

PRCC GAZETTE

“DRIVING THE WAY TOWARD ENERGY INDEPENDENCE”

Volume 5, Issue 25

January 2021

Key Legislation Extends Alternative Fuel Tax Incentives

The clean transportation energy industry won several important victories this week as the House and Senate finally reached an agreement on the FY2021 spending and COVID-19 stimulus bill.

Both the House and Senate approved the bill and the President signed it into law on December 28, 2020.

Specifically, the bill:

- **Extends key alternative fuel tax incentives through 2021, including tax credits for natural gas and propane, the credit for alternative fuel infrastructure, and the credit for qualified fuel cell vehicles.**
- Includes \$40 million for the DOE Clean Cities program and \$20 million for another round of Electric Vehicle Community Partnership grants.
- Directs the DOE to develop a plan for establishing a Clean School Bus Grant

- that would prioritize school districts serving disadvantaged communities and located in air quality nonattainment areas.
- Includes \$90 million for the EPA Diesel Emission Reduction grants.
- Provides \$125 million for the Federal Transit Administration (FTA) Low and No Emission bus grants and encourages the program to support a variety of different fuel types that reduce greenhouse gas emissions.
- Directs the Federal Highway Administration to approve CMAQ funding for clean vehicle projects using the previous criteria (final assembly in the United States) and it directs the agency to review and respond to Buy America waiver requests within 60 days of submission.
- Includes language stating that DOT Surface Transportation Block Grants can be used by States to install charging infrastructure on FHWA designated alternative fuel corridors.
- Enables the Secretary of Agriculture to make payments to U.S. producers of advanced biofuel, biomass-based diesel, cellulosic biofuel, conventional biofuel, or renewable fuel to help compensate for unexpected market losses resulting from COVID-19.

Issue Contributors:

Rick Price, Executive Director/Coordinator, PRCC

PITTSBURGH REGION CLEAN CITIES
C/O Rick Price, Executive Director/Coordinator
1436 Royal Park Blvd
South Park, PA 15129
www.coordinator@pgh-cleancities.org

Thanks to all of you in the clean transportation industry who made your voices heard at Energy Independence Summit 2020 last February and throughout the year.

CALENDAR OF EVENTS

BOARD OF DIRECTOR MEETING SCHEDULE FOR 2021

The PRCC Board of Directors meeting schedule is as follows:

April 7, 2021

July 7, 2021

October 6, 2021

All meetings will be at:

Five Star Development Inc.

1501 Preble Ave.

Pittsburgh, PA 15233

Starting at 9:30 AM

Upcoming Events

TBD

Training Classes

The PRCC is working with the National Alternative Fuels Training Consortium and the Community College of Allegheny County – West Hills Center to conduct training classes. These classes are free to Sustaining Members

Light Duty Natural Gas Vehicles

ATE-115-WH85

1. CEU

TBD

Introduction to Hybrid Electric Vehicles Training

ATE-136-WH85

1.0 CEU

TBD

CNG Tank Inspector Prep for Certification

ATE-601-WH85

TBD

Servicing Hybrid Electric Vehicles

ATE-137-WH85

TBD



To register for these classes contact Bob Koch at 412-788-7378 or rkoch@ccac.edu



DRIVE PA FORWARD PROGRAM STILL OPEN

On July 2, 2020, the PA Department of Environmental Protections opened up their **DC Fast Charger Program**. There is up to \$1,800,000 available for reimbursement grants from the Pennsylvania Department of Environmental Protection (DEP) under the 2020 DC Fast Charging and Hydrogen Fueling Grant Program. Eligible Project Types

1. Publicly accessible DC Fast Charging projects for light-duty EVs.
2. Publicly accessible DC Fast Charging projects for light-duty EVs combined with Level 2 charging at the same location.
3. Publicly accessible hydrogen fuel cell supply equipment projects for light-duty hydrogen fuel cell vehicles.

The project period will begin upon execution of a grant agreement and end 24 months later. Projects without an executed site host agreement within 12 months of the date of the execution of the grant agreement will be subject to termination by DEP.

