



**Chemistry  
Australia**

The Business of Chemistry  
Essential for Life

# Our Ambition for Australia

Opportunities for a Sustainable  
and Competitive Economy



## Message from the Chair

Australia has raw materials, a base manufacturing capability, and skills that will be important in transitioning Australia, and its industrial manufacturing base, towards climate neutrality, a circular economy and greater sovereign security.

Supplying inputs to 108 of 114 industries, Chemistry Australia and its members are committed to playing their role in realising these opportunities.

This requires investment in new technologies, sustainable procurement and business practices, driven by longer-term strategies.

To ensure the nation has a deep and complex manufacturing base to enable the transition, Australia needs government policies that support competitiveness and growth.

Our recommended policy settings and measures are outlined in this document.



David Hawkins  
Chair, Chemistry Australia

# The Australian chemistry industry

## Providing Technology Solutions to Address Australia's Greatest Challenges

The Australian chemistry industry is a vital contributor to Australia's employment, standard of living and economy. Of Australia's 114 industries, 108 rely on the chemistry sector to provide essential materials, products, technologies, innovations and people.

### The Industry:

- protects our water supply with products essential for safe drinking water and sewage treatment;
- ensures food production with crop protection products, fertilisers, and irrigation for agriculture;
- keeps food fresher for longer with refrigerants, cold-chain infrastructure and packaging solutions;
- supports our healthcare system, supplying medical gases, sanitisers, disinfectants, and raw materials for PPE;
- enables mining with explosives, reagents, water treatment products and refining materials; and
- helps to house Australians by providing constructions materials, paints and coatings, adhesives, sealants, and insulation materials.



## Taking Action to Achieve Climate Neutrality

Achieving climate neutrality is imperative across the globe.

The global chemistry industry is a critical part of the climate change solution. As a significant manufacturing sector, we are continuously improving the energy efficiency and intensity of our own operations. We are putting our brightest minds to work to develop transformational technologies and innovations that cut emissions and improve energy efficiency throughout the value chain.

Chemistry Australia member products like insulation materials, marine coatings, fertilisers, and lightweight packaging already contribute to the achievement of Australia's Paris Agreement targets as some of the top climate response solutions enabled by the global chemistry industry.<sup>1</sup>

In Australia, our industry will enable the transition to a lower-emissions future, supplying the emerging and future technologies that will drive Australia's transformation to climate neutrality, including:

- hydrogen and other alternative fuels;
- lower-emission ammonia;
- batteries and energy storage;
- recycled polymers;
- harnessing waste CO<sub>2</sub> as a raw material;
- insulation and other energy-efficient solutions for homes and the built environment;
- lightweight, energy-saving materials for vehicles and transport.

Our industry is also committed to delivering significant emissions reduction and supporting a circular economy through process and technology changes, including advanced recycling; combined heat and power; carbon capture, utilisation and storage; and electric steam crackers.

Australia's actions to achieve climate neutrality should be part of globally coordinated efforts to reduce emissions and mitigate the impact of climate change. It should also strike the right balance between meeting our Paris Agreement commitments and ensuring continued industry investment and jobs growth to underpin our sovereign capability.

## A Competitive Australia – The Essential Element

Transforming our economy to climate neutrality brings numerous opportunities. However, there are no quick fixes. The transition requires long-term certainty, planning, investment, and action by governments, industry, and consumers. Policies and other measures to keep Australian industry internationally competitive will be the key to ensuring that Australian industry can play its part in this transition. If Australia does not provide a globally competitive operating environment, the investment in transformative technologies will be made in other economies, and the long-term viability of Australian industries will be threatened.

Chemistry Australia advocates for a suite of policy actions to give Australian industry the confidence to invest and that will deliver a more sustainable, secure and competitive Australia under the following interconnected themes:

- Climate neutrality and sustainable development;
- De-risking our economy;
- Circular economy;
- Innovation and manufacturing;
- Competitive, low emission energy;
- Better regulation;
- Education and skills.

