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MAY 18, 2017

## Qualcomm unveils electric vehicle dynamic charging tech – built a 100m test track with 20kW charging

Fred Lambert - May. 18th 2017 10:45 am ET [@FredericLambert](#)



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Despite the fact that electric vehicle charging rates have been improving rapidly and should soon solve the charging issue, there are still a few companies working on dynamic charging technology (DEVC) as a potential solution for charging times.

Qualcomm is the latest company to unveil a DEVC system this week. They demonstrated their technology on 100 meters of road in France that can charge electric vehicles at up to 20 kW while they are driving on the road.



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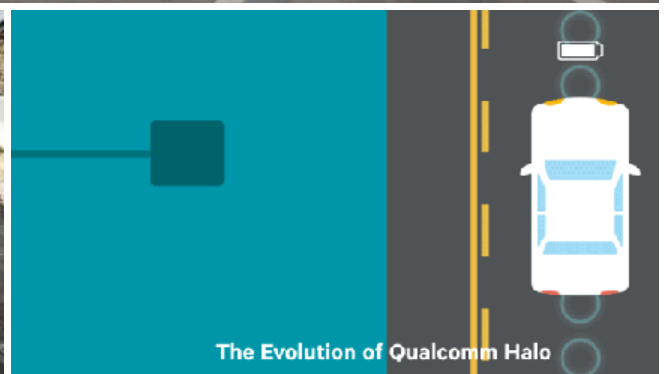


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The California-based semiconductor manufacturer built the technology on top of its wireless charging tech:

*"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 kilowatts at highway speeds. 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."*

They built a test track project called 'FABRIC' in Satory Versailles. Two all-electric Renault Kangoo vehicles were fitted with the receiver and they will be running tests for efficiency until the end of the year.



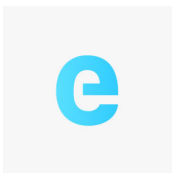
*"We are inventors. We are WEVC. This dynamic charging demonstration is the embodiment of this. I am immensely proud of what we have achieved. The combination of a global team of expert engineers and Qualcomm Halo technology, which covers all aspects of WEVC systems, irrespective of the magnetics used, has enabled us to really push the boundaries of the possible and outline our vision for future urban mobility."*

VEDECOM was also involved in the project along with Qualcomm and Renault.

In the short-term, dynamic charging is not expected to be an important part of the electric charging infrastructure in the automobile industry. But in the long-term and with the advent of autonomous driving, we could see the technology being used on sections of highways in order increase the on-road time of some vehicles, especially trucks.

Other companies, like [Honda](#), are working on the same concept, but with a much higher charge rate.

## Guides



Qualcomm



Wireless Dynamic Charging

## About the Author



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Dafty Punk • a year ago 

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I give them credit for getting it working, but for the moment it looks insanely expensive.

13 

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vilperti ➔ Dafty Punk • a year ago 

—

...and not very efficient .

5 

^

▼

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Roger Lambert ➔ vilperti • a year ago 

—

Stanford engineers said we could have this tech today. And likely at 90 - 95 % efficiency ( inductor receiver are "tuned" to each other)

<http://newenergyandfuel.com...>

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**Andreas** ➔ Roger Lambert • a year ago

– | 🚩

Yea I talked with a smal Startup in this inductive charging segment. They told this (90% efficiency) too. But nobody shows me a real product with this efficiency. So Im a bit sceptical. Also the price are too hi for now and I do not see how you can reduce the price by factor then or so. For now the needed coils are responsible for this pricetags. Physic limits, maybe the reason why elon does not bet on that tech.

^ | v • Share ›

**Roger Lambert** ➔ Andreas • a year ago

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What price? You can not go by the costs associated with research set ups. True price, when done at bid, will be order of magnitude less. The question is: Do we want to make hundreds of millions of very expensive, large batteries for every vehicle on the road, or do we want to, as a nation, invest in something which will save us all huge dollars out of our own pockets.

1 ^ | v • Share ›

**Eletruk** ➔ Roger Lambert • a year ago

– | 🚩

Ha, I like the part about "as a nation". The answer is a pretty obvious NO.

^ | v • Share ›

**Roger Lambert** ➔ Eletruk • a year ago

– | 🚩

NO??!?

The question has never been put to people, incredibly enough. Right now, Americans spend about \$1.5 - 2.0 trillion every year for fossil fuels. (That is > \$3300 for every single person in your household, every year)

Five to seven years of that spending would pay for a whole national RE-only utility system built to meet year 2100 needs, and which would last at least 5 times longer than it took to pay off. That means free electricity, just like a homeowner who has paid off his PV panels.

