Industry perspective on chemical stewardship

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Chemistry Australia

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Agenda

1. Australian chemical industry overview
2. Industry approach to chemical management and product stewardship
3. Plastics circular economy
4. Climate change
5. Partnership approaches

Australian chemistry industry: A snapshot

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Supplies **108** of Australia's **114** industries

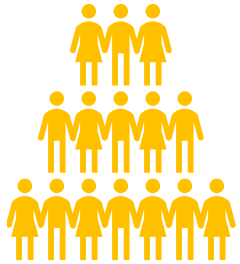
Delivers **$38 billion** to Australia's GDP

Direct	$10,948m
Indirect	$26,780m

3rd largest manufacturing sector

5,500 small, medium and large businesses in **every state and territory**

Directly employs more than **61,000 people** in highly skilled jobs

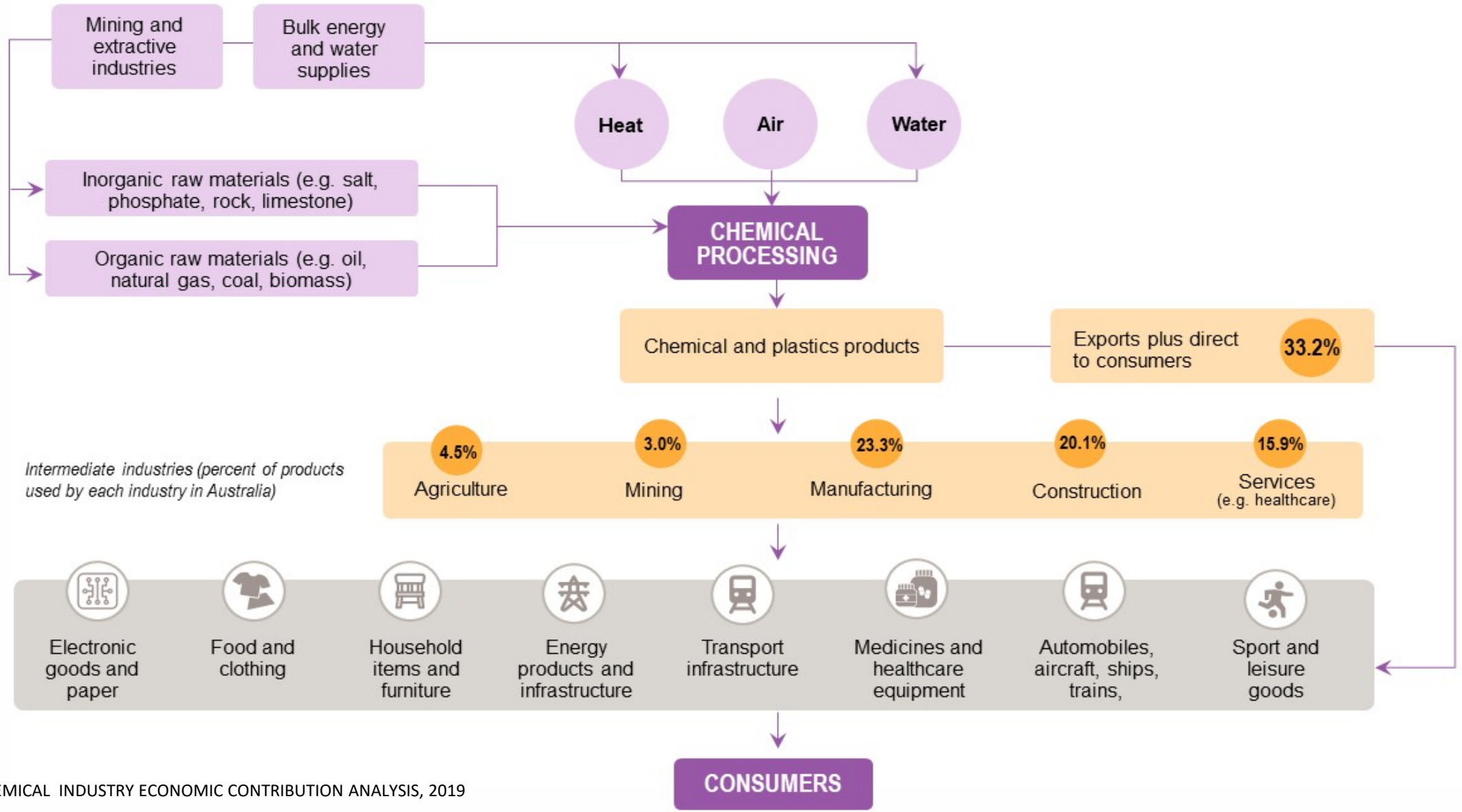


The industry underpins **212,000 jobs** in related supply chains

ACIL ALLEN: CHEMICAL INDUSTRY ECONOMIC CONTRIBUTION ANALYSIS, 2019

General Business

Intrinsically linked to the supply chains of many industries across the economy



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Responsible Care®

The global chemical industry's voluntary initiative to continuously improve safe chemicals management throughout the life cycle and support the role of chemistry in creating a safer, more sustainable world.