<sup>1</sup> *Enabling the future – chemistry innovations for a low carbon society*, ICCA, 2019

## Our immediate priorities are outlined as follows:

### Climate Neutrality

- Introduction of an instant asset tax write-off for emissions-reducing capital investment without caps or thresholds. An instant asset tax write-off will support investment and drive earlier GHG emissions reduction across the economy;
- Changes to the safeguard mechanisms to provide financial support and incentives for investment in emissions-reducing technologies by facilities covered by the mechanism;
- Harmonising the National Construction Code / NatHERS star ratings to more accurately reflect the energy-efficiency performance and insulating properties of the thermal building envelope.

### De-Risking Our Economy

- Urgent action to remedy the current shipping crisis at Australian ports that is hampering the import and export of goods, rapidly escalating transport costs and impacting businesses and consumers across the economy;
- Recommencement of skilled migration to address skills shortages, particularly for engineering;
- Recognition and strategic investment to maintain our essential industries such as ongoing support via the SCRI;
- Continued investment in the Northern Australia Infrastructure Fund to ensure that commercially viable and sustainable business opportunities in Northern Australia are realised to benefit local communities, the nation and the Asia Pacific region.

### Competitive, Low Emissions Energy

- Technology-neutral incentives to support emission-reducing technologies (e.g. hydrogen, battery and other storage);
- A re-set of domestic gas policy focused on economic recovery, climate neutrality, secure supply chains and sovereign manufacturing to secure long-term supply contracts needed to underpin plant turnaround capital investment decisions;
- A transition plan for gas users to bridge the forecast supply gaps and escalating prices that enable a long-term domestic investment environment;
- Domestic gas pricing principles based on long-run LNG Netback that don't cross-subsidise LNG capital and financing costs and are linked to suitable international gas on gas indices (Henry Hub).

### Circular Economy

- Financial incentives and policy measures that support investment in a suite of recycling technologies able to transform used products back into high-value resources, build recycling capacity and meet recycling targets.

### Innovation and Manufacturing

- Extension of the patent box scheme to all sectors;
- A premium rate of R&D tax incentive for R&D expenditure involving collaboration between business and public research bodies, including universities and CSIRO;
- Increased co-investment in national manufacturing priorities.

### Balanced Regulation

- A full regulatory impact assessment (RIS) of the proposed changes to Workplace Exposure Limits.

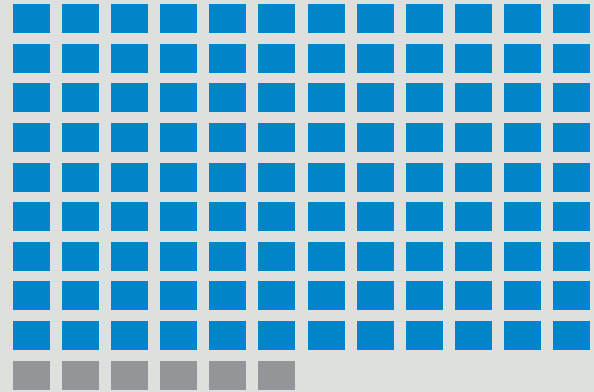
### Skills and Education

- Action to address the chronic undersupply of qualified engineers throughout Australia and the places available at universities, including:
  - a reversal of the changes that reduced the per student funding for engineering education under jobs ready graduate package; and
  - the development of a joint and aligned industry/university skills plan.
- To increase the pipeline of engineering students, a national campaign to promote Australia's vision for our future industries and career opportunities.

# Industry Snapshot



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



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

The Australian chemistry industry is strategically significant because of its supply chain centrality. It is a critical enabler of almost every value chain in Australia, a key employer of Australia's valuable STEM capability and a driver of innovation through advanced manufacturing.



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

The Australian chemistry industry transfers investment and growth through value chains, with an important multiplier effect for jobs. This demonstrates the strategic importance of industry that adds to Australia's economic complexity and builds a diverse and more resilient economy.