Somehow, I think American would be very much in favor of free electricity instead of paying through the nose for FF's, especially since we would be solving global warming at the same time.

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**vilperti** ➔ Roger Lambert • a year ago

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Let them talk.

^ | v • Share ›

I, for one, respect them. Much more than sniping commenters.

1 ^ | v • Share ›

**vilperti** → Roger Lambert • a year ago

– | 🚩

You do that. Lots of too optimistic speculators out there. What is left under the line is not much to show.

^ | v • Share ›

**Roger Lambert** → vilperti • a year ago

– | 🚩

The history of RE is one where naysayers like yourself have been proven wrong all the time. Not sure why you are here?

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**vilperti** → Roger Lambert • a year ago

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Tesla is all the time searching new technology that will make the next step, they have been disappointed too many times.

^ | v • Share ›

**EVPaddy** → Dafty Punk • a year ago

– | 🚩

not as expensive as Musks tunnels.

3 ^ | v • Share ›

**cronin** → EVPaddy • a year ago

– | 🚩

It doesn't help alleviate traffic congestion either.

10 ^ | v • Share ›

**S3XY** → cronin • a year ago

– | 🚩

What if it was integrated in the tunnels on the electric sleds

3 ^ | v • Share ›

**Illuminati** → S3XY • a year ago

– | 🚩

It is.

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**cronin** → S3XY • a year ago

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Then it would need to be built into the road. You might even call it simply a charging station. Qualcomm wouldn't even need to be involved.

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**D800-fan** → cronin • a year ago

– | 🚩

QC would need to be involved. Every user would need to cough up Patent Royalties for using their Patented Tech. The amount charged will be based upon the value of the vehicle and the amount of power sucked up.

Well, that seems to be their current business model, charging according to the sale price of the device (not a fan of QC)

**Curious** → S3XY • a year ago

– | 🚩

Built-in wireless charging while traveling on the underground electric sleds? That's a great idea!

^ | v • Share ›

**AlphaEdge** → EVPaddy • a year ago

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And so is a cup of tea. The whole point of the tunnels has nothing to do with charging.

3 ^ | v • Share ›

**EVPaddy** → AlphaEdge • a year ago

– | 🚩

Yes but something being immensely expensive apparently doesn't stop people from thinking they should have it.

2 ^ | v • Share ›

This comment was deleted.

**EVPaddy** → Guest • a year ago

– | 🚩

Yes, true, but just because it worked once, doesn't mean it'll work every time he tries something. (BTW we don't even know yet if the re-used rockets are reliable enough to be worth the effort).

Musk always wants to make things several orders of magnitude faster than they were(cars, tunnels), but so far he hasn't done that. And even if he manages to do it, it'll still be an expensive task. So I'm asking again, who's going to pay for it? He can't fund it all on his own.

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This comment was deleted.

**Abraham Birzer** → Guest • a year ago

– | 🚩

Yes, stop thinking, start believing. The tunnels will make traffic worse.

^ | v • Share ›

**Carl Raymond S** → Guest • a year ago

– | 🚩

A rocket which lands for reuse makes launching into space cheaper. A tunnel system for sleds for individual cars that are dropped from the street on elevators will never be remotely as cheap as people taking escalators to subways and stepping onto a train. The car elevator will take maybe 2 people a minute? An escalator will take two people a second, and have a smaller street footprint.

^ | v • Share ›

**AlphaEdge** → Carl Raymond S • a year ago

– | 🚩

Subway stations have huge footprints, and costs a fortune. Up in



You whole point is to get people out of their cars. Good luck with that, and why are you here? It's an electrical vehicle blog! Maybe you should find a subway/metro blog to hang out in.

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**Carl Raymond S** ➔ AlphaEdge • a year ago

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EVs will kill ICEVs, and I'm looking forward to that. Tipping point one is cost parity, which is working its way down market with release of Model 3. Then full autonomy blows ICEVs away v fast. Not one for one, but one for five. Disruption by ambush, because people don't understand or believe in AI.

All well and good, necessary to fight the CO2 crisis, but what of congestion? There, in big cities, cars suck and trains rule. Putting cars on tracks might sound like a way for people to avoid trains, but the math says trains still rule.

