

The Hybrid Vehicle and Alternative Fuel Report

March 15, 2015

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 access. *The Hybrid Vehicle and Alternative Fuel Report* (ISSN: 1946-1011) is compiled, written, and edited by Thomas L. R. Smith, Ph. D., 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, positive comments about *The Report*, and cookies are welcome. Please send cookies. And not the computer kind.

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NATIONAL HYBRID, ELECTRIC, AND PLUG-IN HYBRID VEHICLE SALES

February is not a big month for auto sales, and that may be one reason, according to *HybridCars* (Cobb, March 4, 2015), that hybrid cars, plug-ins, and electric cars did not sell well. Bad weather on the East Coast and low gas prices may have been factors, as well. The hybrid market, the largest of the three groups with 27,000 units sold and 2.2% of the car market was up from January, but down from February one year ago. Toyota, as usual, dominated the hybrid market with 63.8% of the hybrid sector. Ford was a distant second, with almost 14%.

Plug-in hybrid sales continue to be weak. They accounted for 2,600 vehicles, or 0.21% of the total car market. While the Chevy Volt led the pack with 26.8% of plug-in sales (a mere 693 cars), Ford took the lead in the sector with 42.5% of sales divided between the Fusion Energi, selling 603 copies, and the C-Max Energi, selling 498. Toyota's plug-in Prius, at 397 cars (15.3%), and the Cadillac ELR rounded out the top five plug-ins.

Battery vehicles are doing better than plug-ins. They sold 3,400 vehicles in February, or 0.35% of the market. Tesla led the sector with 1,400 cars (31.6%) sold, but was trailed closely by Nissan's Leaf at 1,200 vehicles and the BMW i3 at 1,100.

HYBRIDS

We normally don't cover reviews of new hybrid, electric, or alternative vehicles because they are opinion pieces. However, we make exception for this piece from Canada's *The Globe and Mail* (Nice, February 26, 2015) because it contains an interesting tidbit of fact. The reviewer was testing plug-in hybrids, specifically the Prius,

Ford Fusion Energi, and Chevy Volt. While driving in “electric drive mode” on the Prius, the reviewer noticed that her gas gauge was dropping anyway. She also noticed that only 16% of her trips were in electric mode. She asked an expert why. Peter Frise of AUTO21 Network Centres¹ of Excellence told her it was winter. To explain further, that in winter, even though you may plan to drive in electric mode, the hybrid car still has to keep the catalytic converter warm, so the car will run the engine. Even if you select electric mode.

Automotive journalists in the United Kingdom have named the BMW i8 plug-in hybrid as 2015’s UK Car of the Year, *HybridCars* (Crowe, February 27, 2015) says. The car was also named Performance Car of the Year.

Consumer Reports (April, 2015) had different ideas when it designated the Toyota Prius the best Green Car of 2015. *Consumer Reports* says the combination of “affordability, stellar fuel economy, smart packaging, and blue chip reliability” has made the car a “Top Pick for 12 years in a row.” Unfortunately, due to *Consumer Reports’* subscription policy, we can’t link to the article. The hard copy was loaned to us by *Hybrid Report* subscriber Brian Calkins.

National University in San Diego converted its fleet of administrative vehicles to Honda Accord plug-in hybrids, the University (March 2, 2015) said on its [website](#). The school bought 26 hybrids for their campuses around California.

Morgan Olson, the maker of delivery vans, introduced a gasoline-electric hybrid model at the NTEA Work Truck Show in Indianapolis, IN, *Truckinginfo* (Heavy Duty Trucking, March 5, 2015a) informed. The truck uses a Kinetics Hybrid system manufactured by Crosspoint Kinetics to capture kinetic energy from breaking. The van is designed for use delivery operations that entail a lot of starting and stopping.

Kiessling Transit, a company that subcontracts with Massachusetts public transit authorities to provide transportation for persons with disabilities, will add 35 hydraulic hybrid buses, *Truckinginfo* (Heavy Duty Trucking, March 6, 2015) says. The buses use Ford chassis and Elkhart Coach bodies, while the hybrid drive train is made by Lightning Hybrids.

