



# NGV TODAY

YOUR SOURCE FOR NATURAL GAS VEHICLE MARKETS, TECHNOLOGY AND POLICY

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LEADING NEWS

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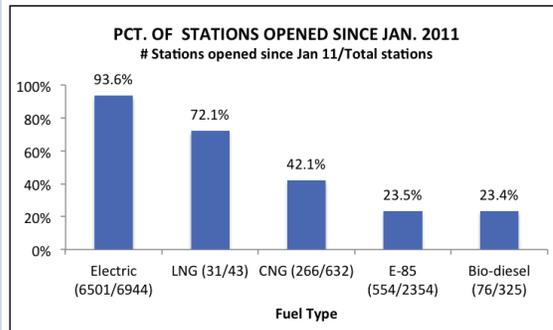
### Pump action – NGVs on the Alternative Fueled Vehicle leaderboard

The Energy Policy Act of 1992 encouraged development of vehicles using alternative fuels with the goal of improving air quality and reducing petroleum consumption in the U.S. Deployment of alternative fueled vehicles has come to revolve primarily around six fuels: natural gas, electricity, propane, bio-diesel, hydrogen, and E-85, a blend of at least 85 percent alcohol and gasoline.

Here's a snapshot of where natural gas vehicles stand today in comparison to these other alternative fuels in terms of the trajectory of infrastructure development and vehicle deployment.

#### NGV fueling station stock is new and getting newer

The chart below details the number of public access AFV fueling stations opened since Jan. 1, 2011 as a percentage of all open public access fueling stations for five alternative fuels. The 31 public LNG stations opened since Jan. 2011 account for 72.1 percent of open public LNG stations. The 266 public access CNG stations that have opened since Jan. 2011 account for 42.1 percent of all U.S. public CNG stations. Taken together, 44 percent of public access CNG and LNG fueling stations opened less than three years ago. The nation's network of LNG and CNG stations is newer than its network of E-85 and bio-diesel stations although not as new as the U.S. electric vehicle charging network: 93.6 percent of U.S. EV charging stations have opened since the start of 2011. The data is drawn from the U.S. Department of Energy's Alternative Fuels Data Center (AFDC), whose records on the opening dates of propane stations is incomplete, so propane stations are not included on the chart. There are 10 public hydrogen stations in the U.S. today, five of which have opened since Jan. 2011.



As seen in the next table there have been an average of 7.6 public CNG stations opened monthly to since Jan. 2011. For LNG stations, the figure is almost 1 station per month. This compares to an average monthly opening of 185.7 EV charging installations and 15.8 E-85 stations and 2.2 bio-diesel stations. (Continued on page 2)

### T. Boone Pickens weighs in on Oregon utility's bid to offer compressing services

As NGV Today has been reporting, a brawl has been underway in Oregon over [a filing Northwest Natural Gas \(NWN\) has made with the Oregon Public Utilities Commission to offer compressing services at third-party customer locations and retail CNG to the public \(p. 8\)](#). The utility's filing has received support from [TriMet, the transit agency serving metropolitan Portland that is evaluating the purchase of 120 CNG buses \(p. 7\)](#), the Oregon Trucking Association; the Northwest Gas Association, the Columbia Willamette Clean Cities Coalition, which earlier this year released a white paper calling for a minimum of 40 public access CNG stations to be built along highway corridors in Oregon by 2022, and others. Opposing the filing are Clean Energy Fuels; Trillium CNG; Blu LNG; TruStar Energy; Kwik Trip Incorporated; and others, contending that if allowed entry into the compressing services space, NWN will enjoy unfair competitive advantages due to its status as a regulated utility and monopoly supplier of natural gas in its service territory.

T. Boone Pickens, CEO of BP Capital and Clean Energy Fuels largest shareholder and author of the Pickens Plan has weighed in with an op-ed in the Statesman Journal, the newspaper serving Oregon's capital city, Salem. Here are some excerpts from the Pickens' op-ed, the full content of which can be read [here](#):

"Unfortunately, Northwest Natural (NWN) – the natural gas utility – is petitioning the Public Utility Commission to allow the company to expand its monopoly beyond delivery of natural gas to homes and businesses to the operation of compressed natural gas (CNG) vehicle fueling stations – a prospect Oregonians should view with great skepticism."

"For most companies, investment decisions are critical to success or failure. But NWN is protected from risk by the safety net of its ratepayers." (Continued on page 3)

## Pump action - NGVs on Alternative Fueled Vehicle growth leaderboard (Continued)

Fueling Station Openings per Month Since 1/11	
Fuel Type	Openings per month
Electric	185.7
E-85	15.8
CNG	7.6
LNG	0.9
Bio-diesel	2.2

Source: U.S. Department of Energy Alternative Fuels Data Center. AFDC data is incomplete on station opening dates for propane stations.

As a general rule, AFV stations open for business as soon as they are completed. However there is something of an anomaly in effect with regard to LNG stations right now. Clean Energy Fuels (CLNE) installed public access LNG fueling infrastructure at about 70 stations last year as part of its America’s Natural Gas Highway plan and has installed or is in the process of installing LNG fueling at another 30 to 50 locations this year. However most of the stations at which CLNE has installed LNG fueling have yet to begin dispensing the fuel; they will open when sufficient demand for their fuel develops. If the 70 LNG stations CLNE installed last year were now open and added to the CNG station inventory, stations built since Jan. 2011 would account for half (49.2 percent) of all public access NGV stations. Based on this metric, NGVs are carving out a space in the AFV hierarchy at a pace second only to that of electric vehicles.

### Comparing AFV growth projections

NGVAmerica estimates that there are about 135,000 dedicated bi-fuel or dual-fuel NGVs operating in the U.S. According to [Navigant Research](#), sales of light-duty CNG vehicles are projected to grow to 50,672 in 2020 from 19,324 in 2013 and sales of medium- and heavy-duty CNG vehicles to 25,340 from 8,313 during this same period. Sales of LNG trucks should reach 4,227 in 2020, up from 304 in 2013. The Electric Drive Transportation Association says there are more than 2.3 million light-duty hybrid-electric vehicles (HEV) on the nation’s roads and about 150,000 plug-in EVs (PEV). Navigant projects that sales of light-duty HEVs will grow to 1,010,405 in 2020 from 502,376 today and for light-duty PEVs, to 341,413 in 2020 from 89,301 today. The Renewable Fuels Association estimates that there

are 16 million flex-fuel vehicles in the U.S. that can fuel on E-85. Beginning with model year 2012 vehicles, the Big Three automakers committed to having half of the vehicles they produce capable of running on E-85. However most owners of flex-fuel vehicles are unaware that these vehicles can run on E-85 or for other reasons, fuel with gasoline. Estimates of the number of on-the-road propane vehicles in the US are at about 150,000. [Consulting firm ICF projects that sales of propane vehicles will increase to about 40,000 per year in 2020](#) from 5,000 in 2011. These figures suggest that the number of light-duty CNG vehicles in 2020 will be 162 percent higher than sales in 2013 with the corresponding number for medium- and heavy-duty CNG vehicles at 205 percent. For LNG vehicles, sales in 2020 will be 1,290 percent of 2013 levels. The corresponding number for light-duty HEV, PEV and propane vehicles can be seen in the table.