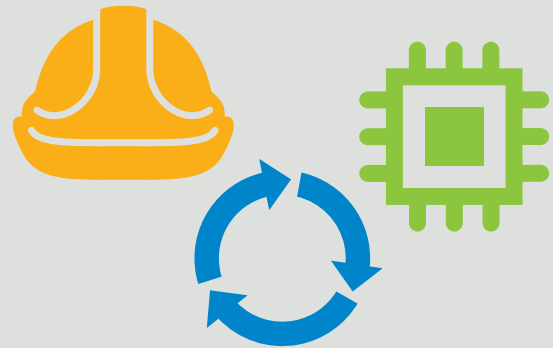


Directly employs more than **62,500 people** in highly skilled jobs

The business of chemistry is a vital part of the STEM ecosystem, providing high quality employment for Australia's valuable university graduates and research capability.

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

The business of chemistry contributes significantly to the Australian economy and to our way of life. The industry adds value to the nation's natural resources and passes this investment on through Australia's value chains to further multiply the benefits for the Australian economy and society.



## One of Australia's **largest manufacturing** sectors

The industry is focused on strategies for sustainable growth and is playing an important role in Australia's transition to smarter, value adding, advanced manufacturing. The business of chemistry also develops new materials and processes to help other manufacturing sectors innovate and grow, for example new technologies in 3D printing and flow chemistry.



Invests **\$246 million** per annum in research and development

The safety of workers and communities, and the protection of the environment, are the highest priorities for the Australian chemistry industry. The industry is focused on ensuring that products are being made and used responsibly in workplaces, through supply chains, and across the communities in which they operate. Industry initiatives and programs are underpinned by state and federal regulation.



# Climate Neutrality

**The challenge of climate change cannot be addressed by a single policy, technical solution, industry or government. A combination of technology, market-based and policy solutions will be needed to reduce GHG emissions and achieve climate neutrality.**

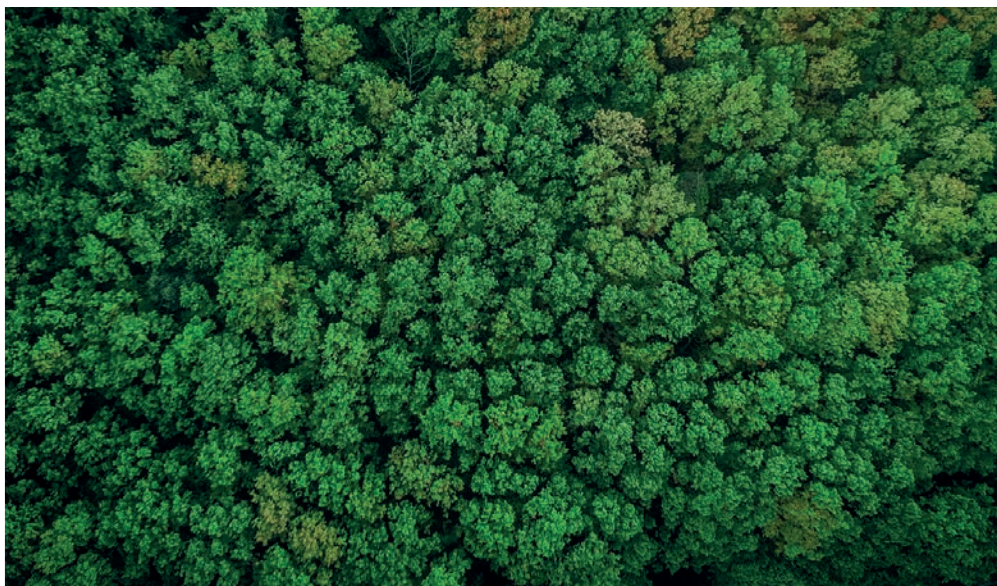
The role of government is to provide the competitive policy framework and certainty to facilitate investment by industry and support informed consumer choices that will drive GHG emissions reduction across the economy.

