

WELCOME



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CLEANTECH



BLUE BIRD[®]

October 2023

Have you seen any of these on the road?

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ROUSHcleantech.com | 800.59.ROUSH

...rolling around your community

ROUSH[®]
CLEANTECH



10+ Year Partnership

ROUSH[®]
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- Exclusive partnership
- OEM propane build



BLUE BIRD[®]

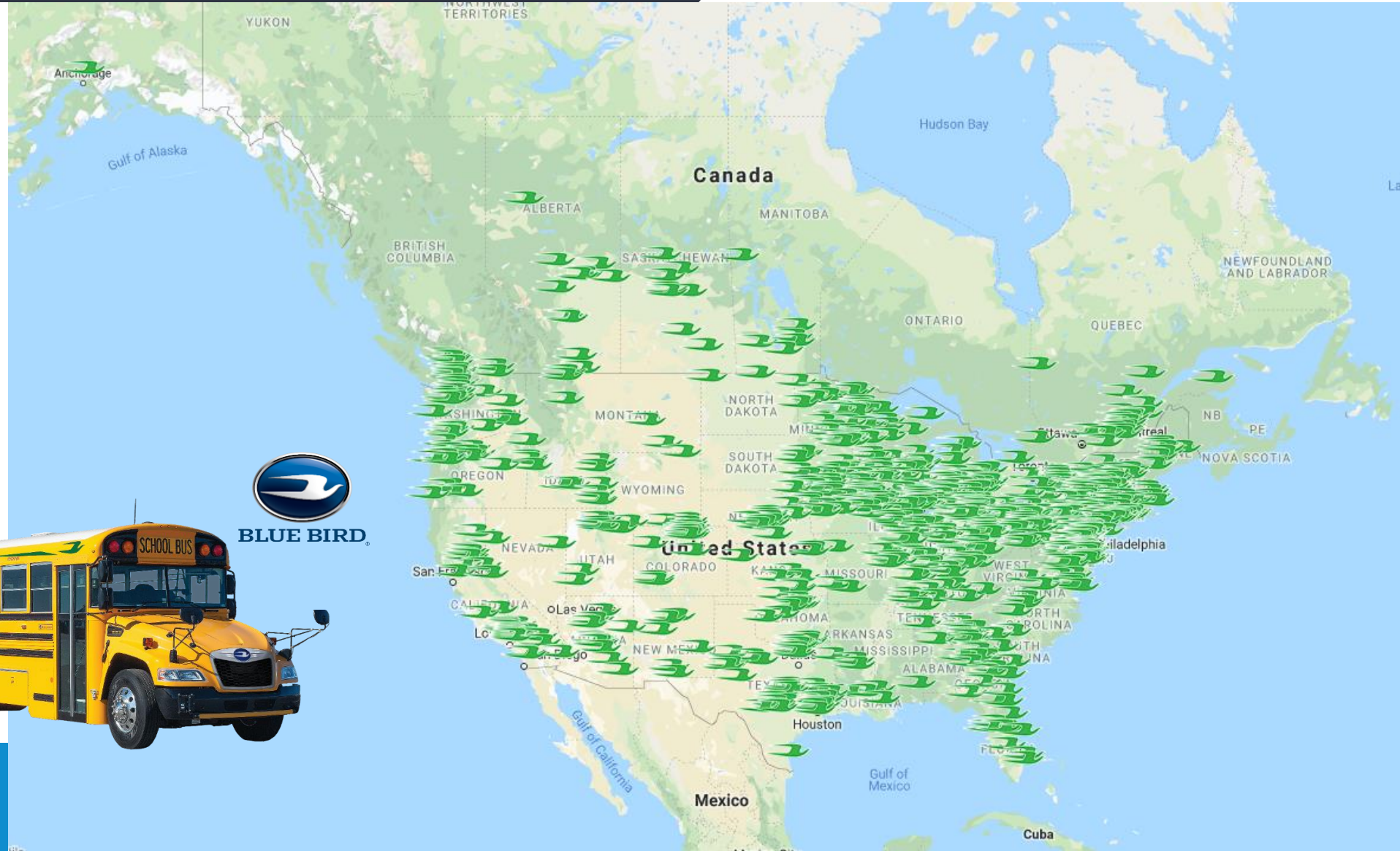


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Propane School Bus Deployments

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More than
20,000
on the road



How are Propane Buses Delivered?

