

BHP eyes nickel tailings as carbon sink



Stuart McKinnon | The West Australian
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 BHP's chief technical officer Laura Tyler. Credit: David Mariuz

BHP is investigating the use of tailings from its Nickel West operations near Leinster to capture carbon and store it.

The tailings, which are rich in magnesium oxide, react naturally with carbon dioxide to form magnesium carbonate, trapping CO₂ safely and permanently.

But BHP is investigating how it can speed up the process and make it more complete.

The trials include tilling and turning the tailings, adding microbes and using thermal activation to increase sequestration rates.

The material can then be left safely in situ or used in building materials like carbon-neutral cement or plasterboard.

BHP is focusing its trial on the 5km tailings dam at Mt Keith, which already stores about 40,000t of CO₂ directly from the atmosphere each year, comparable to offsetting the annual carbon emissions of 15,000 average-sized cars.

Speaking at an Austrade event today, BHP's chief technical officer Laura Tyler said the process, known as mineral carbonation, was being explored as part of a study program involving field trials and engagement with external research teams.

"It's early days but it's a really exciting project with great potential," she said.

Researchers estimate Australia's total sequestration potential through mined nickel could be more than 2000Mt of CO₂, more than four times Australia's estimated net emissions in 2019.

The CSIRO said recently that mineral carbonation for carbon capture should be a priority for Australia given its cost competitiveness.