Climate
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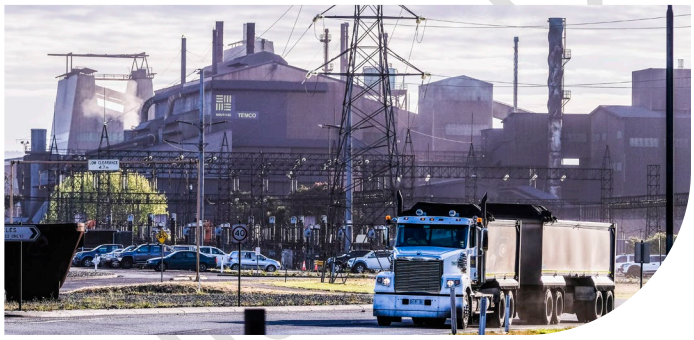

Emissions Reduction and Resilience Plan Tasmania's Industrial Processes and Product Use sector

Consultation draft – September 2024

Renewables, Climate and Future Industries Tasmania
Department of State Growth

Tasmanian Government

In recognition of the deep history and culture of these islands, we acknowledge all Tasmanian Aboriginal people as the continuing Custodians of this Land and Sea Country and pay our respect to Elders past and present.

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Contents

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We want to hear from you

Consultation questions

These questions are designed to guide your feedback on this draft Plan for the Industrial Processes and Product Use (IPPU) sector. Your feedback will help us develop the final Plan. We encourage you to read this draft Plan before you make a submission.

1. What future opportunities do you think will have the most impact in the IPPU sector in Tasmania? (Future opportunities are summarised on page 2.)
2. Are there any priorities or future opportunities for the IPPU sector missing from this draft Plan?
3. How can we collaborate to reduce emissions and build resilience in the IPPU sector?

Key dates

Draft Plan released:	3 September 2024
Written submissions close:	7 October 2024

How to have your say

You can make a submission by writing to us, answering the above consultation questions. You can submit your response online, or by email or post.

For more information about this work, or making a submission, please contact the Climate Change office.

Online:	www.recfit.tas.gov.au/consultation
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Phone:	03 6166 4466

If you are making a written submission, please include the name and contact details of the person or organisation making the submission. All submissions are welcome and valued.

Publication

Submissions will be published on the Renewables, Climate and Future Industries Tasmania (ReCFIT) website (www.recfit.tas.gov.au). Your name or the name of the organisation making the submission will be made public. Personal contact details will not be published. Please tell us if you want to keep your submission private. Defamatory or offensive material will not be published.

Draft Plan summary

Priority area	Future opportunities
1. Supporting the use of existing decarbonisation technology, and research and development into new technologies	• Consider mechanisms to support research to develop low emissions alternative technologies for production processes covered by the IPPU sector. • Explore funding options for industry to scope, plan, design and trial efficient new technologies or processes for metals and mineral production that can lead to implementation at full production scale. • Explore ways to support Tasmanian IPPU sector businesses to access Australian Government funding to trial new technologies. • Consider options to support trials of low emissions alternatives to sulphur hexafluoride (SF_6) use, and how best to support businesses in the transition to alternative technologies.
2. Streamlining regulatory and policy frameworks to support the adoption of low emissions technology	• Explore options to streamline regulatory approval processes for adopting low emission technologies, building on the Renewable Energy Approvals Pathway. • Collaborate with regulators such as the EPA to review regulations that may act as barriers to trialling or implementing innovative low emissions technologies or production processes, while ensuring risks are managed. • Consider embedding climate change into government policy frameworks such as procurement, cost benefit analysis and project specifications for tenders. • Explore sustainability accreditation systems for large-scale government infrastructure projects.
3. Supporting the transition to a low emissions economy	• Collaborate with industry and research organisations to identify future workforce needs and training requirements to ensure a skilled workforce can support the adoption of renewable and low emissions technologies and production processes. • Partner with industry to develop programs for building Tasmanian workforce capabilities in renewable and low emissions technologies. • Consider support systems and guidance for the IPPU sector to comply with new and evolving reporting requirements on carbon emissions and climate-related risks. • Consider options to map decarbonisation pathways for the IPPU sector and the role of Tasmanian businesses, government, and community in the transition.
4. Driving action through partnerships, collaboration and information sharing between governments, industry and key stakeholders	• Explore options for increasing engagement with Tasmania's largest emitters captured under the Safeguard Mechanism to help them access Australian Government funding, reduce emissions and meet their baseline targets. • Support Tasmania's IPPU businesses and industries to share information and learnings about existing technology options to decarbonise and share work that is already underway in the sector. Consider partnering with universities, institutes and CRCs to support research to reduce emissions across the IPPU sector. • Explore opportunities to support Tasmanian manufacturing businesses to join industry groups that aim to reduce the embodied carbon of construction projects. • Support Business Tasmania to continue collaboration with industry through the Tasmanian Advanced Manufacturing Action Plan and existing MoUs with industry.
5. Building the resilience of the IPPU sector to the physical impacts of climate change	• Explore opportunities to increase the resilience of Tasmanian businesses covered by the IPPU sector by integrating the findings of the statewide climate change risk assessment and updated fine-scale climate projections into future planning and risk mitigation strategies. • Support businesses to adapt and build resilience to climate-related risks, through initiatives such as grants, education programs or no-interest loans.

Introduction

Tasmania's *Climate Change (State Action) Act 2008* (the Act) sets out how the government must take action on climate change. Under the Act, Tasmania's emissions reduction target is to achieve net zero greenhouse gas emissions, or lower, from 30 June 2030. To help achieve this goal, the Act requires the government to develop five-yearly sector-based Emissions Reduction and Resilience Plans (Plans) in consultation with business and industry. The Plans will support a practical and balanced approach for our key sectors to reduce greenhouse gas emissions and build resilience to climate change.

The Plans must support greenhouse gas emissions reduction, the transition to a low emissions economy, and resilience to climate-related risks. The legislation also requires that the objects of the Act are taken into account during the development of the Plans. The objects of the Act include supporting emissions reduction, adaptation and a consultative partnership approach action on climate change.