Australia's climate change policy must be part of globally coordinated action to reduce emissions and mitigate the impact of climate change. However, it should also strike the right balance between meeting our Paris Agreement commitments and ensuring continued industry investment and jobs growth to underpin our sovereign capability.

Action on climate change should play a key role in Australia's recovery from the economic cost of COVID-19, getting people back to work and positioning Australia for a climate-neutral future.

The chemistry industry is committed to enabling further significant GHG emissions reduction through changes to its own processes and product innovations that deliver emissions reduction by other industries and consumers.<sup>1</sup>

The key to ensuring that Australia's chemistry industry shares in this transformation is implementing policies and measures that keep Australian industry internationally competitive. If Australian industry is not competitive, this investment will be made in other economies.



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<sup>1</sup> *Enabling the future – chemistry innovations for a low carbon society*, ICCA, 2019



## Chemistry Australia calls for:

### Immediate

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- An instant asset tax write-off for emissions-reducing capital investment without caps or thresholds. An instant asset tax write-off will support investment and drive earlier GHG emissions reduction across the economy;
- Measures to ensure that Australian industries that invest in emission reduction do not suffer a competitive disadvantage against imports from other economies not playing their part to reduce emissions. Such measures will also prevent GHG emissions leakage to economies not playing their part;
- Changes to the safeguard mechanisms to provide financial support and incentives for investment in emissions-reducing technologies by facilities covered by the mechanism;
- Retention of the Clean Energy Finance Corporation.

### Medium-term

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- Australia to honour its international commitments to reduce GHG emissions;
- Transition to net zero emissions from the built environment by mandating energy-efficient dwellings and buildings, including harmonising the National Construction Code / NatHERS star ratings to more accurately reflect the energy-efficiency performance and insulating properties of the thermal building envelope;
- Continued investment in Australian Research Centres and other targeted funding mechanisms to foster innovation and research to reduce emissions, improve energy efficiency and adapt to climate change;
- Increased investment in the development of STEM skills that deliver the talent base required to tackle climate change.

# De-risking Our Economy

**The expansion of global trade and supply-chains has enabled the world economy to expand over many decades, improving living standards as more people have shared in the prosperity this growth has delivered.**

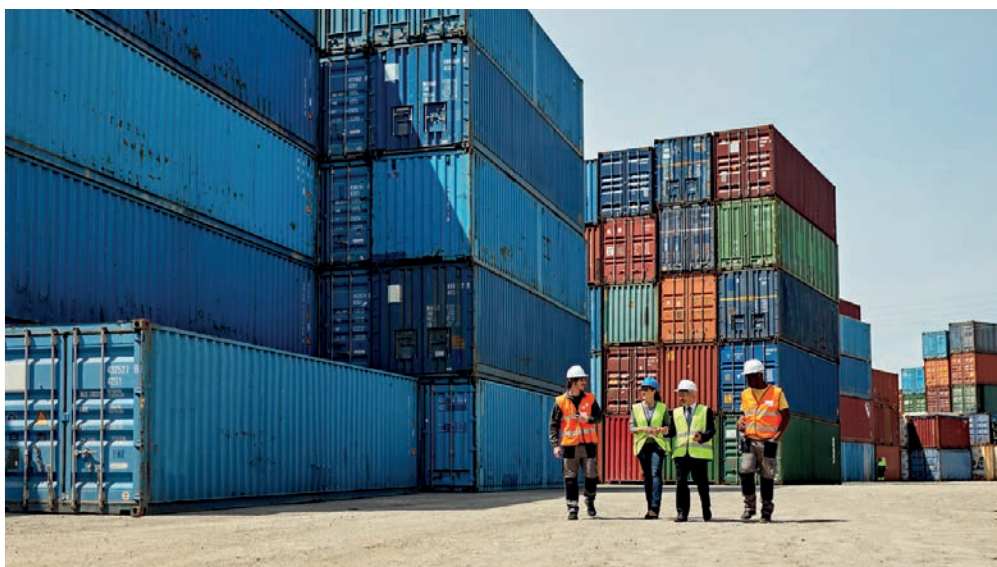
However, this shift in trade has had a significant impact on Australian manufacturing. It has struggled to remain globally competitive against manufacturing in lower-cost jurisdictions operating with economies of scale focused on supplying global markets. Importantly, chemistry and other value-chains are highly inter-connected and inter-dependent. Losing one component, ingredient or capability can curtail, stop or cease the supply of some finished goods.

