SKYCNG

NATURAL GAS BI-FUEL VEHICLES

A COST-EFFECTIVE, LOWER EMISSION ALTERNATIVE TO ELECTRIC VEHICLE TECHNOLOGY

BOB BARBA CEO

FEBRUARY 2021

SKYCNG

THE EMISSIONS CHALLENGE

LOS ANGELES,CA BEFORE AND DURING COVID-19 SHUTDOWN

SKYCNG

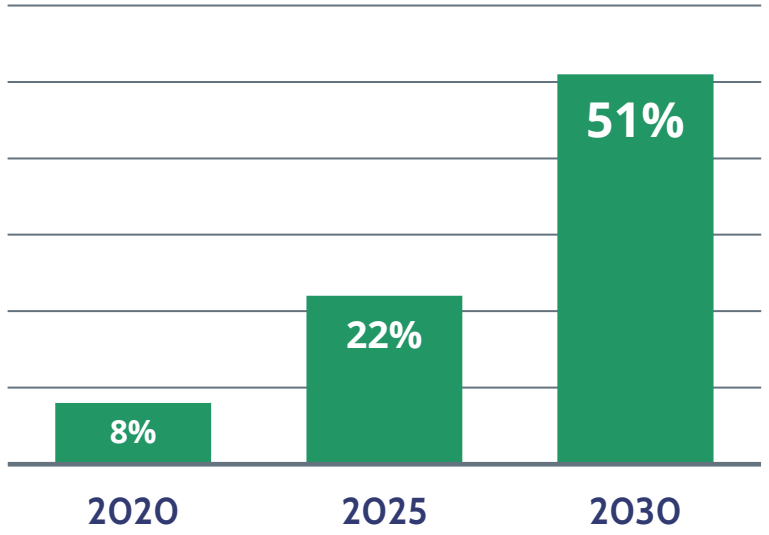
ELECTRIC VEHICLES TO THE RESCUE?

$ 300 BILLION

AUTOMAKERS ARE INVESTING

Over $300 billion has been committed by major automakers to producing over 100 different electric vehicles

100+ EV MODELS



GLOBAL NEW VEHICLE SALES

BCG forecasts over 50% of global new vehicle sales will be EVs by 2030

BUT WILL IT HELP?

EVs only reduce emissions if they are powered by low-carbon electricity.

NATURAL GAS TO THE RESCUE!

NATURAL GAS VEHICLES

- ★ Lowest cost option
- ★ Fuel is abundant, cheap, and 100% North American
- ★ Technology is available now!

ELECTRIC VEHICLES

- ▪ Excessively expensive
- ▪ Most battery components come from outside the USA
- ▪ Still being developed & matured – currently not scalable/sustainable

SKYCNG

ACTUAL CARBON FOOTPRINTS

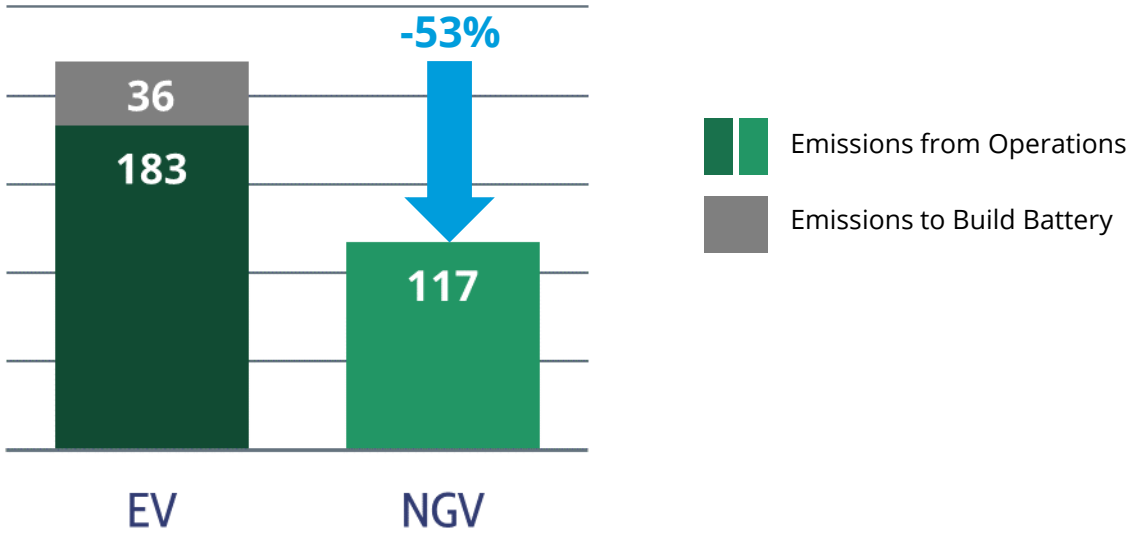
66%

BUYING INTO A DREAM?