Plans must be developed for the following sectors:

- energy
- transport
- industrial processes and product use (IPPU)
- agriculture
- land use, land use change and forestry (LULUCF)
- waste
- any other sector or sub-sector determined by the Minister (the government has committed to develop a Plan for government operations).

A whole-of-economy roadmap outlining the links and cross-cutting issues between all sectoral plans and Tasmania's first statewide climate change risk assessment will also be developed.

Delivery and timeframes

Under the Act, the Plan for the IPPU sector is to be prepared by November 2024. The Minister responsible for climate change is to consult with each relevant portfolio Minister, and with business and industry representatives, to develop the Plans. The Minister is also required to publicly consult on each draft Plan.

The Plans are to be tabled in Parliament and updated at least every five years.

This work is being led by the Climate Change Office in ReCFIT in collaboration with relevant portfolio agencies.

Why sector-based emissions reduction and resilience planning?

The latest data[1] show that Tasmania recorded net zero greenhouse gas emissions for the first time in 2014 and has maintained its net zero status in the nine reported years since. Our emissions profile is largely due to the carbon sink in our managed forest estate and our longstanding investment in renewable electricity generation.

However, our emissions profile is not guaranteed into the future. Emissions are influenced by a range of factors such as population growth, major bushfire events, changes in consumer demand, market forces, and technological advancements. We know we must do more to maintain our net zero status by reducing emissions in all our sectors.[2]

The *AR6 Synthesis Report: Climate Change 2023* by the Intergovernmental Panel on Climate Change (IPCC)[3] confirms that humans are causing global warming and makes it clear that we need to act now. Global temperatures are now 1.1˚C above pre-industrial levels and are likely to reach 1.5˚C above pre-industrial levels in the early 2030s. In Tasmania, the environmental, economic and social impacts of climate change are already affecting our business, industries communities, built environment and our natural values. It is important that we adapt effectively to a changing climate and build strong, resilient communities, while continuing to reduce our emissions.

A consistent theme from consultation on the government's action on climate change is that partnership between government and industry is the preferred approach to support emissions reduction and build resilience in Tasmanian businesses and industries.

Purpose of this consultation draft Plan

This draft Plan has been developed to support the public to provide feedback on priority areas and future opportunities for the IPPU sector. These priorities and opportunities have been identified through targeted consultation with business and industry. The proposed priority areas and future opportunities are outlined in the section "Priority areas for reducing emissions and building the resilience of Tasmania's IPPU sector".

[1] Tasmania's latest reported greenhouse gas emissions were released in April 2024 as part of the Australian Government's *National Greenhouse Accounts 2022* and *State and Territory Greenhouse Gas Inventories 2022*. The Australian Government reporting framework is consistent with UNFCCC and Paris Agreement reporting rules. National inventory reporting runs two years behind the current date and represents the most recent official data in Australia on annual emissions.

[2] Point Advisory and Indufor 2021, *2021 Update of Tasmania's Emissions Pathway Review – technical report* (prepared for the Tasmanian Climate Change Office) www.recfit.tas.gov.au/__data/assets/pdf_file/0009/492093/Tasmanian_Emissions_Pathway_Review_-_Technical_Report.pdf

[3] IPCC 2023, *Climate Change 2023: Synthesis Report - Summary for Policymakers,* www.ipcc.ch/report/ar6/syr/

Funding for the sectoral plans

The feedback from consultation on all plans will help us identify the priority actions to deliver with available funding, as well as future funding priorities to inform budget and planning processes over the five-year life of the plans.

This Plan builds on the $25 million that has already been invested by the Tasmanian Government to support businesses in the IPPU sector to reduce emissions and build resilience to climate change.

The Tasmanian Government will also seek to maximise the opportunities for Tasmania through relevant Australian Government initiatives, including the development of national sectoral decarbonisation plans.

Developing a Plan for the IPPU sector

NOVEMBER 2023

Targeted consultation with government, business and industry

We undertook consultation with relevant government, business and industry representatives in November 2023, including two workshops, and one-on-one meetings.

MID-2024

Public consultation on the draft plan

The feedback from consultation with government, business and industry has informed the development of this *Emissions Reduction and Resilience Plan – Industrial processes and product use: Consultation Draft* (draft Plan).

NOVEMBER 2024

Development and release of the final plan

We will analyse all submissions received and undertake further targeted consultation as required to develop the final Plan. The Plan is due to be prepared by November 2024 as required under the Act.

Key themes from consultation with government, business, and industry

In late 2023 we consulted relevant government, business, and industry stakeholders, including through a workshop. Participants told us what they are doing to reduce emissions and build resilience in the IPPU sector, the barriers and opportunities for further action, and how the government could support the sector to take action on climate change. Participants gave their views on the priority areas for action.

Key themes included:

- Progressing research and development in new technologies, including alternative energy generation and product innovations.
- Support for enhanced government regulatory frameworks to provide efficient approvals for trials of new production processes or products.
- Opportunity for government leadership through procurement, supporting the development and use of innovative and low emissions technologies and products.
- Collaboration between large industrials on opportunities for decarbonisation and recognising the work of those that have developed strategies to decarbonise.
- Improved business resilience in the transition to a low emissions economy, including workforce requirements and skills necessary for the adoption of new low emissions technologies and production processes.
- Sharing of data and information to assist in planning for future resilience and to support investment in the IPPU sector.

Scope of the Plan for the IPPU sector

The sectors identified for the development of Plans are based on the sectors in the United Nations Framework Convention on Climate Change (UNFCCC) greenhouse gas reporting framework.

Under the UNFCCC reporting framework, Tasmania's emissions from the IPPU sector include direct emissions from a range of chemical processes used to manufacture products, in addition to the use of synthetic greenhouse gases and fossil fuels for non-energy purposes.

