

A world first, Anglo American launches 2MW nuGen hydrogen-powered haul truck

By [Sindy Peters](#)

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A world first for a vehicle of its size and load capacity, Anglo American launched its nuGen hydrogen-powered haul truck at its Mogalakwena mine in Limpopo on Friday, 6 May. Speaking at the event, President Cyril Ramaphosa recognised the launch as "a smart step for Anglo American but a giant leap for South Africa's hydrogen economy".



Anglo American's nuGen hydrogen-powered haul truck

"What we are launching here today is not merely an impressive piece of machinery, it is the genesis of an entire ecosystem powered by hydrogen, and that is why I say this is also the genesis of our hydrogen economy," he said.

Converted from a Komatsu 930e diesel-electric truck, the 2MW nuGen hydrogen-battery hybrid now generates more power than its predecessor. Capable of carrying a 290-tonne payload, its fully laden weight is 510 tonnes.

nuGen system's impact on diesel emissions

The chemical reaction that fuels the truck seems a relatively simple one - splitting water into hydrogen and oxygen, but its impact in terms of emissions reduction is highly significant for the mine. One haul truck consumes approximately 3,000 litres of diesel per day. By implementing its nuGen system, Anglo American expects an 80% reduction in its on-site diesel emissions.

“ The launch of the [#nuGen](#) truck is a remarkable milestone in our journey towards an industry and an economy that is more sustainable, more innovative and more resourceful. pic.twitter.com/xvL9BZN7a5— Cyril Ramaphosa 🇿🇦🇿🇦🇿🇿🇦 (@CyrilRamaphosa) [May 6, 2022](#) ”

Further haul trucks will be converted to hydrogen-powered vehicles at Mogalakwena during the pilot stage, followed by the entire 40-truck fleet. Speaking at the nuGen launch, CEO of Anglo American Platinum Natascha Viljoen said the company expects the Mogalakwena fleet to be converted by 2030, reducing its carbon emissions by 20% a year at the

mine.

Anglo American chief executive Duncan Wanblad said the company was also exploring switching some of its other vehicles in the fleet to hydrogen fuel cell technology. "When a mine like Mogalakwena is fully converted and the mobile fleet is running on clean hydrogen fuel cell and battery technology, we will, by our own estimation, have taken the equivalent of 80,000 cars off the road."

End-to-end nuGen Zero Emission Haulage Solution

The hydrogen-powered haul truck forms part of Anglo American's nuGen Zero Emission Haulage Solution (ZEHS), an integrated green hydrogen production, refuelling, and haulage system developed at Mogalakwena. It includes the largest electrolyser in Africa at 3.5MW alongside a solar PV field. Anglo has already started working on the designs for the scale-up of the system for commercialisation.

Along with other public and private partners, Anglo American is also invested in South Africa's Hydrogen Valley initiative, with nine further hydrogen-related projects having been identified to catalyse the local hydrogen economy. According to Wanblad, the Hydrogen Valley has the potential to add up to 14,000 jobs per year and contribute roughly \$57bn to SA's GDP by 2050.



President Cyril Ramaphosa attended the launch of the nuGen Zero Emission Haulage Solution.

"It's not lost on me as to why this might be such a defining moment, certainly for us here at Anglo American, but for South Africa and the role that we can play together as partners in helping to create an enduring and a prosperous world through opportunities that are presented to us by clean energy solutions," he said.



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Ramaphosa also highlighted the Hydrogen Valley's potential to position the country as a global centre for green hydrogen production, noting its multiplier effect as it impacts other sectors. "Our objective is to be the real centre, the real hub of green hydrogen production and that is the destination that we are moving to," he said.

ABOUT SINDY PETERS

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