66% of EV buyers cite lower carbon footprint as a key factor in justifying paying more for their vehicle.

POUNDS OF CARBON to deliver 1 MMBTU of energy to the vehicle

(8.1 GGE or 7.2 DGE per MMBTU)



ELECTRIC VEHICLE

Powered by typical US generation mix, including coal (~20%) and natural gas (~38%), which generate carbon emissions, and typical grid transmission losses.

Most renewable sources require natural gas backup at night or during low wind conditions – and will until grid-scale storage matures.

NATURAL GAS VEHICLE

Powered by 100% CNG.

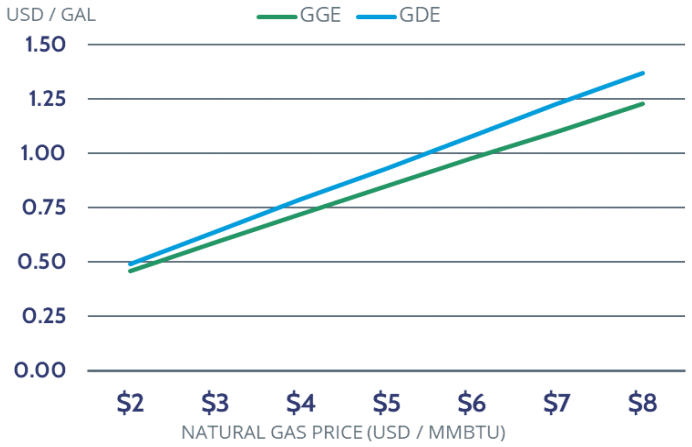
Achieves 53% lower carbon footprint at much lower cost.

SKYCNG

ABUNDANT AND AFFORDABLE

COST TO PRODUCE & COMPRESS

one gallon of gasoline equivalent (**GGE**)
or gallon of diesel equivalent (**GDE**)



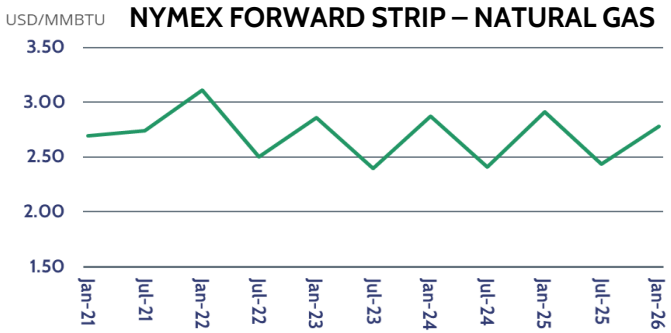
$2/GAL

PRICE AT THE PUMP

CNG distributors are recovering their investment in new distribution infrastructure, which accounts for the ~$2/GGE pump price. Nevertheless, this is competitive with todays historically low gasoline prices and will yield significant cost savings as oil and gasoline prices rise.

LOW PRICES FOR A LONG TIME

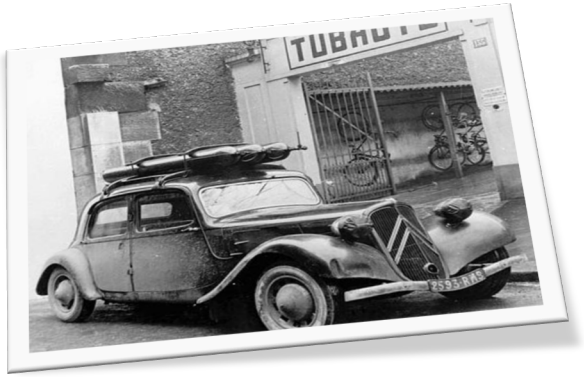
With over 100 years' gas supply in North America, prices are expected to remain <$3/MMBTU for years, locking in a low supply cost for CNG.