ROUSH
CLEANTECH



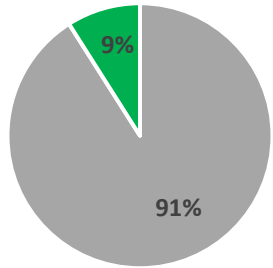
They're driven.

To every customer.

Disruptive Growth in Alt Fuels

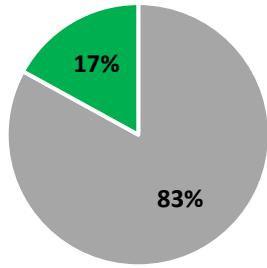


FY 2012



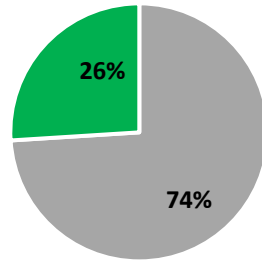
9%

FY 2014



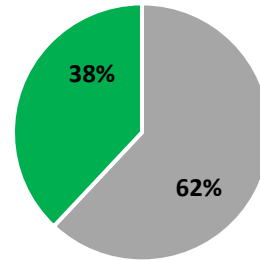
17%

FY 2016



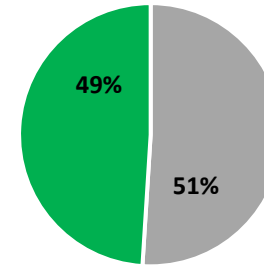
26%

FY 2018



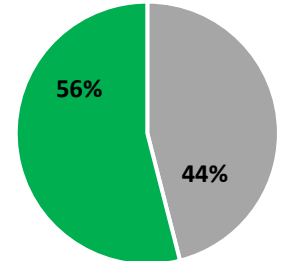
38%

FY 2019



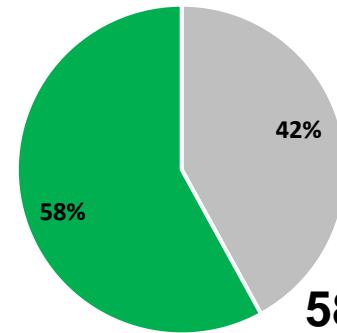
49%

FY 2021



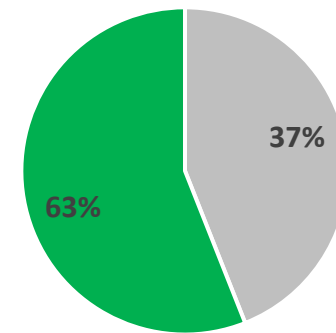
56%

FY2022



58%

FY2023





63%



Top 100 School Districts Adoption



 Propane buses
 Gasoline buses

32%

of the largest 100 school district fleets in the country operate a **Blue Bird propane school bus**



Fleet Viewpoint

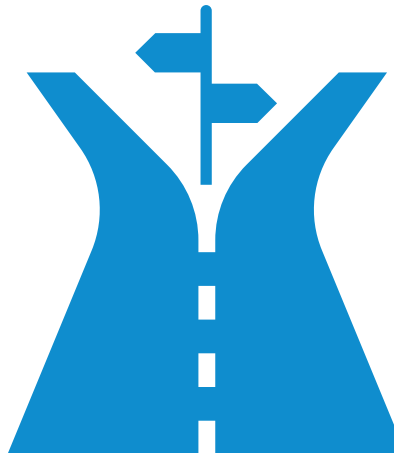


Diesel / Gasoline

PROS	CONS
Familiar	Increasing complexity
Infrastructure in place	Volatile fuel price / scarcity
Low capital cost	No environmental aspect

EV / Fuel Cell

PROS	CONS
Environmental aspect	High capital cost
Funding availability	Duty cycle limitations
Low operational cost	Infrastructure / charging / personnel