At the same time, modern business structures and disciplines, aided by the growth of sophisticated enterprise resource planning (ERP) platforms, have focused on supply chain efficiency, resulting in a delicate balance between supply and demand across many sectors.

COVID-19 has demonstrated that existing global supply chains cannot cope with simultaneous increases in demand across all regions of the globe. It has also shown that critical parts of those supply chains are vulnerable to disruption as governments seek to ensure the availability of essential goods or the interruption of global transport infrastructure and networks.

No country would be able to supply all the goods and services needed to maintain a modern society or economy. Global trade will always be critical to the supply of goods and services. This is particularly true for Australia, which represents less than 1 per cent of international trade.

Nevertheless, Australia needs to strengthen its sovereign capability to maintain the supply of vital goods and services when global supply chains are interrupted.



## Chemistry Australia calls for:

### Immediate

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- Urgent action to remedy the current shipping and logistics crisis at Australian ports that is hampering the import and export of goods, rapidly escalating transport costs and impacting businesses and consumers across the economy;
- Recommencement of skilled migration to address skills shortages, particularly for engineering.

### Medium-term

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- A continuation of the current work on the following critical supply chain vulnerabilities to ensure that Australia is prepared for the inevitable future shocks or disruptive events like COVID-19;
  - Water and sewerage treatment;
  - Inputs to agriculture, including crop protection chemicals and fertilisers;
  - Inputs to mining, including explosives and reagents;
  - Food production, including packaging materials;
  - Health and medical products, including medicines, medical gases and PPE;
  - Emergency response.
- Establishment of a national crisis management framework that incorporates a series of predictable and transparent phases to respond to any future crisis, reducing uncertainty for the community and business;
- Industry, manufacturing and taxation policies that support investment to diversify the economy and address the longer-term risks and declining economic complexity;
- Continued investment in the Northern Australia Infrastructure Fund to ensure that the commercially viable and sustainable business opportunities in Northern Australia are realised for the benefit of local communities, the nation and the Asia Pacific region;
- The strategic use of government procurement to underpin the maintenance and/or establishment of sovereign capability, including Australian manufacturing of and/or creation of strategic.

# Competitive, Low Emissions Energy

**Globally competitively priced gas and electricity are essential for Australia to recover from the economic cost of COVID-19, support those Australians whose livelihoods have been impacted, and get people back to work.**

Affordable and globally competitive gas and electricity are also vital elements in strengthening Australia’s sovereign capability and for the continued viability of Australian manufacturing and many other industries.

Yet, the high cost and unreliable supply of gas and electricity have damaged Australian industry, commerce, and households. Australia’s energy market and the supply of globally competitive long-term gas feedstock contracts were once the envy of the world and formed the basis of vast investment in Australia.

Much more needs to be done to protect consumers from escalating energy prices and attract capital investment for gas-based and other manufacturing. Chemistry Australia reiterates the principles of the National Energy Objectives, where investment is focused on benefits for consumers.

The opportunity to transform our energy supply from hydrocarbons to renewable sources, including hydrogen and bio-based fuels, is real. However, this transition will be neither speedy nor straightforward. The transition requires planning and investment, including establishing standards and appropriate regulation. While policy needs to support this transition, it must also recognise that no single technology will provide an economy-wide solution. Therefore, policy frameworks must support and incentivise the adoption of a variety of fit-for-purpose technologies and solutions.