SKYCNG

PROVEN TECHNOLOGY

HOLLAND 1920s



FRANCE 1940s

FAVORABLE FACTS

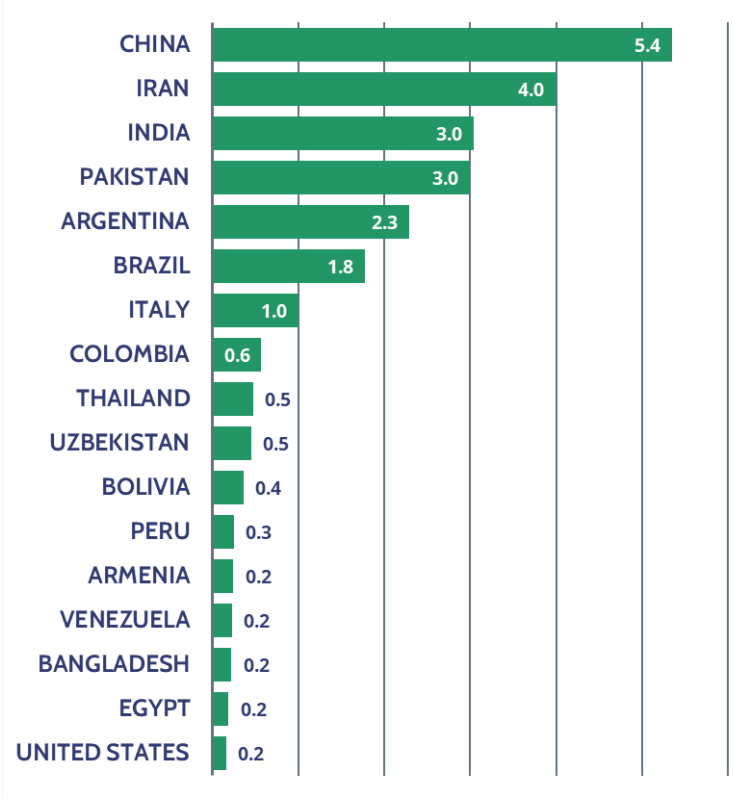
Most engines can be converted to run on both gasoline and compressed natural gas (CNG) – a convenient bi-fuel solution.

North America has a **100+ year supply** of natural gas.

Increasing CNG usage from 0.65% to 5% of the US vehicle fleet would generate **10 bcf/d** in new demand – supporting existing jobs and businesses.

This is not an unreasonable goal, given the forecast market share for more expensive EVs.

NATURAL GAS VEHICLES in operation



SKYCNG

EXAMPLE: CITY BUSES

SOURCE: NGVAMERICA STUDY

TOTAL COST OF OWNERSHIP

On a total cost basis, which includes capital and operating costs, CNG buses are cheaper to operate than either diesel or battery electric alternatives.

	DIESEL	CNG	ELECTRIC
CAPITAL COST OF BUS	$ 476,000	$ 544,000	$ 753,000
INFRASTRUCTURE	$ 3,886	$ 35,076	$ 44,127
OPERATION & MAINTENANCE	$ 506,459	$ 370,305	$ 244,815
TOTAL COST	$ 986,345	$ 949,381	$ 1,041,942
COST PER MILE	$ 2.42	**$ 2.33**	$ 2.55

EMISSIONS REDUCTION

Transit buses favorably impact emissions – regardless of fuel type – by reducing vehicles miles traveled and reducing urban congestion. However, when including electricity generation sources, CNG outperforms electric alternatives.

