
Innovative carbon sponge technology offers cheaper emissions reductions

Statement from Mark McCallum, Chief Executive Officer

Natural enzymes have the potential to significantly reduce Australia's industrial and energy emissions at lower cost and with less environmental impact than other carbon capture technologies.

A review of the innovative carbon capture process developed by Canadian firm [CO2 Solutions Inc.](#) – commissioned by Australia's coal industry research and development fund COAL21 – shows using enzymes for carbon capture will be cheaper, more environmentally friendly and use less energy than other methods.

CO2 Solutions' carbon capture technology uses the carbonic anhydrase enzyme which is naturally present in humans and all living organisms to dramatically accelerate carbon dioxide (CO₂) capture compared to conventional technologies.

It uses simple and harmless salt solutions that, when combined with enzymes and heat from hot water, acts as a carbon sponge to separate carbon from the solution. The heated solution is then cooled and recycled to capture more carbon.

Key findings from the review include:

- Enzyme technology is suited to carbon reduction from iron and steel industrial plants using low-grade heat
- The process delivers significant environmental and operational advantages over current technologies
- The technology minimises the environmental footprint of carbon capture by using an environmentally friendly solution.

If Australia is to meet its Paris Agreement emissions reduction commitments, investments in improved carbon capture technologies are vital while ensuring that business and households are not disadvantaged.

Australia's emissions policy needs to pursue a least cost, technology neutral approach which ensures that all Australians have access to affordable, reliable and sustainable energy.

COAL21 is funded by Australian coal companies to invest \$555 million in the development of low-emissions technologies for the coal-fired power generation sector and in emissions reduction from coal mines.

Coal will be an important part of Australia's diverse future energy mix. The Australian coal industry is focused on technology solutions – including carbon capture, utilisation and storage and other innovative technologies – which reduce emissions as our energy mix changes while demand for power increases.