← (http://www.greencarcongress.com/2017/05/20170518-mg.html) Researchers develop microwave-driven, energy-efficient process for magnesium production (http://www.greencarcongress.com/2017/05/20170518-mg.html)
Mercedes-Benz Energy and Vivint Solar partner on US home energy storage systems (http://www.greencarcongress.com/2017/05/20170518-vivint.html) → (http://www.greencarcongress.com/2017/05/20170518-vivint.html)

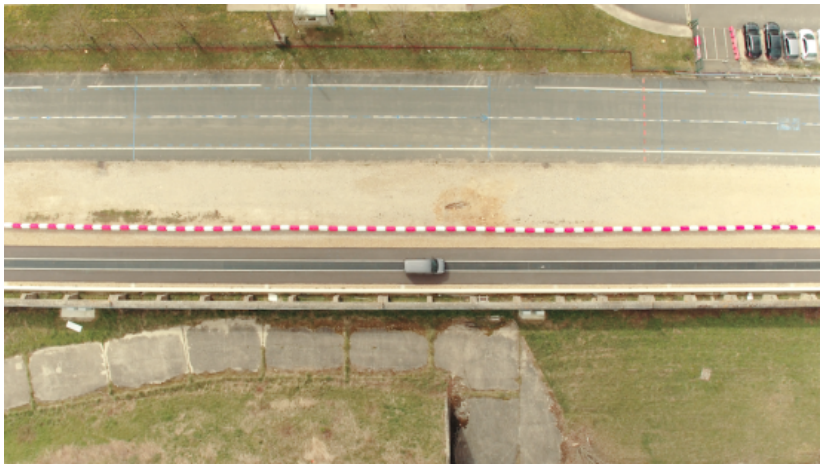
Qualcomm demonstrates dynamic electric vehicle charging; supports up to 20 kW at highway speeds (http://www.greencarcongress.com/2017/05/20170518-devc.html)

18 May 2017 (http://www.greencarcongress.com/2017/05/20170518-devc.html)

Qualcomm Incorporate, through its subsidiary, Qualcomm Technologies, Inc., demonstrated (https://www.qualcomm.com/news/releases/2017/05/18/qualcomm-demonstrates-dynamic-electric-vehicle-charging) dynamic electric vehicle charging (DEVC), which allows vehicles to charge while driving. Based on the Qualcomm Halo wireless electric vehicle charging technology (WEVC), Qualcomm Technologies designed and built a wireless DEVC system capable of charging an electric vehicle (EV) dynamically at up to 20 kW at highway speeds (100 km/h).

Qualcomm Technologies also demonstrated simultaneous charging, in which two vehicles on the same track can charge dynamically at the same time. The vehicles can pick up charge in both directions along the track, and in reverse, further showcasing how the Qualcomm Halo DEVC system has been designed to support real-world implementation of dynamic charging.

The dynamic charging demonstrations took place at the 100-meter FABRIC (http://www.vedecom.fr/fabric/?lang=en) (FeAsiBility analysis and development of on-Road chargIng solutions for future electriC vehicles) test track, which has been built by VEDECOM (http://www.vedecom.fr/?lang=en) at Satory Versailles.



