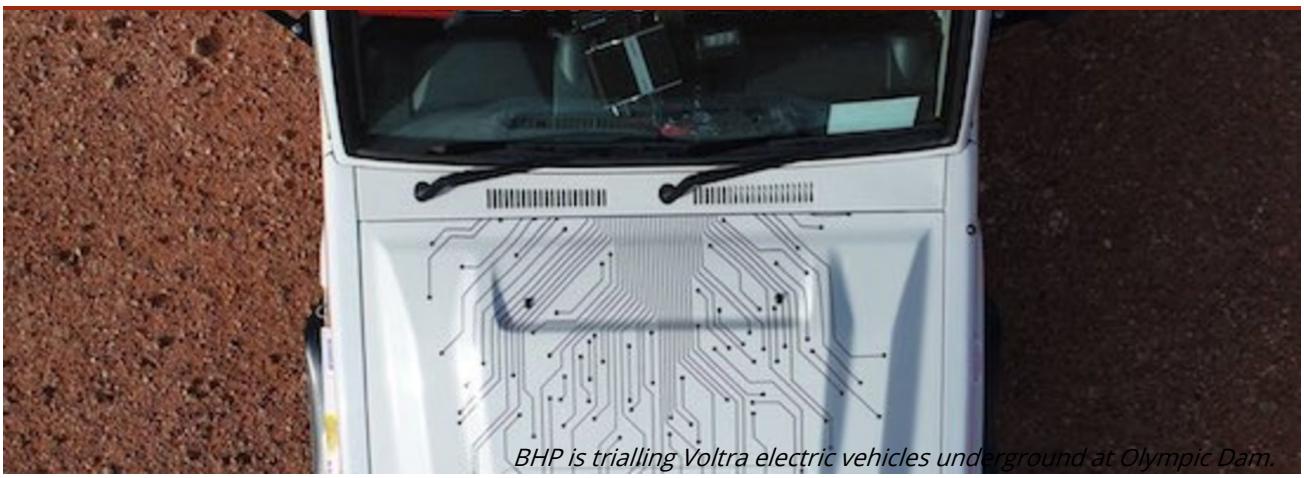
AUSTRALIA'S MINING MONTHLY

BHP trialling EVs at Olympic Dam for global rollout

BHP could swap diesel for electric power in its global fleet of light vehicles based on the results of a trial about to begin at Olympic Dam in South Australia.



BHP is trialling Voltra electric vehicles underground at Olympic Dam.

Underground Mining > Fleet

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BHP general manager integrated operations at Olympic Dam, Claire Halsey, told a conference in Adelaide the company had been working for several months on a trial of electric-powered Toyota Landcruisers in an underground mine environment.

The first vehicle in the trial, supplied by Adelaide-based Voltra (**see the Voltra story here**), arrived at Olympic Dam this month and is going through final testing before being sent underground for the 12-month trial. A second Voltra will join the trial next month.

Halsey said the trial was part of global initiative by BHP to improve health and safety and to reduce emissions.

"It ties in with our target of a 50% reduction in the number of employees who have a potential exposure to particulate matter," she said.

The lithium-battery powered Landcrusier will be monitored for its performance, maintenance and power requirements, charging time and resistance to corrosion underground.

Voltra said the electric motor driving its "eCruiser" was relatively simple, especially when compared to the complexity of a diesel engine. The electric motor also acted as a regenerative brake, significantly reducing wear on brakes and topping up the battery charge.

The company also noted that electric motors did not contribute to heat build-up underground and offered safety benefits because of reduced handling and storage of flammable fuels on site.

Halsey told the Copper to the World conference in Adelaide the electric vehicle trial was one of many innovation projects at Olympic Dam to improve safety and productivity through better use of technology.

Another of those projects was the recent introduction of wireless bolts "about the size of an arm" to monitor the integrity of the mine's three mills, which grind football-sized ore rocks into powder for the flotation plant.

The wireless technology allows operators in the control room to monitor the tensional forces within the bolt. This serves a real-time indicator of the integrity of the 100mm-thick steel shell of the mill, which weighs 1300 tonnes when loaded and processes up to 950t per hour.

Halsey said BHP's monitoring and maintenance of the grinding mills had been industry standard up until the introduction of the bolts in late 2017.

"The routine would involve manual checking of the bolts over a rolling 12-month program. It was an effective safeguard but it was time consuming, it involved production down time and it didn't enable us to capture data.

"The operators in the control room are now alerted to the smallest loss of tension as it happens and they then can investigate and undertake whatever action is considered appropriate. This is a huge gain for our safety, asset integrity and overall productivity in the long term."