POWERING AUSTRALIA

Cyan Ventures

Deloitte.

HORIZON 2035

Unlocking Australia's carbon ecosystem

About Powering Australia

Powering Australia is an Australian Government funded Industry Growth Centre under the Australian Made Battery Plan, helping Australian clean-tech manufacturing businesses grow faster and deliver high-value, locally made clean-energy products. We connect material producers to manufacturers, commercialise renewable technologies, and build the capability of Australian businesses and First Nations communities to participate in the energy transition.

We also deliver the Building Future Battery Capabilities Program which focuses on building Battery Workforce Skills and Training and the Demonstrator Stream which supports the commercialisation and scale-up of Australian battery technologies.

Powering Australia is championing clean-tech industries that generate sustainable jobs, boost economic resilience, grow domestic demand, industrial ecosystems and position Australia as a global leader in clean-energy innovation.

Acknowledgements

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Executive summary

Over the next quarter century, Australia's export industries face a global net zero transformation. Many of our key industries; mineral resources, energy, agriculture and heavy manufacturing are emissions-intensive and hard-to-abate.[1]

In a net zero global economy, these sectors will face heightened scrutiny from markets, exposure to international carbon policies, border adjustment mechanisms and shifting trade requirements.[2] Without proactive measures, this exposure could pose significant risks to Australia's export competitiveness.

A credible domestic carbon sector, founded on robust carbon technologies, can provide critical support to these industries, enabling a low cost and orderly net zero transition.[3] Scheme integrity at both scheme and method levels, alongside strong measurement and reporting frameworks, forms the foundation.

This sector plan delivers through three clear priorities.

- Robust evidence-based methods to ensure integrity and enable compliance;
- Technology-enabled measurement, reporting and abatement to enable cost-effective scale; and
- International market access once Australia's domestic industries are secure.[4]

Sequencing these reforms supports decarbonisation today while positioning Australia for bilateral carbon trade tomorrow.[5]

Australia brings decisive advantages. We have vast lands and geological storage potential that create unmatched scale.[6] Our ACCU system has earned global trust over decares.[7] And our research leadership delivers Australia a competitive edge.[8]

Opportunity landscape

Global net zero targets create both challenges and opportunities for Australia's export industries. Challenges, because our industries are capital intensive and hard to abate. Opportunities, because Australian industries often operate at lower carbon intensity than their international equivalents.

Hard-to-abate sectors need high-quality carbon solutions to achieve low-cost transitions. Without them, the timing of capital investments cannot be optimised, and export market access narrows. With them, premium opportunities emerge.

Australia's unique advantages position carbon leadership within reach. Vast land area offers strong potential for bioenergy, land use change and forestry development, enabling large-scale emissions abatement and carbon credit generation through the Australian Carbon Credit Unit (ACCU) scheme.[9] Geological formations provide world-class storage capacity.[10]Proven ACCU integrity, validated by independent reviews, builds buyer confidence.[11] Research leadership in measurement and methods ensures high integrity, enables new abatement and creates exportable expertise.[12]

Additionally, with over 60% of land under First Nations ownership or interest, projects integrating Traditional knowledge can deliver superior outcomes and social licence.[13] These natural endowments, combined with policy momentum and technical capability, position Australia to serve both domestic compliance needs and emerging international demand.[14]

1. Unique endowments

- Australia's vast lands and geological formations enable low-cost, large-scale carbon sequestration and storage.

2. Demand

- Safeguard Mechanism tightening and international carbon trading create dual domestic and export market opportunities.

3. Industrial ecosystem

- Established research leadership in carbon measurement and verification provides proven ecosystem foundations for scale.

4. Strategy

- Strategic clusters around storage basins, plantations, and First Nations fire management drive competitive advantage.

Securing carbon opportunities under focused ambition could create up to **28,065 jobs** and generate **$14.9 billion** in economic growth by 2035

Australia's carbon sector can meet hard-to-abate demand and power net zero by 2050 through proven ACCU credits and advanced measurement.

Sector overview

The Carbon sector comprises three activities; nature based solutions, carbon capture and storage (CCS) and carbon capture utilisation and storage (CCUS).

Australian Industry reports its emissions through the National Greenhouse and Energy Reporting scheme. The complementary Safeguard Mechanism forces domestic facilities to reduce emissions or surrender ACCU or Safeguard Mechanism Credits (SMC) to maintain emissions within annually declining limits.

ACCU are generated by participating in activities that comply with regulated methods. The methods meet legislated Offset Integrity Standards to ensure they are measurable and additional. SMC are generated by operating a facility below its baseline. Challenges persist around the pace of method development, and the cost of measurement and compliance.