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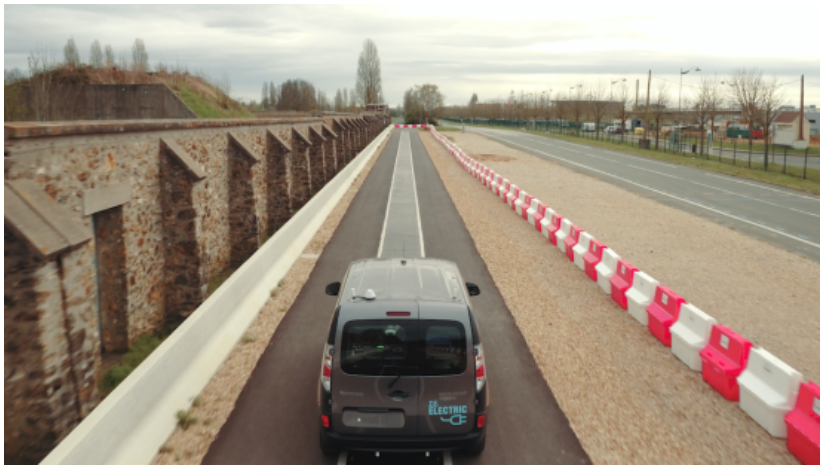
VEDECOM was created in February 2014 and is an Institute for Energy Transition (ITE) established as part of the French government's 'Investment for the future plan' (Programme d'Investissements d'Avenir or PIA). The Institute is dedicated to individual, carbon-free and sustainable mobility.

Qualcomm Technologies and VEDECOM integrated the source part of the Qualcomm Halo DEVC system in the test track, while VEDECOM and Renault integrated the receiving part onto two Renault Kangoo vehicles.



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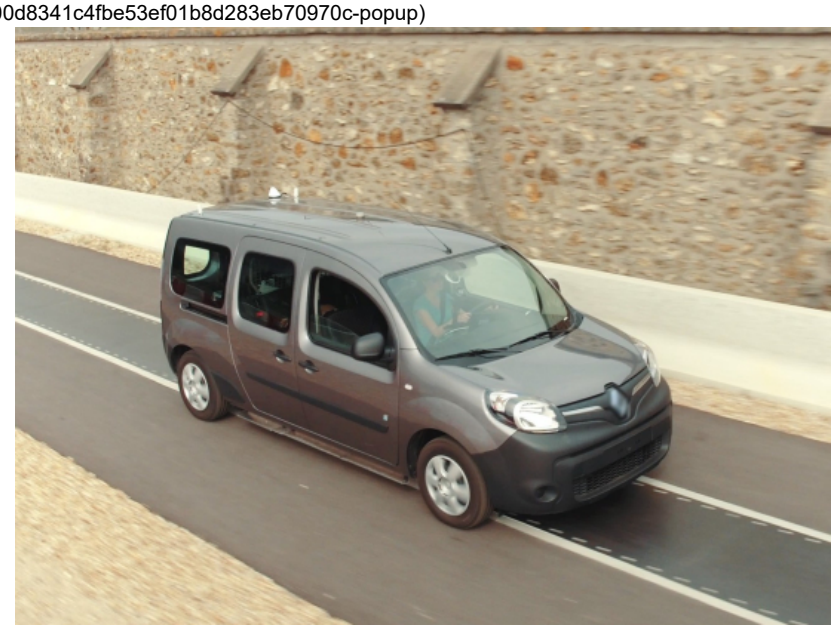

(http://bioage.typepad.com/.a/6a00d8341c4fbe53ef01bb099cc126970d-popup)

Following the demonstration, the Qualcomm Halo DEVC system was handed over to VEDECOM to perform tests for FABRIC. These tests will evaluate the operation, safety and efficiency of energy transfer to the vehicles for a wide range of practical scenarios including vehicle identification and authorization on entering track, power level agreement between track and vehicle, speed and alignment of vehicle along track.

FABRIC is a €9-million (US$10-million) project, mostly funded by the European Commission, addressing the technological feasibility, economic viability, and socio-environmental sustainability of wireless DEVC.

The project began in January 2014 and will continue through December 2017, and is being undertaken by a consortium of 25 organizations from nine European countries, including automotive manufacturers, suppliers, service providers and research organizations from automotive, road and energy infrastructure domains.

VEDECOM is one of the FABRIC collaborators and responsible for providing the demonstration of the charging solution at Satory using the Qualcomm Halo DEVC system. FABRIC's main goal is to conduct feasibility analysis of wireless DEVC as a means of EV range extension.

