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Loop Energy collaborates with CRRC to develop fuel cell electric drive systems for heavy-duty trucks

6 May 2016

Canada-based Loop Energy ([earlier post](#)) has [entered](#) a collaboration agreement with Hunan CRRC Times Electric Vehicle Co., Ltd. (a subsidiary of CRRC Corporation Ltd.) to develop zero-emission power systems for heavy-duty transportation applications.

The power system to be developed for the initial project will combine Loop's fuel cell technologies with CRRC's leading electric drive train system to provide a better performing solution for heavy-duty trucks in comparison to traditional diesel engines.

CRRC Corporation Ltd., with annual revenue of over \$40 billion, is the largest supplier of rail transit equipment in the world and has 46 wholly-owned and majority-owned subsidiaries. Its subsidiary, Hunan CRRC Times Electric Vehicle Co., Ltd. is a world leader in developing and building electric vehicles and drivetrains for a variety of vehicle classes and applications, having produced more than 20,000 units of powertrains and more than 10,000 units of electric vehicles.

In March, Loop Energy—formerly known as PowerDisc Development—was awarded a \$7.5-million grant from Sustainable Development Technology Canada (SDTC) to accelerate deployment of the company's new zero-emission powertrain for heavy-duty trucks.

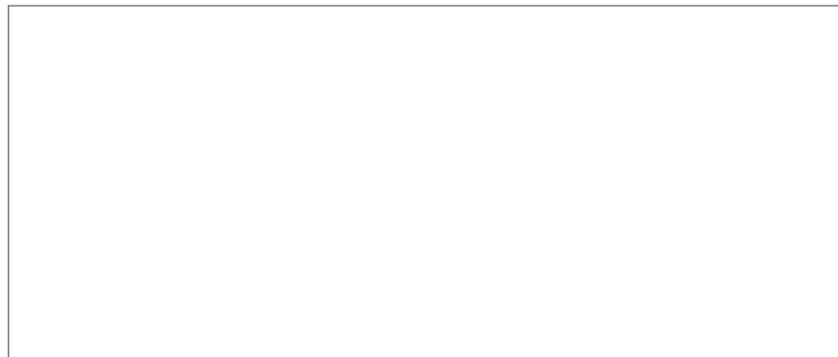
This agreement with Hunan CRRC Times Electric Vehicle Co., Ltd. is a key step on our commercialization path. CRRC's deep experience with electric drivetrains and components, combined with their ability to rapidly scale production, align perfectly with our deployment plans. End customers will benefit from this collaboration as we lead the path to a variety of economical, zero-emission vehicle solutions.

—Ben Nyland, President of Loop Energy

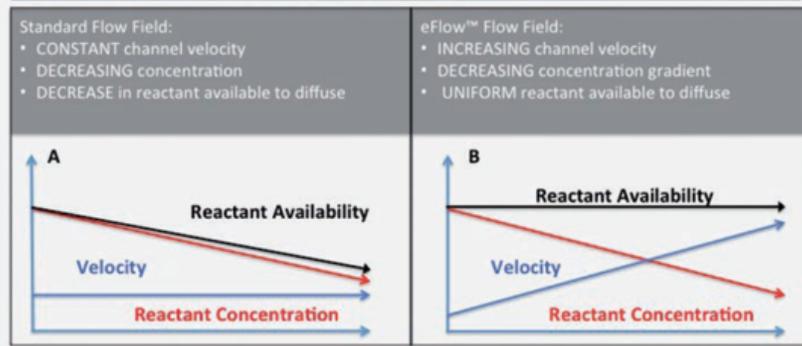
We believe fuel cell electric drive systems are the ultimate solution for new energy vehicles. We chose to partner with Loop Energy because their approach provides a clear path to driving down the cost of zero-emission transportation and to making zero-emission transportation commercially viable.

—Guo Wei, Vice General Manager of Hunan CRRC Times Electric Vehicle Co., Ltd.

Loop's heavyduty power unit combines an electric battery with a hydrogen fuel cell designed around its patented eFlow technology. eFlow addresses unequal current distribution in the fuel cell by improving the flow of oxygen, fuel and water within a fuel cell and avoiding degradation of the fuel cell membrane and stack materials.



How does eFlow® work?



A standard flow channel in a fuel cell is based on a constant cross-sectional area. With this design, the mass flow rate reduces proportionally with the consumption rate—and therefore the flow velocity also reduces. This leads to uneven flow distribution, resulting in stack performances which are more variable compared to single cell measurements.

By contrast, eFlow channels feature a cross-sectional area which converges down the length of the channel to compensate for the reduction in mass flow rate due to reactant consumption. This design levelizes reactant availability throughout the entire flow channel. MacKinnon and Wingrove (2014) [Click to enlarge](#).

The net result is that eFlow increases overall fuel cell durability, enables higher peak power, and significantly reduces cost due to greater membrane resiliency, the elimination of costly system components, and improved lifetime, the company says.

Loop's chairman is Dr. Andreas Truckenbrodt, who as CEO/CTO of Automotive Fuel Cell Cooperation (Daimler/Ford/Nissan), was responsible for driving fuel cell commercialization. He also led the Hybrid Development Center for DaimlerChrysler.

Resources

- Sean M. MacKinnon and Robert A. Wingrove (2014) "[PowerDisc's eFlow reduces fuel cell commercialisation cost](#)" *Fuel Cells Bulletin* doi: [10.1016/S1464-2859\(14\)70089-6](#)

May 6, 2016 in [Fuel Cells](#), [Heavy-duty](#), [Hydrogen](#) | [Permalink](#) | [Comments \(4\)](#)

Comments



FC + batteries or FC + Super caps could be excellent combinations for heavy trucks, long haul buses and locomotives.

Down sized versions could easily find their way into cars and light vehicles like SUVs and light trucks.

Resistance to clean H2 main and sub stations will weaken by 2020 or so, soon after the first 1000+ stations are in operation in Japan, EU, USA etc.

Posted by: [HarveyD](#) | [May 06, 2016 at 09:56 AM](#)



Create the H2 by some means other than fossil fuels and I could support your ideas. Keep the carbon in the ground so it can't be used to pollute.

Posted by: [Lad](#) | [May 06, 2016 at 10:33 AM](#)



HD> Resistance to clean H2 main and sub stations will weaken by 2020...

It's not resistance, Harvey, it's skepticism. Skepticism founded in billions of public funds invested and failed execution. Not just delays and cost overruns, but stations opened and then closed before the completion of grant fund requirements. Leaves a bad taste.

Wild, unsubstantiated claims about how much better it will be in 5-10 years also engender skepticism.

Posted by: electric-car-insider.com | [May 06, 2016 at 11:30 AM](#)



eci:

Instead of engaging in corporate trolling of every thread on hydrogen on other sites when you have your own to present your views, if you are not keen on 'wild, unsubstantiated claims' you could get down to doing some actual journalism on Tesla, and its perfectly ludicrous claim that it will go to hundreds of thousands of Model 3 cars by 2018, a claim so daft the two people who would have been most responsible for carrying it out promptly resigned.

That would make a change from your innumerable articles praising Tesla and having nothing remotely approaching a critical appraisal, let alone investigative journalism.

Posted by: [Davemart](#) | [May 06, 2016 at 11:42 AM](#)

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