In 2023, Australia was the 14th highest global emitter of greenhouse gases, contributing 446 Mt CO2-e (approximately 1% to global emissions).[3,4] Nearly a quarter (23%) of Australia's emissions arise from hard-to-abate sectors, primarily agriculture, cement, steel, aluminium, critical minerals and aviation.[5] Australia has a decarbonisation target of net zero greenhouse emissions by 2050.[6]

Current market dynamics suggest strong domestic demand for carbon offsets, and for physical capture and storage or use of carbon.

Delivering on Australia's carbon opportunity requires a focused implementation agenda centred on three priorities: robust and evidence-based carbon methods, advancing technology-enabled measurement, reporting, and abatement solutions, and expanding international market access (upon satisfaction of domestic demand).

Notes/Sources: [1]CSIRO, 2024. [2]DCCEEW, 2024.[3]DCCEEW, 2025. [4]DFAT, 2023. [5]EU Taxation and Customs Union, 2025. [6]Australian Government, net zero by 2050. [7]Australian Treasury, National Interest Framework, 2024. [8]EU Carbon Border Adjustment Mechanism and related policy instruments. [9]Carbon Market Institute, 2025. [10]Carbon Market Institute, 2025. [11]Geoscience Australia, n.d. [12]Corporate Carbon and related Australian carbon market expertise sources. [13]DCCEEW, Independent Review of ACCUs (Chubb Review), 2022. [14]Clean Energy Regulator, 2025.

Size of the prize: economic value

Australia's carbon sector stands to generate substantial economic value for regional communities and businesses. Under the current trajectory, vegetative methods deliver $275 million in economic value by 2035, rising to $595 million by 2050. Focused ambition unlocks $885 million by 2035 and $3.2 billion by 2050.

Geological storage creates even greater impact. Current trajectory yields $5.9 billion in economic value in 2035, growing to $6.7 billion by 2050. Focused ambition scales this to $13.2 billion by 2035 and $25.2 billion by 2050.

High-quality credits keep our export industries competitive worldwide. This builds a new revenue engine powering the net zero transition while creating lasting economic benefits across regional Australia.

Potential benefits associated with NZA geological storage supply projections

(Economic value in m)

Year	Range Value	GVA Estimate
2035	Current Trajectory	5,850
	Focused Ambition	13,165
2050	Current Trajectory	6,710
	Focused Ambition	25,170

Potential benefits associated with vegetative methods for safeguard facility demand projections

(Economic value in m)

Year	Range Value	GVA Estimate
2035	Current Trajectory	275
	Focused Ambition	885
2050	Current Trajectory	595
	Focused Ambition	3,210

Notes/Sources: Figures reflect expected market ACCU demand from safeguard facilities under the moderate abatement case. Vegetative methods are assumed to see a 2% YoY decline rate to approximate the inclusion of emerging innovative technologies. Market size is determined in alignment with the cost current containment measure prices for ACCUs as upper and lower bookends, and does not consider market clearing mechanisms, or ability for technology to commercially achieve GVA and jobs figures under real world conditions.

Analysis in Appendix C indicates that idealistic price reduction levers associated with forestry projects. Accordingly, forestry projects have been considered above as potentially viable for a current ACCU market price.

Potential benefits associated with NZA geological storage supply projections
(Jobs estimation)

Year	Range Value	Peak Construction FTE	Operation FTE	Indirect Jobs
2035	Current Trajectory	1,735	870	6,510
	Focused Ambition	3,905	1,955	14,645
2050	Current Trajectory	6,440	3,220	24,160
	Focused Ambition	24,160	12,080	90,595

Potential benefits associated with vegetative methods for safeguard facility demand projections
(Jobs estimation)

Year	Range Value	Peak Construction FTE	Operation FTE	Indirect Jobs
2035	Current Trajectory	980	490	1,300
	Focused Ambition	3,185	1,595	4,230
2050	Current Trajectory	2,130	1,065	2,825
	Focused Ambition	11,535	5,770	15,310

Size of the prize: jobs

Australia's carbon sector offers thousands of real jobs across construction, operations, and supply chains, strengthening regional economies while supporting export industries.

On the current trajectory, by 2035, vegetative methods deliver 2,770 total jobs while NZA geological storage supply provides 9,115 total jobs. Under focused ambition, where Australia captures carbon opportunities, potential multiplies, securing 155,795 total jobs (32,615 vegetative by 2050 and 123,180 geological storage) comprising construction, operational, and indirect roles.

From site technicians to carbon tech operators, these roles will strengthen regional economies and support our major exporting industries while building skilled careers that last beyond project construction.