Qualcomm Halo envisages a transport system in which licensed operators build out the Dynamic Charging network in a similar way to which wireless communications networks have been deployed. DEVC technology would be integrated into one or more lanes of main roads and highways and DEVC drivers would drive and charge at the same time.

Qualcomm Halo expects new business models to develop around DEVC networks and services, potentially mirroring the wireless communications business models that have helped drive global adoption of wireless mobile phones and devices.

Posted on 18 May 2017 in Electric (Battery) (http://www.greencarcongress.com/electric_battery/), Infrastructure (http://www.greencarcongress.com/infrastructure/), Smart charging (http://www.greencarcongress.com/smart-charging/) | Permalink (http://www.greencarcongress.com/2017/05/20170518-devc.html) | Comments (14) (http://www.greencarcongress.com/2017/05/20170518-devc.html#comments)

Comments

You wouldn't want to be "electrosensitive" with that near you.

Posted by: mahonj (http://profile.typepad.com/jamesmahon) | 18 May 2017 at 10:45 AM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b7c8f9b48b970b#comment-6a00d8341c4fbe53ef01b7c8f9b48b970b)

They have pay lanes and carpool lanes, I suppose EV lanes could happen. You would have to charge a high fee to pay for it.

Posted by: SJC (http://profile.typepad.com/6p0112790f78c028a4) | 18 May 2017 at 12:45 PM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b8d283fc26970c#comment-6a00d8341c4fbe53ef01b8d283fc26970c)

@sjc, it would certainly cost a lot.
However, I imagine they would make it free, or nominal electricity cost (say $0.11/KwH) or else no-one would use it.
You would want a loan at a VERY low interest rate to pay for something like this.

Posted by: mahonj (http://profile.typepad.com/jamesmahon) | 18 May 2017 at 01:31 PM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b7c8f9c105970b#comment-6a00d8341c4fbe53ef01b7c8f9c105970b)

It seems like they need at least 10 miles to start to make it worth while. At $2 million per lane mile that would be $40-50 million. If it is for EVs only low utilization can happen, if it is for all cars then you have to sense EVs and turn on that segment as it passes to save energy.

Posted by: SJC (http://profile.typepad.com/6p0112790f78c028a4) | 18 May 2017 at 03:20 PM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b8d28408f8970c#comment-6a00d8341c4fbe53ef01b8d28408f8970c)

The big thing that this sort of system has going for it is that electric trucks can be powered, as their length means that they can have many charging pads.

I would see that as the prime driver, with electric cars along for the ride.

Posted by: Davemart (http://profile.typepad.com/6p01156fc08021970b) | 18 May 2017 at 04:09 PM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01bb099ce588970d#comment-6a00d8341c4fbe53ef01bb099ce588970d)

Electric delivery trucks sounds like a good idea, sort of a range extender for them.

Posted by: SJC (http://profile.typepad.com/6p0112790f78c028a4) | 18 May 2017 at 06:17 PM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01bb099cee4b970d#comment-6a00d8341c4fbe53ef01bb099cee4b970d)

Hi SJC.

We can do electric/fuel cell delivery trucks already without on the move charging.

Check out this fairly substantial one from Renault, the Maxity H2:
https://fuelcellsworks.com/news/the-maxity-h2-the-first-french-utility-100-electric-hydrogen/

And Toyota and others are designing Class 8 short range delivery trucks with combinations of batteries and fuel cells.

What we can't do with any reasonable economy and drastically reducing the payload is long range Class 8.

On the move charging would put that within reach, supplemented by batteries probably rather than fuel cells for the uphill bits and acceleration.

Posted by: Davemart (http://profile.typepad.com/6p01156fc08021970b) | 19 May 2017 at 01:28 AM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b7c8f9e803970b#comment-6a00d8341c4fbe53ef01b7c8f9e803970b)

It strikes me that the first thing you need is an EU (or USA) wide standard for this. A global standard would be even better.
It will certainly cost a lot, but it can be rolled out bit by bit. It does not need to be continuous as the vehicles using it will have batteries and so can hop over non charging sections.

