



# The Hybrid Vehicle and Alternative Fuel Report

May 30, 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 access. *The Hybrid Vehicle and Alternative Fuel Report* (ISSN: 1946-1011) is compiled, written, and edited 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](mailto:smithtm@wsdot.wa.gov) or (360) 705-7941. Contributions of news items, original articles, and positive comments about *The Report* are welcome.

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## HYBRIDS

Madrid will received 51 Scania hybrid buses in June, Scania (May 12, 2016) said in a [press release](#). Seven different operators will put the Scania Citywide™ buses on routes in the Madrid region. The hybrid buses can run on 100% biodiesel.

The Colorado legislature passed House Bill 1332 which set a flat income tax credit of \$5,000 on hybrids and electric vehicles rather than a series of complex formulae for determining the credit, [Southwest Energy Efficiency Project](#) (May 4, 2016) says. Buyers can get an income tax credit or they can assign the credit to the dealership or finance company to further lower the cost of the vehicle and get an immediate payoff. Some credits were lowered and the bill excludes used and diesel-electric hybrids from the credit, but it looks like more cars are eligible for the credit.

Some hybrid car owners will get free parking in Kelowna, which is somewhere in Canada, [Kelowna Capital News](#) (Waters, May 17, 2016) notes. The city council had removed hybrids from the list of vehicles eligible for free parking, leaving only electric cars with the privilege. But a councilor who owned a hybrid convinced the council to restore the privilege. Not all hybrids get free parking. The car must use less than six litres per 100 kilometres<sup>1</sup>. Hybrids will get free parking for the next two years.

Three [University of California at Riverside](#) engineers have developed methodology for managing how a plug-in hybrid selects electric power or the internal combustion engine which will give plug-in hybrids 5 to 10 more miles per gallon (Boriboonsomsin, Wu, and Barth, Access no. 48, Spring 2016). Typical plug-in systems will use the battery until it's depleted, then shift to fuel while recharging batteries. The

<sup>1</sup> We are not sure what that translates to in real measurements, but we think it's 41 miles per gallon. At least that's our guess.

UC Riverside engineers propose a method that depends on maintaining the batteries state of charge at an optimum level. It seems that batteries are at their least efficient if they are too low on charge or fully charge. Like Goldilocks, batteries are best if they are just right. The power management system would then decide under which conditions each power source should be used. *Hybrid Report* reader Brian Calkins sent this article in.

**I hardly knew ye:**<sup>2</sup> Most people didn't even know it was out there, but Cadillac pulled the plug on the ELR plug-in hybrid, *The Florida Times-Union* (Scanian, May 20, 2016) tells. The luxury car, based on the Chevy Volt, only sold 1,000 vehicles in 2015 and 357 in 2016. Cadillac stopped production back in February. There still a few on dealer lots.

Peapod LLC, the internet grocery operating out of the Midwest, added two hydraulic hybrid delivery vans, *Fleet Owner* (May 20, 2016) floats. These trucks use a hydraulic system to capture energy from braking for use later. The system is expected to reduce emissions from these trucks by 50%. The trucks are plying the streets of Chicago.

## ELECTRIC VEHICLES

The Los Angeles Police Department (LAPD) tested Tesla Model S patrol cars over the last year, but says they won't become part of the fleet, *HybridCars* (Healey, May 12, 2016) reports. While LAPD said the cars did just fine in high speed pursuits and had adequate range, they had two drawbacks: wide spread power outages and price. LAPD expressed concern that the cars would be crippled in a general power outage. But the biggest concern was that the Tesla costs \$100,000 before being outfitted as a police cruiser. The cars LAPD usually buys start at \$30,000 and reach \$40 to \$50,000 once all the police extras are added. LAPD said they will continue to monitor developments in electric vehicles and expect vehicle prices to drop in the future.

Starting in 2018, Audi will release a new electric car each year, *Fortune* (Korosec, May 12, 2016) forecasts. The first electric car will be an SUV based on a concept car first shown last year at the Frankfurt International Motor Show. Audi says that by 2025, one quarter of Audis sold in the United States will be a plug-in.

Dunedin City Council (DCC) in New Zealand will buy 20 electric vehicles over the next five years, *Scoop* (DCC, May 13, 2016) scooped. DCC staff say that the cars can save a penny per kilometre over conventional vehicles. DCC has a fleet of 113 vehicles. Of that fleet, it has 48 cars. The fleet currently has two hybrids and an electric bicycle.

