

Game Changer? Implications of the EU's Net Zero Industry Act for Carbon Management in Australia

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Dr. Alice Evatt University of Oxford alice.evatt@ouce.ox.ac.uk



I begin today by acknowledging the Gadigal people of the Eora Nation, Traditional Owners of the land on which this event is being hosted.

I pay my respects to their Elders past, present, and emerging.





Dr. Alice E. A. Evatt

Research Fellow

Net Zero for the Fossil Fuel Sector Oxford Net Zero and The Environmental Change Institute, University of Oxford

Expert Advisory Group Member

Science Based Targets Initiative (SBTi) Oil and Gas Standard Development Project

Professor. Myles Allen CBE

Head of Atmosphere, Oceanic and Planetary Physics University of Oxford

Lead Author IPCC Special Report on 1.5 Lead Author Oxford Principles for Net Zero Aligned Carbon Offsetting





ADGO Day 1: Two Key Takeaways

We need more gas supply

We need effective, efficient policy to de-risk investment



We also need something else

We need more gas supply

We need effective, efficient policy to de-risk investment



We need to reach net zero by 2050

We need more gas supply

We need effective, efficient policy to de-risk investment



decarbonise gas

How are we going to decarbonise gas in time to meet required net zero targets?

How are we going to decarbonise gas in time to meet required net zero targets?

And ensure energy security, and increase gas supply at the same time?



3 | LESSONS FOR AUSTRALIA



Geological Net Zero. GEOZero.



Limiting warming to **1.5°C** and **2°C** involves rapid, deep and in most cases immediate greenhouse gas emission reductions

Net zero CO₂ and net zero GHG emissions can be achieved through strong reductions across all sectors



Emission Reductions



Source: Global GHG emissions of modelled pathways, IPCC, AR6 Synthesis Report

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Greenhouse gas emissions (stylised pathway)



Source: Roles of CDR in global or national mitigation strategies, IPCC, WGII, AR6

Greenhouse gas emissions (stylised pathway)



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Industrial CO₂ production and storage in "technology neutral" 1.5° Source: Jenkins et al (2023) from IPCC database

Geological CO2 Production

Coal. Oil. Gas. Limestone.

&

Geological CO2 Production

GCS = umbrella term covering both CCS and CCUS

Focuses on permanent CO₂ storage in geological formations Includes CO₂ from:

- Point-source and Industrial capture
- Direct air capture
- Utilisation (if it leads to geological storage)

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Industrial CO₂ production and storage in "technology neutral" 1.5°C scenarios

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Geological CO2 Production

Geological CO2 Storage

> Geological Net Zero



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3 | LESSONS FOR AUSTRALIA

Geological CO2 Production

Geological CO2 Storage

Geological Net Zero





3 | LESSONS FOR AUSTRALIA









1 | GEOLOGICAL NET ZERO



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We Need Geological CO₂ Storage and permanent CO₂ Disposal.

This is a necessity, not an option.

2 | INTERNATIONAL POLICY DEVELOPMENTS

3 | LESSONS FOR AUSTRALIA

State of Play

Australia



Operational and planned capture capacity Source: IEA, CCUS Projects Explorer, 2024

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2 | INTERNATIONAL POLICY DEVELOPMENTS

3 | LESSONS FOR AUSTRALIA

Australia

Mt CO2 per year 18 16 14 12 10 8 6 4 2 0 2024e 2026 2028 2030 Operational Output Under construction Operational



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United Kingdom

Operational and planned capture capacity Source: IEA, CCUS Projects Explorer, 2024

2 | INTERNATIONAL POLICY DEVELOPMENTS

3 | LESSONS FOR AUSTRALIA

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Operational and planned capture capacity Source: IEA, CCUS Projects Explorer, 2024

2 | INTERNATIONAL POLICY DEVELOPMENTS

%

3 | LESSONS FOR AUSTRALIA

Australia









Operational and planned capture capacity Source: IEA, CCUS Projects Explorer, 2024

The world is waking up to the need for permanent CO₂ disposal and storage.



The BIG question:

How do we fund it?