Tasmania's emissions from IPPU under the UNFCCC Reporting Framework	Related emissions that are accounted for in other sectors
• Industrial process that chemically or physically transform materials to produce metals and minerals such as cement, steel, lime, and alumina. • Synthetic greenhouse gases such as hydrofluorocarbons (HFCs) used in products such as fridges, air conditioners and aerosol cans and as substitutes for ozone-depleting substances. • The release of sulphur hexafluoride (SF_6) in electrical switchgear. • Use of fossil fuels for purposes other than to generate energy (for example as lubricants). • The manufacture and use of other products, such as the nitrous oxide from aerosol products and anaesthesia, and process uses of carbonates.	**Energy sector** • Emissions from the combustion of coal and gas to generate heat, steam, or pressure for commercial and major industrial operations. • Fugitive emissions in oil and gas industries. **Transport sector** • Transportation of products and materials imported and exported by major industrials. **Waste Sector** • Disposal and incineration of solvents and other products without energy recovery.

The majority of Tasmania's IPPU emissions are from the manufacture of metals and minerals, followed by the use of synthetic greenhouse gases such as HFCs and SF_6. The Australian Government has the regulatory responsibility for the phase-out of HFCs under the Montreal Protocol. The remaining sub-sectors combined make up less than 1 per cent of total IPPU emissions. The Plan will focus on the largest IPPU emissions sources for Tasmania.

The Plan will also consider the resilience of Tasmania's IPPU sector to the impacts of climate change and the transition to a low emissions economy. The physical impacts of climate change and extreme events will affect industrial processes and supply chains to varying degrees. Demand for low emissions products and a changing regulatory environment will also impact businesses' competitiveness and access to markets.

Due to the nature of the IPPU sector and the UNFCCC reporting framework, there is significant overlap between the IPPU and energy sectors. Emissions associated with the stationary energy and combustion of fossil fuels used in industrial production processes are accounted for in the energy sector, while the emissions from the processes themselves are accounted for in the IPPU sector. For example, the emissions from the combustion of coal for heat during the manufacture of cement are reported as energy emissions, and the emissions from the calcination of cement clinker are reported in the IPPU sector.

There may be initiatives or programs identified in the Plans that lead to reduced emissions from both stationary energy uses and industrial processes. In these instances, the initiatives will be reflected in both the IPPU and energy Plans.

The future opportunities identified in the Plans for each sector will be combined and inform the development of Tasmania's next climate change action plan. Preparation of the next action plan will include the identification of priorities and gaps not addressed through the development of the sector-based Plans.

Priority areas

How have the priority areas and future opportunities in this consultation draft Plan been identified?

We prepared a State of Play Report (Report) informed by research, analysis and targeted consultation with government, business and industry. The Report summarises the IPPU sector in Tasmania, its emissions, impacts of climate change on the sector, opportunities, challenges and barriers to reduce emissions and build resilience, and relevant policies and actions at the local, national and international level. The Report is available on the ReCFIT website: www.recfit.tas.gov.au/policies_strategies_plans/emissions_reduction

The State of Play Report provides the foundation for the priorities and future opportunities in this Plan. The future opportunities under each priority area have been identified to address any gaps in current activity and help to reduce the barriers to action on climate change in the IPPU sector in Tasmania. The opportunities are intended to complement and build on the work already underway by international, national, and local governments, business and industry, and the community. Action on climate change is a collective responsibility where all levels of government, business and industry and the community have a role to play.

Research and resources

Key considerations in the development of the Report and the Plan include:

- alignment with existing Tasmanian Government policies, including the *Tasmanian Advanced Manufacturing Action Plan 2024*[4] and Memoranda of Understanding (MoU) with industrial businesses
- our legislated target to ensure Tasmania's emissions are net zero, or lower, from 2030.
- the other objects of the Act, including adaptation, contribution to international, national and local government action, and supporting a consultative partnership approach to action on climate change
- feedback from consultation on *Tasmania's Climate Change Action Plan 2023-25*[5] (Action Plan)
- the 2021 *Tasmanian Emissions Pathway Review*[6]
- the principles of sustainable development and social equity, transparency and reporting, science-based approach, integrated decision making, risk management, community engagement, and complementarity (as outlined in the Action Plan)
- analysis of additional resources and policies, including initiatives being implemented in other jurisdictions, and reports by peak industry bodies such as *Decarbonisation pathways for the Australian Cement and Concrete Sector (2022)*[7] and *HILT CRC Heavy industry low-carbon transition*[8].

[4] www.stategrowth.tas.gov.au/__data/assets/pdf_file/0011/136568/Tasmanian_Advanced_Manufacturing_Action_Plan_for_web.pdf

[5] www.recfit.tas.gov.au/what_is_recfit/climate_change/action_plan

[6] www.recfit.tas.gov.au/__data/assets/pdf_file/0009/492093/Tasmanian_Emissions_Pathway_Review_-_Technical_Report.pdf

[7] cement.org.au/wp-content/uploads/2021/11/Full_Report_Decarbonisation_Pathways_web_single_page.pdf

[8] hiltcrc.com.au/wp-content/uploads/2022/11/HILT-CRC-corporate-brochure-2022.pdf

Priority areas

Through targeted consultation, research and analysis, we have identified key priorities and future opportunities to reduce emissions and build resilience in Tasmania's IPPU sector. The key consultation themes highlight that there is no one-size-fits-all approach to reduce emissions and build resilience in the IPPU sector. A holistic, flexible approach is required to meet the diverse needs of Tasmania's major industrial businesses and ensure we can make the most of opportunities presented by emerging technologies.

We have grouped the key themes into five priority areas for action:

1. Supporting research and development into new technology and production processes.
2. Streamlining regulatory and policy frameworks to support the adoption of low emissions technologies and processes.
3. Supporting the transition to a low emissions economy.
4. Driving action through partnerships, collaboration and information sharing between governments, industry and key stakeholders.
5. Building the resilience of the IPPU sector to the physical risks of climate change.

The future opportunities in this draft Plan are intended to guide public consultation to help us identify the priority actions to progress under the final Plan.