## Chemistry Australia calls for:

### Immediate

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- Technology-neutral incentives to support emission-reducing technologies (eg. hydrogen);
- A re-set of domestic gas policy focused on economic recovery, the transition to a climate-neutral economy, Australian sovereign manufacturing capability and supply chain security, including:
  - A sharper focus on long-term contracts needed to underpin plant turnaround capital investment decisions;
  - Domestic gas price methodology based on long-run LNG Netback that does not cross-subsidise LNG capital and financing costs, and linked to suitable international gas on gas indices (Henry Hub).

### Medium-term

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- Implementation of a transition plan for gas users to bridge the forecast supply gaps and escalating prices that enable a long-term domestic investment environment;
- Implementing policies that prioritise gas availability and supply for domestic use at globally competitive prices;
- Continuing reforms to address the concentration of market power;
- Implementing policies that reserve valuable natural gas liquids for domestic industries;
- Introduction of a 'use it or lose it' mandatory development regime;
- Investment in pipelines and other infrastructure to bring new gas supply to the market;
- Continued gas market reform to increase transparency for consumers.

# Circular Economy

A circular economy prioritises resource conservation and efficiency to capture the greatest value from traditionally discarded materials. In addition, a circular economy reduces pollution, litter, and waste.

A more circular stewardship approach (creating an Australian Plastics Circular Economy) to plastic materials and products will help achieve the United Nations Sustainable Development Goals and Australian National Plastics recycling targets.

A strong, sustainable Australian chemicals and plastics sector, domestic manufacturing sector, recovery and recycling sectors, and industry-focused research are critical to realising a circular economy.



## Chemistry Australia calls for:

### Immediate

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- Financial incentives and policy measures that support investment in a suite of recycling technologies able to transform used products back into high-value resources , build recycling capacity and meet recycling targets.

### Medium-term

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- National waste policies that continue to support the principle of selection of material on merit and appropriate lifecycle analysis;
- Standardised collection, sorting and cleaning infrastructure to provide quality recycling feedstock at scale;
- The establishment of specifications and standards to verify raw material feedstocks, recycling outputs, and the recycled content of products;
- Support for programs such as Operation Clean Sweep<sup>®</sup> that help eliminate plastic pellet loss from the entire supply chain;
- Support for product and market development that create demand for re-usability and recycled content;
- Measures to ensure that imported materials and products meet Australian specifications, including APCO targets.



# Innovation and Manufacturing

**Manufacturing provides nations with economic resilience and strengthens sovereign security. At its peak in the late 1950s and early 1960s, Australian manufacturing represented around 30 per cent of Australian GDP. By 2000, it had declined to 12.6 per cent of Australian GDP; and by 2020, it had dropped to 6.1 per cent of Australian GDP.**

The Department of Industry, Innovation and Science has described Australia’s economic complexity “as an anomaly among advanced economies, with the economic complexity closer to that of a developing country”. \*

The COVID-19 crisis has demonstrated that the ongoing decline of Australian manufacturing represents an unacceptable risk to the Australian community and economy. This risk is exacerbated when critical global supply chains are disrupted.

Sovereign capability across vital industrial sectors, like chemistry, does more than guarantee the supply of essential goods to consumers and industries.

It underpins:

- a critical mass of broader manufacturing capability and scale, the retention of necessary skills and expertise
- the viability of critical infrastructure (e.g. ports and energy networks) and the availability of courses at universities
- TAFE and other vocational training.

As a nation representing less than 1% of the global economy, Australia must regain a minimum level of sovereign manufacturing capability to bolster its future growth and prosperity while the domestic capability still exists.

The crisis has also highlighted that Australian manufacturers are innovative and agile, stepping up to address many product shortages. Australia’s renewed focus on climate neutrality requires flexible and robust manufacturing and innovation capability. A systematic strengthening and leveraging of this strategic capability must now be a priority.

Innovation collaboration between industry, research and academia can accelerate commercial outcomes, help reduce emissions, create more circular economies and deliver job-ready graduates. Successful models exist that need to be further supported and expanded to build future capability and capacity.