Sales Growth Projections for Alternative Fueled Vehicles			
Vehicle Type	Sales 2013	Sales 2020	Increase
LD CNG	19,324	50,672	162%
MD/HD CNG	8,313	25,340	205%
MD/HD LNG	304	4,227	1,290%
LD HEV	502,376	1,010,405	101%
LD PEV	89,301	341,413	292%
Propane	5,000 (2011)	40,000	700%

### NGV fueling is more expensive than other AFV fueling

[With the possible exception of hydrogen fueling and very large EV fast-charge installations](#), CNG and LNG fueling are the most expensive types of public access AFV fueling infrastructure to install. Improvements in compressing, storage, and other technologies are helping to lower the cost of NGV fueling and the cost of providing fueling varies depending on a number of factors including the number of vehicles to be fueled and volume to be dispensed, how much compressor redundancy is desired for system reliability and the cost of gas distribution pipeline improvements and extensions for CNG stations, and for LNG stations, the logistics of accessing a source of liquefied natural gas. But spending a minimum of \$1 million to install fast-fill public access CNG fueling is not unusual while LNG fueling installations can cost \$2 million to \$3 million on up. Installing E-85 and bio-diesel infrastructure at a station costs about the same as installing conventional diesel or gasoline fueling infrastructure and propane can cost even less.

Unlike CNG and LNG fueling, EV charging does not require large-scale investment in central station infrastructure such as expensive compressors and storage tanks. The typical costs of installing a Level 2 EVSE (electric vehicle supply equipment) station with two charging units each of which can charge a Chevrolet Volt in about 3 hours ranges from between \$16,000 and \$20,000. [The cost rises](#)



considerably however to between \$45,000 and \$100,000 or more for a station with one DC fast-charging EVSE unit that can add enough charge for 60 to 80 miles of range to a light-duty EV in 20 minutes and the bigger the array, the more charging units that are needed. Yet, fast-chargers service many fewer vehicles in an hour than a LNG or fast-fill CNG dispenser.

## T. Boone Pickens weighs in on Oregon utility's bid to offer compressing services (Continued)

“Setting aside the guaranteed profit, NWN’s natural gas monopoly impedes competition in other ways. NWN buys natural gas from suppliers at low wholesale prices but companies operating CNG fueling stations in Oregon are required to buy natural gas from NWN at retail prices. This requirement ensures NWN will profit from every CNG station in the state – including “competing” stations – while also guaranteeing the monopoly the ability to undercut competitors’ prices at the pump.”

“Perhaps these problems could be addressed if NWN operated fueling stations through an unregulated subsidiary that competed on a level playing field, but under their current proposal, NWN is unlikely to face any competition at all.”

“Make no mistake, I’m a big advocate for fueling vehicles with CNG – especially heavy trucks that can’t run on electricity. But while NWN says they will offer Oregonians more CNG fueling stations, misapplication of their monopoly powers would mean fewer consumer choices down the road.”

Oregon’s [first public access CNG station is under construction and should be open for business within the next month](#). The station is located in West Eugene, along the I-5 corridor about 110 miles south of Portland. The station will cost upward of \$1 million to complete and the company building it will receive a 35 percent tax credit for the station under the state’s program to encourage use of alternative fuels. There are three private access CNG stations in Oregon.

## Ribbon cut, Trillium fueling 35 Class 8 CNG tractors in Virginia for Supervalu Inc.

Minnesota-based grocery wholesaler and retailer [SUPERVALUE Inc.](#) has placed 35 Class 8 Volvo CNG trucks into service at its Mechanicsville, Virginia distribution center, in the Richmond metropolitan area. This makes SUPERVALUE the largest private operator of heavy-duty CNG trucks in the Mid-Atlantic region. The company operates 20 distribution centers in the U.S. with more than 400 trucks in its fleet not including the company’s Save-A-Lot food chain stores, which operate separately. Of the 400 trucks, 105 operate out of the Mechanicsville facility, which plans to convert 65 percent of its fleet to run on CNG by 2015.

The trucks will fuel at the Mechanicsville distribution the where a ribbon cutting was held last week for a fast-fill CNG station that [Trillium CNG](#) has built and is operating. “The CNG station allows SUPERVALU to focus on converting its fleet while Trillium focuses on the necessary fueling infrastructure to help SUPERVALU meet its transportation goals,” said Trillium’s president Mary Boettcher.



Trillium is building another station in the Richmond area for the GRTC Transit System, which should be operating by the end of the first quarter of 2014. GRTC is in the process of replacing its 152 diesel buses and 78 gasoline paratransit vehicles with CNG vehicles as the petroleum vehicles are retired. By the end of the second quarter of next year, Trillium will have 81 CNG stations in operation nationwide, with 54 offering public access.

The NGV space looks set to grow even more in Virginia. The state’s governor, Bob McDonnell, signed an [executive order directing the](#)

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state's fleet managers to "pursue all practicable and cost-effective options to promote the use of alternative fuel vehicles," including NGVs. At Richmond International Airport, [Standard Parking has placed nine CNG shuttles into service, which fuel at a CNG station located on airport grounds.](#)

## New Jersey Natural Gas plants CNG fueling footprint

[New Jersey Natural Gas \(NJNG\)](#) is moving ahead with installation of CNG fueling stations at three locations under a pilot program that the New Jersey Board of Public Utilities (BPU) approved in 2012. The BPU authorized NJNG to spend up to \$10 million to install, own and maintain CNG fueling at third-party host locations.

One station is to be located at the Middletown Township Public Works Department and the other, at beverage distributor Shore Point Distributing Company, in Freehold, both in Monmouth County. The third station will be located at a Waste Management (WM) facility in Toms River, in Ocean County. NJNG expects to have all three of the stations operating in 2014. Construction of the three stations is expected to cost between \$6 million and \$8 million, leaving NJNG funds to build one and possibly two more stations if demand grows.