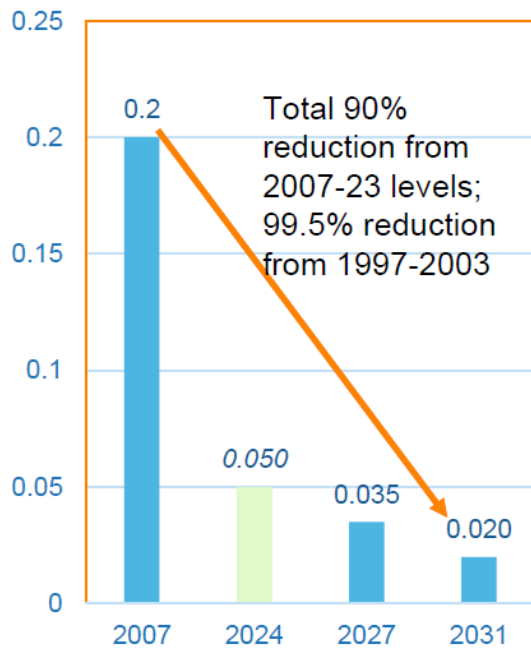


Blue Bird/ROUSH Gen 5 Propane: Future Proof for Emissions



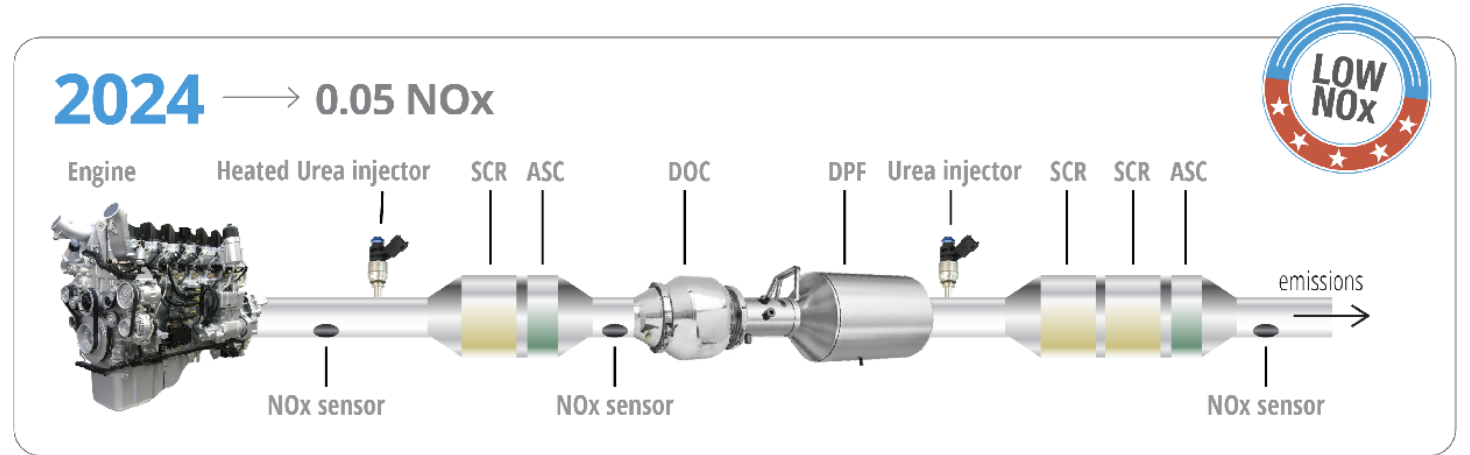
California Air Resource Board Heavy Duty Engine and Vehicle Omnibus Regulations passed into law in 2021