Consultation questions

To help us develop the final Plan for the IPPU sector, we want to hear your thoughts about the priorities and future opportunities outlined on the following pages.

1. What future opportunities do you think will have the most impact for the IPPU sector in Tasmania?
2. Are there any priorities or future opportunities for the IPPU sector missing from the draft Plan?
3. How can we collaborate to reduce emissions and build resilience in the IPPU sector?

1 Supporting the use of existing decarbonisation technology, and research and development into new technologies

The targeted consultation process highlighted that an important step to reduce emissions from the IPPU sector is investing in research and development of new technologies in the production of metals and minerals in Tasmania. The low emissions substitutes for most production processes are at varying stages of development and will take time to be commercialised and become economically feasible to implement at scale. Initiatives are already underway to reduce emissions for many of Tasmania's major industrial businesses, including research into decarbonisation pathways for production processes, and investment in energy efficiency. Emerging opportunities to consider include the use of automation, advanced data analysis and artificial intelligence, and how these opportunities can support decarbonisation of industry.

The future opportunities in this priority area and throughout this draft plan are designed to assist the sector to overcome the barriers to adoption, make the most of the co-benefits, and build on the work already underway.

Benefits

- Investing in research and new technologies has the potential to create new jobs and skills in Tasmania, especially in regional areas.
- Increasing energy efficiency from new technologies and processes can improve productivity and economic outcomes for businesses and reduce greenhouse gas emissions.
- As Tasmania's emissions are currently net zero and we have a strong renewable energy sector, we are well-placed for businesses to trial and test new low emissions technologies.

Barriers

- The high cost of new technologies, not yet commercialised or readily available for businesses, may require specialist skills and expertise to install and operate. Existing emissions-intensive technologies are often cheaper, readily available, and easily accessible in the current market.
- Many new low emissions technologies are in the early stages of development, so there will be delays until these technologies are commercialised. New technologies may have high up-front costs to install and commission.
- Regulatory pathways can slow down the ability for businesses to trial new low emissions technologies and production processes, which may impact the financial viability of solutions and potentially delay production.

Current action

Tasmanian Government

- The government has committed $4 million to establish a crumb rubber plant to develop low emissions alternatives to road pavement materials for road construction projects.
- Funding of $20 million has been committed towards an expansion of the Nyrstar zinc smelter that will deliver a new electrolysis plant. This will address safety and environmental issues as well as improve production capacity, resulting in more zinc produced for less power. This upgrade project is currently on hold as global economic conditions change and costs rise.

- The *Tasmanian Advanced Manufacturing Action Plan*[9] supports the advanced manufacturing sector to grow its capabilities and become more successful and sustainable, through leading-edge design, innovation, technologies, and practices to deliver growth and improved business capability. A new Action Plan is set to be released in October 2024 that will cover the next four years.

Australian Government

There are various Australian Government funding opportunities and programs available to support research and innovation in emissions reduction in Tasmania's industrial sector.

The $1.9 billion Powering the Regions Fund (PRF), under the Powering Australia Plan[10], supports regional Australia's transition to net zero emissions. This fund includes the $50 million Safeguard Transformation Stream[11] grant program to assist industry to reduce emissions, reduce the risk of carbon leakage (which occurs when a business responds to emissions reduction policies by moving emissions-intensive production to a country with less stringent policies), and provide skills development to existing workforces in new equipment or processes that contribute to the reduction of scope 1 emissions.

Through the PRF, the Australian Government recently awarded $330 million to nine projects to reduce emissions, including four projects in Tasmania. Liberty Bell Bay manufacturing site has been awarded $700,000 to trial the production of biochar as an alternative to using coking coal in the smelting process. The other three Tasmanian projects have been awarded to Grange Resources at the Savage River Iron Ore Mine and the Port Latta Iron Pelleting facility, and Cement Australia for energy efficiency and electrification upgrades.

The $15 billion National Reconstruction Fund Corporation[12] (NRFC) invests in priority areas to assist Australia's industries, including renewables and low emissions technologies, medical science, transport, and defence, and enabling capabilities such as engineering and data science.

Industry research organisations

There are several research and development programs underway across Australia to develop new low emissions technologies and production processes for the IPPU sector.

The Heavy Industry Low-Carbon Transition Cooperative Research Centre (HILT CRC) is investing over $200 million for collaboration between industry, research, and government to deliver three industry-led research programs to de-risk technology pathways for the decarbonisation of heavy industry. Grange Resources and Liberty Steel Group have locations in Tasmania and are Core Partners of HILT CRC, and the CEO of the Tasmanian Minerals, Manufacturing and Energy Council is a current director of the CRC. Each research stream includes a range of outputs. The research programs are focused on process technologies, cross-cutting technologies, and facilitating transformation.

The Australian Government has engaged HILT CRC to fulfil Australia's co-leadership role in coordinating knowledge, sharing benefits, and building further international networks on heavy industry decarbonisation. The Tasmanian Government is yet to become a member of HILT CRC, although this is

9 https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0011/136568/Tasmanian_Advanced_Manufacturing_Action_Plan_for_web.pdf

10 www.dcceew.gov.au/energy/strategies-and-frameworks/powering-australia#toc_1

11 business.gov.au/grants-and-programs/powering-the-regions-fund-safeguard-transformation-stream-round-1

12 www.nrf.gov.au/what-we-do/investment-guidance

an opportunity that could allow greater collaboration and engagement in research and innovation for the sector.

The Australian lime, cement and concrete industries commissioned two studies by world-renowned research centre VDZ to better understand technologies, pathways and practices necessary to decarbonise the Australian lime sector[13], and the cement and concrete sector[14]. The study for the cement and concrete sector will assist the industry to meet its declared ambition for the cement and concrete value chain to decarbonise by 2050.

The resulting VDZ reports identified five decarbonisation pathways for the lime sector and eight pathways for the cement and concrete sector, and included assessments of technology readiness, value chains and research requirements. Engagement plans are being developed to implement the key recommendations of the reports.