The stations will fuel fleet vehicles from the station hosts as well as offer public access: the Middletown and WM facilities will provide time-fill fueling for the host fleets and fast-fill dispensing for public access while the Shore Point facility will be outfitted with fast-fill fueling exclusively. Each of the hosts has committed to use 20 percent of each station's dispensing capacity, or 50,000 GGE (gasoline gallon equivalents), per year. Middletown Township operates one CNG vehicle, a number that will rise to at least 16 over the next three years. Shore Point Distributing is slated to fuel between 15 and 20 of its vehicles and WM will fuel 50 refuse trucks at its station. NJNG will be responsible for building market by other fleets. The utility has purchased demographics on fleets located in its service area from an informatics vendor and will mount a marketing campaign aimed at convincing fleet owners to convert their vehicles to run on CNG.

Middletown Township, Shore Point and WM incur no cost for hosting the fueling stations. NJNG will recoup its capital investment and gas commodity cost by charging for each GGE dispensed. The rate is structured so that a portion of revenues collected from CNG sales and taxes will be returned to the utility's ratepayers. Another increment of revenues collected will be returned to the station hosts to compensate them for the electricity costs they incur for having the stations operate on their grounds.

According to Tom Massaro, NJNG's vice president for marketing and business development, NJNG launched the pilot project to seed CNG fueling into an area where non-utility natural gas fueling firms have shown little interest because few CNG vehicles operate in the area. NJNG hopes that ensuring available fueling will convince local fleets to make the move to CNG. Under the schedule NJNG has established, if the stations were operating today, CNG would be dispensed at \$1.85 per GGE. Local retailers are currently selling gasoline for about \$3.26 per gallon and diesel, for \$3.71 per gallon.

The NJNG program is somewhat different from the CNG infrastructure program that [Atlanta Gas Light](#), also a regulated gas utility, is implementing in its service territory in Georgia. Both the NJNG and AGL programs involve the utilities installing and owning CNG fueling infrastructure at third-party host locations. Whereas NJNG owns all of the fueling equipment including the compressors, dispensers and payment processing equipment and is responsible for marketing the fuel to fleets, AGL owns and maintains only the compressing equipment with the dispensers being owned by the station host. Under the AGL program, the station host is responsible for fuel marketing, not the utility. Both programs differ from public CNG fueling models operated by Questar Gas in Utah, Oklahoma Natural Gas in Oklahoma and Piedmont Natural Gas in North Carolina where the public purchases CNG directly from utility owned stations.

## Crowley Maine tips balance toward LNG marine propulsion with ConRo ships

Crowley Marine's recent announcement that it is constructing two LNG powered ConRo ships may not constitute a tipping point, but it's certainly a sign that the balance in marine propulsion is starting to lean toward LNG in the U.S.

The two 720-foot long ships will be LNG/diesel dual-fuel and be amongst the first LNG propulsion combination container and Roll-On/Roll-Off (ConRo) ships in the world. They will be the first ocean-going LNG-propulsion ships to be built in the U.S.; the ships will be Jones Act compliant, meaning that they are constructed in the U.S., flagged in the U.S. and crewed by Americans. The ships will transit between ports along the U.S. South Atlantic seaboard and Puerto Rico and when complete, replace six barges that Crowley, the largest marine freighter plying between the U.S. and Puerto Rico, currently has in service.

Crowley is based in Jacksonville, Fla., and [Clean Energy Fuels recently announced that it plans to build a liquefaction plant at the Port of Jacksonville to serve the marine propulsion market \(p. 3\).](#) Asked if

Crowley's Commitment class ship would fuel with CLNE, Crowley's Gilliam deferred, saying that CLNE is an option but the company will discuss its LNG bunkering options with other prospective suppliers as well.



The two ships comprise the Commitment Class and each ship will have a capacity of 26,500 dead weight tons and can accommodate 2,400 TEU (ton equivalent unit) containers, nearly 400 vehicles, and among the 2,400 TEUs, 300 refrigerator units. They will be capable of up to 22 knots, built by VT Halter Marine in Pascagoula, Miss., and outfitted with Wärtsilä propulsion systems.

The name Commitment Class was chosen to reflect the company's commitment to eco-stewardship, according to according to Crowley's vice president of special projects, Tucker Gilliam. Gilliam points to Crowley's long history of sound marine environmental practices, having enacted procedures to prevent spills 20 years before the Oil Pollution Act of 1990 became law. After evaluating options, Crowley

decided LNG was the most effective way to ensure the ships' compliance with [Emissions Control Area \(ECA\) regulations that began to take effect in the U.S. in 2012 \(p. 4\)](#). The rules gradually phase in stricter limits on emissions of sulfur oxide, nitrogen oxide and particulates that are the byproducts of burning heavy bunker fuels. To meet the ECA rules, marine vessels that burn diesel will need to burn costly ultra-low sulfur diesel, making LNG cost-competitive. Dual fuel ships such as the Commitment class will be able to fuel with either LNG or low-sulfur diesel, whichever is less expensive at the moment. Gilliam says that Crowley's intent is to operate the ships on LNG.

[Europe is already moving aggressively to install LNG bunkering at major ports \(p. 5\)](#) with tens of millions in funding from the European Union. Federal financing for LNG infrastructure at U.S. ports appears unlikely right now. But as Crowley's new ships demonstrate, use of LNG for marine propulsion is set to grow in North America as ship owners seek to comply with the ECA regulations and save money on fueling costs. [Interlake Steamship Company is converting its Great Lakes bulk carrier Mesabi Miner to run on dual fuel](#) and is expected to convert other ships in its fleet as well. The company has signed a fueling agreement with Shell, which is building a liquefaction facility in Sarnia, Ont. Shell is also building a liquefaction facility in Geismar, La. to serve the marine market. [Washington State Ferries recently made a filing with the U.S. Coast Guard that will allow it to convert its Issaquah class ferries serving Puget Sound to convert to LNG propulsion \(P. 8\)](#), where CLNE also plans to build a liquefaction plant to serve the marine sector.

## BUS STOP

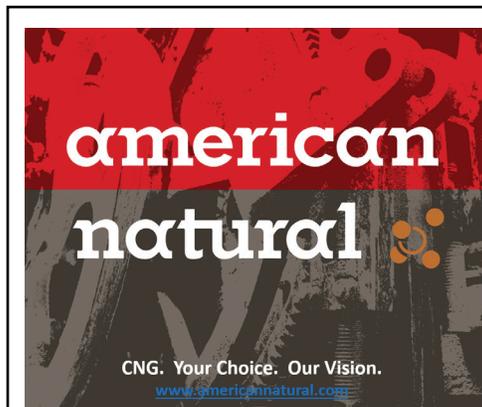
### Indiana's CityBus pivots toward a CNG fleet

[CityBus](#), serving Lafayette, Ind, home to Purdue University, has taken a step toward converting its bus fleet to CNG buses with its solicitation of proposals for a contractor to design, build and maintain a CNG fueling station.

