



**Chemistry
Australia**

The Business of Chemistry
Essential for Life

An ambitious vision for investment in Australian chemistry

Chemistry Australia Policy Priorities





Message from the Chair

The Australian chemistry industry is integral to driving innovation, supporting economic growth, and enhancing our quality of life. Our sector provides essential materials for diverse industries and serves as a cornerstone for future technological advancements. Amid the pressing challenges of climate change and the need for circular economies, chemistry has never been more crucial.

We share an ambitious vision for the future of Australian manufacturing—one that prioritises sustainability, innovation, and resilience. However, we must confront the reality that the fundamental conditions for business investment remain the same for current and future industries. The economic headwinds facing reinvestment in Australian manufacturing businesses will likely also weaken the prospects for investment in new Australian based industries, businesses and technologies.

Globally, the chemistry sector is making substantial investments to supply the inputs to support the energy transition and establish circular economies.

There is no guarantee that the global mobile capital available to address these challenges will make its way to Australia. Indeed, Australia is a difficult economy in which to justify investment and re-investment. It is small and remote, and the obstacles, including red tape, policy uncertainty, high construction costs, skills shortages and declining productivity, are significant. Increasing concerns about the availability of a reliable supply of low-cost gas and electricity are further disincentives to investment and reinvestment in Australia.

More must be done to leverage Australia's opportunities for current and future manufacturing investment. Domestic policy must consider the underlying competitiveness of doing business in Australia to ensure we have access to secure and sustainable manufacturing and sovereign value-chain capability at a time of increasing geopolitical and other risks.

The opportunity is to maintain and grow chemical manufacturing investment critical for Australia. The linkages and inter-dependencies across the chemical manufacturing ecosystem multiply the economic benefits from that investment. Outputs from chemical facilities support further manufacturing investment along a multitude of value chains – in 108 of Australia's 114 industry sectors.

Unfortunately, as we have recently seen, the converse is also true: a plant closure can have a ripple effect, leading to additional closures and the loss of key value-adding and employment opportunities, with risks for our future supply chain security.

At Chemistry Australia, we have considered current investment conditions and what is needed to ensure that Australia attracts the investment in chemistry necessary to deliver the net zero transition, establish a more circular economy, and maintain our nation's sovereign capability.

The outcomes of this work are reflected in our policy priorities outlined in this document.



Karen Dobson
Chair, Chemistry Australia

Backing investment – the essential element

Investments in Australian industries deliver economic growth and prosperity that supports our high standard of living. Ambitious investment should be backed by suitably ambitious policy in the national interest.

Manufacturing investment underpins the supply of products and inputs, provides diverse employment opportunities, and supports a broad ecosystem for value-adding, knowledge and technology transfer, and collaboration.

Australian manufacturing investment continues to lag behind other OECD nations. Previous stimulus benefits have been eroded by higher energy and other input costs hindering Australia's economic development. Manufacturing's contribution to GDP is also in decline as Australia deindustrialises. This decline is reflected in Australia's continuing fall on the Harvard Economic Complexity Index*.

“Economic development requires the accumulation of productive knowledge and its use in both more and more complex industries. Harvard Growth Lab's Country Rankings assess the current state of a country's productive knowledge, through the Economic Complexity Index (ECI). Countries improve their ECI by increasing the number and complexity of the products they successfully export.”¹

Amidst a changing geopolitical landscape, we need to do better.

Meeting the challenges of transitioning to net zero and a circular economy while addressing the decline in Australia's living standards, requires a more diverse and complex Australian manufacturing capability to simply keep pace with competing economies (in addition to what is needed to exploit our comparative and competitive opportunities).

The upsurge in manufacturing activities to deliver the energy transition is increasing demand for chemicals and materials globally and domestically.

It has been estimated that more than 75 per cent of all emissions reduction technologies needed to meet net-zero goals by 2050 depend on chemical industry support ². Australia has a choice as to whether this demand will be met by domestic capacity or a greater reliance on imports.

Chemical manufacturing investment is vital for Australia's net zero and circular economy ambitions. However, we must accept that we cannot manufacture everything required to deliver these outcomes. We should play to our strengths in leveraging manufacturing investment, including adding value to our endowment of natural resources such as gas and minerals.

To maintain and attract strategic chemical manufacturing investment, Australia must provide an environment of certainty and overcome issues of scale by ensuring we have an internationally competitive operating environment.