Two kinds of money | two kinds of policy

Private Money

Market mechanisms

Public Money

Subsidy & Public Funding



Which one will help us build capacity?

Private Money

Market mechanisms

Public Money

Subsidy & Public Funding



Two kinds of money; two kinds of policy

Private Money

Market mechanisms

- **Carbon pricing** has been **ineffective** at supporting the near-term development of large-scale capital-intensive capture and storage (Zakkour et. al., 2024).
- This is not news. Short-comings were recognised early on (Carbon Pricing Leadership Coalition, 2017).



Which one will help us build capacity?

- The US Inflation Reduction Act and its 45Q tax credit for carbon sequestration.
- > High credit values
 - \$85/tCO2 permanently stored,
 - \$180/tCO2 permanently stored via DAC.

> Flexible mechanisms

- Direct pay option for companies without tax liability
- > Extended timelines
 - Projects can qualify until Jan 2033 to begin construction

Public Money

Subsidy & Public Funding



Which one will help us build capacity?

Downsides

- Not an infinite source
- Subject to political change
- Public acceptance and taxpayer funds
- Other countries can't compete

Public Money

Subsidy & Public Funding



Could there be a game changer?
The Net Zero Industry Act

Article 23



Entered into force on **June 29, 2024**

Focus on Strategic Net-Zero Technology Products Manufacturing Ecosystem





Source: European Commission, EU Net-Zero Industry Act Factsheet, 2023



• Primary Objective:

Improve the functioning of the internal market by establishing a Unionlevel framework that ensures the Union's access to a "**secure and sustainable supply of net-zero technologies**".

Supportive Regulatory Framework:

- Cuts administrative red tape and
- Accelerates and simplifies permitting across the EU
- Increases planning and investment certainty





Coupled with ambitious targets:

EU aims to provide:

- at least **40%** of the **EU's annual deployment needs** for strategic net-zero technologies.
- At least 15% of global market share by 2050.





• Security is at the heart of the NZIA:

Aim: reduce and prevent strategic dependencies that could hinder access to essential technologies and components required for the transition to a greener economy.

> Russia and Ukraine

> China's net zero manufacturing capacity; dominance in supply of renewables and critical minerals

> The US Inflation Reduction Act



CO2 Storage Injection Capacity

Article 20: Union level objective of CO2 injection capacity

• <u>50 million tonnes p.a. by 2030</u>, excluding sites used for Enhanced Hydrocarbon Recovery

Article 21: Transparency of CO2 storage capacity data

• Requires Member States to publicly disclose data on potential CO2 storage sites

Article 22: CO2 transport infrastructure

• Mandates the development of CO2 transport infrastructure, including cross-border facilities

Article 23: Contribution of authorised oil and gas

• Obligates natural gas and crude oil producers to contribute towards EU 50mt target

Article 24: Regulatory framework for the market for captured CO2

 Establishes a regulatory framework for the CO2 market, with the possibility of legislative action to address issues



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Article 23

Novel: First Injection Capacity Obligation (ICO)

The ICO introduces a novel subject of obligated demand, a sector-specific, sectorwide mandate for CO2 injection capacity (Evatt et. al. 2024).



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Article 23

Mandated contributions:

Contribution to the 50 MtCO2/yr injection capacity target is **calculated pro rata** on the basis of the entity's **share of production** within the Union **between 1 January 2020 to 31 December 2023**.



Article 23

Who is obligated?

- The bulk of responsibility for the target will fall on majors, national oil companies (NOCs), mid-sized firms, and Europe focused producers
- Wood Mackenzie estimate EU's Top 10 O&G producers account for over 70% of the 50 Mt target



Article 23

How will contributions be met?

- I. Invest in or develop CO₂ storage projects independently or in collaboration with others.
- II. Enter into agreements with fellow producers.
- III. Establish agreements with third-party CO₂ storage developers or investors.



Banned onshore CO2 storage in Austria and Germany





Defining Features

It's temporary

A "Band-aid Obligation". Designed to accompany the ETS and public funding

• It's grounded in ability

Similarities between the ICO and the U.S. Defense Production Act (DPA)

The oil and gas industry "possesses the assets, skills and knowledge needed to explore and develop additional storage sites" (2023/0081(COD), p.15)



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Why Now?