Pathway forward

As a large amount of the emissions in the production of metals and minerals are from energy use, the focus on emissions reduction for industry is often directed at electrification. However, alternative low emissions technologies to reduce emissions from the production processes are also being developed globally for the hardest to abate sectors There are opportunities to support the research and development of these processes in Tasmania. The adoption of these technologies will be important for Tasmanian businesses in the sector to remain competitive in the transition to a low emissions economy and continue to meet the requirements of the Safeguard Mechanism.

New technologies and low emissions alternative processes to produce metals and minerals result in products that are referred to as ‘green’, such as ‘green steel’ and ‘green aluminium’. Options to extend funding already committed by the Tasmanian Government to produce crumbed rubber could be expanded to include low emissions concrete production or green steel for building projects in the future. There may be opportunities to implement circular economy solutions in the industrial sector, which can be explored further in collaboration with industry. Future opportunities to support the decarbonisation of Tasmania’s manufacturing industry are outlined below.

Future opportunities

Consider mechanisms to support research to develop low emissions alternative technologies for production processes covered by the IPPU sector. For example, partnering with universities, research institutes and Cooperative Research Centres (CRCs).

Explore funding options for industry to scope, plan, design and trial efficient new technologies or processes for metals and mineral production that can lead to implementation at full production scale.

Explore ways to support Tasmanian IPPU sector businesses to access Australian Government funding to trial new technologies, for example from the Australian Renewable Energy Agency (ARENA), National Reconstruction Fund Corporation, Clean Energy Finance Corporation, the ACCU Scheme, or Powering the Regions Fund.

[13] www.cement.org.au/wp-content/uploads/2023/06/Decarbonisastion_Pathways_Australian_Lime_Sector.pdf

[14] www.cement.org.au/wp-content/uploads/2021/11/Full_Report_Decarbonisation_Pathways_web_single_page.pdf

Future opportunities

Consider options to support trials of low emissions alternatives to sulphur hexafluoride (SF_6) use, and how best to support businesses in the transition to alternative technologies.

2 Streamlining regulatory and policy frameworks to support the adoption of low emissions technology

The consultation process identified that a barrier to implementing and trialling new technologies and alternative production processes is regulation. Feedback indicates that some regulatory frameworks currently lack the flexibility to quickly trial new technologies, for example implementing technologies that have been proven and tested overseas, still need to go through a rigorous assessment which takes time and is costly. There needs to be a balance between strong regulatory frameworks that protect the Tasmanian community and developing innovative solutions and adapt to changing market conditions. The Government can also play a role to support business innovation and the implementation of low emissions technologies through specifying low emissions material use in procurements and consideration of embodied emissions of new projects.

Benefits

- Enabling and supporting business innovation to decarbonise production processes.
- Greater levels of confidence for businesses investing in innovative technologies.
- Reducing costs for businesses while managing social, economic, and environmental risks.
- Increased market competitiveness for environmentally friendly products.

Barriers

- Justifying upfront costs to implement new innovative technologies that secure long-term benefits of emissions reduction for businesses and industry.
- The speed of change and innovation can be difficult for regulators to assess potential unintentional risks. Regulators need to understand and respond to changes quickly.

Current action

Tasmanian Government

The Renewable Energy Approval Pathway (REAP) is a set of actions that will support projects such as wind farms, transmission lines and other renewable energy investment entering the Major Projects Assessment Process under the *Land Use Planning and Approvals Act 1993*.

The REAP is an important step to improve regulatory outcomes that support renewable investment and align with community expectations. Components of the REAP include:

- Establish a Major Renewable Energy Project case management function in state government, composed of a dedicated case management officer for each project in ReCFIT and a cross-agency team to integrate and coordinate the assessment process.
- Develop sector-specific renewable energy information requirement guidelines for the Major Projects Assessment Process.
- More resourcing for regulatory agencies, including the Tasmanian Planning Commission, EPA, and Aboriginal Heritage Tasmania.
- Coordinated pre-assessment process, including consideration of the Reserve Activity Assessment and related assessment processes, in parallel to the Major Project Assessment Process.

Australian Government

The Australian Government's Safeguard Mechanism commenced in 2016 to reduce emissions from Australia's largest industrial facilities. The mechanism sets legislated limits on the greenhouse gas emissions of facilities that emit scope 1 emissions of more than 100,000 t CO_2-e per year, and applies to mining, oil and gas production, manufacturing, transport, and waste facilities.

Each facility covered by the Safeguard Mechanism has an annual emissions limit, known as a baseline, which falls each year (generally by 4.9 per cent, but this is based on a facility's production multiplied by an emissions-intensity benchmark value). Reforms to the Safeguard Mechanism were introduced in 2023 to ensure facilities contribute to meeting Australia's emissions reduction targets while strengthening their competitiveness as the nation moves to a net zero economy. The reforms include introducing credits that may be purchased by facilities with hard-to-abate emissions and providing an incentive for other facilities covered by the scheme to reduce emissions beyond their baselines.

The Clean Energy Regulator administers the National Greenhouse and Energy Reporting Scheme and the Safeguard Mechanism. The Australian Government has a legislative requirement to publish certain information on facilities that are covered by the Safeguard Mechanism. Six Tasmanian businesses are currently covered by the Safeguard Mechanism, due to a combination of their stationary energy use and IPPU emissions. The reforms to the Safeguard Mechanism provide clarity for industry regarding the regulatory policy settings and funding programs to support the adoption of low emissions technologies and production processes.

Pathway forward

The Tasmanian Government can clarify and guide Tasmania's major industrials through the approvals processes and support them to choose the most appropriate pathway, as well as supporting the EPA and other regulators to collaborate and support industry to trial low emissions technologies. The Tasmanian Government can also support low emissions economic activity through the uptake of low embodied carbon materials in government building projects and other low emissions products.