Application Submission Periods – The DC Fast Charging and Hydrogen Fueling Grant Program application submission period will begin upon public notice of availability and will remain open continuously through February 26, 2021. DEP will review and score applications after each submission period end date. Submission period end dates are 4:00 PM on:

- February 26, 2021

For more information go to

<http://www.depgis.state.pa.us/DrivingPAForward/>



Electric Cargo Handling Grant Program, CY2020 Round 2: \$2.5 Million Available

This program will reimburse you a percentage of the total cost of repowering or replacing older diesel-powered forklifts, airport ground support equipment, and port cargo handling equipment with all-electric equipment.

The following equipment types are included: diesel-powered forklifts with greater than 8,000-pound lift capacity; Tier 0, Tier 1, or Tier 2 diesel-powered airport GSE; and diesel-powered port cargo handling equipment limited to rubber-tired gantry cranes, straddle carriers, shuttle carriers, and terminal tractors, including yard hostlers and yard tractors that operate within ports. **Open:** October/November 2020.

Application period opened: November 6, 2020

Anticipated application deadline: March 5, 2021

Guidelines: [CY2019-2020 RD 2 ECH GRANT PROGRAM GUIDELINES.pdf \(state.pa.us\)](#)

Project duration: Grant agreements will be from the date of execution to three years later. Extensions are considered case by case.

Funding: Successful applicants will enter a grant agreement with DEP and receive a reimbursement for the grant amount (up to the maximum allowed) once project work is complete. Partial and multiple project funding may be available

Marine and Rail Freight Movers Grant Program, CY2020 Round 2: \$8.7 Million Available

This program will reimburse you a percentage of the total cost of repowering or replacing eligible pre-Tier 4 freight switchers that operate at least 1,000 hours per year with any new EPA or CARB-certified diesel, alternative fuel, or all-electric engine, including Generator Sets.

You may also be reimbursed a percentage of the total cost of repowering eligible unregulated, Tier 1, or Tier 2 ferries or tugboats with a Tier 3 or Tier 4 diesel engine, alternative fuel engine, or with all-electric engines or upgrading them with an EPA Certified Remanufacturer System or an EPA Verified Engine Upgrade

Application period opened: November 6, 2020

Anticipated application deadline: March 19, 2021

Guidelines: [CY2020-2021 MARINE & RAIL FREIGHT MOVERS GRANT RD 2 PROGRAM GUIDLI.pdf \(state.pa.us\)](#)

Project duration: Grant agreements will be from the date of execution to three years later. Extensions are considered case by case.

Funding: Successful applicants will enter a grant agreement with DEP and receive a reimbursement for the grant amount (up to the maximum allowed) once project work is complete. Partial and multiple project funding may be available

Level II Rebate Program

Rebates will be provided for Level 2 EV charging equipment for:

- Public use at government owned property
- Public use at non-government owned property
- Non-public use at work places
- Non-public use at multi-unit dwellings

PA organizations that submit complete and eligible applications will be provided rebate vouchers on a first come, first served basis. All projects for which a rebate is requested must be approved in advance by DEP.

Program guidelines do not identify a specific application deadline. Instead, program guidelines will remain in effect until rebate vouchers are issued for projects totaling at least 750 plugs. Upon reaching that target, DEP will evaluate the program and determine whether to publish a new version of the guidelines with new rebate levels and another targeted number of plugs.

Guidelines: [Level 2 EV Rebate Program Guidelines V2.0.pdf \(state.pa.us\)](#)

CATA Introduces New CNG High-Capacity Buses to Blue Loop Campus Route

October 25, 2020. The Centre Area Transportation Authority (CATA) is adding new high-capacity buses to its no-fare Blue Loop campus transit service in University Park, Pennsylvania.