A competitive Australia – the catalyst for chemical manufacturing investment

The keys to a competitive Australia are:

- Access to reliable and lowest-cost energy
- Addressing our declining productivity, the shortage of critical skills and inefficient regulation
- Provision of targeted tax incentives
- Support for industry to meet the challenges of the net zero transition and establishing a more circular economy

¹ <https://atlas.cid.harvard.edu/rankings>

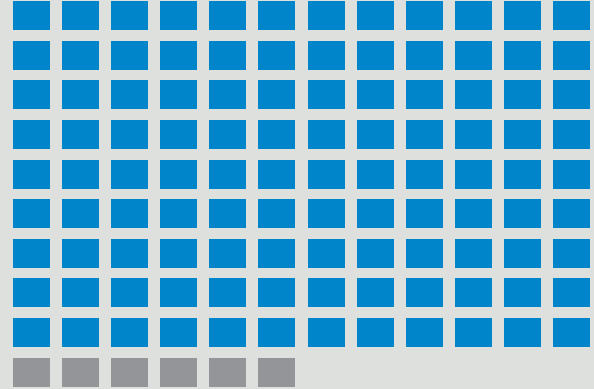
² *2024 Chemical Industry Outlook - The chemical industry should balance short- and long-term goals to weather the uncertainty in the current landscape and position itself for the future*, Deloitte, 2023



Industry Snapshot



Comprises **5,900** 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 **240,000 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.

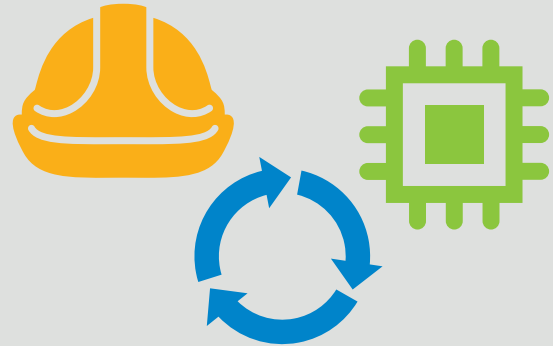


Directly employs more than **69,000 people** in highly skilled jobs

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 **\$48 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, depolymerisation and advanced battery technologies.



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.



Access to reliable, lowest-cost, low-emissions energy

The availability of reliable, low-cost electricity and gas drove post-war chemical manufacturing investment in Australia. The sector offered rewarding employment opportunities for Australians, delivered substantial economic growth, and improved our living standards and quality of life.

A return to reliable, lowest-cost electricity and gas is critical for chemical feedstock and energy, and all other downstream manufacturing energy needs. Without them, the industry will not be globally competitive or have the capacity to reinvest.

In short, if we do not address the high cost of electricity and gas, most industrial chemical manufacturing in Australia will become unviable.

This has already been demonstrated by the recent closures of strategically important chemical assets including:

- Qenos (Botany and Altona), Australia's sole manufacturer of polyethylene and loss of steam crackers – critical for future circular economy capability in plastics;
- Indorama Ventures Oxides (Botany), Australia's sole manufacturer of ethylene oxide and nonionic surfactants, which have a wide range of applications including in agriculture, mining, and home care hygiene, amongst many other sectors; and
- Incitec Pivot (Gibson Island), supplier of quality fertilisers used in agriculture and technical grade urea used in the manufacture of AdBlue for diesel engines as well as a major source of CO₂ for water treatment, medical and industrial use, and food and beverage production.

While the loss of local manufacturing capability has been, or will be, replaced by imports, Australia's economic capacity, complexity and supply chain security is further eroded. And notably, the loss of gas-feedstock based chemical manufacturing costs Australia's GDP approximately \$145M per petajoule of gas³.

Gas Market Characteristics

Australia's east-coast gas market is an omnishambles. Despite what should be a competitive advantage from the abundance of significant reserves, domestic gas users remain effectively locked out of affordable and reliable supply.

Three market interventions have failed, including supply agreements, a voluntary and a mandatory code of conduct requiring an initial price cap followed by reasonable pricing provisions in contracting arrangements. The previous price cap now effectively functions as a price floor for negotiations.

³ [Chemical industry economic contribution analysis, Acil Allen Consulting, 2017-18](#)

Gas retailers supplying most small and medium consumers have few checks and balances on their significant market power. These conditions contrast with the west coast gas market which has greater functionality, whilst managing the same domestic and export demand and supply dynamics.

Technology Neutrality

While our current focus on net zero by 2050 is essential, it is too short-term, particularly when viewed against the long-term, multiple-decade lifespan of capital-intensive chemical manufacturing investment. We need to start planning and building energy systems that will deliver reliable and clean energy well beyond 2050, which means that all energy types have a role to play in meeting Australia's future energy needs.

