

Which Road to Take?

Choosing the right road to lower emissions today:
Use the best alternative fuel choice for the purpose...
on and off road.

Two Different Paths

States are working to improve air quality and reduce transportation emissions using different approaches. While it once embraced a variety of vehicle technologies, California now has decidedly taken a zero-emission vehicle-only approach, dramatically raising its costs as most medium- and heavy-duty ZEV technology remains in development stage and is cost-prohibitive. Texas, on the other hand, advances a market-based solution, allowing fleets to choose the most efficient and cost-effective clean powertrain - including natural gas vehicles (NGVs) - that meets their application needs and addresses their sustainability targets.

Which is more effective and cost efficient? Compared to California's ZEV-only focus, the Texas approach results in less money spent + more clean HD trucks and buses on the road + greater emissions reductions.

	Texas	California	Result
On-Road Funds Spent	\$561 million	\$816 million	CA spent 46% more
NOx Reduced	61,610 tons	35,299 tons	CA accomplished 43% less
Total # of Investment Years (2005-19)	15 years	15 years	TX reduced more emissions while spending less

Texas focused on replacing older, dirtier medium- and heavy-duty diesel trucks with newer, cleaner CNG, LNG, LPG, diesel, and diesel hybrid alternatives. Overall, Texas spent 31% less money on more heavy-duty vehicles and reduced 75% more harmful NOx emissions than California.

California focused its funding on medium- and heavy-duty battery electric vehicle test projects. As a result, California spent 46% more money overall and reduced 43% less NOx emissions than Texas.

Note: Texas data collected from the Texas Commission on Environmental Quality (TCEQ) and includes analysis of its Texas Emissions Reduction Program (TERP) funding - Diesel Emissions Reduction Incentive (DERI), Texas Clean Fleet, Natural Gas Vehicle Grant, Seaport and Rail Yard Areas Emission Reduction (SPRY), and Texas Clean School Bus Programs. California data collected from the California Air Resources Board (CARB) and California Energy Commission (CEC) and includes analysis of its Carl Moyer, California Hybrid and Zero-Emission Truck and Bus Voucher Incentive (HVIP), and CEC Clean Transportation Programs. Since California does not track NOx reductions for its HVIP and CEC funding, the U.S. DOE AFLEET emissions calculator was used to estimate. Analysis made on available Texas and California data from 2005-2019.

✓ **From 2006 to 2013**, California reported annual NOx emissions of 160,000 tons per year. Since that time - and despite its increased ZEV-focused investment - California's annual emissions have increased to about 175,000 tons per year.

Source: "Assessing California's Climate Policies - Transportation," California Legislative Analyst's Office, December 2018

✓ **Since 2000**, Texas has reduced NOx emissions by 69% to about 250,000 tons per year today. During the same time period, its population increased by 35%.

Source: Texas Commission on Environmental Quality, 2020

Invest in NGVs fueled with RNG:

Spend Less. Get More Clean Trucks on Our Roads Today.
Achieve Clean Air and Eliminate Vehicle GHG Emissions Immediately.
Learn more at NGVAmerica.org.

NGVAMERICA
Natural Gas Vehicles for America

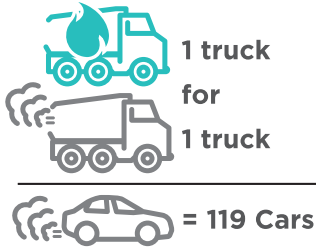
Why Invest in Trucks?



✓ Cleaner Air is Needed Now

Close to 5 out of every 10 Americans live in areas with air that is unhealthy to breathe... 150 million Americans!

Source: American Lung Association, 2020



✓ Heavy-Duty = Heavy Impact

Replacing 1 traditional diesel-burning heavy-duty truck with 1 new Ultra Low-NOx natural gas heavy-duty truck is the emissions equivalent of removing 119 traditional combustion engine cars off our roads.

Source: https://greet.es.anl.gov/afleet_tool

Unlike trucks and buses, passenger vehicles sit unused 95% of the time.

✓ Cleaner Air Starts with Cleaner Trucks

Heavy-duty trucks and buses are the #1 sources of urban emissions.

Build on Success

Texas continues its clean air achievement by supporting vehicle choice and an “all of the above” approach” to alternative fuel vehicle technologies. As Texas begins to add renewable natural gas (RNG) to its natural gas vehicle investments, Texas is creating actual carbon-free fleet solutions today.

While supportive of increased RNG production capacity, California is moving to limit the best use of this captured biomethane – as a transportation fuel – by supporting only ZEV purchases that require massive amounts of public funding to subsidize. NGVs fueled with RNG are the most immediate and cost-effective carbon-free transportation solution available now.

✓ Drive a Truck, Not a Science Project

Proven and Certified Solutions for Every Vehicle Class

Natural gas is impacting vehicles in every class and application... at airports and ports, with short- and long-haul freight delivery, in public transit and school transportation, and through municipal services and refuse and recycling collection.

Off-road applications in marine, rail, and construction are also impacting our air and climate.

See more at www.ngvamerica.org/vehicles/

✓ Go Carbon-Free Now with Renewable Natural Gas

Fueling with renewable natural gas (biomethane) collected at local landfills, wastewater treatment plants, commercial food waste facilities, and agricultural digesters can yield a carbon-negative lifecycle emissions transportation result.

Renewable natural gas (RNG) holds the lowest carbon intensity of any on-road vehicle fuel, including fully renewable electric.

Source: California Air Resources Board, LCFS Program Certified Fuel Pathways, 2020



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