3rd country
in the world to adopt Responsible Care® in 1989

Chemistry Australia
administers the program

Product Stewardship
is core to Responsible Care®

Harmonize
with existing business processes and management systems, complements other systems and standards (ISO, AS, GRI)

Responsible Care® aligns to the UN SDGs

THE INTERNATIONAL COUNCIL OF CHEMICAL ASSOCIATIONS

Responsible Care® Global Charter

Responsible Care is the global chemical industry's unifying commitment to the safe management of chemicals throughout their life cycle, while promoting their role in improving quality of life and contributing to sustainable development.

As a signatory to the Responsible Care Global Charter my company will actively strengthen the Responsible Care initiative worldwide and is committed to:

1. **A Corporate Leadership Culture** that proactively supports safe chemicals management through the global Responsible Care initiative
2. **Safeguarding People and the Environment** by continuously improving our environmental, health and safety performance; the security of our facilities, processes and technologies; and by driving continuous improvement in chemical product safety and stewardship throughout the supply chain
3. **Strengthening Chemicals Management Systems** by participating in the development and implementation of lifecycle-oriented, sound-science and risk-based chemical safety legislation and best practices
4. **Influencing Business Partners** to promote the safe management of chemicals within their own operations
5. **Engaging Stakeholders,** understanding and responding to their concerns and expectations for safer operations and products and communicating openly on our performance and products
6. **Contributing to Sustainability** through improved performance, expanded economic opportunities and the development of innovative technologies and other solutions to societal challenges

Responsible Care®: Implemented through Codes of Management Practice

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RESPONSIBLE CARE® CODES OF PRACTICE

IT&E	Industry Transparency and Engagement
MPS	Manufacturing Process Safety
EH&S	Employee Health And Safety
S&TS	Storage And Transport Safety
EP	Environment Protection
PS	Product Stewardship

PRODUCT STEWARDSHIP CODE

The responsible and ethical design and management of products throughout the entire product life cycle; in order to ensure health and safety and protect the environment.

- Education & training
- Labelling and warnings on products
- Provision of information, advice and assistance
- Evaluation of downstream users and practices
- R&D in product & process design improvement
- Providing information on waste minimisation and avoidance
- Supporting reprocessing and waste management.

Industry Committed to End Plastic Waste

"Plastic is a valuable resource. It should not be lost as waste to the environment."

Supporting the sustainable use and recovery of plastics

Chemistry Australia Position

- Advocate circular economy principles and the stewardship of plastic materials
- Circularity for the greatest societal and environmental benefits across all material lifecycles
- The sector is an inherent provider of technologies for sustainable solutions
- Recycling technology agnostic
- A strong domestic manufacturing sector is needed to deliver circular economy solutions at scale for Australia
- Enabling policy that encourages domestic investment and does not disadvantage domestic industry is required
- Support the National Waste Policy Action Plan and the National Plastics Plan as a structured and coordinated national approach

Diagram: CSIRO, National circular economy roadmap for plastics, glass, paper and tyres, Jan 2021

Requirements to transition to a more circular economy

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Affordability Gap

Conformance of imported materials and products to meet Australian specifications

Design Gap

Design for re-useability and recyclability

Own Sector Capabilities

Fit for purpose recycling technologies to transform used products back into high value resources

- Mechanical recycling
- Advanced recycling

Quality Gap

Material and product specifications and standards to **verify quality**

create demand for re-use and recycled content

Supporting other sectors

Quantity Gap

Standardized collection, sorting and cleaning infrastructure for **quality feedstock at scale**

Stakeholder Education

Diagram: CSIRO, National circular economy roadmap for plastics, glass, paper and tyres, Jan 2021

Climate Change: An essential issue for Chemistry Industry

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As both a large consumer of energy and **provider of technologies** essential to a **low-carbon future**

