OVERVIEW

This document outlines key messaging about school buses and the use of propane autogas and compressed natural gas (CNG) for school bus transportation. By using these talking points, we can ensure consistency and accuracy in our communications when reaching out to Clean Cities coordinators, state energy offices and other relevant parties regarding the VW funding allocations.

**GENERAL SCHOOL BUS FACTS**

**School buses are safe.**

* + - * School buses are the safest mode of transportation for getting children to and from school.
* School buses represent 25 percent of the miles traveled by students, but account for less than 4 percent of the injuries.
  + *(Source: Transportation Research Board, “The Relative Risks of School Travel: A National Perspective and Guidance for Local Community Risk Assessment,” TRB Special Report 269, Accessed 9/20/11)*

**School buses decrease traffic and emissions.**

* School buses keep cars off the road, decreasing both traffic congestion and fuel emissions.
  + *(Source: American School Bus Council)*
* Every school bus takes about 36 cars off the road, resulting in less traffic congestion and a reduced carbon footprint.

**CLEAN TECHNOLOGY SCHOOL BUS BENEFITS**

**Clean technology reduces harmful pollutants.**

* The Blue Bird Vision CNG Type C offering will be certified to a CARB-optional 0.10 NOx level. This is better than the federal 0.20 NOx level and are cleaner than “clean diesel” applications available today.
* Although the Blue Bird Vision propane offering is currently certified to 0.20 NOx level, it will be certified to a CARB-optional 0.05 NOx level at the next engine model year early 2017. This is better than the federal 0.20 NOx level and will be the cleanest engine offered in a school bus application.
* Switching school buses from pre-emission regulated diesel to improved clean technology decreases particulate and gaseous air pollutant and toxic emissions during transit, pick-up and drop-off, and idling.
  + *(Source: Am J Respir Crit Care Med. 2015 Jun 15;191(12):1413-21. doi: 10.1164/rccm.201410-1924OC. Adopting Clean Fuels and Technologies on School Buses. Pollution and Health Impacts in Children. Adar SD1, D'Souza J1, Sheppard L2,3, Kaufman JD2,4,5, Hallstrand TS4, Davey ME6, Sullivan JR2,Jahnke J7, Koenig J2, Larson TV2,8, Liu LJ2,6.)*

**Clean technology improves air around school children.**

* Decreasing pollutants and emissions significantly reduces children’s exposure to harmful emissions.
  + Less pollutants means improvements in respiratory health, like improved lung function and decreased school absenteeism.
  + This was especially observed in asthmatic children who are at a greater risk.
  + *(Source: Am J Respir Crit Care Med. 2015 Jun 15;191(12):1413-21. doi: 10.1164/rccm.201410-1924OC. Adopting Clean Fuels and Technologies on School Buses. Pollution and Health Impacts in Children. Adar SD1, D'Souza J1, Sheppard L2,3, Kaufman JD2,4,5, Hallstrand TS4, Davey ME6, Sullivan JR2,Jahnke J7, Koenig J2, Larson TV2,8, Liu LJ2,6.)*
* For more than a decade, elevated air pollution levels inside pre-emission regulated diesel school buses have been recognized as possibly affecting the health of the 25 million U.S. children who commute to school in these school buses each day.
  + *(Environ Sci Process Impacts. 2013 Oct;15(11):2030-7. doi: 10.1039/c3em00377a. The impact of an anti-idling campaign on outdoor air quality at four urban schools. Ryan PH1, Reponen T, Simmons M, Yermakov M, Sharkey K, Garland-Porter D, Eghbalnia C, Grinshpun SA.)*
* When inhaled by younger children whose lungs are still maturing and are particularly susceptible to these pollutants, the effects of pre-emissions regulated diesel bus discharges can be harmful. This effect has been studied and documented for the last 15 years, including by scientists commissioned by California Air Resources Board.
  + These studies have led the state of California to start replacing pre-emission regulated diesel buses with a variety of alternative-fueled school buses, including CNG and propane.