Beginning Monday, Oct. 26, the new 60-foot articulated buses will begin serving the Blue Loop route following two months of service on CATA's various community service routes. The buses can transport 55% more riders than standard buses, providing a greater ability to socially distance while riding. Riders also will be able to board these buses using either the front or back door. Like all other CATA buses, the articulated buses are powered by compressed natural gas (CNG), which produces fewer emissions than regular fuel.

As the new articulated buses are significantly longer than CATA's other vehicles, pedestrians and cyclists are urged to use extra caution while traveling near them.

Case Study: Propane Supplier Helps School Districts Reduce Costs and Emissions

Propane Autogas LLC, a division of Propane People Inc., provides fuel for more than 150 propane school buses operated by districts across Indiana, including DeKalb County Central United School District, Southwest Allen County Schools, Westfield Washington Schools and Wa-Nee Community Schools.

"We introduce school districts to the benefits of propane autogas so that school districts can experience emission reductions and fuel savings, and alleviate maintenance requirements," said Mark Gibson, president of Propane Autogas LLC.

School districts may be familiar with the benefits of propane autogas, but may not have the means to establish a new fuel — whether it be room in their transportation budget or a location for fueling infrastructure.

Propane Autogas LLC has developed four ways to help with the transition to this economical, emission-reducing alternative fuel.

1. Education

The company starts by providing information about the fuel itself. Propane autogas is a nontoxic, non-carcinogenic and non-corrosive fuel classified as a non-contaminant by the EPA.

The company then educates districts about the emission-reducing benefits of propane autogas. With the addition of propane buses, school districts cut harmful emissions and greenhouse gases, which benefits both student health and the local community's air quality. Clean-operating propane emits fewer greenhouse gases and smog-producing hydrocarbons, no particulate matter, and extremely low levels of nitrogen oxides. According to a [West Virginia University study](#) released in 2019, propane school buses reduce nitrogen oxides by at least 95%.

“Since 2004, the district has worked hard to save money through energy-efficient upgrades,” said Larry Johnson, director of transportation for Westfield Washington Schools. “By adding propane buses to our fleet, we demonstrate our commitment to being good stewards to our students, taxpayers and the planet.”

Since many school transportation departments have seen their budgets cut, Propane Autogas LLC also focuses on cost savings. Propane autogas averages 50% less than diesel and 40% less than gasoline. And with no cold-start issues, propane buses save districts both time and money on equipment and staff. The buses “have no cold-start issues and warm up quickly, which is especially important during the long, cold Indiana winters,” said Gibson.

Steven Teders, superintendent for DeKalb Central Schools agrees. “DeKalb County Central United School District sees many benefits in running propane buses versus their diesel counterparts, including better cold-weather starts, lower maintenance and reduced fuel cost for long-term savings,” said Teders. “With the continued financial challenges and obstacles that school districts are facing, this is especially attractive.”

All three major school bus manufacturers offer propane school buses, although most of Propane Autogas' customers have Blue Bird buses, which Gibson says is the “industry-leading solution.” About 85% of the propane school buses operating in the U.S. and Canada are Blue Bird buses, which each come equipped with a Ford engine and ROUSH CleanTech propane autogas fuel system.

2. Funding

Since propane is classified as an alternative fuel by the U.S. Department of Energy, there are a number of incentive programs to encourage adoption, including state and federal funding.

Propane Autogas provides grant writing services to school districts ready to transition to propane-fueled buses. The well-versed grant writing team helps identify and secure school bus funding for districts needing fiscal assistance.

3. Fueling infrastructure

Propane Autogas also informs school districts about propane infrastructure options. It helps districts choose the right fueling option based on fleet size, routes, budget and facility space.

There are thousands of propane fueling stations for public use across the U.S., including six that Propane Autogas has in Indiana. However, many districts find having a station on school property maximizes productivity. For districts looking for onsite infrastructure, Propane Autogas installs a no-cost fueling station in exchange for a fuel contract. This arrangement allows school districts to eliminate capital investment, leaving only the cost of fuel.