Government should:

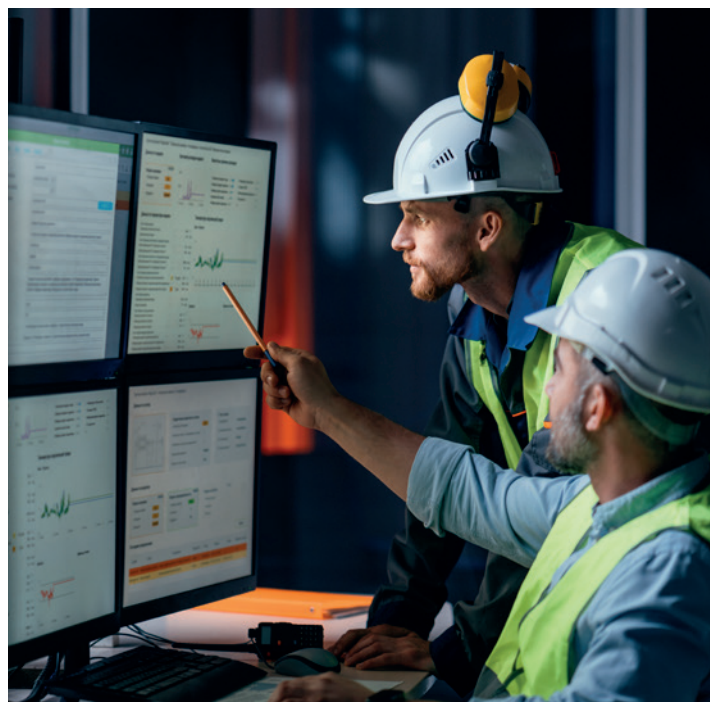
1. Implement policies that prioritise the supply of low-cost gas focused on the interests of domestic consumers including finishing the gas market reform process:

- 1.1 In the absence of a properly functioning market or effective price controls, implement a plan to provide targeted assistance to industrial gas users (*i.e. financial, regulatory, planning and/or other mechanisms*) to bridge their net-zero transition to alternative sources of energy and feedstock;
- 1.2 Curtail the concentration of producer and retailer market power by increasing competition and supply options to give consumers greater choice;
- 1.3 Increase transparency for consumers to address the current contracting power imbalance, including publicising the exemptions and gas volumes issued under the East Coast Gas Code of Conduct, and including retailers;
- 1.4 Introduce strong and enforceable “use it or lose it” obligations to ensure that gas reserves are brought to market;
- 1.5 Require specific policy consideration of the direct and indirect impacts on domestic self-sufficiency, given increasing geo-political challenges and the need for improved supply chain security;
- 1.6 Prioritise the supply of gas as feedstock to ensure Australia receives the maximum economic return from this vital public resource;
- 1.7 Implement policies that reserve valuable natural gas liquids as feedstock, to encourage investment in high-value-added domestic chemical manufacturing opportunities; and
- 1.8 Encourage investment in pipelines and other infrastructure to bring new gas supply to the market.

2. Electricity supply should be further strengthened by:

- 2.1 Ensuring the reliability and affordability of electricity supply by leveraging all available firming technologies, including gas generation;
- 2.2 Improving the infrastructure in the poles and wires needed for de-centralised supply; and
- 2.3 Addressing current investment uncertainty through greater Federal and State Government cooperation and coordination in the deployment of renewable energy infrastructure.

3. Adopt a technology-neutral approach to energy solutions necessary to tackle the substantial challenge of net zero.



Addressing our declining productivity

Skills, education and the future workforce

The chemistry sector requires a variety of skilled employees, predominantly engineers, chemists, technicians, and other STEM-qualified individuals at VET and University achievement levels.

Like many STEM-based industries in Australia, Chemistry Australia members are finding it difficult to recruit enough suitable candidates for roles from the local talent pool and are reliant instead on skilled migration.

As Engineers Australia has pointed out, in 2021, 55.8 per cent of qualified engineers working in an engineering occupation were born overseas (The Engineering Profession: A Statistical Overview Fifteenth Edition, 2023).

While skilled migration will always remain part of the solution to the skills gap, it has also become difficult as many other countries are seeking the same skills as we need.

We need to do a better job of developing a training pipeline of skilled workers here in Australia. Core barriers to this have been identified as insufficient numbers completing STEM subjects in high school and attracting and retaining students and recent graduates in the workforce.

Currently STEM education appears to be in a decline where fewer qualified teachers are available to teach fewer students thereby perpetuating the issue.