Citybus is operated by the Greater Lafayette Public Transportation Corporation (GLPTC), which has a fleet of 73 buses that drive a total of 1.8 million miles per year. While the CityBus fleet includes 20 hybrid-electric buses, much of its fleet is at or has surpassed its retirement age and the agency's strategic plan calls for its fleet to be replaced. [CityBus commissioned a benefit-cost study](#) by a team at Purdue University of three options for updating its fleet: diesel buses, hybrid electric buses and CNG buses. The study concluded that the agency could

save \$468,000 in net present value (NPV) over 15 years by switching its fleet to CNG buses, a better result than would be achieved by replacing its diesel buses with hybrids.

CityBus has significant green credentials – its facilities in Lafayette are powered by three 100 kWh wind turbines – and the study found that converting the bus feet to CNG would significantly reduce the transit agency's carbon footprint in comparison to diesel buses. The agency applied for a Federal Transit Administration grant to fund construction of a fueling station but the application was not funded, although federal funds would likely be available for the



agency to purchase new CNG bus rolling stock. The agency’s board of directors then decided to issue its RFP to see what terms are available for moving ahead with building the station. The study’s authors concluded that CityBus could minimize its costs by opening the station to public access fueling. The Lafayette area is already home to one public access CNG station operated by CNG Fuel Inc., the station having opened earlier this year.

CityBus staff will review the proposals it receives for the station and plans to present recommendations to its board of directors in the first half of 2014.

## British Columbia transit agency’s CNG bus conversion plan faces criticism

A proposal by [TransLink](#), the transit agency serving the Vancouver, British Columbia area, to buy 45 CNG buses to replace diesel buses and make a \$5 million retrofit to install CNG fueling for up to 100 buses as part of a long term fleet conversion plan has run into opposition from local elected officials. Translink is seeking \$25.8 million in federal gas tax funding for its conversion program for which it will also look to utility Fortis BC for about \$1.26 million in grant funding. In 2012, Fortis BC launched a \$104.5 million grant program to offset up to 70 percent of the incremental cost of purchasing NGVs and building fueling stations. The utility recovers its costs by rate-basing them under tariffs approved by the B.C. Utilities Commission.

The Translink plan has received support from the mayor of Surrey, B.C. however the mayors of Richmond and Burnaby have criticized it, claiming that CNG bus technology is unreliable, that the CNG

buses are more expensive than diesel buses, and that CNG buses cannot operate on streets on which the region’s trolley system runs. Complaints have also been voiced that the transit agency has yet to complete vehicle replacements for the agency’s HandyDart door-to-door shared ride service and SkyTrain automated driverless light rapid transit system.



Translink spokesman Bob Paddon says that the agency has no plans to operate CNG buses on streets served by the trolleys because “you don’t want to mix gas and electric sparks with each other.” He notes that CNG buses TransLink purchased in 2006 save about \$25,000 per year on fueling compared to diesel buses, produce fewer greenhouse gas emissions, and that the price differential between CNG buses and diesel buses has declined since the agency’s earlier CNG bus purchase in 2006. Padden also notes that new CNG buses experience fewer breakdowns than older CNG buses and are able to run farther on a single fueling.” Says Paddon, “Some of the elected officials have not been informed of these trends and changes. Their views are a decade old. We’ve saved money and made some good deals here.”

## POLICY FOCUS

### Move to allow LNG fueling in New York State faces uncertainty

[The effort underway by the New York Department of Environmental Conservation \(DEC\) to enact regulations that would end a 40-year ban on LNG fueling stations \(p. 8\)](#) has run into significant opposition by opponents of hydraulic fracturing. DEC planned to wrap up the public comment period on its proposal on Nov. 4 but extended it through Dec. 4 after public meetings held in Syracuse and Albany.

The regulations have drawn support from the American Lung Association, the League of Conservation Voters, the Business Council of New York State (see the commentary by Darren Suarez on page 8) and other groups because of the potential to reduce diesel pollution emissions and reduce fueling costs for businesses. However last Wednesday, the last day for public comments, environmental

groups including New Yorkers Against Fracking and the Sierra Club delivered what they said were over 50,000 comments critical of the new regulations. The groups also delivered a letter to N.Y. Gov. Andrew Cuomo asking that that DEC withdraw the proposal and start over.

The opponents claim that the regulations are vague and would allow for construction of LNG import/export terminals and infrastructure needed for hydro-fracking to be put in place in the event that Cuomo ends a moratorium on fracking that was imposed in 2008. The DEC has responded that the regulations “have nothing whatsoever to do with fracking, and everything to do with putting cleaner trucks on our highways.” DEC must review and log the comments and respond to any substantive issues raised by next October, the deadline for either finalizing the proposed rules, allowing them to expire, or seeking a single 90-day rulemaking extension.

## SPOTLIGHT ON COLUMBUS

The city of Columbus has been attracting a lot of attention in the NGV space as it moves aggressively to convert its municipal fleet to CNG. The blueprint for the city’s move to CNG is outlined in the City’s [Green Fleet Action Plan](#). Developed in 2008 and since updated

for a 2011-2014 timeframe, the plan is part of an ambitious effort by Columbus Mayor Michael Coleman to lower the city fleet’s fuel costs and reduce its emissions. Accolades have followed the plan’s adoption: the city has received awards for environmental stewardship



and for having one of the greens fleets in the country from Government Fleet magazine.

## CNG profile for the City of Columbus

The city operates about 3,000 on-road trucks, vans, SUVs, and cars. Of these, the city sees a CNG conversion opportunity totaling 780 vehicles. The Green Fleet Action plan lays out management, operation and procurement policies for converting these vehicles to CNG as legacy vehicles are retired and replaced. The priority is on the fleet's heavy-duty units. By year's end, Columbus will have 165 dedicated CNG vehicles and the goal is to convert 450 heavy-duty vehicles to CNG by 2020, which the city's fleet managers project will save Columbus about \$2 million per year on its fueling bill.