The company provides flexibility for their customers with dispensing options and fuel delivery services as well. “Propane Autogas LLC can set up a dispenser and customers can then choose to have us or another local propane company deliver the fuel,” said Gibson. He notes that the company's fueling stations report on important data, like gallon usage, to assist with district costs and driving efficiencies.

For customers with up to four vehicles, Propane Autogas LLC installs a mobile dispensing unit with a 1,000-gallon tank at the customer's location. As the customer expands its propane fleet, the company will provide a larger 3,000-gallon tank. The infrastructure may increase to an 18,000-gallon storage tank, which is either put underground or aboveground, based on location.

After installation, the company trains district employees on how to use their propane dispenser and how to fuel their vehicles properly and safely.

4. Maintenance

Propane Autogas offers maintenance for both propane infrastructure and servicing the buses. The company replaces or fixes fueling dispensers within a 24-hour window. If more maintenance time is required, the company arrives with a bobtail to directly fuel vehicles and keep customer operations running smoothly.

For the propane buses, Propane Autogas' sister company, First Class Auto Repair, provides maintenance with certified propane mechanics. First Class Auto Repair services include general bus tune-ups and roadside assistance.

The company also explains how maintenance costs are reduced due to propane's clean operation. Propane buses eliminate the need for additional fluids or filters; exhaust after-treatment or diesel emissions fluids; particulate trap systems; turbochargers or intercoolers. Filter packages cost about 60% less, and propane uses less engine oil. For example, an oil change for a Blue Bird Vision Propane bus uses about seven quarts compared with 25 to 30 quarts for a typical diesel engine.

Safe, Clean Student Transportation

School districts have myriad goals related to student safety and success. "Southwest Allen County Schools has developed and encouraged a culture of learning that embraces change, flexibility and innovation," said Dr. Philip Downs, superintendent of Southwest Allen County Schools.

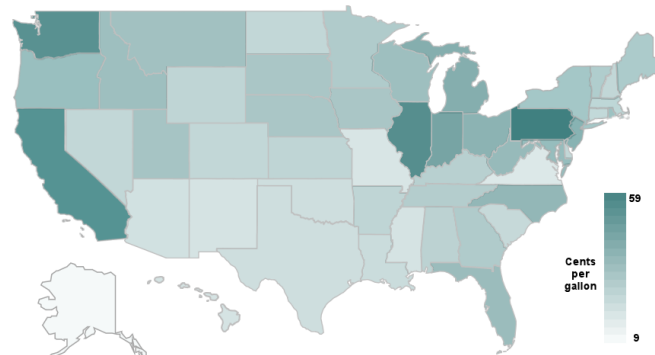
"This stretches far beyond the curriculum and helps to guide many decisions throughout the district. One concrete example of this is our shift to propane buses to promote sustainability and cost containment."

Across the nation, there are more than 20,000 propane school buses operating in over 1,000 districts. That number continues to grow as districts across Indiana and the nation experience firsthand the cost savings and emission reductions of propane buses, leading the way to safer and cleaner student transportation.



ROUSH[®]
CLEANTECH

State Gasoline Tax Rates, February 2019



In addition to the federal gasoline tax of 18.4 cents per gallon, four states – Pennsylvania, California, Illinois, and Washington – have state taxes over 50 cents per gallon, Alaska has state gasoline taxes less than 10 cents per gallon. This includes gasoline tax plus other per gallon taxes such as leaking underground storage tank tax.

See Table 11.10 of the Transportation Energy Data Book Edition 38.2

Increasing Electric Vehicle Adoption in the Second-Hand Market

Shopping for a used electric vehicle? View our [Used Electric Vehicle Buyers' Guide](#).

Plug-in electric vehicles (EVs) provide benefits to all Americans: cleaner air, reduced healthcare costs, reduced reliance on foreign oil and improved national security, financial savings for consumers, jobs in the technology and innovation sectors, and reduced carbon emissions. Given these benefits, it is no surprise that adoption of these clean vehicles is growing, with nearly **1.5 million EVs** on the road throughout the U.S. today. These light-duty passenger EVs are one piece of the larger transportation sector that is transitioning to an all-electric future.