\*Industry Insights, Globalising Australia 2/2018, June 2018



## Chemistry Australia calls for:

### Immediate

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- Extension of the patent box scheme to all sectors;
- A premium rate of R&D tax incentive for R&D expenditure involving collaboration between business and public research bodies, including universities and CSIRO.

### Medium-term

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- Industry policy that sets a long-term vision that fosters investment confidence among large, medium, and small manufacturing businesses. The policy should address:
  - Diversification of our economy to tackle the longer-term risks and declining economic complexity;
  - The attraction of capital and investment;
  - Critical issues of national security and sovereign capability, including the need for ongoing refinery capability; and
  - The inextricable link between innovation and manufacturing at scale.
- Industry policy to drive energy policy;
- Support the circular economy by facilitating investment in mechanical and advanced recycling of plastics to meet the objectives of the National Waste Policy;
- Continued investment in Australian Research Centres and other targeted funding mechanisms to foster collaborative innovation and research to reduce emissions, improve energy efficiency and adapt to climate change.



# Balanced Regulation

**Regulation in Australia is recognised as inconsistent, complex and costly, causing businesses to avoid investment. Companies seeking to invest here comment that while other economies roll out the red carpet, Australia rolls out the red tape. A balance needs to be restored.**

Chemistry Australia has long advocated for minimum effective regulation that safeguards the community and environment while attracting and protecting investment, enabling Australia to be globally competitive.

The COVID-19 crisis demonstrated that Australia’s complex web of regulation across nine different jurisdictions hampered our ability to respond to the crisis across many fronts. At the same time, some regulatory agencies and governments rose to the challenge and provided regulatory flexibility to address the crisis, while others hesitated.

The National Cabinet mechanism established to respond to COVID-19 shows what can be done when all governments work together.

The emerging trend toward adopting zero-risk by regulators has significant implications for business and the ongoing viability of operations across many industry sectors.



## Chemistry Australia calls for:

### Immediate

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- A full regulatory impact assessment (RIA) of the proposed changes to Workplace Exposure Limits.

### Medium-term

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- Continued deployment of the National Cabinet framework to address critical areas for regulatory reform and harmonisation to reduce red-tape across all jurisdiction to support competitiveness and job creation; and strengthen sovereign capability while providing appropriate safeguards for the community and environment;
- All future regulatory impact assessments (RIA) to include a critical evaluation the potential of impacts of proposed regulations on Australia's ability to respond in a time of crisis;
- The appropriate application of risk management principles in developing regulation and setting standards, including recognising the implications of zero risk regulatory standards;
- True national consistent regulation for workplace health and safety, poison scheduling, dangerous goods transportation, and precursor chemicals by replacing current model law approaches with applied law schemes;
- Establishment of a national dangerous goods regulator and full alignment of Australia's DG transport, handling, and storage regulations with international rules to improve supply-chain flexibility;
- Reform of major hazard facilities regulation to establish a single national regulator and regulatory scheme;
- Nationally consistent management of hazardous waste;
- Australia to take the lead on industrial chemicals management to promote an international network of trusted regulators to facilitate mutual recognition of chemical assessments.

# Education and Skills

**Australia needs to continually update the skills of its workforce to maintain its sovereign capability and ensure it remains ahead of changing market opportunities rather than falling behind.**

This will enable Australia to compete for skilled technical workers in a global market, ensure today's STEM graduates play a role in tomorrow's challenges and respond to future crises like COVID-19.

Australia is facing a skills shortage in many areas which are critical for growth. In the chemistry industry, we are experiencing skills shortages across the sector – from forklift drivers to technologists and engineers.

Importantly, Australia must act to address the immediate and future shortage of engineers if we are to take advantage of the opportunities to transform and grow our economy. In the OECD, Australia ranks third lowest in terms of engineering graduates.<sup>2</sup> We must strengthen our sovereign capacity to build a sustainable engineering workforce, which in turn will provide substantial opportunities for Australian industry.<sup>3</sup>

The Job Ready Graduates package, introduced in 2021, has made it financially more difficult for universities to offer engineering places. It has also decoupled engineering education from research activity. Given the critical role that engineers play in driving innovation in our economy, this is a suboptimal outcome.



