

The Hybrid Vehicle and Alternative Fuel Report

November 15, 2016

The fine print: This report is a summary of articles appearing in popular, business, and technical media referring to the impact of fuel costs and fuel efficiency on vehicle technology, development, and markets. At the end of the report is a list of all articles summarized with hyperlinks to internet sources where available. Some articles may require free registration or paid subscriptions to view. *The Hybrid Vehicle and Alternative Fuel Report* (ISSN: 1946-1011) is compiled and written by Thomas L. R. Smith, Ph. D. (hereinafter referred to as "The Editor"), Economic Analysis Branch of the Budget and Financial Analysis Division, Washington State Department of Transportation. Contact *The Hybrid Vehicle and Alternative Fuel Report's* editor at smithtm@wsdot.wa.gov or (360) 705-7941. Contributions of news items, original articles, cookies, and positive comments about *The Report* are welcome.

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National Sales for October 2016

Sales for hybrids, plug-in hybrids, and electric cars were pretty lackluster for October, but then so was the entire new car market. There were 26,484 hybrids sold in October, the lowest number sold since June 2011, *HybridCars* (Cobb, November 2, 2016) reported. Prius, as always, led the pack, but *HybridCars* still described Prii sales as "terrible." There were only 5,421 Prii sold. Ford sold 4,915 Fusion hybrids. Prius hasn't had a competitor come this close since back in the days that the first Honda Insight was competitive. Never the less, Toyota still dominated the sector, selling 61% of all hybrids. Still, hybrids only took 1.94% of total new car sales.

Plug-in hybrids did OKish in October. The sector was led by Chevrolet's Volt, which took 36.87% of the plug-in hybrid market. Usually, though, Ford's combined sales of the Fusion and Energi surpass GM's plug-in sales. This was not the case in October, where Ford's total sales were only 32.69% to GM's 36.92%. Also unusual, plug-in hybrid sales exceeded battery sales for the first time that we can remember. Plug-ins sold 5,943 units, for 0.44% of the total new car market, compared to 5,408 battery cars (Cobb).

So what happened to electric cars? *HybridCars* chalks it up to "a dramatic decline in Tesla sales" (Cobb). The decline was for two reasons: the first was that Tesla restated monthly sales numbers moving sales into September for accounting purposes; next was that Tesla reduced production to modify assembly for automated-driving applications, which reduced sales. According to *HybridCars*, Tesla sales will jump in November and December. The bottom line is that Nissan Leaf outsold Tesla's Model X by 212 cars to lead the battery pack, but Tesla still commanded the sector with 40% of sales on the strength of its two electric models. Electric cars only took 0.4% of the new car market.

Overall, it was not a great month for hybrid, plug-in hybrid, and electric car sales. These cars only accounted for 2.78% of the new car market (Cobb).

HYBRIDS

It will be hybrids and lasers for the U. S. Army's¹ next combat vehicle, the [Army News Service](#) (Sheftick, November 2, 2016) served. The Army is beginning its analysis for the vehicle that will be fielded in 2035, but it will probably be a hybrid and have laser weapons. Of course, since the vehicle is some ways off, it could be a hydrogen fuel cell vehicle, but a fuel cell that could provide all the power an armored vehicle needs would be pretty large.

The [City of Fontana](#), California, (October 31, 2016) is offering \$500 rebates to buyers of new fuel efficient cars, including hybrids, the City says. The City will pay the rebate to residents of the City who buy a new car from dealerships in Fontana. Cars must have an EPA mpg of 34 or greater and California smog score of 9 or greater to qualify.

Santa Rosa, California, is getting a turbine-electric hybrid recycling truck, [Government Fleet](#) (November 2, 2016) floats. Ratto Group, which handles refuse collection for Santa Rosa, had one of its trucks refitted with a Wrightspeed powertrain. Ratto plans to add another 15 hybrid trash trucks over the next year.

The Slovak government will start handing out rebates for hybrid and electric cars in 2017, [The Slovak Spectator](#) (November 11, 2016) observed. Slovakia's Economy Minister announced that the country has €5.2 million (\$5.7 million) to give to buyers. Hybrid buyers will get €3,000 (\$3,282.99), while electric buyers will get \$5,000 (\$5,471.66). Slovakia hopes to have an additional 1,000 electric or hybrid cars on its roads by the end of next year.