Closer to home, the San Juan County council, right here in Washington State, just approved the purchase of two Nissan Leafs, the *San Juan Islander* (May 12, 2016) says. The County already has two electric vehicles.

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<sup>2</sup> Irish Traditional, "Johnny, I Hardly Knew Ye," ca 1795.

The Indian State of Goa has a plan to put electric rickshaws on the streets of the State, *ET Auto* (TNN, May 14, 2016) elucidates. The plan is to use these as delivery vehicles in the capital of Panaji, public transportation in rural areas of Goa, and refuse collection. The vehicles can run for 10 hours on a charge and get 80 to 90 kilometers (49.7 to 55.9 miles).

Also in India, Kashmir's department of tourism introduced an electric Polaris Ranger to Zabarwan Park, the *Kashmir Reader* (May 14, 2016) writes. The Park will use the vehicle to take tourists to a temple in the park. It can get 70 to 75 kilometers (43.5 to 46.6 miles) on a single charge.

The BMW i3 loses power when the range extender comes on to recharge batteries according to a lawsuit filed in California, *Automotive News Europe* (Stempel, May 18, 2016) says. At least one driver says it is a dangerous problem. The i3 range extended model comes with a small gasoline engine that is supposed to recharge batteries, however, according to the lawsuit, if the car "is under a 'significant load,'" it can rapidly drop speed. The lawsuit says other drivers have reported this to the National Highway Traffic Administration. BMW has not commented on the lawsuit or the issue.

Madrid's La Ciudad del Taxi signed a deal with Nissan that will create the world's largest all-electric taxi fleet, *Autocar Professional* (May 19, 2016) reported. La Ciudad del Taxi will put 110 Nissan Leafs on Madrid's streets, surpassing Amsterdam's 100 Leaf fleet and Budapest's 65 Leaf fleet.

The Province of Ontario just passed the Climate Change Mitigation and Low Carbon Economy Act, *Lexology* (Rosengarten & Lee-Andersen, May 19, 2016) lets on. Among its many provisions, the act provides \$285 million (\$217 million, US) for electric vehicle incentives. The incentives include rebates up to \$14,000 (\$10,652.06, US), charger rebates of up to \$1,000 (\$760.86, US), elimination of the province's part of the Harmonized Sales Tax, and free charging overnight for electric vehicles.

## ALTERNATIVE FUELS

The City of San Francisco was named Climate Action Champion and was given \$4.75 million to pursue projects to develop hydrogen fuel cell infrastructure, the *U. S. Department of Energy* (May 20, 2016) announced. One project that San Francisco will work is developing regulations and building codes that will make building fueling stations easier.

**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:** If you are near Ozark, Alabama, there is a charging station available to the public at Tom and Elizabeth Wyse's house, the *Dothan Eagle* (Davis, May 18, 2016) says. The Wyses bought a new Tesla Model S and installed a charger and they will let others use it. They live off US 231.

Essex County, New Jersey, unleashed charging stations at South Mountain Recreation Complex in West Orange and at the County Government Complex in Newark, *The Progress* (May 20, 2016) professes. Two chargers were installed at each location. Charging is free, and unlike New Jersey's gas stations, they are self-service.

**Around the World:** BMW will begin installing Solar Carport charging stations in Johannesburg, Cape Town, and Durban, South Africa, in July, *AFK Insider* (Staff, May 21, 2016) reveals. The carports are available for home or office and are made from steel and bamboo.

Thirty charging stations are coming to the Swedish city of Jonkoping, *Fortum* (May 18, 2016), the company that operates the chargers announced. The chargers are a joint effort between Fortum Charge & Drive and Jonkoping Energi, the local electric company. It will take two years to install the chargers.

The charger next to the Bradford Council building in England is no longer available to the public, the *Telegraph and Argus* (Wilde, May 24, 2016) sent. The council removed the charger from a public network, but it will be available for the council's electric fleet of nine vehicles.

## OTHER TECHNOLOGY

The Society of Automotive Engineers (SAE) just approved guidelines for wireless car charging stations, *Gizmag* (Turpen, May 21, 2016) reports. The guidelines set a standard frequency band for charging systems and four levels of charging.

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*That'll do.*