Projected NOx Standards

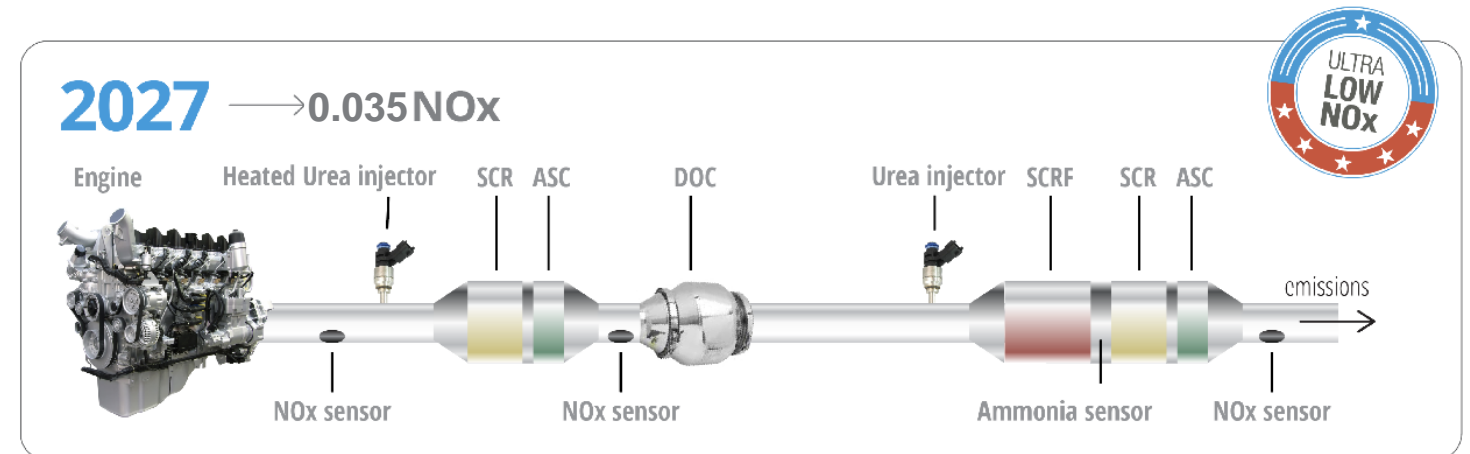


Source: "ESTIMATED COST OF DIESEL EMISSIONS-CONTROL TECHNOLOGY TO MEET FUTURE CALIFORNIA LOW NOx STANDARDS IN 2024 AND 2027"

https://www.roushcleantech.com/The_Future_of_Emissions_February_2022.pdf



ROUSH CleanTech's propane autogas vehicles meet CARB's 2024 standard.



ROUSH CleanTech's propane autogas vehicles meet CARB's 2027 standard.