Future opportunities
Explore options to streamline regulatory approval processes for adopting low emission technologies, building on the Renewable Energy Approvals Pathway.
Collaborate with regulators such as the EPA to review regulations that may act as barriers to trialling or implementing innovative low emissions technologies or production processes, while ensuring risks are managed.
Consider embedding climate change into government policy frameworks such as procurement, cost benefit analysis and project specifications for tenders with consideration for consumer impacts.
Explore sustainability accreditation systems for large-scale government infrastructure projects. The Tasmanian Government can lead by example by attaining sustainability accreditation and supporting the use of low emissions materials and processes in government projects.

3 Supporting the transition to a low emissions economy

The consultation process identified that there are significant risks and opportunities for Tasmanian businesses and industry associated with the transition to a low emissions economy. These transition risks may include:

- the increased cost of compliance with the changing regulatory landscape (for example, the Safeguard Mechanism)
- the slow rate of new technologies to be commercialised
- cost of disposal of obsolete emissions-intensive technologies
- safety concerns and timeframes for implementation which may affect production
- the skills necessary to support new technologies and reporting requirements.

The transition of the sector to low emissions will have an impact on the workforce and skills required to maintain new equipment, report on emissions and sustainability practices, undertake strategic business planning, and implement new technologies.

Benefits

- Increased certainty for the IPPU industry to continue to invest and grow in Tasmania.
- Investing in new technologies has the potential to create new jobs and skills in Tasmania, especially in our regions.
- Industries that implement measures to decarbonise may be able to register for the Emissions Reduction Fund, presenting an opportunity to generate additional income through the sale of ACCUs or Safeguard Mechanism Credit units.
- Tasmania to become a leader in low emissions technologies and sustainability.

Barriers

- Upskilling opportunities and education options for training and development are limited in Tasmania.
- High up-front and ongoing costs of implementing new technologies, including costs of design, installation, training, testing, and maintenance.
- Solutions to reduce emissions in the IPPU sector are generally highly technical and facility- or process-specific, that rely on specific knowledge and expertise and require long lead times to trial and prove technologies.

Current Action

Australian Government

Funding opportunities for industry to transition to low emissions technology and renewable energy sources are already available from the Australian Government. On behalf of the Australian Government, ARENA launched a $400 million grant program for the Industrial Transformation Stream (ITS) to support emissions reduction at existing industrial facilities in regional Australia.[15] The ITS is part of the Powering

[15] Powering the Regions Industrial Transformation Stream, ARENA, Australian Government (2023) arena.gov.au/funding/powering-the-regions-industrial-transformation-stream/

the Regions Fund. Round 1 of the program allocates $150 million for applications focusing on regional decarbonisation of process heat used in industrial processes and off-road transportation.

The grant program aims to improve technology readiness and commercial readiness of renewable energy technologies, energy efficient technologies that will result in a significant reduction in scope 1 and scope 2 emissions, or improve the efficiency of an industrial process.

The Australian Government commissioned Jobs and Skills Australia to undertake a capacity study on the workforce needs for Australia's transition to a clean energy economy. The capacity study *The Clean Energy Generation: workforce needs for a net zero economy,* sets a baseline of Australia's capacity to meet net zero by 2050, and identifies 38 critical occupations and makes 50 recommendations to support achieving a net zero economy.[16]

Tasmanian Government

Funding of $1 million has been allocated to the Advanced Manufacturing Accelerating Growth Grants program to assist Tasmanian manufacturers to become more competitive, resilient and scale up to global markets. This program is designed to support businesses to take advantage of new growth opportunities.

Pathway forward

Building capacity in Tasmania to transition to a low emissions economy will require collaboration across government and industry to ensure there is reduced overlap in effort, and support is provided to reduce impacts on businesses. Investment in the capacity and capability of the current workforce and attraction and training of new workers are avenues to support businesses in this transition.

Transition risks for the sector include an increasing need for industrial businesses to demonstrate environmentally sustainable practices to comply with changing regulations, including the climate-related financial disclosure requirements which are proposed to commence in Australia for large businesses from 1 January 2025.[17] Supporting the sector to use energy efficient technologies and low emissions production processes will be an integral part of de-risking the transition to a low emissions economy. Energy efficiency and energy use is out of scope for the industrial processes and product use sector but will be covered in the energy sector Plan.

Future opportunities

Collaborate with industry and research organisations to identify future workforce needs and training requirements to ensure a skilled workforce can support the adoption of renewable and low emissions technologies and production processes. This includes:

- Consideration of training, education, and migration pathways to ensure Tasmania has the capacity to transition to a low emissions economy.

Partner with industry to develop programs for building Tasmanian workforce capabilities in renewable and low emissions technologies. This could include:

- Pathways through TasTAFE and other Vocational Education and Training providers, supported by Skills Tasmania.
- Other higher education options, non-accredited training and other forms of capability building.

[16] Clean Energy Capacity Study, Jobs and Skills Australia, Australian Government (2023) www.wa.gov.au/service/community-services/grants-and-subsidies/carbon-innovation-grants-program

[17] For more information see Australian Treasury's Climate-related financial disclosure: exposure draft legislation released in January 2024, available at treasury.gov.au/consultation/c2024-466491

Future opportunities

Consider support systems and guidance for the IPPU sector to comply with new and evolving reporting requirements on carbon emissions and climate-related risks.

Consider options to map decarbonisation pathways for the IPPU sector and the role of Tasmanian businesses, government, and community in the transition.

Clearly demonstrating the pathway for decarbonising the sector can provide clarity for businesses to understand the steps that will need to be taken, and any barriers or challenges that will need to be addressed.

4 Driving action through partnerships, collaboration and information sharing between governments, industry and key stakeholders

The transition to a low emissions economy will require significant investment, supported by collaborative working relationships between industry, government and research organisations. Challenges, including changing markets, cost constraints and commercial viability of alternative options, can be better managed through collaboration and information sharing to coordinate the approach to decarbonise. This opportunity has been identified as a key focus area to ensure Tasmania can reduce its emissions and enhance resilience for the IPPU sector.

Current Action

HILT CRC

HILT CRC is investing over $200 million for collaboration between industry, research, and government to deliver three industry-led research programs to de-risk technology pathways for the decarbonisation of heavy industry.