CNG Profile for the City of Columbus	
Total On Road Vehicles	3,000
Conversion Opportunity	780
CNG Vehicles by end of 2014	165
2020 Goal CNG Vehicles	450

To fuel its fleet, Columbus brought a CNG station into operation in April 2012 at one of its fleet operations centers. The station is equipped with six fast-fill dispensers and outfitted with non-lubricating compressors produced by British Columbia-based [IMW Industries](#). The city is in the process of installing CNG fueling at a second facility that should become operational in March 2014. There the city opted for lubricating compressors manufactured by Ohio-based [Ariel Corp](#). A third CNG station for fueling city vehicles is in early stage planning. The station will be built and operated by the city and located at a Central Ohio Transit Authority (COTA) operations facility. COTA is the transit agency that serves the Columbus metropolitan region. Among Columbus's goals is to promote the use of CNG throughout its region and toward this end, the station the city has in operation offers fueling to the public. The station has already dispensed 50,000 GGE to public customers. The new stations will likewise offer public access once they are operational.

While the transition to CNG has not necessarily been easy for Columbus (see accompanying interview with city fleet administrator Kelly Reagan), according to city officials, the decision to focus its fleet greening on CNG made common sense. It was clear during the Green Fleet Plan's development that Ohio was sitting atop large deposits of shale gas in the Utica Play and that the technology was there to harvest this gas. Common sense dictated that if the city wanted to green its fleet its strategy should focus on CNG, both due to the fuel's low emissions and cost and also, the added benefit of creating jobs in

the Buckeye State and its capital, Columbus.

## Central Ohio Transit on the CNG bus route

The City of Columbus's move to a CNG fleet is mirrored in a CNG fleet conversion underway at [COTA, the Central Ohio Transit Authority](#), which serves the greater Columbus metropolitan area. The transit agency has put into effect a plan to convert its entire fleet of 320 active scheduled route buses to CNG buses under which it will purchase 30 to 40 CNG buses each year over 12 years as diesel buses are retired. COTA's first 30 CNG buses went into service in May – 12 of the buses are 35-foot Gillig low-floor models and 18 are 40-foot low-floor Gilligs. COTA has placed an order for 36 Gillig CNG buses for delivery in 2014. The buses are fueled at an agency operations facility where CNG fueling became operational in May and as noted in the preceding article, COTA is in the early stages of working with the city on plans to build a CNG station at one of its operations facilities that would be used to fuel city and public vehicles.



## Interview with Kelley W. Reagan, fleet administrator for the City of Columbus on municipal CNG fleet conversion strategy

NGV Today recently spoke with Kelly W. Reagan, fleet administrator for the City of Columbus, Ohio. Kelly talked about the nuts and bolts of transitioning the city's fleet to compressed natural gas including educating policy makers and the general public in an area unfamiliar with CNG vehicle and fueling technology:

**NGV Today:** One goal of any fleet change strategy is to overcome impediments to change. What are some of the impediments the city faced in its CNG fleet conversion?

**Kelly:** Well, making a transition into natural gas is not easy. We have as dedicated and informed group of leaders here at the City of Columbus as you'll find at any city in the country. But we had to educate, demonstrate and inform all end users and stakeholders. We began by dispelling some legacy myths born of the prior generation of natural gas vehicles from a decade ago that didn't always meet expectations. We heard concerns that vehicles with natural gas engines wouldn't have enough power and torque for heavy-duty applications like trash and vactor/flusher trucks, snow plows and street sweepers, and that fuel savings might not materialize because CNG vehicles would get poor mileage performance.

One of the first lessons that we needed to teach is that OEMs (original equipment manufacturers) have perfected natural gas engines so that they deliver the same power and torque and mileage performance as vehicles that run on diesel. To prove this we did a side-by-side test. We ran a CNG rear-loader trash truck alongside a diesel rear-loader for 24 months. This confirmed what I expected. We saw no difference in performance, in power and torque, in mileage. And we saw the fuel costs savings. The test was a key part of our strategy. It dispelled misconceptions that a CNG fleet wouldn't perform at the level we needed it to perform at.



**NGV Today:** How about community reaction to your conversion plans?

**Kelly:** There was strong support in the community for greening our fleet but again, there were myths we needed to dispel. Our first city CNG fueling station went operational in April 2012. But we ran into obstacles when we went to build our second station, which is now under construction and will open in March next year.

In 2011, there was a massive gas line explosion in eastern Ohio. It came a day after a gas explosion destroyed several homes in Allentown, Pennsylvania. We needed a zoning change to build the second station, and there were concerns expressed by local neighbors related to whether this could happen at this CNG station. Again, education was key. We walked through the technology, made clear that the station fueling systems had safety valves to prevent an explosion. We assured them that CNG fueling is actually safer than standard based diesel fuel.

**NGV Today:** Did your strategy involve any special training?

**Kelly:** Of course we needed to train our crews on operating the vehicles and how to fuel them. But we also needed to train fire marshals statewide under the NFPA (National Fire Protection Association) code used to regulate fuel sites. So we've equipped the state fire marshals with the knowledge they need as more CNG stations are added statewide.

**NGV Today:** So what would you say to officials from other cities planning to convert their fleets to natural gas?

**Kelly:** Converting a fleet may sound simple but nothing about it is simple. Having a strategy is critical. Know where you want to go and make sure you have a roadmap of how to get there. Do your homework, such as testing the vehicles, to make a clear and compelling case and educate people.

**NGV Today:** I understand you're heading to speak at a seminar tomorrow on the benefits of converting vehicles to CNG.

**Kelly:** Among the things I'll be talking about is a white paper titled "Developing Synergies to Transition Away from Traditional Fuels into Alternative Fuels: The Six Steps." The author of the paper is Paul Condran, fleet services manager for Culver City, California. I'd recommend it as required reading for anyone thinking about making a fleet conversion.

**NGV Today:** Thanks for your time. Can our readers contact you if they want to follow up?

**Kelly:** Absolutely. Have them write to me at [kwreagan@columbus.gov](mailto:kwreagan@columbus.gov). I'm also happy to send them a copy of the white paper.

## COMMENTARY

### Allowing LNG fueling in New York State will provide economic and environmental benefits

By Darren Suarez

On December 4th the New York State Department of Environmental Conservation (DEC) concluded the public comment period on its draft regulation that would create a permitting program for liquefied natural gas storage facilities (proposed 6 NYCRR Part 570). When finalized, it will allow New York to join the other forty-nine states that already permit LNG facilities. Under the proposed regulations, New York will incorporate by reference national safety standards, known as NFPA 52, "Vehicular Fuel Systems Code," (as updated in 2013) and NFPA 59A, "Standard for the Production, Storage and Handling of Liquefied Natural Gas (LNG)," (updated in 2013).

The Business Council of New York State, Inc. strongly supports allowing LNG fueling in New York State because it will have a positive environmental and economic benefit, as it will permit an alternative fuel source that is safe, affordable, and cleaner.