ETS Damage Control

- Carbon price policy mechanisms have proven ineffective. (Zakkour et. al., 2024).
- The EU ETS failure to scale the CCS value chain and infrastructure was acutely felt: its scaling geological storage and carbon transport was flagged as a key issue affecting the CCS value chain, blocking CCS technology scale up (European Commission, 2023a).
- The US subsidy model is not suitable for Europe, its Single Market Mechanism, and runs the risk of market distortion.



What's Next?

The European Commission will clarify several outstanding issues:

- The definitive method for determining obligations
- Criteria for exemptions
- How the EEA will be treated in relation to the storage target



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Which one will help us build capacity?

Private Money

Market mechanisms

Public Money

Subsidy & Public Funding



A Third Option: Regulation



Source: Stechemesser et al., Climate policies that achieved major emission reductions, Science, 2024



A mandate to scale geological storage

Lessons for Australia?

Lessons for Australia



Because we've done this before



Renewable Energy Target

Renewable Energy Target

A mandate policy

2001:

Mandatory Renewable Energy Target.

The Renewable Energy Target (RET) is an Australian Government scheme that aims to reduce greenhouse gas emissions in the electricity sector and increase renewable electricity generation. The RET sets a target to deliver an extra 33,000 gigawatt-hours (GWh) of electricity from renewable sources every year from 2020 to 2030.

The RET creates a market to incentivise the generation and use of renewable energy. This supports the transition towards a more sustainable and less carbon-intensive energy system.

Key point:

A RET-liable entities MUST purchase a certain percentage (Renewable Power Percentage) of their electricity from renewable sources each year.

Mandated activity

Source: Clean Energy Regulator, Australian Government, 2024.



Has it worked?



Renewable Power Percentage (RPP) and Adjusted Renewable Energy Targets (GWh) by Year





Source: Inputs from Clean Energy Regulator, Australian Government, 2024

Has it worked?



Source: IEA, Evolution of total energy supply in Australia since 2000, 2025



Something a bit closer to home?



WA Domestic Gas Policy



A mandate policy

WA Domestic Gas Policy

The WA Domestic Gas Policy mandates that liquefied natural gas (LNG) export projects in Western Australia must reserve a portion of their gas production --15% -- for the domestic market to ensure a stable and affordable local gas supply.

- Seen as necessary to ensure the WA's domestic gas requirements
- Safeguards WA's energy security.
- Has it worked?



The Pitch: Could a geological storage mandate help the gas sector decarbonise in Australia?

"The best way to discourage investment is to keep changing the rules"



A mandate would help provide long term policy stability and de-risk investment





New gas supply?

1 | GEOLOGICAL NET ZERO

2 | INTERNATIONAL POLICY DEVELOPMENTS

3 | LESSONS FOR AUSTRALIA



UK Courts have decided that impact assessments have to account for CO2 generated when fuels are burned.




What to do?

1. Block the approvals?





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- 2. Market substitution or displacement rationale? "This project won't increase global emissions because it will simply replace more emissions-intensive oil or gas from elsewhere."





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- 3. Permit on condition of a progressive transition to geological net zero, obliging licensees to contribute to geological storage development.





What to do?

- 1. Block the approvals?
- 2. Market substitution or displacement rationale? "This project won't increase global emissions because it will simply replace more emissions-intensive oil or gas from elsewhere."
- Permit on condition of a progressive transition to geological net zero, obliging licensees to contribute to geological storage development.
 Legitimate decarbonisation strategy



Gorgon?



Think about it. Could a geological storage mandate help the gas sector decarbonise in Australia?





Prepared by Dr. Alice Evatt

Research Fellow | Net Zero for the Fossil Fuel Sector Oxford Net Zero and The Environmental Change Institute, University of Oxford

School of Geography and the Environment University of Oxford, South Parks Road, Oxford, OX1 3QY E: <u>alice.evatt@ouce.ox.ac.uk</u> | T: +44 7429 593577

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