**PROPANE & CNG SCHOOL BUS BENEFITS**

**School buses powered by propane or CNG lower emissions.**

* Buses fueled by propane autogas emit fewer greenhouse gases and total hydrocarbon emissions. And, they virtually eliminate particulate matter when compared with pre-emission regulated diesel-powered buses.
* Vehicles fueled by propane autogas emit:
  + 60 percent reduction in nitrogen oxide emissions
  + 80 percent fewer smog-producing hydrocarbons
  + 100 percent reduction in particulate matter
* Compressed natural gas is a low carbon fuel. Fueling with CNG significantly lowers greenhouse gas emissions and other harmful emissions compared to petroleum fuels.
* When compared to petroleum fuels, natural gas lowers carbon dioxides by 27 percent and nitrogen oxides by 95 percent.

**Propane- and CNG-fueled school buses make economic sense.**

* Both CNG and propane provide school districts with a fueling method to achieve clean-operating school buses without sacrificing their maintenance budgets. Neither CNG nor propane requires expensive after-treatment systems required by diesel school buses.
* Blue Bird’s Ford/ROUSH CleanTech propane school bus offers the best total cost of ownership of any school bus on the road today. Over the total bus ownership, school districts experience significant savings with propane buses compared to their diesel counterparts.
* CNG and propane autogas cost significantly less per gallon versus gasoline and diesel.

**PROPANE FACTS**

* Propane autogas is a nontoxic, non-carcinogenic and non-corrosive fuel.
* Propane autogas is the leading alternative fuel in the United States and the third most commonly used vehicle fuel, following gasoline and diesel.
* More than 90 percent of the United States propane autogas supply is produced domestically, with an additional 7 percent from Canada.
* More than 25 million vehicles travel worldwide with propane autogas in their fuel tank. This includes school buses, shuttle buses, taxis, delivery vans, construction trucks, paratransit vehicles and more.
* For more than 30 years, the cost of propane autogas has been, on average, 40 to 50 percent less than the cost of diesel.
* Propane autogas vehicle fuel tanks are 20 times more puncture-resistant than gasoline or diesel tanks. They are constructed from carbon steel in compliance with the American Society of Mechanical Engineers.
* Propane buses offer maintenance savings — about 20 percent less oil required per year, with no exhaust gas recirculation, diesel particulate filter, regeneration or diesel exhaust fluid necessary.
* Buses fueled by propane autogas reduce noise levels by about 50 percent when compared to buses fueled by diesel.

**CNG FACTS**

* Compressed natural gas is a safe, domestically produced fuel. School districts choose CNG-fueled buses because of economics, energy security and environmental factors.
* Historically, the cost of CNG is 40 to 50 percent less than gasoline, and 60 percent less than diesel, when compared on a gallon equivalent measure.
* CNG buses offer maintenance savings — about 20 percent less oil required per year, with no exhaust gas recirculation, diesel particulate filter, regeneration or diesel exhaust fluid necessary.
* Natural gas production is expected to increase by 56 percent over the next two decades in the U.S.
* Buses fueled by CNG reduce noise levels by about 50 percent when compared to buses fueled by diesel.

**BLUE BIRD FACTS**

* Blue Bird has manufactured and sold more than 550,000 buses since in 1927.
* There are approximately 180,000 Blue Bird buses in operation today.
* There are over 9,500 Blue Bird buses fueled by propane in operation today in more than 600 school districts.

**ROUSH CLEANTECH FACTS**

* ROUSH CleanTech designs, engineers, manufactures and installs state of the art propane autogas fuel systems for Ford commercial vehicles and Blue Bird school buses.
* With more products available, an increased customer base and corporate growth from six to 90 employees since 2010, ROUSH CleanTech is one of the most rapidly growing companies in the alternative fuels and vehicle technology industries.
* ROUSH CleanTech has deployed almost 11,000 Ford trucks and vans and Blue Bird school buses fueled by propane autogas to fleets across America.

**For More Information:**

Propane Education & Research Council: [www.propane.com](http://www.propane.com)

American Gas Association: [www.aga.org](http://www.aga.org)