I wonder how it would work with a lot of cars and trucks on it ?

Interesting, however, as it would solve the "big battery" problem for compatible cars. If you had this, you could get by with 20-25 KwH batteries which would make the cars lighter and cheaper.

Posted by: mahonj (http://profile.typepad.com/jamesmahon) | 20 May 2017 at 06:31 AM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b8d284885c970c#comment-6a00d8341c4fbe53ef01b8d284885c970c)

Something using 20,000 watts every 50 feet for 20 miles both ways would take 100 megawatts, dedicating a power plant is asking a lot.

Posted by: SJC (http://profile.typepad.com/6p0112790f78c028a4) | 20 May 2017 at 01:52 PM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b8d2849d83970c#comment-6a00d8341c4fbe53ef01b8d2849d83970c)

@SJC, I think it is every 50 (or 60) meters, not feet.
According to my calculations, it takes 105 MW / 100 miles (@67 yards / car) both ways.
You would not have to dedicate a power plant to it, just use the electricity from the grid.

From a CO2 point of view, it very much depends on where your power is coming from.
If it is from coal, you would be better off using hybrids, if from renewables or nuclear, you are better off using the electricity.

Source Gms/KwH Miles/KWH gms/mile gms/km
Ireland 470 3 156.7 97.9
Coal 1029 3 343.0 214.4
Oil 756 3 252.0 157.5
Nat Gas 515 3 171.7 107.3

Note, I used the figure of 3 miles / KwH as 3.3 * 0.9, assuming the wireless transmission if 90% efficient.

If you take a Prius at 158 gms / mile*, you can just about beat the Ireland mix / nat gas generation.

*from fueleconomy.gov

From a local pollution point of view, you will be much better off.
The main thing with local pollution is to prevent it building up in cities and towns, and for this to happen, you need more people in electrics (or out of diesels anyhow), so making electric cars work better on long runs should make more people buy them, etc.

Posted by: mahonj (http://profile.typepad.com/jamesmahon) | 21 May 2017 at 02:45 AM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b7c8fa78d9970b#comment-6a00d8341c4fbe53ef01b7c8fa78d9970b)

Sorry about the formatting. It looked OK in the box

Source Gms/KwH Miles/KWH gms/mile gms/km
Ireland 470 3 156.7 97.9
Coal 1029 3 343.0 214.4
Oil 756 3 252.0 157.5
Nat Gas 515 3 171.7 107.3

Posted by: mahonj (http://profile.typepad.com/jamesmahon) | 21 May 2017 at 02:47 AM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b7c8fa78de970b#comment-6a00d8341c4fbe53ef01b7c8fa78de970b)

If you want to payback the expense soon you platoon the cars and trucks. Trucks will have several pads so take more energy. Even at 50 megawatts that is 50,000 homes for one small length of highway.

Posted by: SJC (http://profile.typepad.com/6p0112790f78c028a4) | 21 May 2017 at 11:04 AM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b8d284cff3970c#comment-6a00d8341c4fbe53ef01b8d284cff3970c)

@SJC: platooning should make it better as the power requirements will be reduced by (say) 20%. This will need ADAS systems, but not full autonomy, just V2V standards.

Platooning should not put more cars on the roads, it should just bunch them together, so the overall energy requirements should go down, assuming the number of cars on the roads does not change.

Thinking about this, people would pay quite a bit to use it, say 2x the normal price of electricity - as long as it is cheaper than fossil fuels. Being able to do a long run and arrive with an almost full battery would be a very attractive proposition.
You could also make the price flexible so it matches the current wholesale price hour by hour. This would encourage truckers to go when the wind was blowing (or the sun shining).

