

Taylor's CCS, storage and hydrogen goals are feasible, say experts

Possibly two CCS opportunities

The roadmap sets a goal of compressing CO₂, transporting it to a hub, and storing it for a total cost of under \$20 per tonne (with no mention made of capture costs).

"We are confident that there is one, possibly two, current opportunities for CCS deployment where \$20/tonne for CO₂ compression, transport and storage is potentially achievable at a stretch," Global CCS Institute chief executive Brad Page told *Footprint*.

However, other projects "are almost certainly" going to be above \$20, he told *Footprint*.

"The greatest immediate potential for cost reductions in the compression, transport and storage chain is the cost of electricity to operate compression, and increasing scale," Page said.

"After this, ensuring that the pipeline is as short as possible ... while utilising very well characterised sub-surface storage formations, also leads to least-cost."

Page added that CCS hubs are now the strongly favoured approach around the world.

"Hubs significantly reduce the unit cost of CO₂ transport and storage through economies of scale and offer commercial and technical synergies that reduce the risk of investment and further reduce cost," he said.

"The hub and cluster model is highly applicable in Australia in a number of locations, including the Latrobe Valley (CarbonNet) and Darwin," he added.

"Separating the value chain so that the transport and storage service operates independently from capture is also attractive, as the competencies required for transport and storage are very different to capture," Page noted.

"Value chain disaggregation allows each actor to focus on their core competencies."

Storage cost goal could be eight years away

According to CSIRO chief energy economist Paul Graham, the roadmap's goal of under \$100/MWh for at least six to eight hours of storage capacity, equates to the current cost of providing firming capacity from an existing gas turbine.

Graham and his team regularly examine price trends for generation and storage technologies, and provided their latest GenCost report just a few months ago.

It includes an estimate of storage costs, which is based on annualised capital costs.

Based on CSIRO's calculations, battery storage (with eight hours capacity) is likely to reach the benchmark figure in about 2028, he told *Footprint*.

Global competitiveness driver for hydrogen

According to Fiona Simon, chief executive of the Australian Hydrogen Council, the government's targeted \$2 per kilogram production cost for hydrogen can be achieved in the medium term – and must be accomplished quickly for global competitiveness reasons.

"We believe that the target can be reached by 2030, and that this needs to be the case for Australia to compete effectively in the export market," Simon told *Footprint*.

Once hydrogen production reaches this price point, it can "compete with alternatives in large-scale deployment across our energy system", Simon said.

"Getting to 'H2 under \$2' by 2030 will involve significant planning and coordination, as well as execution of 'mega projects' that can produce export quantities of clean hydrogen," she said.

"Ten years may seem like a long way away, but it is not terribly long for planning major projects."

"The federal government's continued investment in hydrogen, which now includes hydrogen fuel cell vehicles being eligible under the new \$74.5 million Future Fuels Fund and setting up a hydrogen export hub worth \$70.2 million, demonstrates the important role hydrogen will play in Australia's future energy mix," she said.