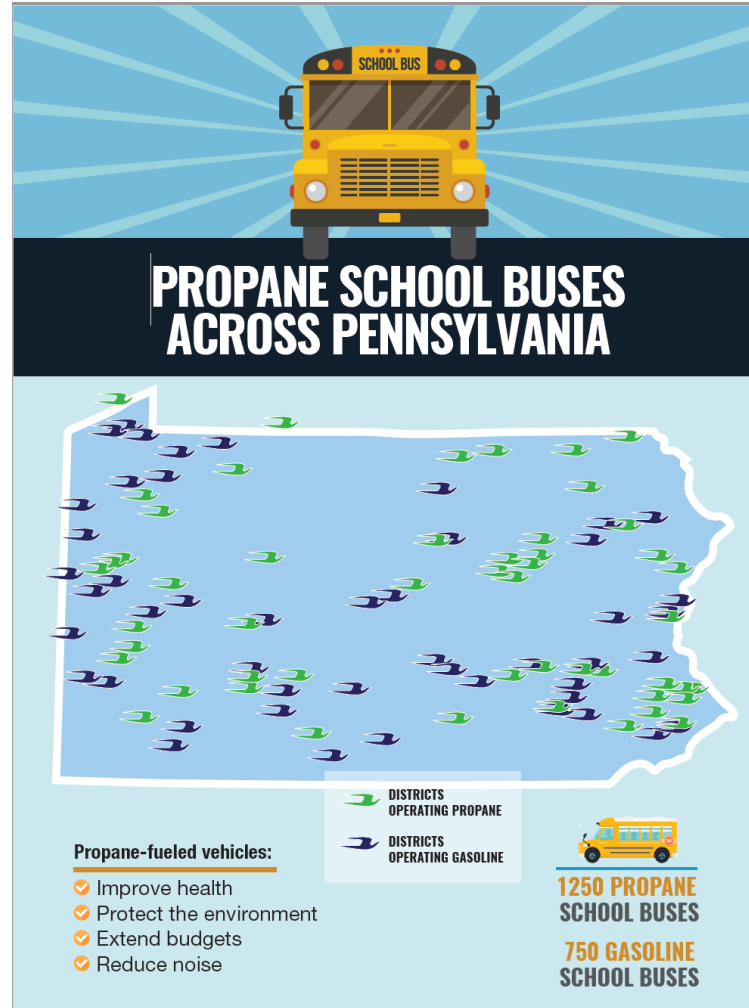
Roush 7.3L Propane Emissions



Emission Constituent	Blue Bird Vision 7.3 LPG
NOx (Nitrogen Oxides)	0.021
HCHO (Formaldehyde)	0.00
PM (Particulate Matter)	0.002
NMHC (Non-Methane Hydrocarbons)	.051
CO (Carbon Monoxide)	5.85
Greenhouse Gas Emissions	
GHG Carbon Dioxide (CO ₂)	545
GHG Methane (CH ₄)	0.032
GHG Nitrous Oxide (N ₂ O)	0.02

- Average: **70% cleaner** than federal emission standards
- Meaningful impact now, without the need for grant funding

Blue Bird / ROUSH PA Deployments





CASE STUDY: North Penn School District, Lansdale, Pennsylvania

The Challenge

In 2019, North Penn School District began a massive overhaul of its aging, costly diesel school bus fleet. Charged with the goal of finding a fuel that would reduce fuel and maintenance costs, improve the district's environmental impact and provide a quieter, healthier ride for students and drivers, leadership determined that propane autogas was the best fit for the school district. Today, the district has transitioned 50% of its fleet to propane, enjoys a 75% savings on fuel and has received more than \$800,000 in supplemental funding.

Why Propane Autogas?

According to the district, it's:

- ⊙ Safe.
- ⊙ Energy efficient.
- ⊙ Domestically produced.
- ⊙ Budget-friendly.

"At \$2.66 less per gallon than our diesel buses, the fuel savings with our propane buses is second to none." – Dennis Ryan, coordinator of transportation

By the Numbers

<p>13,000 students travel safely to 68 schools.</p>	<p>97 Blue Bird Vision propane buses travel 9,000 miles per year per bus.</p>	<p>76% of routes operate on propane power.</p>	<p>Over \$800,000 in infrastructure funding through grants and credits.</p>	<p>75% savings on fuel.</p>
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CASE STUDY: North Penn School District



The Bigger Picture

North Penn School District joined more than 1,000 school districts across the U.S. in switching to the most widely used alternative fuel for school buses: propane autogas. Not only has the district recognized significant fuel savings, it has drastically reduced maintenance service and costs due to propane's clean operation.

"Our old fleet consistently is being replaced by propane buses every year. Everything from fueling to serviceability makes propane the right choice for us," said Dennis Ryan, the district's coordinator of transportation.

Second-to-None Savings

Diesel rate: \$3.58 per gallon.

Propane rate: \$.92 per gallon.
(2022 fuel rates)



FOR MORE INFORMATION
ROUSHcleantech.com 800.59.ROUSH

Did You Know?



More than 35%

of the nation's largest school districts operate propane buses powered by ROUSH Clean Tech's advanced clean fuel system.



1.3 million students travel to school in a propane bus each day.

Propane autogas engine technology is so advanced that **harmful emissions are near zero.**



Propane autogas offers the **lowest total cost of ownership** when compared to electric vehicles.



Alternative fuel **tax credits** have been extended through 2024. Propane has a \$0.37 per gallon tax credit.

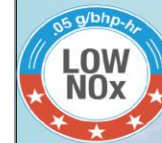


UPPER MORELAND SCHOOL DISTRICT



Case Study:

In 2016, Upper Moreland School District did a complete overhaul of their school bus fleet, converting to 100% propane. In addition to the projected savings, the buses will burn cleaner due to the low NOx engine.



The Facts:

35 propane-powered

Blue Bird school buses

\$77,000

In fuel cost savings

\$155,439

In maintenance savings

Additional Benefits:

- Current safety features
- Less engine noise
- Less oil required

50,000 gallons

Of diesel fuel displaced

10,000 gallons

Of gasoline displaced

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Thank you

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