In order to reap the benefits from a fully electric transportation sector, all aspects of the light-duty vehicle sector need supportive policies. One often overlooked sector is the second-hand EV market. With thousands of new EVs coming off of leases, used EVs are more available than ever before, particularly in states where there has been a growing new EV market the past few years. Since battery electric vehicles (BEVs) have ten times fewer moving parts than gas cars, the only major concern in purchasing or leasing a used EV is the quality of the battery. Even with plug-in hybrid EVs (PHEVs), which run on electricity and/or gas, these cars experience less wear and tear because the miles driven on the electric motor reduce wear on the internal combustion vehicle components. In terms of the battery, most BEVs and PHEVs are under warranty by the automaker for typically eight years, but the batteries can last anywhere from 15-20 years or longer without losing much capacity to hold a charge, depending on how the vehicle is driven and charged.

Used EV Purchase Incentives

Federal, state, and local incentives have lowered the effective purchase price of new EVs, which in turn has lowered the cost of used EVs.

There are an increasing number of used-EV incentives, which can take the form of a straight rebate, a “cash for clunker” program, or a reduced charging rate from local utilities. These incentives are important to make EVs even more affordable to traditionally underserved communities and lower income households. Most existing examples of used EV incentives are direct rebates, though new policies targeting lower-interest loans may also be highly effective. Regardless of the form of the purchase incentive, ensuring there are new and **used vehicles** on the road broadens the visibility of these vehicles amongst all consumers.

California:

- The **Clean Cars for All program** focuses on providing up to \$9,500 through the California Climate Investments (CCI) to lower-income California drivers to scrap their older, high-polluting cars and replace it with a new or used BEV or PHEV. The program is limited to vehicle owners residing in participating air districts, and those who meet income and vehicle requirements.
- The **Low Carbon Fuel Standard** requires the utilities in CA who have opted in to this program to offer a credit back to current and future EV drivers. The credit has ranged from \$50-\$1000 depending on the utility, and may be used for the purchase of a used EV.
- Pasadena Water and Power (PWP) **provides rebates of \$250** to residential customers who purchase or lease an eligible new or used EV. An additional \$250 is available if the EV was purchased or leased from a Pasadena dealership. Customers participating in PWP’s income-qualifying programs may also qualify for an additional \$250 rebate, for a total of \$750.

Florida: The Orlando Utilities Commission provides **rebates of \$200** to residential customers who purchase or lease an eligible new or used EV. Applicants must apply within six months of the purchase or lease of the EV.

New Hampshire: The **New Hampshire Electric Co-op** offers rebates of \$1,000 for the purchase or lease of a new or used BEV, and \$600 for the purchase or lease of a new or used PHEV.

Oregon: **Clean Vehicle Rebate Program**: Low and moderate income households may be qualified for the Charge Ahead program, which offers a rebate of \$2,500 for the purchase or lease of a new or used BEV or PHEV. All EVs must have an MSRP of \$50,000 or less.

Pennsylvania:

- Duquesne Light Company offers a **rebate of \$1,000** to DLC customers for the purchase or lease of a used BEV or PHEV.
- The state **Alternative Fuel Vehicle rebate** offers \$750 for “one-time preowned” BEVs and \$500 for a “one-time preowned” PHEV with less than 75,000 miles.

Washington: The **retail sales tax** of 6.5% will not apply to either the sale or lease of used BEVs or PHEVs with a range of at least 30 miles.

Battery Replacement Programs for Used EVs

Some states are also implementing policies that will assist buyers of used EVs to replace the battery in an EV, if certain criteria are met. One such state is California. The California Air Resources Board will establish the **Zero Emission Assurance Project** (ZAP) to offer rebates for the replacement of the battery or other related vehicle component for eligible used EVs. Rebates will be limited to one per vehicle, and applicants must be at or below 80% of the statewide median income, and will be available through July 31, 2025.

