Canada. Their fuel savings alone using propane are 67% versus diesel. Their transportation director states that between the overall savings on fuel and maintenance, the reliability and health benefits, "It's common sense. It just works."

[1] *Propane's Impact on Economy: 2018 Minnesota*, National Propane Gas Association, https://www.npga.org/wp-content/uploads/2020/06/Minnesota_Propane-1-Pager_2020.pdf

Clean American Energy: Propane burns cleanly, efficiently and has a low-carbon content.[2] It is nontoxic and non-polluting. As such, and unlike diesel, it presents no threat to soil, surface water or ground water.[3] Propane school buses reduce harmful NOx emissions by 96% compared to diesel buses.[4] Companies have produced propane engines that meet the California Air Resource Board's optional ultra-low NOx emission certification for engines. These engines are certified to a NOx emission standard of 0.02 grams per brake horsepower-hour and are 90 percent cleaner than current standards.[5]

Decarbonization: Even though vehicles have no tailpipes, they are not truly zero emission, as our bulk electricity sector is not zero emission. Fossil fuels, including coal, oil and natural gas, generate more than 48% of utility-scale electricity in Minnesota.[6] Our electric sector emits 861 pounds of carbon dioxide per megawatt-hour of electricity generated.[7] These emissions should be considered before pursuing an electric-only grant approach to vehicle fleet decarbonization.

Renewable Propane: The propane industry continues to make investments to increase production and consumption of renewable propane. Renewable propane is a by-product of renewable diesel production and can be derived from a variety of sustainable sources, such as biomass, animal fats and vegetable oils.[8] In addition to retaining all of the same environmentally friendly attributes as traditional propane, it has an even lower carbon intensity (CI).[9] Notably, the CI scores of both conventional and renewable propane are far lower than electricity in our state.

Performance & Operation: The benefits of expanding the program to include propane becomes even more clear when you consider that propane is noncorrosive, has a high-octane rating (104 to 112) and low oil-contamination characteristics, which reduce maintenance costs and prolong the life of an engine.[10] Critically, propane vehicles have the power and operating range required to meet the real-world demands of commercial transportation. Propane-powered vehicles have similar performance as those running on conventional fuels.[11] The amount of time required to refuel a propane vehicle mirrors gasoline and diesel.

Upfront Costs? The average cost of a propane autogas bus is significantly less than an electric bus. Propane buses cost about $100,000, while an electric bus costs between $325,000 and $375,000. And that's just the start. The cost to install refueling infrastructure for 10 propane autogas vehicles with a single 1,000- to 2,000-gallon tank is up to $60,000, including as much as $36,000 for site preparation and equipment, and up to $24,000 for installation.

In comparison, the cost to set up recharging infrastructure for 10 electric vehicles with five level 3 fast EV chargers is up to $480,000, including as much as $200,000 for site prep and equipment, and up to

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[2] *Carbon Dioxide Emissions Coefficients by Fuel*, U.S. Energy Information Administration, (Oct 5, 2022), https://www.eia.gov/environment/emissions/co2_vol_mass.php

[3] *Propane Fuel Basics*, Alternative Fuels Data Center, U.S. Department of Energy, https://afdc.energy.gov/fuels/propane_basics.html

[4] *In-Use Emissions and Performance Testing of Propane-Fueled Engines, PERC Docket 20893,* Ryskamp, R., West Virginia University, (June 11, 2019), https://cloudinary.propane.com/images/v1601044101/website-media/WVU-School-Bus-Emissions-Final-Report-June-2019/WVU-School-Bus-Emissions-Final-Report-June-2019.pdf?_i=AA

[5] *Optional Low NOx Certified Heavy-Duty Engines*, California Air Resources Board (2021), https://ww2.arb.ca.gov/sites/default/files/classic//msprog/onroad/optionnox/optional_low_nox_certified_hd_engines.pdf

[6] *Electricity Data Browser: 2021 Annual Minnesota*, U.S. Energy Information Administration, https://www.eia.gov/electricity/data/browser/#/topic/0?agg=2,0,1&fuel=vtvv&geo=000004&sec=008&freq=A&start=2021&end=2022&ctype=linechart&ltype=pin&rtype=s&maptype=0&rse=0&pin=

[7] *Minnesota Electricity Profile 2021*, U.S. Energy Information Administration, (November 10, 2022), https://www.eia.gov/electricity/state/minnesota/

[8] *Propane Production and Distribution*, Alternative Fuels Data Center, U.S. Department of Energy, https://afdc.energy.gov/fuels/propane_production.html

[9] *Staff Summary, Renewable Naphtha and Renewable Propane from Distillers' Corn Oil, Used Cooking Oil, and Rendered Animal Fat*, California Air Resources Board, (April 30, 2021), https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/b0189_summary.pdf

[10] *Where is Propane Used*, Natural Resources Canada, (December 19, 2018), https://natural-resources.canada.ca/energy-efficiency/transportation-alternative-fuels/alternative-fuels/propane/21611

[11] *Propane Basics*, Vehicle Technologies Program, U.S. Department of Energy, (March 2010), https://www.nrel.gov/docs/fy10osti/46996.pdf

$280,000 for installation. Unlike the propane autogas infrastructure, the electric infrastructure will most likely have additional costs for items like electric sub-panels, added amperage to power multiple stations, and upgrading and replacing incoming power lines. When you factor in the cost of a new vehicle, regardless of energy source and the costs for fuel, fluids, maintenance, and repairs over the lifetime of the vehicle, propane autogas has the lowest cost of any energy source.

Range on a Single Refuel or Recharge: An electric bus has a full driving range of about 120 miles on a single charge. Bear in mind that operating any electric feature while the vehicle is in use can diminish the driving range. This includes heat, air conditioning, windshield wipers, and the radio. In colder climates, this range will be adversely impacted. Propane autogas vehicles can provide a range of more than 400 miles on a single fill that takes less than 10 minutes, regardless of the weather.

We ask that you consider including propane autogas as part of the solution for Minnesota's school bus grant program. I am happy to discuss this matter further and work towards legislation that MPA can fully endorse. Thank you again for the opportunity to provide comments.

Sincerely,

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