This investment also includes national industry roundtables, which have already been held in Western Australia and South Australia. HILT CRC and the Tasmanian Government are planning to host a roundtable to consider decarbonisation pathways for the IPPU sector, and strategies for collaboration between government and industry. Key industry representatives will be invited to attend and share current work, and opportunities and insights on decarbonisation work occurring in the sector.

Materials and Embodied Carbon Leaders' Alliance

Over 100 organisations from the building industry and all levels of government have formed the Materials and Embodied Carbon Leaders' Alliance (MECLA) which launched in April 2021 and is funded by the NSW Government and the Government of South Australia. This collaboration has several working groups which are addressing barriers and identifying opportunities to:

- demonstrate the demand and activate the supply of materials that meet the needs of net zero carbon goals
- define a best practice embodied carbon evaluation framework
- capture industry case studies that showcase excellence and share this knowledge widely
- develop a common language for procurement guidelines
- help manage climate transition risk, and risks associated with adopting innovative materials
- support the acceleration of the supply of low carbon and innovative materials.[18]

Pathway forward

The transition to a low emissions and resilient IPPU sector will require a collaborative working relationship between government and industry. Knowledge sharing networks or groups can bring together differing perspectives and support innovation when managing climate risks and leveraging new opportunities. A regular meeting, network, platform, or group can connect industry stakeholders with each other and support a collaborative approach to adapting to climate change.

[18] Materials and Embodied Carbon Leaders' Alliance – 'MECLA' (2024) mecla.org.au/about/

Future opportunities

Explore options for increasing engagement with Tasmania's largest emitters captured under the Safeguard Mechanism to help them access Australian Government funding, reduce emissions and meet their baseline targets. This could include:

- additional resourcing to establish a case management function in government
- coordination role between government departments
- providing assistance to proponents requiring regulatory approval.

Support Tasmania's IPPU businesses and industries to share information and learnings about existing technology options to decarbonise and share work that is already underway by business and industry to decarbonise.

Consider partnering with universities, research institutes and CRCs to support research to reduce emissions across the IPPU sector. For example, deliver industry decarbonisation roundtable meetings with Tasmanian businesses, peak industry bodies, government and research organisations that focus on specific issues and barriers for the sector to reduce emissions.

Explore opportunities to support Tasmanian manufacturing businesses to join industry groups that aim to reduce the embodied carbon of building materials and construction projects.

Work with Business Tasmania to continue collaboration with industry, for example through the *Tasmanian Advanced Manufacturing Action Plan* and existing Memorandum of Understanding (MoU) with Tasmanian major industrials. Collaborative work could include:

- increased consideration in policies and programs of emissions reduction
- opportunities in emerging green markets for low emissions and sustainable material
- work to build resilience to climate related risks.

5 Building the resilience of the IPPU sector to the physical impacts of climate change

Projected changes to the Tasmanian climate will increase physical risks for Tasmania including industrial processing and manufacturing facilities. These risks could include an increase in bushfires, floods, coastal erosion, and potential extreme weather events that can cause damage to infrastructure and property, as well as damage to the transport infrastructure necessary for exporting goods.

Enhancing resilience will require information and data on the future climate risks posed to the IPPU sector. The Tasmanian Government has several initiatives underway to improve our understanding of the impacts of climate change on Tasmania. Once this information is available, sharing it with industry in an accessible way will assist the sector to plan for risks and build resilience against the changing climate.

Current Action

Tasmanian Government

The targeted consultation undertaken to date has highlighted that there are gaps in our understanding of the risks to the sector and the capacity and capability to appropriately plan for these risks. The Tasmanian Government has a number of initiatives underway to improve our understanding of the impacts of climate change on Tasmania.

Initiatives include updating the fine-scale climate projections for Tasmania to provide new information for a range of stakeholders, and development of Tasmania's first statewide climate change risk assessment. Once this risk assessment is complete, the data will assist in planning for future resilience of the sector and support ongoing investment.

Business Tasmania has also developed an Emergency Preparation Toolkit to improve business resilience to extreme weather events. This toolkit is aimed at small to medium-sized businesses, and includes considerations such as reviewing insurance policies, ensuring data is backed up, and considering planning for alternative trading methods and business dependencies.

Pathway forward

The transition to a resilient IPPU sector will require a collaborative working relationship between government and industry.

Business and industry will need to take action to reduce the impacts of climate change, including strengthening supply chains, understanding and addressing workforce vulnerabilities, and adapting businesses to climate events, changes in markets and innovation. Governments also have a role to play by providing financial incentives, partnering on key projects and advocating for Tasmanian businesses at a national level.

Future opportunities

Explore opportunities to increase the resilience of Tasmanian businesses covered by the IPPU sector by integrating the findings of the statewide climate change risk assessment and updated fine-scale climate projections into future planning and risk mitigation strategies.

Future opportunities

Opportunities could include identifying priority areas to implement measures that reduce the impacts of climate change on industrial facilities, and aid informed decision making for ongoing investment in the IPPU sector in Tasmania.

Support businesses to adapt and build resilience to climate-related risks, for example through financial support, or an education and awareness program.

What happens next?

Implementation

Following the development and publication of the final Plan for the IPPU sector, we will continue to engage with key partners and the community on the development and implementation of future opportunities as required.

We will keep stakeholders and the community informed through the ReCFIT website, Climate Change Office newsletter and social media.

We encourage you to sign up for our newsletter through our website: recfit.tas.gov.au/cc_newsletter and follow the Tasmanian Climate Change Office on Facebook to stay informed about opportunities to participate in relevant programs.

Reporting

We will prepare an annual climate change activity statement, showing the status of each sectoral Plan and progress on future opportunities identified, and the status of initiatives in the Action Plan. We will monitor and report on Tasmania's progress to meet our target to remain at net zero, or lower, by 2030.

We will also prepare an annual greenhouse gas emissions report detailing Tasmania's emissions for each sector.

These reports will be prepared each year and will be tabled in Parliament, as required under the Act.

