

Join us in taking action to end offshore exploitation of our oceans and marine life.



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Carbon capture and storage: A dangerous distraction

References

1. Gruber et al. (2019) The oceanic sink for anthropogenic CO₂ from 1994 to 2007. *Science* 363,1193–1199(2019). DOI:10.1126/science.aau5153
2. Australian Government Department of Environment. (2015). South-east marine region profile: A description of the ecosystems, conservation values and uses of the South-east Marine Region. Commonwealth of Australia.
3. IPCC, 2018: Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3–24, doi:10.1017/9781009157940.001.
4. 'Net Zero by 2050 - A Roadmap for the Global Energy Sector'. Report by the International Energy Agency, October 2021. https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf
5. McCauley R. D. et al. (2017). Widely used marine seismic survey air gun operations negatively impact zooplankton. *Nature Ecology & Evolution*, 1.
6. 'Confronting the Myth of Carbon-Free Fossil Fuels: Why Carbon Capture Is Not a Climate Solution.' 2021, Center for International Environmental Law. <https://www.ciel.org/wp-content/uploads/2021/07/Confronting-the-Myth-of-Carbon-Free-Fossil-Fuels.pdf>
7. Chevron, Gorgon Gas Treatment Plant Greenhouse Gas Management Plan (17 Aug. 2022), Available at: <https://australia.chevron.com/~media/australia/our-businesses/documents/gorgon-gas-treatment-plant-greenhouse-gas-management-plan.pdf>.

The Climate Change Threat

Our ocean covers 71% of the planet and sustains us in myriad ways. Our ocean has absorbed a quarter of the excess carbon dioxide emitted into the atmosphere since the 1990s¹, buffering the impacts of human carbon emissions on our planet.

Climate change driven by burning fossil fuels is putting our ocean at risk. Australia's south east ocean is warming at 3 to 4 times the global average, causing kelp forest die offs and bleaching of coral reefs. Most of the species here are found nowhere else on Earth. If we lose them here, they vanish forever².

To avoid catastrophic impacts to our marine ecosystems, it is imperative to drastically cut emissions and limit global temperature increases to 1.5 degrees Celsius³. We know that there can be no new fossil fuel projects if the world is to reach net zero emissions by 2050⁴. Yet, the Australian Government wants to expand the offshore fossil fuel sector and create offsets by dumping carbon pollution through carbon capture and storage (CCS). This is an expensive and dangerous distraction that will only delay the much-needed transition to renewable energy.



What is Carbon Capture and Storage (CCS)?

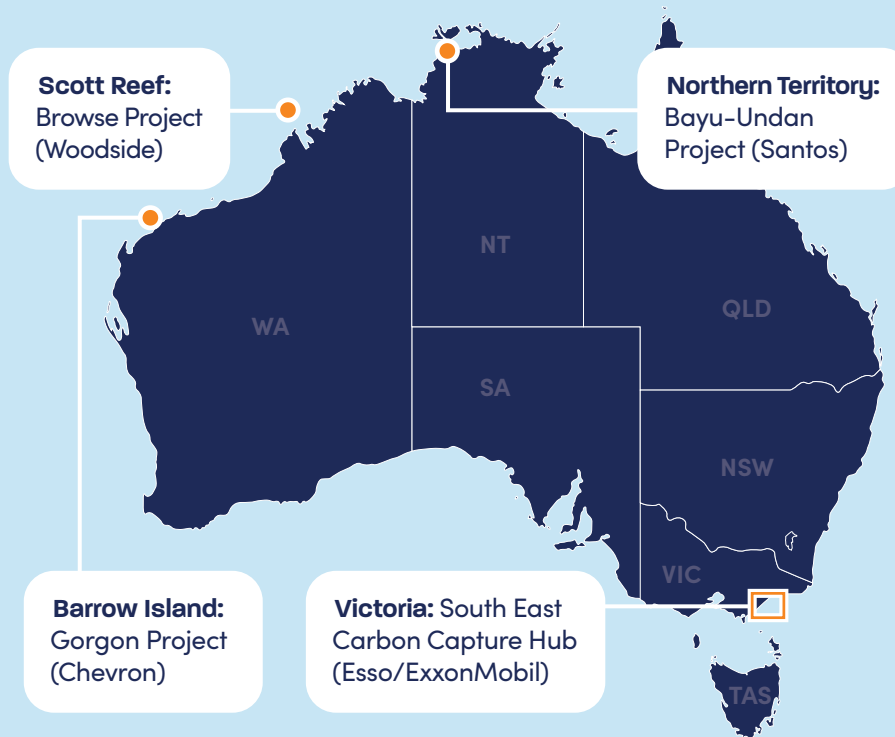
Carbon pollution dumping through CCS is a technique invented by the fossil fuel industry to prolong the life of old oil and gas wells. It was originally known as enhanced oil recovery: carbon pollution in liquid and gas form is pumped through a well underground, pushing out the last bits of fossil fuels. As the climate crisis unfolds, CCS is being promoted as a way to sequester carbon dioxide pollution by pumping it below the ocean floor.

Ocean impacts of CCS

Seismic blasting is used to find potential carbon pollution dumping sites. After carbon pollution is pumped under the seafloor, seismic blasting is required every other year to monitor for leaks, fissures and fractures. Seismic blasting is lethal to krill⁵, the foundation of marine food webs, and causes hearing loss in whales.

There are risks of leaks and pollution occurring at every stage of CCS development and operation. Every year, Chevron's Gorgon CCS project in Western Australia leaks millions of tonnes of greenhouse gas pollution that it committed to sequestering below the ocean floor. Leaks can have adverse impacts on marine plants and animals, acidifying the seawater and asphyxiating nearby marine life.

At the end of a CCS project, the pipelines that carry the carbon pollution will need to be removed, which is incredibly costly. Under current laws, companies can abandon their responsibilities and pass these costs onto the state after 15 years of ceasing operations. Greenlighting CCS projects will leave Australian taxpayers to clean up the mess for hundreds of years into the future.



CCS in South-East Australia

Fossil fuel company Esso (owned by ExxonMobil) has plans to build a CCS hub on Victoria's Gippsland coast using existing rigs, pipelines and other aging infrastructure. Leaks and spills have occurred at several of Esso's platforms in the region, raising serious safety concerns about future CCS projects.

Map is not to exact scale and is subject to change.

Failed, Expensive and Dangerous

In recent years, the Australian Government has offered up vast areas under our ocean to fossil fuel companies for carbon pollution dumping with CCS through an annual process known as 'acreage release'. The areas proposed for CCS include huge areas of our ocean, from Western Australia, the Northern Territory, and between Victoria and Tasmania.

CCS has been proven not to work, to be expensive and to prolong the life of the fossil fuel industry, which will only worsen the climate crisis. Globally, carbon pollution dumping CCS projects have only been able to capture 0.1 percent of fossil fuel emissions each year⁶. Chevron's Gorgon project in Western Australia has cost over \$3 billion and is expected to sequester less than 6 percent of its total emissions⁷.

Using aging oil and gas infrastructure to transport and store carbon pollution is fraught with dangers. Carbon dioxide forms carbonic acid with any exposure to water, which is strongly corrosive to carbon steel. It is also very difficult to repurpose a pipeline designed to carry fossil gas to carry carbon pollution. In the US, several major leaks have occurred from ExxonMobil's carbon dioxide transport pipelines⁸, with serious health implications for nearby communities⁹.

The Australian Government must protect our oceans, marine life and climate by ending acreage release for these dangerous CCS projects and not approve any carbon pollution dumping proposals in our ocean.