The Israeli Tax Authority plans to eliminate the green tax exemption on luxury hybrid cars next year, so importers are bringing in the cars and warehousing them before the break expires, [Hamodia](#) (Halavy, November 11, 2016) informs. The tax authority will do away with the exemption for any hybrid sold for 300,000 New Israeli Shekels (\$78,135.17). Usually, dealerships in Israel only import a car into the country after an order is made. It is unusual for dealers to bring unsold cars into the country.

ELECTRIC VEHICLES

A report by the [American Lung Association in California](#) (Holmes-Gen & Barrett, October 2016) says that the plan to increase zero emission vehicles (ZEV) in 10 states will save \$21 billion a year in health and climate change costs by 2050. The report looked at the ten states that fully adopted the California emissions plan and makes a "conservative estimate" (p. 5) of the plan's benefits.

Quebec has adopted Bill 104, a Zero Emissions Vehicle standard, for automakers in that Canadian province, the [Quebecois Government](#) (Simard, October 26, 2016) says. Bill 104 was adopted unanimously and takes effect in 2018. Automakers will have the option to refit cars to meet the as yet developed regulations.

Volkswagen shift away from diesel cars to electric will cost 10,000 jobs around the world, [The Local](#) (October 29, 2016) levied. The job loss won't happen all at once, but as VW factories

¹ The Editor's former employer, 1982-1998.

gear up to produce 30 models of electric vehicles by 2025, the company will need fewer employees since electric cars have fewer components than diesels.

[NASA](#) is developing electric airplanes at the Glenn Research Center near Cleveland, Ohio, the agency (Lockhart, October 19, 2016) says. The agency has established the NASA Electric Aircraft Testbed (NEAT) at Plum Brook Station where the Glenn Research scientists tested an electric motor that could fly a small airplane. The plan is to be able to power a commercial plane with electric power.

At the current rate of electric sales in Ireland, it will take the Emerald Isle 90 years to achieve its goal of 50,000 electric cars on Irish roads. It's supposed to achieve that goal by 2020, the [Irish Examiner](#) (Rogers, October 31, 2016) examines. With only 550 cars sold each year since the goal was set, it does not look like it's happening.

Toyota, which has not played in the electric car arena since it unplugged the electric RAV 4 a few years ago, may be back in the game, [Reuters](#) (Tajitsu & Shirouzu, October 30, 2016) reports. Toyota has avoided lithium-ion batteries for many reasons and favored nickel hydride batteries. Recent innovations at Toyota's labs and work with Panasonic have opened up the possibility that Toyota could use lithium in a line of electric cars. The batteries Toyota is developing may be safer and more powerful than the lithium batteries currently used.

Renault-Nissan is introducing a new twist to electric cars with their e-Power system, [Automotive News Europe](#) (Frost & Guillaume, November 3, 2016) explains. The system is something between a range-extended electric and a hybrid. With a hybrid system, the vehicle has a gasoline engine and an electric motor. The two motors provide power to the wheels. An extended-range electric car also has the electric motor and a small gasoline engine, however, with the extended range car, the electric motor is the only source of power to the drive train. The gasoline engine only serves as a generator to recharge batteries between plugging in to recharge. In Nissan's mini-hybrid, the electric motor is the only power source for the wheels, like the extended-range vehicle, the gasoline engine only serves as a generator. The difference is that the gasoline engine generator is the only source of electricity for the batteries. It does not plug-in. So far, the power system will go into the Note sold only in Japan, but they could expand it to other markets and vehicles.

Delaware's Department of Natural Resources and Environmental Control increased rebates for electric cars, plug-in hybrids, propane, and natural gas cars, [WMDT](#) (November 3, 2016) said. All-electric cars can get up to \$3,500, while the others can get up to \$1,500.

Washington's [Governor](#) Jay Inslee (Lee, November 3, 2016) announced that the State doubled the number of electric cars in the State motor pool. The new vehicles are Chevrolet Bolts. The new Bolts have a 230 mile range on a charge and they are \$3,000 less than the cheapest hybrid. Washington bought 130 Bolts and has a contract that allows local governments to buy Bolts. The Bolts will emit 2.3 to 3.3 times less carbon than hybrids. Mrs. *Hybrid Report* Editor alerted us to this story.