Zero and Low Interest Loans for Used EVs

Financing programs can help consumers purchase used EVs, particularly low-income consumers. In Washington state, the “**EVs for EVERYONE**” program is offered to Washington residents through a partnership between Plug In America and the Express Credit Union. Loans to purchase a new EV are as low as 3.24%, while loans to purchase a used EV are as low as 3.49%. Applicants also receive a free access to Plug In America’s **EV Support Program**, and also have optional access to an experienced EV owner as a mentor to assist in the car buying process. In California, the **Clean Vehicle Assistance Program** is administered by the Beneficial State Foundation (BSF) and offers low-income Californians grants of up to \$5,000 for a used EV (or new) and affordable **financing opportunities** ($\leq 8\%$ interest); including up to \$2,000 for a Level 2 home charger installation for eligible vehicle purchases or a \$1,000 prepaid charge card and a free portable Level 1 charger.

If you have questions, contact us at info@pluginamerica.org

Pitt Shuttles Switch to Propane, Reducing Carbon Emissions

Starting in July 2020, Pitt’s new shuttles are a state-of-the-art fleet of 20 propane-powered shuttle buses, which help us reach towards carbon reduction goals and improve local air quality.



Starting July 1, 2020, Pitt’s new shuttles are a state-of-the-art fleet of 20 propane-powered shuttle buses! Along with new amenities like passenger-counting technology and WiFi, the shuttles will contribute to a 33% reduction in carbon emissions from Pitt’s shuttle operations (previously a mix of gasoline and 5% biodiesel vehicles).

Operated by Pittsburgh Transportation Group, the shift to propane-powered shuttle vehicles will help Pitt move toward its [carbon neutrality goals](#). Campus shuttle vehicles are projected to operate for over 4,350 hours annually, supporting over 2 million rides per year. The new shuttles **will reduce shuttle-related carbon dioxide emissions by 33%**, (the equivalent of emissions from 44 passenger vehicles). Localized nitrogen oxide emissions will also decrease by approximately 20% due to the fuel switch.

If you want to learn more about Pitt’s shared and active mobility choices, read this [Pitt Transportation 101!](#)

The shift to propane-powered vehicles will help the University move toward its [carbon neutrality goals](#). “These shuttles are more fuel efficient and emit less carbon than comparable diesel or gasoline-powered vehicles,” said Kevin Sheehy, assistant vice chancellor of Auxiliary Operations and Finance. The new shuttles will cut shuttle-related carbon dioxide emissions by 33% and nitrogen oxide emissions by 20%, the equivalent of emissions from 44 passenger vehicles.



A more sustainable fleetPitt’s own fleet of vehicles, including trucks and vans, are on the road to greater sustainability, too. A new agreement with [Enterprise Fleet Management](#) will provide electric and hybrid vehicles in support of the University’s commitment to making the campus [carbon neutral](#) by 2037.

Enterprise will deliver 32 new vehicles to start, including pickup trucks, cargo vans and passenger vans. Overall, it will lease 268 vehicles to Pitt. The agreement is projected to save the University \$750,000 over the next five years.

Is A Plug-In Hybrid A Real Electric Car? Is It Dead Like The Chevy Volt?



Chevy Volt in 2014 above the California Aqueduct in the Mojave Desert. In 2020, a plug-in hybrid or ... [+]

CREDIT: BROOKE CROTHERS

The Chevy Volt plug-in hybrid was blazing an electronic trail long before it was cool to own an EV.

The beauty of the Volt (which I owned back in 2013) was that 90 percent of the time it was an electric car but could switch to a gas engine-driven generator for long trips. The combined range of electric and generator was typically over 300 miles.

The Chevrolet Volt was a cutting-edge “EV” back in 2011 when it arrived at dealers:

- It offered 300+ miles of range in 2011
- Never had to worry about charging on the road
- Typically under \$40K
- Only real competitor for range was the \$90K+ Tesla Model S

Way back in the dark ages of the EV, an electric with 300+ miles of range was a minor miracle for under \$40K. The only option for long range at that time was the unaffordable \$90K-and-up Tesla Model S which offered a top range of 265 miles (EPA estimated).