Talley Ho! The British Government placed an order for 142 plug-in hybrids and electric cars, *Transport Evolved* (Gordon-Bloomfield, March 11, 2015) transmitted. The order was part of an initiative by the Government to reduce emissions of the government fleet. Fifteen departments participated in the order which includes 78 plug-in hybrids and 64 all-electric vehicles. The Government also announced the Go Ultra Low City Scheme which provides £35 million (\$52.3 US) to help British cities reduce emissions.

¹ It’s Canada. They spell funny.

Siemens gave the Chattahoochee Nature Center near Atlanta, Georgia, a new hybrid-electric shuttle bus, *Greentech Lead* (Wahid, March 11, 2015) led. The bus is made by Azure Dynamics and powered by a Siemens regenerative braking system. The Chattahoochee Nature Center in Roswell provides environmental education.

ELECTRIC VEHICLES

We spend a lot of time in *The Hybrid Report* discussing electric and hybrid passenger cars. But Ian Wright, one of the founders of Tesla and now the boss at Wrightspeed, says the emphasis should be on trucks, *The Verge* (Vincent, February 27, 2015) voices. Mr. Wright points out that passenger cars burn only 600 gallons of gas a year. A garbage truck, on the other hand, burns 14,000 gallons per year. Of course, Wrightspeed is in the business of converting conventional trucks to electric.

By 2017 the Province of Jeju Island, south of South Korea's mainland, will be the home of 50,000 electric vehicles, *BusinessKorea* (Jung Y., February 11, 2015) boasts. Jeju Island had 850 electric vehicles last year, but that number has grown to 1,500. Planners also plan for an equal number of electric cars in the Korean capital of Seoul.

The Scottish Government plans to phase out all public sector petroleum-fueled vehicles by 2050, *Click Green* (February 27, 2015) clucked. The Government has dedicated £2.5 million (\$3.8 million, U. S.) to enable local governments and public entities to convert their fleets to electric. Scotland leads the United Kingdom in electric vehicle conversion.

Also from Scotland, Orkney Island has more electric cars per person than any other place in Scotland, after Scotland's Capital, *The Scotsman* (Munro, March 8, 2015) says. Orkney accounts for 5% of Scotland's electric vehicles, but only has 0.4% of the population. It appears one of the reasons for electric vehicle popularity, is that much of Orkney's electric power comes from wind turbines. Orkney also has the advantage of being but a wee island that is easy to drive around and has 11 free charge points.

The Fire Department of Kent, Washington, took out three-year leases on two Nissan Leaves, the *Kent Reporter* (February 27, 2015) reported. The two vehicles will be used for administrative uses and the fire prevention division of the Regional Fire Authority.

Seneca, South Carolina's entire bus fleet is all-electric, *Greenville News* (Barnett, February 27, 2015) notes. Seneca claims this is the world's first all-electric bus fleet. The town in the foothills of the Appalachian Mountains has six buses running through town and to nearby Clemson. The buses can go 35 miles on a charge. They get the equivalent of 19 miles per gallon. A regular diesel bus gets about 4 mpg. The buses are made by Proterra in Greenville, South Carolina.

WE'RE NUMBER THREE! According to electric car-charger maker ChargePoint, Seattle is the third friendliest metropolitan area for electric vehicle drivers *EV World* (ChargePoint, March 3, 2015) writes. ChargePoint derived this ranking by factoring in the number electric vehicles registered and the number of ChargePoint chargers. Portland is number ten. The Bay Area and Los Angeles beat Seattle for the top spot. No other chargers were taken into account in determining electric vehicle friendliness.

The Washington State Legislature's Joint Transportation Committee commissioned a report outlining how the private sector could develop sustainable electric vehicle charging networks. That report, *Business Models for Financially Sustainable EV Charging Networks* (Nigro & Fades, March 2015), is now on their website. In the report, we learn that a private business that installed a single fast charger would lose \$44,000 over ten years, while someone installing a level 2 charger would lose \$26,000 over ten years. The challenge, then, is how to install chargers and make a profit, or at least not lose money. The study looks at three business models that can address that. Unfortunately, none of the business models can help a business make the charger payoff in less than five years. The paper concludes that in order to develop adequate charging networks, Government has to play a role by providing grants, loans, tax breaks, and other incentives. News of the report and the link to it was provided by Mary Fleckenstein of the Joint Transportation Committee.