Posted by: mahonj (http://profile.typepad.com/jamesmahon) | 22 May 2017 at 04:44 AM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b8d285079b970c#comment-6a00d8341c4fbe53ef01b8d285079b970c)

Usage fees would have to be high enough to recover all ongoing operation cost and 8% to 10% of initial cost.

The total end user cost may not be that much lower than current hybrid units but less pollution may be created.

Secondly, the first few years would be short of enough users to recover cost.

All weather extended range FCEVs could be a better all around solution?

Posted by: HarveyD (http://profile.typepad.com/harveyd) | 27 May 2017 at 09:11 AM (http://www.greencarcongress.com/2017/05/20170518-devc.html?cid=6a00d8341c4fbe53ef01b7c8fc8983970b#comment-6a00d8341c4fbe53ef01b7c8fc8983970b)

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Stone Ridge Technology and Eni partner to develop ECHELON reservoir simulator breakthrough calculation (http://www.greencarcongress.com/2018/05/20180507-eni.html)

Frost & Sullivan: EVs could account for 22.4% of total passenger vehicle sales by 2025 (http://www.greencarcongress.com/2018/05/20180507-fs.html)

Central Ohio Transit Authority receives $400,000 alternative fuels grant from Ohio EPA (http://www.greencarcongress.com/2018/05/20180507-cota.html)

EPA awards Oregon DEQ $466k to improve diesel monitoring (http://www.greencarcongress.com/2018/05/20180506-epa.html)

Agility Fuel Solutions introduces large-capacity hydrogen storage systems for trucking (http://www.greencarcongress.com/2018/05/20180505-agility2.html)

BYD, US Hybrid partner on fuel-cell range-extended electric bus for Hawaii (http://www.greencarcongress.com/2018/05/20180505-byd.html)

Motiv Power Systems announces OEM-integrated all-electric shuttle bus with Champion Bus (http://www.greencarcongress.com/2018/05/20180504-motivchampion.html)

Eurostat estimates EU fossil fuel CO2 emissions increased in 2017 compared to 2016 (http://www.greencarcongress.com/2018/05/20180504-eurostat.html)

Winnebago partners with Motiv Power to launch battery-electric commercial vehicle (http://www.greencarcongress.com/2018/05/20180504-winnebago.html)

Red Funnel trialing renewable diesel blends in ferry operations (http://www.greencarcongress.com/2018/05/20180504-redfunnel.html)

Schwan’s Home Service to deploy 600 ROUSH CleanTech propane vehicles by year’s end (http://www.greencarcongress.com/2018/05/20180503-roush.html)

AVM secures MOU for 58 rapid-charging electric buses with Israeli transport company (http://www.greencarcongress.com/2018/05/20180503-avm.html)

Agility Fuel Solutions introduces large-capacity hydrogen storage systems for trucking applications (http://www.greencarcongress.com/2018/05/20180503-agility.html)

Air Canada operates biofuel flight from Edmonton to San Francisco (http://www.greencarcongress.com/2018/05/20180503-aircanada.html)

Tesla posts record loss in Q1, Model 3 production hit 2,270/week in April (http://www.greencarcongress.com/2018/05/20180503-tesla.html)

California has invested more than $1.2B in zero-emission and low-carbon transportation projects (http://www.greencarcongress.com/2018/05/20180502-arb.html)

Kenworth displays special prototype T680 CNG Hybrid at ACT Expo; Cummins-Westport ISL G Near Zero engine (http://www.greencarcongress.com/2018/05/20180502-kenworth.html)

Trillium CNG changes name to Trillium, partners with EV charging company EV Connect (http://www.greencarcongress.com/2018/05/20180502-trillium.html)

EIA: US tight oil production efficiency continues to improve (http://www.greencarcongress.com/2018/05/20180502-eia.html)

Efficient Power Conversion (EPC) completes automotive AEC Q101 qualification for two gallium nitride devices (http://www.greencarcongress.com/2018/05/20180502-epc.html)

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