Anchor opportunities

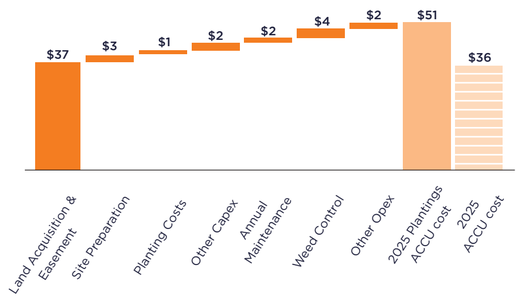
Three of our key pathways to success are identified as "anchor opportunities." These are opportunities with strong potential for Australia's long-term competitiveness and may also contribute to improving supply chain resilience.

Anchor opportunities: Plantation forestry

As emissions rules tighten for mining and manufacturing, plantation forestry offers proven, low-cost carbon credits. Trees soak up 60 tonnes CO_2 per hectare over 25 years through natural growth, then deliver timber products that lock carbon long-term. Replanting sustains the cycle, reliably supplying ACCUs when industries need them most to stay globally competitive.[15]

Australia's established ACCU Plantation Forestry Method powers 174+ live projects, already generating credits. Costs average around $50 per tonne sequestered. This anchors Australia's leadership in scalable carbon solutions, securing Safeguard compliance, rural jobs, and a competitive edge in global markets.[16]

Australia's indicative plantation forestry (P. radiata) production cost | 2035



Notes/Sources: [15]North East NSW Forestry Hub, 2022. [16]CER, 2025

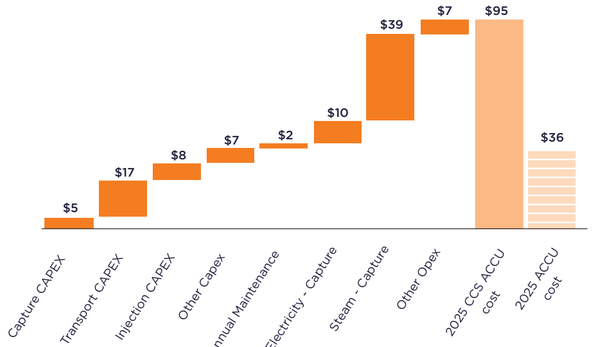
Anchor opportunities: Geological storage

Geological storage has the potential to tackle emissions from Australia's biggest point source emitters such as LNG plants and alumina refineries. Captured CO_2 pumps deep underground into secure rock layers, where it remains in gas form or is dissolved into aquifers and stored permanently.[17]

Australia hosts one of the world's largest commercial CCS projects, Gorgon. Australia also hosts the well explored, world class Carnarvon and Bonaparte sedimentary basins and established offshore oil and gas industries with strong relevant capabilities. Australia is a pioneer in CCS research through its leadership with the CO2CRC and the GlobalCCS Institute.[18]

Sixteen projects now advance across basins holding 403 Mt capacity, but the geological potential is much larger at over 31GT. The proximity to Asian markets and large industry could position Australia as the Asia-Pacific hub for permanent storage, anchoring Safeguard compliance for some hard-to-abate industries and enabling export potential.

Australia's indicative geological carbon capture and storage cost | 2035[1]



Notes/Sources: [1]Based on Deloitte modelling. [17]British Geological Survey, 2025. [18]Chevron, 2025.

Wider supply chain opportunities

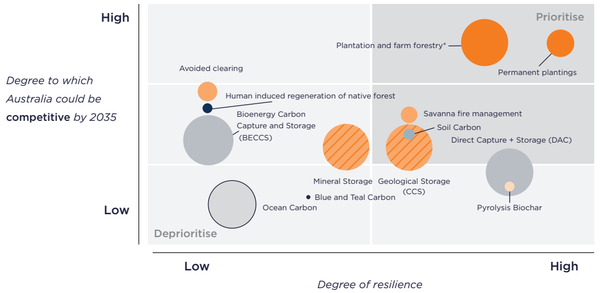
Australia can lead global carbon markets through three strengths: research leadership, advanced MRV technologies, and strategic international partnerships. Independent reviews like the 2022 Chubb Review praised our ACCU scheme's strength but called for better transparency to build greater trust.[19]

This credibility rests on precise, low-cost measurement systems. Soil carbon projects combine satellite imagery, spectroscopy, and predictive analytics (as demonstrated by AgriProve)[20], while geological storage leverages seismic monitoring, gravimetry, and fibre-optic sensing.[21] These technologies ensure every credit represents verified emissions reductions, overseen by the Clean Energy Regulator's mandate of three independent audits per project crediting period.[22]

These trusted systems position Australia to seize Article 6 (Paris Agreement) climate deals, unlocking international access to export our proven methods and making us the region's go-to carbon trading partner.