It has been over forty years since an empty Staten Island LNG facility collapsed – a construction accident, not related to LNG – resulting in a state prohibition on additional New York LNG storage facilities. In 1999, a moratorium on the siting of LNG storage facilities outside of New York City was repealed, but the state did not adopt statutorily mandated regulations.

The current regulatory proposal, once adopted, will meet the statutory requirements thus allowing the siting of new LNG facilities in New York.

Due to advances in technology, and a stable and competitive price of natural gas, many of the historic barriers to LNG deployment have been addressed, making now the time for New York to remove barriers to the deployment of LNG facilities.

Support for the proposed regulation has been strong from the business community including the transportation, manufacturing and utility sectors. A number of fleet operators have expressed interest in using LNG to reduce their transportation cost. Several New York businesses have expressed interest in developing LNG facilities, including fueling facilities for heavy-duty trucks.

Many have recognized that LNG has the potential to become a significant alternative transportation fuel in New York. Typically, one-third of a transportation company's cost base is fuel, and natural gas compares favorably to petroleum (often 30 to 40% lower today). Additionally, a growing domestic supply helps insulate consumers from market volatility.

Additionally, LNG can be used in rural areas as an alternative to propane and oil heat. Many current industrial and commercial users of residential oil do not have access to natural gas supplies. LNG has the potential to bring this alternative fuel to an isolated facility allowing more New York manufactures to remain competitive and

retain New York jobs.

Earlier this year, bipartisan legislation was introduced (S5846A, A8110) by Senator George Maziarz (R-C, Newfane), and Assemblyman Karim Camara (D-WFP, Brooklyn), that would adopt measure similar to those in the Department’s proposed rule; this legislation was supported by members of the business community and the environmental and health community (including American Lung Association and League of Conservation Voters).

The Business Council supports these efforts to reduce carbon emissions, with workable, cost-effective policies. We support the adoption of climate policies that provide near-term, concrete benefits that have a co-benefit to reduce the scale of human activity on the climate system. The advancement of the proposed part 570 will do this providing concrete



benefits for both the environment and the economy.

Historically, New York has had a reputation innovating and leading the way on various issues. At times, this independent spirit has served the state well, but as we compete on a national, and international level to retain and grow our economy too often it has been a significant hindrance. Allowing for the siting of LNG facilities in the state of New York will remove an unwarranted, and ill-conceived impediment to our economy. All around the nation, plans are being made to develop a network of LNG refueling facilities. The finalization of this regulation will allow New York to join this national trend.

The Cuomo administration and key legislators have shown increased interest in addressing unnecessary regulatory restrictions on the state’s business community. This proposal to authorize use of LNG fits with the state’s efforts to promote new investments and a more competitive state economic climate.

**Darren Suarez is Director of Government Affairs at The Business Council of New York State, Inc. Contact him at [darren.suarez@bcnys.org](mailto:darren.suarez@bcnys.org).**

**NEWS BRIEFS**

**Westport offering free CNG to fleets**

Westport and Clean Energy have joined forces to offer fleets purchasing CNG vehicles the opportunity to receive free CNG. The program is open to fleets purchasing five or more Westport WiNG power systems between now and Dec. 31, 2013. Westport will provide fuel credits to be used at any Clean Energy station in the U.S. The free fuel credits are being offered on a “first-come-first-served” basis, and up to 750,000 gasoline gallon equivalent (GGE) of CNG fuel will be given away by Westport during the promotion. Fleets have until December 31, 2015 to use their free fuel credits.

during an overnight fill lasting 10 to 12 hours. The stations have the capacity to expand to fuel as many as 45 trucks at one time.

**Downers Gove, IL. opens CNG station to the public**

The Village of Downers Grove, IL, is offering CNG for sale to commercial operators who have CNG-enabled vehicles. The high-capacity CNG fuel dispensers are located on the grounds of the Public Works facility, 5101 Walnut Ave. The station is open 24 hours a day, seven days a week and accepts credit cards only. Advance registration is required.

**Autocar introduces Class 7 Xpert natural gas refuse truck**

Autocar ha introduced a natural gas version of its Class 7 cabover Xpert refuse truck. The “baby 8” Xpert ACMD is now available with the Cummins Westport CNG/LNG engine. Autocar introduced the truck at the 2013 Autocar Natural Gas Symposium in Indianapolis last month. The [medium-duty truck](#) has gained traction among municipal utility providers and private refuse haulers. The smaller, more-nimble truck can withstand the severe conditions of waste collection, according to Autocar.

**Effort to build CNG station in Jackson, WY. runs into roadblock**

An effort in Wyoming to bring a CNG station to Jackson with state money hit a setback Thursday, when a state board recommended awarding the project a loan instead of a requested \$767,000 grant. Jackson’s mayor rejected the loan, saying a station wouldn’t be financially viable if the operator has to make loan payments. A grant would have allowed a station owner to pay 10 cents per each gasoline gallon equivalent of CNG back to Energy Conservation Works, the joint powers board organizing the project. Owners of Shervin’s Independent Oil Center had agreed to be the guinea pig station. But the loan would require that the 10-cent per gallon revenue be use to make the \$5,000 monthly payments back to the state. That means the station would have to sell at least 50,000 gallons a month. Officials working on the project plan in January to bring their case directly to the State Loan and Investment Board, composed of Wyoming’s highest elected officials, including Gov. Matt Mead.

**Clean Energy will build a station dispensing CNG and LNG in Bridgeview IL**

Clean Energy Fuels will build a station that dispenses both CNG and LNG in the west Chicago suburb of Bridgeview, IL., near where I-55 and I-294 converge. After receiving approval at a recent village board meeting, the company is looking to break ground on the project next spring, with completion set for later in 2014.

**Ohio County receives \$100,000 state grant to examine CNG feasibility**

Trumbull County, OH., north of Youngstown, has secured a state grant to explore a “larger scale” study of CNG use. “This is really to help facilitate this being a countywide initiative and looking at it from a comprehensive, countywide standpoint,” said the County

**Waste Pro opens CNG stations in Florida**

Waste Pro USA has opened CNG fueling stations at its Daytona Beach and Bunnell operation centers in Florida for its CNG trucks. The local stations have the capacity to fill 26 CNG solid waste collection trucks

engineer. The \$100,000 Local Government Innovation Fund grant will be used to hire a consultant to look at existing and needed infrastructure, potential locations for a CNG fueling station and cost savings to communities that want in. So far, about 20 governments and businesses in Trumbull County have signed on as partners to the county's CNG initiative.