Consumer Reports (April 2015) named the Tesla Model S as Best Overall for 2015. This makes two years in a row for the Tesla. It got *Consumer Reports* highest test score even though it only scored average on reliability.

Tesla began selling cars in China a year ago in April, however, the first year has been rocky, *Investor's Business Daily* (Howell, March 9, 2015) deals. Because sales did not match projections, Tesla is cutting its 600 person workforce by 180.

There are also rumors that instead of building its own electric car, Apple² may buy Tesla, and the subject was brought up by a stockholder at Apple's annual shareholder meeting on March 10th, *Automotive News Europe* (Bloomberg, March 11, 2015) reported. A shareholder suggested that Apple buy Tesla, to which Apple CEO Tim Cook responded, "We don't have a relationship with Tesla." Mr. Cook went on to tout Apple's CarPlay, the system that links iPhones with cars, and said he would like Tesla to add it to their car. The subject was brought up again, and Mr. Cook returned to the subject of CarPlay.

If you happen to be in Port Townsend, Washington, on March 17, take in the Jefferson County Energy Lunch Program. WSDOT's own Tonia Buell will be the key

² In the interest of full disclosure, the Editor owns stock in Apple, but has no inside knowledge of the issue.

speaker at the Lunch and will talk about local EV development in Washington State, the *Port Townsend Leader* (March 11, 2015) led.

ALTERNATIVE FUELS

The state of California has approved dimethyl ether (DME) as a vehicle fuel. DME is a product of methane and is supposed to be cleaner than other fuels, *Truckinginfo* (Heavy Duty Trucking, February 27, 2015) transmits. Volvo Trucks likes the fuel because it gives the power of diesel, handles like propane, is cheaper than diesel, and reduces greenhouse gas emissions. Besides fueling your truck, DME is used to freeze warts.

Is it a Hybrid or Alternative Fuel Vehicle? Ram Truck introduced a new version of its Ram 2500 pickup truck at the NTEA Work Truck Show in Indianapolis, *Truckinginfo* (Heavy Duty Trucking, March 5, 2015b) says. The 2500 burns compressed natural gas (CNG) and gasoline. The CNG burns first and can take the truck 301 miles. Then the gas tank kicks in. You can get either an 8 gallon or 35 gallon tank. That can get you to a total of 966 miles. On CNG, the truck gets the equivalent of 18.2 miles per gallon.

Make it so: Captain Piccard is piloting the solar-powered airplane the Solar Impulse on an around-the-world, the *BBC* (Amos, March 10, 2015) broadcasts. Bertrand Piccard, who was in the first non-stop around-the-world trip in a balloon, and Andre Borschberg are making the trip starting from Abu Dhabi. The flight will take about 5 months to complete. The propeller driven solar-electric plane is powered by 17,000 solar cells mounted on the wings. Its wing span of 236 feet is wider than a Boeing 747-81, but it flies at about 43 mph. Apparently Monsieur Piccard is the grandson of the scientist and adventurer who was the model for Star Trek's Captain Jean-Luc Picard.

Optimus Prime: Pittsburgh will convert 20 heavy duty trucks to biofuel and will build a 5,000 gallon biodiesel station at its garage, *Government Fleet* (March 11, 2015) floated. Pittsburgh tested Optimus Technologies' biofuel technology on five trucks for 18 months before making the decision to convert. Garbage and recycling trucks will be first in line for conversion.

La Poste, the French postal service, is testing a hydrogen fuel cell truck made by Renault, *Post & Parcel* (March 11, 2015) posted. The delivery truck built by Renault should get 200 kilometres (124 miles, U. S.), twice the distance that the same truck gets on electricity alone. The vehicle will also have electric batteries that can be recharged.