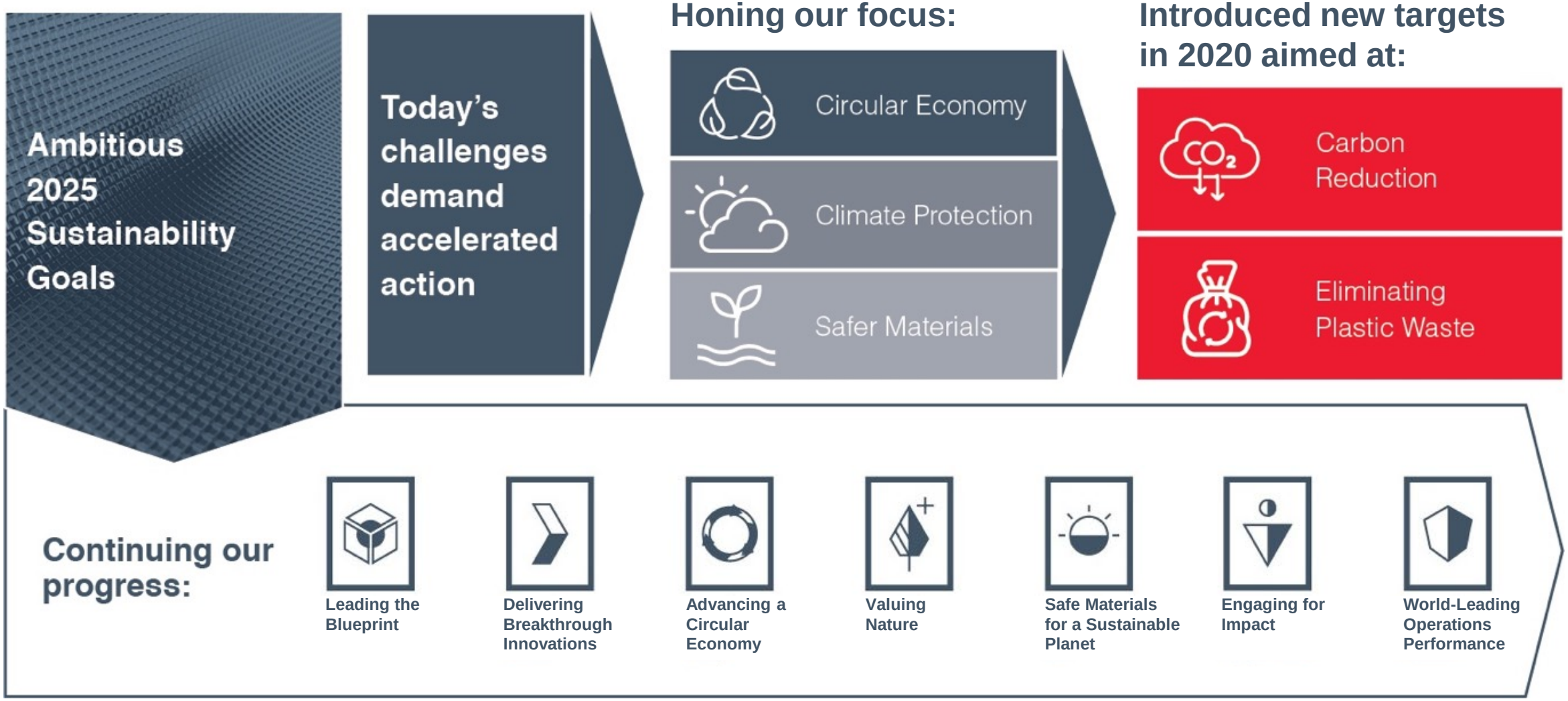
Climate change presents **risks** and **opportunities**

Risk/Opportunity Type		Description
Risks – Physical	Acute & Chronic	More frequent incidents of severe weather, or long-term changes in precipitation patterns
Risks – Transition	Regulatory	Carbon pricing mechanisms
Opportunities	Technology	Transition to lower emission technology
Opportunities	Resource Efficiency	Use of more efficient production and distribution processes
Opportunities	Products & Services	Dow products can enable the transition to a low carbon economy

Advanced materials enable decarbonization

>2x mitigation offset

EXAMPLE: SUSTAINABILITY ARCHITECTURE



Partnerships & Collaborations: Examples

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PRODUCT STEWARDSHIP SCHEMES

paintback

Tangaroa Blue

Operation Clean Sweep®

drumMUSTER

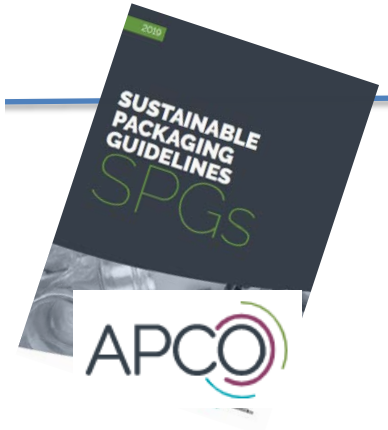
Agsafe Product Stewardship

PARTNERING WITH GOVERNMENT

PACTA

Australian Government
Department of Agriculture, Water and the Environment

CSIRO



NWRIC
National Waste and Recycling Industry Council

ACOR
Australian Council of Recycling

APCO

Australian Food & Grocery Council

Alliance to End Plastic Waste

PVC Stewardship

Investment in new chemistries and solutions:

- The Green Chemical Futures facility at Monash University Clayton
- The Monash Chemicals and Polymers Manufacturing Innovation Network (PhD)
- The ARC Training Centre for the Chemical Industries with the University of Melbourne and the University of New South Wales
- The ARC Training Centre for Green Chemistry in Manufacturing at Monash
- The ARC Centre for Energy Efficient Separation Technologies at Monash
- Dow-UQ Centre for Sustainable Engineering Innovation

R&D COLLABORATIONS

INDUSTRY COLLABORATIONS

Policy and Regulation

Importance of market & policy certainty to improve circular economy stewardship:

- New product introductions
- Standards, thresholds etc for evidence-based claims
- Advanced recycling of plastics

Regulatory & non-regulatory approaches in consolidated vs fragmented industry sectors

Q&A

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