## **Nat G CNG solutions opens conversion center in Converse, TX.**

With locations in Texas and Louisiana, Houston-based Nat G CNG Solutions has opened its newest center in Converse, TX, near San Antonio. Nat G converts new and in-service vehicles to run on CNG and designs, builds and installs CNG fueling stations for commercial and government clients. Its clients include San Antonio-based Lewis Energy Group, a longtime South Texas driller and one of the earliest companies into the Eagle Ford Shale. Nat G also has converted the vehicle fleet for the Texas Railroad Commission and is also building a natural gas fueling system for it in Austin.

## **Clarion County, PA. businesses receive over \$300,000 for CNG vehicles**

Two Clarion County, PA. businesses have pulled in over \$300,000 in state grants for purchasing CNG vehicles or converting vehicles to use the fuel. Redbank Chevrolet Partners of New Bethlehem was awarded \$208,800 to convert 37 vehicles to use CNG. Francis J. Palo Partners of Clarion received \$118,750 to purchase 14 CNG vehicles, convert three to CNG, and convert three more to run on propane. Palo's grant application involved four businesses: Francis J. Palo Inc., Atkinson Fire Safety, Computer Support and Nomad Services. The grants are funded by Pennsylvania's Act 13, the Unconventional Gas Well Impact Fee paid by shale gas producers.

## **PA's River Valley transit aspires to convert 29 bus fleet to CNG**

The River Valley Transit's spiffy new CNG filling station here is the latest link in a growing CNG network aimed at fleets of large, fuel-hungry vehicles. "We think this is going to be a winner," said Kevin W. Kilpatrick, the planning manager for the transit agency, which already owns one CNG bus, has four more on order, and aspires to convert its entire 29-bus fleet to natural gas within a decade. River Valley is the mass-transit company for Williamsport and Lycoming counties in north-central PA. The new station will also sell fuel to the public once a credit-card reading device is installed.

## **18 CNG refuse trucks coming to Mesa, AZ**

The Mesa, AZ, Solid Waste Department will replace 18 diesel refuse trucks with CNG trucks over the next two years. "The Solid Waste Department is excited about the opportunity to move toward CNG as a fuel source for the refuse vehicles," Michael Comstock, Director of the Solid Waste Management Departments said in a press release. "Through a methodical and conservative review of the technological advancements for these vehicles and a lengthy economic analysis of the program, we are convinced the transfer to this type of fuel is a long-term benefit to the City of Mesa."

## **York County PA transit agency waiting on state funding for CNG bus fleet conversion**

Rabbit Transit, serving York County, PA, is waiting to find out its share of the recently passed \$2.3 billion state transportation bill to see if it can move ahead with a \$10 million plan to replace its diesel buses with CNG buses and renovate its bus garage to accommodate CNG fueling. Sixty-four percent of the transit agency's 87-vehicle fleet is 12 years or older and beyond its useful life or will be in 2014. It will cost at least \$1.2 million to make the facility safe for CNG buses, with costs including spark-free light switches and other measures. The fleet could be completely converted and running on natural gas within 16 months if sufficient state funding is forthcoming.

## **Trussville, AL looking at school bus fleet conversion to CNG**

Trussville, AL, City Schools is looking into the possibility of running all its school buses on CNG in 2015. If the school system eventually makes the move to CNG for its bus fleet, it could acquire federal funding. The city of Trussville already uses CNG to operate about 40 city vehicles, from Chevrolet Tahoes for the Trussville Police Department to dump trucks for the Parks and Recreation Department. Those vehicles fuel up at the Chevron on Deerfoot Parkway, where the public can also use the CNG dispenser.

## **Natural gas truck dealership coming to Omaha, NE**

One of the biggest Omaha-area truck dealerships is planning a new metro-area location catering to natural gas vehicles, a project being undertaken in partnership with the Metropolitan Utilities District. Omaha Truck Center Inc. said it plans to soon start construction of what it calls the first natural gas truck dealership in the state. Tentative opening is scheduled for summer 2014, the company said. The dealership will have six service bays and occupy approximately 15,000 square feet for working on alternative fuel vehicles, including those running on CNG, LNG, propane and electricity.

## **Blu LNG opens Indiana's first LNG station**

Blu LNG opened the first LNG station in Indiana in September, in Sellersburg off I-65, about 65 miles north of Louisville, KY. "Nobody can figure out why we haven't done this a long time ago," said Eric Johnson, director of national operations for Blu, a company owned by Utah-based Transfuels LLC, whose majority stakeholder is China-based alternative energy company ENN. Clean Energy Fuels has a CNG station on the other side of Interstate 65 near Exit 7.

## **City of Statesboro, GA. moving to CNG fleet conversion**

The City of Statesboro, GA. will roll out a pair of CNG refuse trucks this month. One year ago, the city purchased from First Transit Inc. a CNG fueling station located on U.S. Highway 301 South. The station had been supplying CNG for buses operated by Georgia Southern University. City officials say they will transition more of the city's fleet — heavy vehicles like garbage trucks and street sweepers, and some medium-duty pickup trucks — to CNG as current vehicles drop

out of service. City officials are also interested in the prospect of purchasing police cruisers that run on CNG.

## State's largest CNG station going in in S.E.

### Alabama

The Hobo Pantry located on 735 Ross Clark Circle in Dothan, Alabama, near where Alabama, Florida and Georgia meet is adding a

CNG station. "It's a prime location for us. We've got a lot of trucking companies and industrial companies close by that run large fleets," said Dennis McKnight, Chief Operating Officer with Home Oil Company, Inc. Construction will begin next year with the goal to open shop in summer 2014. The station will be Alabama's largest CNG station.

## BY THE NUMBERS

### U.S. DOE says CNG prices in October were at their lowest level since July 2012

NGV Today's fuel price report shows the price spread between diesel and CNG at \$1.59 per GGE (gasoline gallon equivalent); for gasoline and CNG at \$1.01; and for diesel and LNG, at \$1.03.

The recently released U.S. Department of Energy's [Clean Cities Alternative Fuel Price Report for October 2013](#) (the report is published quarterly) shows an October national average per gallon CNG price of \$2.09 and the fuel price spread between gasoline and CNG at about \$1.36 per GGE. According to the report, U.S. retail CNG prices in October were at their lowest level since July 2012.