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: The [City of Roswell](#) (February 23, 2015), just north of Atlanta, Georgia, set charging fees for the chargers scheduled to open to the public in April, the City's website says. The city will charge \$1 per hour for the first four hours. After the four hours, the rate jumps to a whopping \$20 per hour, so you better move your car. Roswell will have four charging stations, with two connectors each, around the city.

We have chronicled, from time to time, the development of Tesla's network of 400 Superchargers along major highways. Tesla also has another charger network it calls "Destination Charging," [Bloomberg Business](#) (Hull, March 2, 2015) blabs. This system is set up through hotels, wineries, and other resorts and has grown to 900 locations in the United States and Asia. These chargers, similar to Tesla's home charging systems, have been installed in high-end hotels like the Four Seasons in Jackson Hole, Wyoming, or bed and breakfast inns on Martha's Vineyard. While one might expect that someone who drops \$80,000 on an automobile would stay at a Four Seasons hotel, some low brow establishments have added them as well. The Suds Hut Famous Chicken in Helena Montana has one. Perhaps after spending \$80,000 on a car, that's all you can afford.

The Diablo Canyon nuclear power plant in California has ten charging stations and will have 12 more, [The Tribune](#) (Sneed, March 2, 2015) of San Luis Obispo says. The chargers are part of Pacific Gas and Electric's effort to install 25,000 chargers in their service area.

Two for Texas:³ Two Texas shopping malls are getting NRG eVgo fast-charging Freedom Stations, the [Fort Worth Business Press](#) (Graham, March 4, 2015) pressed. Grapevine Mills near Fort Worth and Katy Mills outside Houston added the charging stations. Both malls are owned by Simon.

You may very well drive on your next charging station, someday, if [Hot Hardware](#) (Lilly, March 8, 2015) is correct. Hot Hardware reported from the Geneva Auto Show that Goodyear rolled out a concept tire that can recharge electric vehicles when the vehicle is in motion or parked. The secret is a layer of material underneath the tread that converts heat to electricity. Heat from a rolling tire is converted to electricity, but so is heat from hot pavement, while the car is parked.

Short of driving around on your next charging station, a ChargePoint charger could be as close as your own garage, [Charged](#) (Ruoff, March 9, 2015) charges. The charger Charged refers to is the new home charging station introduced by ChargePoint called ChargePoint Home. The home charging market is quite full of entries; however, ChargePoint may have an advantage in home chargers since 70 to 80% of electric car owners have a ChargePoint account.

³ James Lee Burke, *Two for Texas*, New York: Hyperion, 1989

Georgia Regents University (GRU) unleashed a fast charging station at the Health Science Campus in Augusta, [WAGT 26](#) (Randall, March 9, 2015) reported. GRU's minions, we mean people, can charge for \$5 per hour. The fast charger should charge a car to 80% in 22 minutes. The charger was financed with a grant from the Georgia Environmental Finance Authority.

Sandy Springs, Georgia, has two new chargers at the city's Hammond Park, [Sandy Springs Patch](#) (Dixon, March 10, 2015) patched. The level 2 ChargePoint chargers were installed with grants from the Georgia Environmental Finance Authority.

Around the World: Dubai has a network of 16 charging stations, [The National](#) (Badam, February 25, 2015) notes. The Dubai Electricity and Water Authority (DEWA) installed the chargers at 12 of their offices and a 13th Dubai Silicon Oasis. DEWA will install another three chargers next month. DEWA plans to install 84 more chargers at public locations around the emirate by the end of the year.

Quebec, Canada gets two more fast charging stations, [CNW](#) (March 2, 2015) concedes. The Electric Circuit chargers will be at AddEnergie's main office and CAA-Quebec's office. These chargers will be available this spring, while a third will open later this year.

Canadian vacation organization [Club Intrawest](#) (March 8, 2015) announced the installation of Tesla and ClipperCreek car charging stations at its Tremblant location in Quebec. The Tremblant chargers should be available this month but Club Intrawest will open chargers at their locations Whistler and Blue Mountain in Canada and two U. S. locations, Sandestin, Florida, and Palm Desert, California, by during the spring of 2015.

Don't miss the 10th Anniversary Issue of The Hybrid Report, coming March 30th!

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That is all.