Why did GM kill the Volt?

Lots of Volt owners who adored the car howled when GM killed it (slightly reminiscent of GM killing the EV1 as depicted in "[Who Killed the Electric Car?](#)").

But GM couldn't afford to make both the pure electric Bolt and plug-in hybrid Volt.

At the time the Volt was launched, circa 2010, GM was paying close to \$1,000 per kilowatt-hour for lithium-ion batteries — "A hefty penalty for a vehicle that needed a 24 kWh pack — or around \$24,000 per vehicle," [according to CNBC](#). In short, GM was losing money. Probably lots of it.

So it had to commit to one technology, the pure EV, represented today by the Chevy Bolt. And GM has said publicly, including comments by CEO Mary Barra, that going forward it wants to focus on pure EVs like the upcoming Cadillac Lyriq and electric Hummer.

The plug-in hybrid isn't dead

The plug-in hybrid isn't going away, though. Toyota and Ford, among others, have some strong offerings. Some of the best include:

- 2020 Toyota Prius Prime: 25 miles of EPA-estimated battery-only range, total of EPA-estimated 640 mile range, starting at \$27,900
- 2021 Toyota RAV4 Prime: 42 miles of battery-only range, total range is 600 miles, starting at \$38,100
- 2020 Ford Escape Plug-In Hybrid: 37 miles of battery-only range, total range is 530 miles, starting at around \$33,000
- 2020 Hyundai Ioniq Plug-In Hybrid: 29 miles of battery-only range, total range is 630 miles, starting at around \$26,500
- 2020 Chrysler Pacifica Hybrid: 32 miles of battery-only range, total range is 520 miles, starting at \$39,995

Are plug-in hybrids electric cars?

Answer: it depends on how far you drive every day.

In the case of the Volt, when it switches to its gas-engine-powered generator it's using gas. So, if you spend a lot of time in gas mode — driving relatively long distances — by definition that's not an electric car.

However, if you spend most of your time driving locally (e.g., in and around Los Angeles like I did) and rely mostly on the battery, it becomes mostly an electric. And it can become a pure electric for many people who drive relatively short distances every day.

There is also the added convenience that many Volt owners cite: no need to worry about finding a charging station (and wasting an hour recharging) on long road trips.

Should you consider a plug-in hybrid?

Electric car purists would say no. Because you're still driving a "dirty" car, i.e., one with an internal combustion engine (ICE). I would push back on that by saying plug-in hybrids are eminently practical. I often took my Chevy Volt on long trips and appreciated the fact that I didn't have to deal with the anxiety of finding a charging station (aka range anxiety). Plus it got stellar gas mileage. For me, it was over 50 MPG when using the generator.

Answer: until a sub-\$40k electric car offers 400 miles of range and until charging stations are more common, a plug-in hybrid is not a bad choice.

But pure EV options are definitely improving:

Pure EV options in 2020 for long range include:

- 2020 Tesla Model 3 base model (Standard Range Plus) with 250 miles of EPA estimated range starting at \$37,990
- 2020 Tesla Model 3 Long Range model with 322 miles of EPA estimated range starting at \$46,990

- 2020 Chevy Bolt with an EPA range of 259 miles starting at \$36,620
- 2020 Hyundai Kona EV with an EPA range of 258 miles starting at \$37,190
- 2020 Nissan Leaf S Plus with an EPA range of 226 miles starting at \$38,200

What are example applications of natural gas ferries and locomotives?

Natural gas use in locomotives and ferries is still in the early stages, though we featured examples and provided some background information below. Please note that we cannot verify the accuracy of non-government resources.

Liquified Natural Gas (LNG) Ferries and Ships

First, the Alternative Fuels Data Center's (AFDC) Case Studies database includes an example LNG maritime application, *Natural Gas Makes a Splash in Florida* case study (<https://afdc.energy.gov/case/3080>; <https://afdc.energy.gov/case/3080?text>). This case study details a port in Florida that provides LNG fueling for ships.