Norway has extended its tax exemption for electric cars, [Electrek](#) (Lambert, November 9, 2016) reported. Norwegian electric car buyers are eligible for a 25% reduction of vehicle value

added tax (VAT), but that exemption was set to expire. Norway plans to have 100% new car sales by 2025. To help achieve that goal, the VAT exemption was extended until 2020.

The City of Denver will add 200 electric cars by 2020, *The Denver Post* (Worthington, November 10, 2016) posted. Beginning in 2018 Denver will replace older cars with electrics. It believes it will save \$800,000 and cut emissions by 2,300 metric tons with the change.

ALTERNATIVE FUELS

Sales of natural gas heavy duty trucks dropped 29% over the three months from June to August, compared to 2015, *Truckinginfo* (October 31, 2015) informs. The declining sales are not related to low fuel costs, but reflect a decline in freight shipping and excess capacity in the freight sector.

Targa's Sound Terminal will begin selling renewable diesel in Tacoma, Washington, *Government Fleet* (Dao, October 26, 2016) floats. The terminal will sell to fuel distributors in 2017. Members of the Public Fleet Managers Association and purchasing agents were able to tour the facility on November 10th.

“Here’s Your Sign:”²The federal Fixing America’s Surface Transportation (FAST) Act passed and signed way back in December 2015 required the Department of Transportation to designate national alternative fuel corridors (*Federal Register*, July 22, 2016). To comply with that requirement, the Federal Highway Administration requested State and local governments to nominate corridors for that designation in July. The designated corridors have been released. The designated corridors include all or portions of 55 Interstate highways in 35 States and the District of Columbia. Corridors are either electric vehicle corridors, hydrogen, propane, compressed natural gas, or liquid natural gas. There are also two types of corridors: signage-ready and signage pending. The signage-ready corridors already have sufficient fuel stations to have special signage installed. The signage-pending corridors need more fuel stations before they get a sign. So, what do you get if you’re a designated corridor? A sign. Yes, folks, you will get a bright shiny new sign designed by the FHWA that meets the standards for signage set in the *Manual of Uniform Traffic Control Devices*. Washington and Oregon’s West Coast Electric Highway was designated an EV corridor. Interstate 5 in Washington was also designated propane, CNG, and LNG corridors. You can find a map of all the designated corridors at the [FHWA website](#). *Hybrid Report* subscriber Sharon Love³ alerted us to this development.

COMING TO A LOCATION NEAR YOU: The latest news on new charging stations which may or may not be somewhere close to you.

United States: To ensure their sky stays blue with white clouds high above,⁴ the town of Greenfield, Massachusetts moved their charger from Miles Street to Town Hall, *WWLP* (Linnartz, October 28, 2016) says. While the town has had the charger for four years, the Mayor’s office said that town hall is a better location and that, since the charger had recently been vandalized, the new location provides better security.

² Bill Engvall, *Here’s Your Sign*, Warner Brothers Nashville, 1996.

³ And FHWA employee.

⁴ Terry Gilkyson, Richard Dehr, and Fank Miller, “Greenfields,” 1956, EMI Blackwood Music, Inc., from *The Brothers Four*, Columbia, 1960.

When my Pennsylvania cousin moves into his luxury apartment at the new 500 Walnut tower in Philadelphia, he will be able to charge his electric car with the first wireless induction charging system installed in a residential building in the U. S. (Ayre, *Clean Technica*, October 30, 2016). In addition to charging the car, the system parks it as well.

Camden Yards stadium in Baltimore,⁵ Maryland, has nine charging stations, *The Baltimore Sun* (Barker, November 1, 2016) shines. One of the chargers is a fast charger, while the rest are level 2. The chargers were installed with a grant from Maryland's Electric Vehicle Supply Equipment Rebate program.

West Virginia's Pipestem Resort State Park got the first of eight chargers that will populate State Parks, the *Charleston Gazette-Mail* (November 4, 2016) sent. The level 2 chargers can charge two cars at a time. The West Virginia plans to install chargers at all State Parks that have lodges.

Nevada Governor Brian Sandoval cut the ribbon on Nevada's Electric Highway's second charging station, the *Sparks Tribune* (November 9, 2016) sparked. The station was installed at the Fox Peak Station, a gas station operated by the Fallon Tribal Development Corporation, in Fallon, Nevada.⁶ There is a DC fast charger and two level 2 chargers at the station. Governor Sandoval said he wants Nevada to be the first in the nation to have an electric highway. We must break the news to the Governor that Washington, Oregon, and California have all beat Nevada to the punch.