Electrek is my fave site, a window to the future. But the commenters sometimes lack the background in urban traffic systems, and/or physics to spot when Musk is wrong. Musk has a blind spot when it comes to trains and big dense populations.

^ | v • Share ›

**Stoli Cat** ➔ EVPaddy • a year ago

– | 🚩

Easy on Elon, he's having a bad day with that Guardian article of employee abuse.

^ | v • Share ›

**Nagato!** ➔ EVPaddy • a year ago

– | 🚩

yep

^ | v • Share ›

**Roger Lambert** ➔ Dafty Punk • a year ago

– | 🚩

That's what they said about solar ten years ago. And we do NOT have any idea what this would cost. But you only need to install the system once. But we do know what duplicating \$10,000 batteries for 600 million vehicles will cost. \$6 trillion bucks. A titanic amount of money.

1 ^ | v • Share ›

**Dafty Punk** ➔ Roger Lambert • a year ago

– | 🚩

Fair, but who pays for the installation? Who pays for the power?

1 ^ | v • Share ›

**Roger Lambert** ➔ Dafty Punk • a year ago

– | 🚩

Who paid for the Interstate system?

We all paid for it with taxes and bonds. Same thing could be done for all our RE investments.

^ | v • Share ›



**Serge Pavlovsky** → Roger Lambert • a year ago

batteries cost less than that already and battery price falls 15% each year and what makes you think wireless chargers under every road will be cheaper?

^ | v • Share ›

**Roger Lambert** → Serge Pavlovsky • a year ago

Batteries cost more than that, too. Price an EV semi battery. Right now, batteries to power the whole transpo fleet would be \$6 trillion. \$6T would build us an entire 100% RE energy system for the U.S. This is likely to be a huge bargain - but we do not yet know what it would actually cost.

^ | v • Share ›

**Roger Lambert** → Roger Lambert • a year ago

My math is wrong! There are only 250 million vehicles on the road, not 600 million in U.S. Still, I think, a compelling (potential) bargain.

^ | v • Share ›

**AnOutsider** • a year ago

I love that minds are being put to work to solve the range and infrastructure issue from so many angles. I can imagine a future where EVs are no longer inferior because they don't have access to gas stations everywhere, but superior because they have access to so many different refueling options.

6 ^ | v • Share ›

**dusty5683** • a year ago

I for one, seriously can't wait for this to happen, Can you imagine the police chasing a stolen car of the future? This would make for some great TV, It would never end!

6 ^ | v • Share ›

**schaep** → dusty5683 • a year ago

They'd just program the road to drain battery instead of charge and by the time the police chaser drives over it reverse to charging again... It would be over really quick....

^ | v • Share ›

**18650 FTW** • a year ago

Why are people still wasting their time on this? They are solving a temporary problem in a way that is very expensive and impractical.

I also don't for a second believe the 20kW claim, at least not for real world.

If they want to focus on wireless charging, dump efforts into static wireless, like parking lots and driveways.

8 ^ | v • Share ›

**Roger Lambert** → 18650 FTW

We're talking about reducing the need for the most expensive, heaviest, and least longest-lived component of EV cars. It makes complete sense. Adding DEVC to roadways is something you only need do once. And roadways are likely to be where HVDC lines are most cost-effectively buried - no right of way for the government to purchase.

This would be an enormous savings to transportation when we have 600 million EV vehicles on the road at any given time (cars, vans, trucks) and EV batteries - needed for every single one of them, currently go for \$10,000 plus. That's \$6 trillion dollars of just EV batteries on the road - which is enough money to buy the U.S. a whole brand spanking new 100% RE system.

Think bigger.

2 ^ | v • Share ›

**shane smith** → Roger Lambert • a year ago

— | 🚩

I really don't understand the naysayers on this. If I can get a future car with half the battery weight but still have 300 mile range, isn't that better than the same weight but 600 miles? The only issue becomes long trips. Hey, here is a thought, what if the long stretch of freeway between LA and Vegas had a couple miles of this? Is that a negative?

Are people thinking this is the only way to power a car rather than a handy range extender? What is the problem with this?

2 ^ | v • Share ›

**EVPaddy** → shane smith • a year ago

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It always comes down to: How much will it cost and what will it be good for.

certainly you could add a couple of miles of this. But it needs quite some effort to do and with current technology you don't get much charge. And of course your car has to be prepared to take that charge, you need a way to pay for it... you can always do everything, but... anyway, sure, if somebody is willing to fund that thing, it'll happen. If