In 2012, Washington State Ferries contracted a study, *Evaluating the Use of LNG in Washington State Ferries (WSF)*, to answer questions surrounding the feasibility of converting or building new LNG ferries (http://leg.wa.gov/JTC/Meetings/Documents/Agendas/2012%20Agendas/JTC_010412/LNGDraftFinalReport_010412.pdf). While this paper was authored in 2012, it provides a great overview of considerations for LNG ferry projects, including impacts on security, cost of retrofitting or buying new vessels, and fueling infrastructure availability, as well as soft costs such as training workers. The paper estimates the costs of purchasing new vessels, or retrofitting new vessels:

Note that in 2018, WSF set aside plans to convert six ferries to LNG (<https://www.nwnewsnetwork.org/post/washington-state-ferries-look-harder-diesel-electric-conversion>), and started exploring hybrid electric propulsion as another option.

Natural Gas Locomotives

Like natural gas usage in ferries, natural gas-powered trains are still considered by many to be an emerging application. The U.S. Environmental Protection Agency's Rail and Locomotives Best Practices page (<https://www.epa.gov/ports-initiative/rail-and-locomotives-best-practices>), provides examples of diesel reduction projects for locomotives. While many projects focus on idle reduction and retrofitting yard equipment, we've provided some examples of natural gas usage in locomotives below.

First, Chicago's Regional Transit Authority (RTA) conducted an alternative fuel feasibility study for the Northeast Illinois Regional Commuter Railroad Corporation

(<https://www.rtachicago.org/sites/default/files/documents/plansandprograms/Locomotive%20Alternative%20Fuel%20Study%20Single%20Report%20R1.pdf>)

Next, the New York State Energy Research and Development Authority authored a study, *CNG Short Line Locomotive Study*, to examine natural gas usage in locomotives (<https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Transportation/16-36-Compressed-Natural-Gas-Short-Line-Accessible.pdf>).

The study includes a number of case studies, as well as lessons learned, including:

- *“Locomotive types and age vary among the short lines and can significantly impact the feasibility and cost to retrofit for CNG.*
- *Locomotive CNG retrofits are specialized and unique to each application increasing system complexity and costs.*
- *Many short lines operate on limited schedules and rotate use among several locomotives (which are old and not always reliable requiring them to keep multiple options available) resulting in lower fuel consumption per locomotive. Some operations have adopted more of a cargo/railcar storage or transload business model than transportation only operations.*
- *CNG fueling infrastructure and maintenance facility upgrade costs are high and challenge the business case for use by a single CNG locomotive. Fueling with a CNG trailer filled at an existing nearby station and defueling the locomotive prior to entering the maintenance facility are options to reduce costs (but, can inconvenience staff).”*

PRCC Sustainable Members

Platinum Members



Gold Members



Silver Members



PRCC Membership Levels Information

Membership Options: Individual- \$150 Nonprofit- \$300 Bronze- \$500 Silver- \$1000 Gold- \$2000 Platinum/Sponsor- \$4000+

To find out more on membership levels go to:

<http://www.pgh-cleancities.org/membership/>



The Pittsburgh Region Clean Cities Board of Directors would like to thank all our members and stakeholders for supporting our coalition and mission!



UNITED WE STAND – SEPTEMBER 11, 2001

Our deepest sympathy and heartfelt thoughts go out to our fellow Americans during this time of crises. We will continue to stand strong and united in our support of the men and women protecting our country's interests.

Please come visit our PRCC Web Site:

www.pgh-cleancities.org

. Contribute Your News!

In trying to get the news of successes we have in our area. Please feel free to contact Rick Price, Executive Director/Coordinator at 412-735-4114 or at coordinator@pgh-cleancities.org.

Learn more about Clean Cities at cleancities.energy.gov, and learn how to get involved with the Pittsburgh Region Clean Cities coalition at www.pgh-cleancities.org