Southlake, Texas, in the Dallas-Fort Worth area, opened a new charging station at Southlake Town Square, the Fort Worth *Star-Telegram* (McFarland, November 11, 2016) sent. The ChargePoint charger was given to the City by TXU Energy. Even though the area gained this charger, the chargers in nearby Grapevine will be shut down for lack of use.

Around the World: Story Homes in Carlisle, England, installed two chargers which can serve four vehicles, *Cumbria Crack* (Fallowfield, November 1, 2016) cracked. The chargers are intended for employees to use to charge company cars.

There is now a charger at the West End car park in Kaikoura on New Zealand's South Island, *Stuff* (Dangerfield, November 2, 2016) says. There is no charge for charging, however chargers charging at the charger will pay normal parking charges.

Pakistan got its first public charger, *The Express Tribune* (Haq, November 9, 2016) expressed. The new charger was installed at the Emporium Mall in Lahore by Dewan Motors, the local BMW dealership.

OTHER TECHNOLOGY

There is no other technology.

⁵ Pronounced, "Bal-mer."

⁶ The Editor was deployed several times to nearby Naval Air Station Fallon during his naval career from 1976-1980. He has fond, but fuzzy memories of Fallon.

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ARTICLES REFERENCED

- Army News Service*. 2016, November 2. Lasers and hybrid power likely for Next-Generation Combat Vehicle. Retrieved:
https://www.army.mil/article/177734/lasers_and_hybrid_power_likely_for_next_generation_combat_vehicle
- Ayre, J. 2016, October 30. 1st Of Its Kind Wireless EV Charging System Coming to 500 Walnut Residential Tower (Philadelphia). *Clean Technica*. Retrieved:
<https://cleantechnica.com/2016/10/30/1st-kind-wireless-ev-charging-system-500-walnut-residential-tower-philadelphia/>
- Charleston Gazette-Mail*. 2016, November 4. Electric vehicle chargers planned for 8 state parks, first station opens at Pipestem. Retrieved:
<http://www.wvgazette.com/outdoors/20161104/electric-vehicle-chargers-planned-for-8-state-parks-first-station-opens-at-pipestem->
- Cobb, J. 2016, November 2. October 2016 Dashboard. *HybridCars*. Retrieved:
<http://www.hybridcars.com/october-2016-dashboard/>
- Dangerfield, E. 2016, November 2. Environmentally conscious travelers can now charge electric cars in Kaikoura. *Stuff*. Retrieved:
<http://www.stuff.co.nz/environment/85838985/environmentally-conscious-travellers-can-now-charge-electric-cars-in-kaikoura>
- Dao, T. 2016, October 26. Renewable Diesel Coming to Washington. *Government Fleet*. Retrieved: http://www.government-fleet.com/news/story/2016/10/renewable-diesel-coming-to-washington.aspx?utm_campaign=enews-monday-new-20161031&utm_medium=Enewsletter&utm_source=Email
- Fallowfield, C. 2016, November 1. Story Homes charged and raring to go. *Cumbria Crack*. Retrieved: <http://www.cumbriacrack.com/2016/11/01/story-homes-charged-raring-go/>