	DIESEL	CNG	ELECTRIC
CARBON INTENSITY	100.45	**79.21**	81.49
NO_X REDUCTION	--	**94,800 lbs**	62,738 lbs
GHG REDUCTION	--	**26,045 tons**	14,600 tons

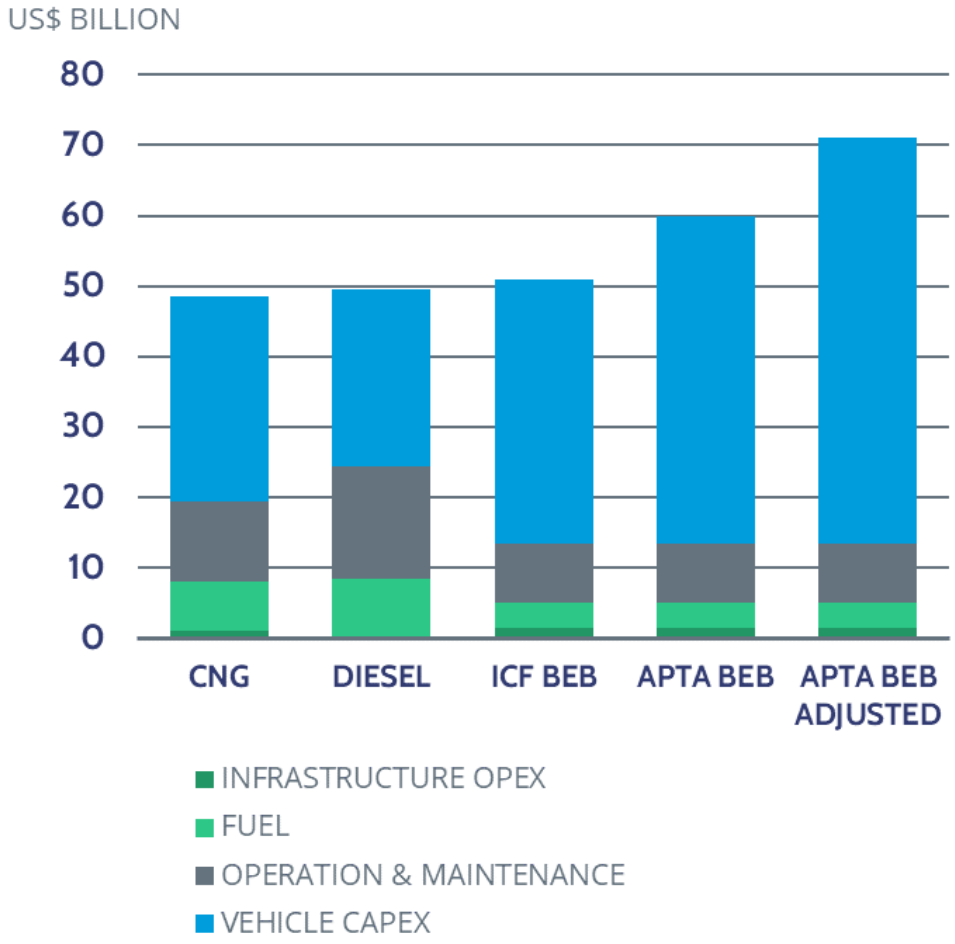
SKYCNG

EXAMPLE: CITY BUSES

SOURCE: NGVAMERICA STUDY

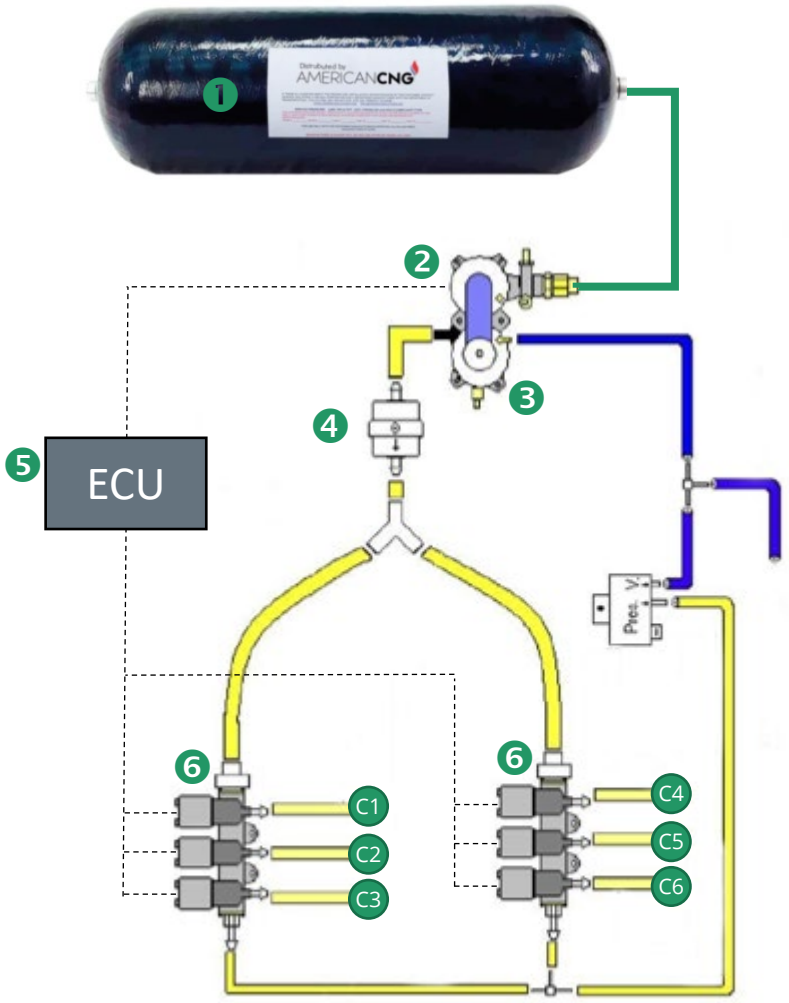
50,000 BUS FLEET REPLACEMENT

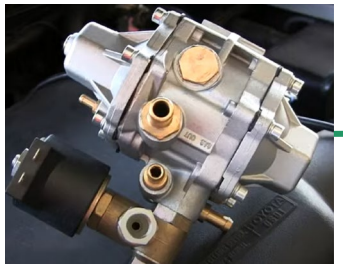
Converting diesel buses to CNG nationwide would **save over $20 billion** compared to replacing them with battery electric buses.

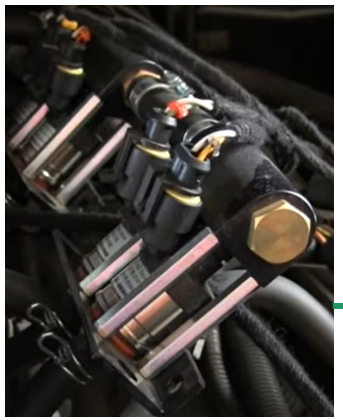


SKYCNG

CNG CONVERSION KIT







1. **CNG CYLINDER** Stores CNG fuel. Typical capacity of 20.7 gallons of gasoline equivalent
2. **REDUCER** Regulates CNG supply pressure from tank (3,600psi) to 35-40psi
3. **COOLANT** Engine cooling fluid is used to prevent reducer from freezing – vehicle switches from gasoline to CNG once engine has warmed up
4. **FUEL FILTER**
5. **ENGINE CONTROL UNIT** (ECU) Works with vehicle powertrain control module to optimize fuel flow and minimize emissions without tampering with existing emission controls, as per EPA guidelines.
6. **INJECTOR RAILS** Dual rails distributing fuel between individual injectors

C1 C2 C3 C4 C5 C6 **INJECTORS** Threaded into intake manifold

OUR VISION

EDUCATE