Review

The Tasmanian Government is committed to a co-ordinated, whole-of-government response to climate change. Together with the climate change action plan and the delivery of Tasmania's first statewide climate change risk assessment, the development of the sector-based Plans is a strategic priority for the government that will be delivered in consultation with business, industry, and portfolio Ministers.

However, we recognise that there is significant overlap between IPPU and other sectors, and that there are parts of Tasmania's communities, businesses and industries that may not be comprehensively covered by the sector-based Plans.

We will prepare and publish a report outlining the links between all six sectoral plans and the climate change risk assessment. The report will also identify future focus areas to inform policies and programs, including Tasmania's next climate change action plan.

The Plans are to be updated at least every five years.

Glossary

Term	Description
ACCU	Australian Carbon Credit Unit. One ACCU represents one tonne of carbon dioxide equivalent (CO_2-e) that is stored or avoided due to a project. ACCUs are issued by the Clean Energy Regulator for eligible projects registered under the Emissions Reduction Fund.
ACCU Scheme	Formerly called the Emissions Reduction Fund, the ACCU Scheme is a key element of the Australian Government's climate change policies and is particularly important for emissions-intensive industries. The Scheme provides businesses the opportunity to earn ACCUs for every tonne of carbon dioxide equivalent stored or avoided through the adoption of eligible practices and technologies, and facilitates the trading of ACCUs.
Calcination	Calcination is the process of heating a substance at a high temperature to separate the chemicals in a substance. For example, calcination of raw materials such as limestone, iron ore and clay create cement clinker.
Carbon leakage	Carbon leakage is a situation where large emitters in countries with strong climate policies, where costs of production are increasing, relocate to other countries with less stringent climate policies. The carbon emitted by these businesses is therefore not avoided or reduced but has 'leaked' to another country.
Clinker	Clinker, or cement clinker, is the key component of cement. It is made by heating raw materials, principally limestone, at extremely high temperatures in a cement kiln, which forms the clinker and releases carbon dioxide. The clinker is generally ground into a powder and combined with other materials to create cement.
CO_2	Carbon dioxide; a greenhouse gas.
CO_2-e	Carbon dioxide equivalent. This is a standard unit for measuring the greenhouse warming potential of gases. Each different greenhouse gas is represented in terms of the amount of CO_2 that would create the same amount of warming.
CRCS	Cooperative Research Centres (CRCs) are an Australian Government initiative that funds industry-led collaborations between industry, researchers and end users.
DCCEEW	Australian Government Department of Climate Change, Energy, Environment and Water
Emissions	Greenhouse gas emissions.
Embodied carbon	Embodied carbon refers to the greenhouse gas emissions associated with the manufacture and use of a product or service, regardless of where that occurs. For example, for buildings and infrastructure this means the emissions associated with the extraction, manufacture, transport, construction, maintenance and disposal of the materials used.
EPA	Tasmanian Environment Protection Authority. The EPA is an independent statutory authority. Its purpose is to regulate developments and activities that may impact on environmental quality and to promote best practice and sustainable environmental management.

Term	Description
GWP	Global warming potential. A value that allows direct comparison of the impact of different greenhouse gases in the atmosphere by comparing how much energy one tonne of a gas will absorb compared to one tonne of carbon dioxide.
HFCs	Hydrofluorocarbons. Various synthetic greenhouse gases, mostly used in refrigeration and air conditioning equipment, with high GWP.
IPCC	Intergovernmental Panel on Climate Change, an independent body that assesses the scientific, technical and socioeconomic information relevant to understanding the risk of human-induced climate change. The IPCC develop guidelines for national greenhouse gas inventories which are used under the UNFCCC.
IPPU	Industrial Processes and Product Use, one of the sectors in the UNFCCC greenhouse gas reporting framework.
ISC	Infrastructure Sustainability Council.
kt	Kilotonnes. A kilotonne is equivalent to 1,000 tonnes or 1 million kilograms.
Lime	Lime is a material used in a range of products and processes including steel, glass and paper manufacturing, agricultural practices, chemical processes, plaster, mortar and other building materials. Lime is produced by heating carbonate materials in a kiln, which releases carbon dioxide.
LULUCF	Land Use, Land Use Change and Forestry, one of the sectors in the UNFCCC greenhouse gas reporting framework.
Methane	A greenhouse gas, which contributes approximately 28 times more atmospheric warming than carbon dioxide.
Montreal Protocol	The *Montreal Protocol on Substances that Deplete the Ozone Layer* is the landmark multilateral environmental agreement that regulates the production and consumption of nearly 100 man-made chemicals referred to as ozone depleting substances.
Mt	Megatonnes. A megatonne is equivalent to 1,000 kilotonnes or 1 million tonnes.
Nitrous oxide	a greenhouse gas, which contributes approximately 265 times more atmospheric warming than carbon dioxide.
NRE TAS	Department of Natural Resources and Environment Tasmania
ReCFIT	Renewables, Climate and Future Industries Tasmania
Safeguard Mechanism	The Safeguard Mechanism is an Australian Government policy which requires Australia's highest greenhouse gas emitting facilities to keep their emissions below an emissions limit (baseline). If a Safeguard facility exceeds their baseline, they must manage their excess emissions. They can become liable to pay a financial penalty if they fail to comply with the Safeguard Mechanism.
SMCs	Safeguard Mechanism Credit units are tradeable carbon credits designed to incentivise Safeguard Mechanism facilities to reduce their emissions beyond their baselines. One SMC represents one tonne of CO_2-e.
SF_6	Sulphur hexafluoride, a synthetic gas used in electrical switchgear with a GWP of 23,500.

Term	Description
Substitutes for ozone depleting substances	Ozone depleting substances are chemicals that destroy the earth's protective ozone layer. They were commonly used in products such as fridges, air conditioners, fire extinguishers and aerosols. Synthetic gases are now widely used to replace ozone depleting substances. While they do not damage the ozone layer, they are potent greenhouse gases.
t	Tonnes. 1,000 kilograms.
UNFCCC	United Nations Framework Convention on Climate Change

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