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10 December 2021

XCIENT FCEV Project update

Last Friday we unveiled the XCIENT hydrogen-powered fuel cell truck in three exclusive viewing sessions.

In addition to the hydrogen technology and XCIENT Fuel Cell information our own team delivered, the Minister of Transport, Hon Michael Wood spoke at the unveiling about the important role of hydrogen in decarbonizing NZ's transport sector.

If you couldn't be there, we hope you joined the livestream. A recording of the event livestream can be watched [here](#) or to view the highlights package, click [here](#).

What's next?

Over the coming months, the XCIENT Fuel Cell will be set up for use on New Zealand roads and have a purpose built freight body constructed. It will be ready in the second quarter of next year to go into full-time service in the fleet of a national freight transporter. Once we are in a position to confirm our trial partners we'll let you know.

If you're interested, here's some more information about the project.

Purpose

The goals for this New Zealand-first trial are to:

- Operate the trucks on dedicated routes with various topography.
- Identify and resolve challenges of using Fuel Cell heavy-duty trucks on New Zealand roads.
- Fully test the demand capabilities of the Hydrogen refuelling infrastructure.
- Upskill the road freight sector and encourage early adoption and vehicle supply.
- Understand total cost of ownership, with NZ Government support through incentives while in commercial fleet customer operations.
- Gain and share an understanding of the relative strengths and challenges of this technology against battery electric and diesel trucks.
- Feedback data from trials to the Hyundai Motor Company so future versions of the trucks would be fit for purpose on New Zealand roads.

The project will make the most of New Zealand's renewable electricity, and take advantage of opportunities to reduce CO2 emissions and improve air quality. With the abundance of renewable resources in New Zealand, New Zealand's focus is on green hydrogen, where Hydrogen is produced using electrolysis.

The benefits of the XCIENT Fuel Cell truck

Hyundai Motor Company are currently the only mainstream vehicle manufacturer with heavy duty hydrogen fuel cell trucks in mass production.

Hyundai Motors has been investing in and developing hydrogen technology for vehicles for over 20 years now and are proudly world leaders in FCEV development.

Hyundai decided to start large scale commercialisation of hydrogen vehicles in the Commercial Vehicles space. Hence the arrival of the XCIENT Fuel Cell truck we now have here in New Zealand.

Commercial vehicles are large emitters of CO₂, and we believe that using Hydrogen and Electric vehicles across all forms of transport will make the biggest impact in the shortest amount of time.

Here in New Zealand the Heavy Transport sector makes up 4% of the National fleet and is responsible for 25% of transport emissions. So for us, it's a great place to start.

The technology

As Hyundai Motor Company's first mass production FCEV Truck, the technology applied to the XCIENT Fuel Cell is based on Hyundai Motor Company's 2nd generation mass production FCEV SUV – the Hyundai NEXO launched globally in 2018, and introduced locally in New Zealand in 2019.

The FCEV truck's 350kW of power (470hp) comes from a 180kW hydrogen Fuel Cell system with dual 90kW Fuel Cell stacks. Seven tanks offer a combined storage capacity of about 32.09kg of hydrogen providing a driving range of up to 400km (range based on Hyundai Korea testing data, while towing an 18-tonne trailer). This is the equivalent of driving from Auckland to Palmerston North.

Not only is the XCIENT FCEV truck zero-emission, with a by-product of water vapour out of the tail pipe, the XCIENT FCEV also features an Air Purification System. While driving, the heavy-duty filter system removes 99.9% of harmful PM_{2.5} fine particulate matter released into the air from diesel vehicles.

We wish you and your family a happy and safe festive period and look forward to picking up further on this topic early in the New Year.