- Federal Register*. 2016, July 22. Volume 81, Number 141, Docket No. FHWA-2016-0017.
<https://www.federalregister.gov/documents/2016/07/22/2016-17132/fixing-americas-surface-transportation-act-designation-of-alternative-fuel-corridors>
- Fontana, City of. 2016, October 31. Alternative Fuel Vehicle Rebate Program. Retrieved:
<http://us8.campaign-archive2.com/?u=0d15ef4170b9d995ab2441109&id=3cf2ec7dae>
- Frost, L.; & Guillaume, G. 2016, November 3. Ghosn says mini-hybrids could compete in Europe. *Automotive News Europe*. Retrieved:
<http://europe.autonews.com/article/20161103/COPY/311039889/ghosn-says-mini-hybrids-could-compete-in-europe?cciid=email-ane-daily>
- Government Fleet*. 2016, November 2. Turbine-Electric Hybrid Trash Truck Deployed. Retrieved: http://www.government-fleet.com/news/story/2016/11/turbine-electric-hybrid-trash-truck-deployed.aspx?utm_campaign=enews-monday-new-20161107&utm_medium=Enewsletter&utm_source=Email
- Halavy, D. 2016, November 11. Importers Rush to Bring In Luxury Hybrids Before Tax Hike. *Hamodia*. Retrieved: <http://hamodia.com/2016/11/11/importers-rush-to-bring-in-luxury-hybrids-before-tax-hike/>
- Haq, S. 2016, November 9. Pakistan's first public charging station opened for hybrid electric vehicles. *The Express Tribune*. Retrieved: <http://tribune.com.pk/story/1224905/hybrid-electric-vehicles-pakistans-first-public-charging-station-opened/>
- Holmes-Gen, B.; & Barrett, W. 2016, October. *Clean Air Future: Health and Climate Benefits of Zero Emission Vehicles*. American Lung Association in California. Retrieved: <http://www.lung.org/local-content/california/documents/2016zeroemissions.pdf>
- Lambert, F. 2016, November 9. Norway keeps electric vehicle tax exemption until 2020, positions itself to stay EV leader. *Electrek*. Retrieved: <https://electrek.co/2016/11/09/norway-keeps-electric-vehicle-tax-exemption-until-2020-positions-itself-to-stay-ev-leader/>
- Lee, T. 2016, November 3. Inslee doubles state electric vehicle fleet with long-range EV purchases. Washington Governor Jay Inslee. Retrieved: <http://www.governor.wa.gov/news-media/inslee-doubles-state-electric-vehicle-fleet-long-range-ev-purchases>
- Linnartz, K. 2016, October 28. Electric vehicle charging station to move to Greenfield Town Hall. *WWLP*. Retrieved: <http://wwlp.com/2016/10/28/electric-vehicle-charging-station-to-move-to-greenfield-town-hall/>
- Lockhart, D. 2016, October 19. It's Electric! NASA Glenn Engineers Test Next Revolution Aircraft. NASA. Retrieved: <https://www.nasa.gov/feature/it-s-electric-nasa-glenn-engineers-test-next-revolution-aircraft>



McFarland, S. 2017, November 11. Southlake adds electric vehicle charging spots to Town Square. *Star-Telegram*. Retrieved: <http://www.star-telegram.com/news/local/community/courier-journal/article114119433.html>

Rogers, S. 2016, October 31. Ireland to fall short on electric car targets. *Irish Examiner*. Retrieved: <http://www.irishexaminer.com/ireland/ireland-to-fall-short-on-electric-car-targets-428248.html>

Simard, E. 2016, October 26. Quebec moves forward with a zero-emission vehicle standard. Office of the Minister of Sustainable Development. Retrieved: http://www.mddelcc.gouv.qc.ca/infuseur/communiqu_e_en.asp?no=3599

The Slovak Spectator. 2016, November 11. State supports purchase of electric and hybrid cars with €5.2 million. Retrieved: <http://spectator.sme.sk/c/20380982/state-supports-purchase-of-electric-and-hybrid-cars-with-5-2-million.html>

Sparks Tribune. 2016, November 9. Nevada Expands its Electric Vehicle Infrastructure with New Charging Station. Retrieved: <http://sparkstrib.com/2016/11/09/nevada-expands-its-electric-vehicle-nfrastructure-with-new-charging-station/>

Tajitsu, N.; & Shirouzu, N. 2016, October 30. Warming to lithium-ion, Toyota chargers up its battery options. *Reuters*. Retrieved: <http://www.reuters.com/article/us-toyota-batteries-idUSKBN12U0ZH>

The Local. VW's electric car switch 'to cost 10,000 jobs.' Retrieved: <https://www.thelocal.de/20161029/vws-electric-car-switch-to-cost-10000-jobs>

Truckinginfo. 2016, October 31. Natural Gas Truck Sales Fall in Weak Freight Environment. Retrieved: http://www.truckinginfo.com/channel/fleet-management/news/story/2016/10/natural-gas-truck-sales-decline-in-weak-freight-environment.aspx?utm_campaign=Fuel-Smarts-20161101&utm_source=Email&utm_medium=Enewsletter

WMDT. 2016, November 3. Update: Del. offering \$3,500 in rebates for electric vehicles. Retrieved: <http://www.wmdt.com/news/more-local-news/update-del-offering-3500-in-rebates-for-electric-vehicles/42358916>

Worthington, D. 2016, November 10. City of Denver commits to adding 200 electric cars by 2020. *The Denver Post*. Retrieved: <http://www.denverpost.com/2016/11/10/denver-electric-cars/>

That'll do.