Notes/Sources: [19]CMI, 2023. [20]CMI, n.d. [21]Agriprove, 2025. [22]Australian Energy Producers, 2025.
[1]Data primarily based on CSIRO, 2022, link | Analysis by Deloitte.

Australia's competitiveness and resilience for carbon opportunities (Size reflects illustrative potential scale)



Type

- **Avoided**
- **Biological**
- Photosynthesis
- HIR
- Microbes
- Coastal and wetland
- **Ocean**
- **Engineered**
- Synthetic removal
- Synthetic storage
- Bio-removal

First Nations opportunities

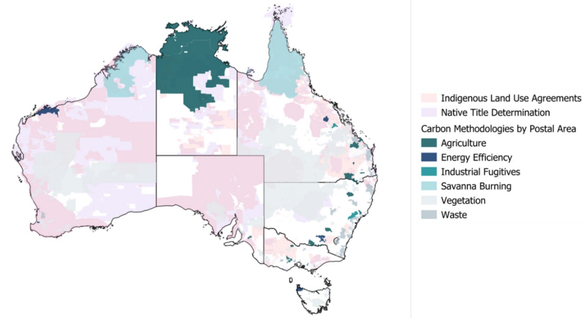
First Nations partnerships enable carbon sector development through land rights, traditional knowledge, and co-designed projects. Carbon opportunities like plantations, geological storage, and savanna burning overlap heavily with Native Title Determinations (NTDs) and Indigenous Land Use Agreements (ILUAs).[23]

Three targeted pathways unlock these opportunities:

- Land and sea partnerships via NTDs, ILUAs, equity stakes, and services supporting geological storage, plantations, and savanna burning. Proven by Tiwi Plantations{10} and Arca-WYLOO models.[24]
- Directly commercialising traditional knowledge and regional populations through savanna burning. Exemplified by West Arnhem Land Fire Abatement (ALFA) issuing over 6.2 million ACCUs.[25]
- Supporting services in monitoring, reporting and verification, heritage, environmental management, and operations. Building on ranger programs and networks like the Indigenous Carbon Industry Network.[26]

These pathways create jobs on-Country, boost project resilience, and position Australia as a global leader in Indigenous-led carbon solutions. Embedding Free, Prior, and Informed Consent (FPIC) with self-determination delivers enduring partnerships that align carbon growth with community priorities and national net-zero goals.

Notes/Sources: [23]Notes and sources: NTD from NNTT and includes only certain outcomes (exclusive or non-exclusive). ILUA from NNTT. Carbon projects from CER ERF (link). [24]Tiwi Plantations, n.d., | Department of Agriculture and Fisheries, n.d., link | Timber and Forestry, 2023, [25]ALFA, 2023, [26]ICIN, n.d.



Intersection of carbon opportunity areas with First Nations Native Title or ILUA[1]

Making it happen

Australia should focus on three priorities to enhance the competitiveness of its Carbon sector and support industry more generally:

Robust evidence-based methods to ensure integrity and enable compliance

Technology-enabled measurement, reporting and abatement to enable cost-effective scale

International market access once Australia's domestic industries are secure

These priorities can help transform Australia's domestic carbon potential into an export relevant industry by 2035.

Although Australia has export potential for its offsets, and has world class geological storage potential, it should secure access for domestic industries in preference to generating offsets for export, and in turn enable greater competitive advantage for its domestic industries.

Achieving Australia's potential

Australia can build carbon solutions leadership.

Robust partnerships across industry, government, First Nations and communities will drive progress through plantation forestry, geological storage and resilient supply chains.

Coordinated action can position Australia's carbon expertise as a key contributor to global net zero supply chains, delivering sustained economic value as the carbon sector expands into 2035 and 2050.

Powering Australia invites industry leaders, policymakers, investors, First Nations organisations and communities to collaborate on delivering world-class carbon capability for the clean energy transition.

For details and team engagement, contact Powering Australia.

Acknowledgement

Powering Australia wishes to acknowledge the First Nations of Australia and recognise their enduring connection to Country through culture, people, place and story. We honour the knowledge systems that have sustained these lands and waters for thousands of generations and recognise the vital role of First Nations leadership and self-determination in shaping a just and sustainable future. As Australia undergoes a significant clean energy and industrial transition, we acknowledge the importance of respectful partnership, cultural integrity, and shared purpose to realise the full opportunity of the Clean Energy Transition.