<sup>2</sup> OECD Education at a Glance 2020 Tertiary Graduates by Field

<sup>3</sup> GO8 Industry Summit: Securing the Future of Australia's Engineering Workforce

# Chemistry Australia calls for:

## Immediate

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- Action to address the chronic undersupply of qualified engineers throughout Australia, including:
  - a reversal of the changes to higher education funding that reduced funding for domestic engineering students; and
  - the development of a joint and aligned industry/university skills plan.
- To increase the pipeline of engineering students, a national campaign to promote Australia's vision for our future industries and career opportunities.

## Medium-term

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- Support for programs that rebuild strategic skills and capabilities;
- Greater investment in STEM literacy education for all Australian school students;
- Continued government support for industry collaboration with universities and the CSIRO;
- Investment in tertiary programs to provide education to address the gap in regulatory science capability in Australia and around the world;
- Investment in vocational training that builds the skills needed to address the changing nature of work and which builds a suitable level of “reserve-like” skills and expertise that can be readily deployed to support Australia's capacity to deal with future crises.

# About us

**Chemistry Australia is the pre-eminent national body representing the \$38 billion Australian chemistry industry, one of the largest manufacturing sectors in the country.**

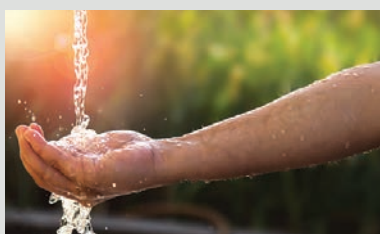
Our members are positioned across the entire value chain, including manufacturers, importers and distributors, logistics and supply chain partners, raw material suppliers, fabricators, compounders, recyclers, research academia and service providers to the industry. Their businesses range from small family-owned companies to leading national and multinational enterprises.

Chemistry Australia affiliated organisations include the Australia New Zealand Industrial Gas Association (ANZIGA) and the Australian Paint Manufacturers' Federation (APMF). Member initiatives including the Australian Modern Building Alliance and Plastics Stewardship Australia promote the sustainable use of polymers. Our members participate in a number of industry-led product stewardship schemes, including ChemClear®, drumMUSTER®, Operation Clean Sweep®, and Paintback®

## The Business of Chemistry – Essential for Life



**Supporting Australia's mining and resources industry** with specialist mining equipment, chemicals, technologies, and services to extract and process minerals and precious metals more efficiently.



**Providing clean drinking water** through advances in disinfectants that kill germs and prevent disease, polymer membrane filters that remove impurities, and materials for pipes that protect water from the source to the tap.



**Enabling the future of energy** with sustainable technologies that are revolutionising the way we generate and store energy, including new developments in solar cells, wind turbines, and rechargeable batteries.



**Ensuring a safe and plentiful food supply** by protecting plants from pest infestation and increasing crop production through the use of fertilisers, high-yield seeds, and irrigation infrastructure. Innovative packaging reduces spoilage and prolongs shelf life, enabling Australian growers and food manufacturers to reach international markets.



**Helping to build our homes and cities** with advanced technologies and materials developed for more efficient construction and transport, as well as innovation in coatings, insulation, adhesives, and sealants.



**Improving public health** through medical breakthroughs and innovative technologies that help to protect against infection, prevent disease and improve treatment options.



Operation Clean Sweep® is designed to help the plastics and logistics industries reduce the loss of plastic resin pellets from all parts of the plastics value-chain into the environment.

Globally, the reduction of pellet loss has been included in the Declaration of Solutions for Marine Litter to help industry's role in addressing marine litter.

The program's goal is to help every plastic resin pellet handling operation implement good housekeeping and pellet containment practices to work towards achieving zero pellet loss.

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