Educate vehicle and engine operators on fuel-related emissions, sources of electricity, and the availability and sustainability of CNG fuel and conversion kits as a cost-effective way to lower emissions.

CONVERT

Convert as many commercial vehicles as possible to run on CNG.

SUPPORT

Provide conversion options for as many different types of engines and vehicles as possible, either in-house or through a network of preferred suppliers and installers.

IMPACT

Make a significant positive environmental and financial impact by facilitating the conversion of personal, commercial, and industrial vehicles and equipment to CNG fuel.

BOB BARBA OWNER & CEO

39 years oil and gas industry experience

Developed new products for Schlumberger (FracHite, QLA)

Completion efficiency process for conventional reservoir performance analysis (SPE 90483)

Recovery factor process for organic shale re-frac optimization (SPE 174994, SPE 201777)

Extreme Limited Entry re-frac process integration with expandable liners (SPE 195962)

100+ reservoir studies yielding in-depth understanding of substantial US gas supply potential

Oil and gas operator who was paying people to take gas from his leases – a motivator for acquiring SkyCNG

FOR MORE INFORMATION

ADMIN@SKYCNG.COM

+1 (713) 823-8602

WWW.SKYCNG.COM

WWW.LINKEDIN.COM/COMPANY/SKYCNG

WWW.YOUTUBE.COM/USER/SKYCNG