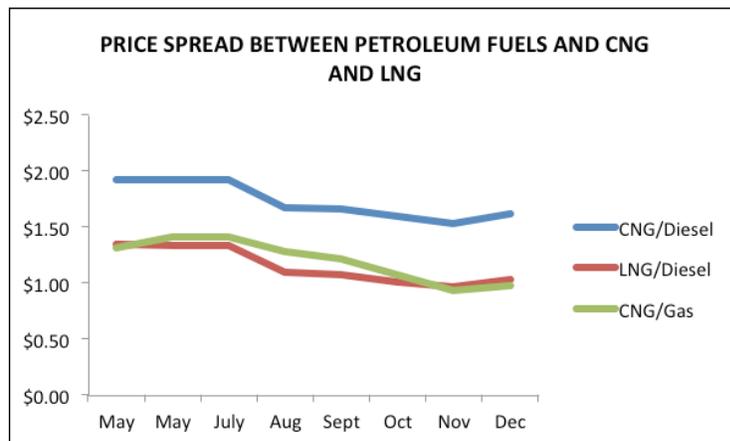
The Clean Cities report shows the average price of CNG in October as having been 20 cents lower than what NGV Today reported in October and the price spread in October as having been 28 cents lower than what NGV Today reported. The discrepancies are probably due to data sourcing and how the numbers are calculated. For the Clean Cities report, price data on CNG and gasoline is collected from Clean Cities' coordinators, fuel providers, and other key stakeholders on a voluntary basis and mean price averaged. NGV Today bases its CNG prices on typical at-the-pump prices (modal average – the price most commonly displayed) in the 12 states with the most CNG stations and its gasoline price on that reported in [This Week in Petroleum](#) published by the Energy Information Administration.

#### Fuel Price Report

Fuel	Now	Price Spread CNG	Price Spread LNG
CNG	\$2.26		
LNG	\$2.85		
Gasoline	\$3.27	- \$1.01	
Diesel	\$3.88	- \$1.59	- \$1.03

All prices quoted in diesel gallon equivalents. Sources: For CNG, average typical CNG price at 12 states with most CNG stations; Actual prices at the pump vary widely across the nation by location. For LNG, latest Clean Energy Fuels Corporation Fuel Price Report; For gasoline and diesel, U.S. EIA This Week in Petroleum.

### Price Spread Between Petroleum Fuels and CNG and LNG



#### CNG/LNG Fueling Station Count

Station Type	Number Open	Two Weeks Ago	Change since July 2011
CNG Public Access	632	632	26.4%
CNG Private Access	644	644	13.7%
LNG Public Access	42	42	75%
LNG Private Access	39	39	30%

Source: U.S. Department of Energy Alternative Fuels Data Center. The numbers may sometimes decline from period to period due to revision updates made to the database. For example a private access station might open to public access, which would move it from one row to another.

#### CNG/LNG Station Openings Last 60 Days

Name	Location	Fuel	Access
Trillium	Appleton, WI	CNG	Public
Sapp Bros.	Lincoln, NE	CNG	Public
Kwik Trip	New Berlin, WI	CNG	Public
Trillium	Tampa, FL	CNG	Public
Kalmbach	Upper Sandusky, OH	CNG	Public
Trillium	Jonesboro, AR	CNG	Public
New Holland	New Holland, PA	CNG	Public

Source: As reported by the U.S. Department of Energy Alternative Fuels Data Center. May lag behind actual new station opening dates.

## FUNDING OPPORTUNITIES

### Texas accepting applications for \$7.6 million in NGV fueling station grants

The Texas Commission on Environmental Quality is accepting applications for grants to build and upgrade natural gas fueling stations under the Texas Emissions Reduction Plan's (TERP) Clean Transportation Triangle (CTT) program and Alternative Fueling Facilities Program (AFFP). A total of \$3.8 million will be available for CTT grants and an equal \$3.8 million will be available for the AFFP grants. Proposals must be received by TCEQ by February 18, 2014.

The [CTT program](#) was authorized by the Texas Legislature in 2011 and provides grants for the installation of natural gas fueling infrastructure in 62 eligible counties with priority given to counties adjoining interstate highways connecting the Dallas-Fort Worth, Houston and San Antonio metropolitan areas. The [AFFP](#) provides grants for installation and upgrade of alternative fueling facilities in the 18 Texas non-attainment counties in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas and in El Paso County.

Application workshops for these grants have been scheduled on Thursday, December 12, in San Antonio, and Friday, December 13, in Arlington. To obtain application materials or find out more about

grant eligibility requirements or the workshops, click [here](#) or email [Kathleen Vale at TCEQ](#).

### Pennsylvania accepting applications for \$11 million in grants for heavy-duty NGVs

Pennsylvania is now accepting applications for grants under the state's Natural Gas Vehicle Grant Program for Heavy-duty Vehicles. About \$11 million will be available for this round of funding.

Businesses, local governments, school districts, state agencies, state related universities, the Pennsylvania Turnpike Commission, transit districts and nonprofit entities may apply for grants under this program. Grants are awarded to help pay for the incremental cost of purchasing new CNG and LNG heavy-duty vehicles or retrofitting vehicles to run on CNG or LNG. Only vehicles weighing 14,000 pounds or more are eligible for funding under the program and grants awarded cannot exceed 50 percent of the vehicle incremental cost with a maximum of \$25,000 per vehicle. Applicants must apply to purchase or convert a minimum of five vehicles. Persons or entities wanting to participate in this program but unable to meet the five vehicle minimum can join together and submit a single aggregated application. Applications must be submitted by 4 p.m., Friday, Jan. 10, 2014, and will be awarded in the spring. Application materials can be found [here](#).

## EVENTS

### Natural Gas Vehicle Technology Forum 2014 Meeting

When: January 14-15, 2014

Where: Brookhaven National Laboratory, Upton, N.Y.

Information: [Here](#).

### Tri-State Alternative Fueling Expo & Conference

When: February 18-20, 2014

Where: Monroeville Convention Center, Monroeville, PA (near Pittsburgh)

Information: [Here](#).

## TRAININGS

### The Natural Gas Vehicle Institute will be offering training sessions in January:

- NGV Technician and Fleet Operations Safety Training: One-day session on the elements involved in the safe maintenance practices, fueling procedures, and operation of NGVs. January 28 in Charlotte, NC.
- CNG Fuel System Inspector Training: Two-day session on the proper techniques for inspecting CNG fuel systems, including on-board compressed natural gas fuel storage cylinders. Jan. 29-30 in Charlotte, NC.
- Heavy-Duty NGV Maintenance and Diagnostics Training: Three-day course that prepares technicians to understand the operation, maintenance, diagnosis and repair of heavy-duty natural gas vehicles. Jan. 14-16, Long Beach, Ca.

For more information on these trainings, click [here](#).



## COLOPHON

### Editorial

Matthew Slavin, Editor  
 Ph. 202-524-0882  
 Email: [msslavin@ngvtoday.org](mailto:msslavin@ngvtoday.org)

### Subscriptions & Sponsorship

Kate Alegado  
 Ph. 202-735-1880  
 Email: [kalegado@ngvtoday.org](mailto:kalegado@ngvtoday.org)

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