Government should:

4. Work with state and territory governments, with the support of industry, to improve the teaching and uptake of STEM subjects in primary and secondary schools, including:

- 4.1. Programs that successfully encourage students to study and continue to study STEM subjects, whether they plan on undertaking VET or university-level qualifications on graduation;
- 4.2. Encouraging, financially and socially, qualified STEM professionals to transition to education to improve the numbers of skilled maths, science, technology and innovation teachers in primary and secondary schools;
- 4.3. Work with industry to promote the social benefits and improve the profile of occupations in the STEM/chemistry industry in Australia, including for less well represented cohorts. This could include continuing CSIRO's Generation STEM or reintroducing the Women in STEM Ambassador role. This needs to be actioned across all education levels, e.g., early education, primary, secondary and tertiary;
- 4.4. Ensure career guidance counsellors and teachers are fully aware of the opportunities that STEM will provide for future occupations through coordination between government and relevant industry associations, like Chemistry Australia. This should initially focus on low and mid-level secondary school students who are making decisions on which subjects to continue in order to increase their career options;
- 4.5. Review the need for compulsory STEM subjects in the senior secondary curriculum (e.g., mathematics) to improve the talent pipeline into university and VET STEM qualifications and to maximise career options;
- 4.6. Encourage and support the students through their post-secondary qualifications in VET or university in STEM degrees and courses, including:
 - 4.6.1. Work with industry to overcome financial impacts for students through:
 - Paid placements (as recently announced for students in teaching, nursing, midwife or social worker courses);
 - Consideration of providing degree apprenticeships to relevant courses;
 - Early admission; and
 - Other work integrated learning pathways.
 - 4.6.2. Work with universities to ensure that student places are available to prospective students;

4.6.3. Provide funding to enable schools and universities to invest in the most up-to-date technology and infrastructure to meet the needs of employers.

Regulation

Unnecessary, inconsistent, complex, overly-burdensome and duplicated regulation adds to business costs. It is also a major disincentive to investment because it increases uncertainty and delays projects. Our members have observed that while other economies roll out the red carpet, Australia rolls out the red tape.

Unfortunately, the situation is not improving; it is getting worse as the Federal Government and different state governments seek to impose their own, often conflicting, net zero, circular economy and environmental obligations on manufacturers. A balance needs to be restored.

Government should:

5. Streamline new project approvals by consolidating federal, state and local government processes into a unified framework;

6. Prioritise manufacturing investment through an ongoing National Cabinet commitment to focus on and reduce red tape at federal, state, and local government levels. This must include eliminating duplicative regulatory schemes and requirements at all levels of government;

7. Re-establish the discipline of Regulatory Impact Statements (RIS) to ensure regulators maintain an economic lens to encourage stable, manageable, and balanced regulation that reduces costs and supports investment and economic growth;

8. Ensure that any regulatory obligations imposed under packaging reform legislation can be applied equally to imported and domestically manufactured goods to prevent disadvantaging Australian manufacturers; and

9. Streamline and modernise Australia's biosecurity IT systems, regulations, and controls, focusing on relieving the burden on bio-based chemistry emerging as a replacement for fossil fuel-derived chemistry.

Targeted tax incentives

With its combination of state and federal taxes on income, land, and employment, Australia is a relatively high-tax economy for manufacturers and other industries. A competitive tax environment is just as important a driver of investment as competitive energy and labour.

Targeted tax incentives can help deliver the investment needed to meet the challenges of net zero, the circular economy, and setting Australia on a path to success.

Government should:

10. Establish an instant asset write-off with no caps or thresholds;

11. Change the tax treatment of grant funding incentives provided to domestic manufacturers to non-assessable, non-exempt income;

12. Continue to support for the R&D tax incentive to support the domestic R&D activities required to develop the chemistry, products, and materials for Australian consumers and industries;

13. Extend the "patent box" concept to all Australian R&D; and

14. Establish a lower tax rate for income derived from Australian R&D that is commercialised through manufacturing investment in Australia.

Supporting industry to achieve net zero and transition to a more circular economy

Accelerating circular economy transition for plastics and other materials.

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 and its members are committed to enabling and accelerating the transitions to net zero and a more circular economy.

A more circular economy will prioritise resource conservation and efficiency to capture the greatest value from traditionally discarded materials. It will reduce pollution, litter, and waste, and help build new markets and employment.

To achieve this and support opportunities to build on current investments, a combination of technologies, market-based solutions, and policy solutions is needed. Both outcomes are contingent on a strong, sustainable domestic industry investing in new technologies and market depth. This includes emissions reduction investments and new markets for recycled content delivered by mechanical and chemical recycling investments.

The chemistry industry is an enabler of the circular economy transition required across the multiple value-chains it provides inputs into. The development of national circular economy frameworks, standards and networks, based on cross sector consultation will be vital to support and leverage into the future. These should integrate with regional and global markets and jurisdictions needed for scale and optimisation.

The Australian plastics circular economy transition is already underway. Investments and innovations are being made in materials, products, technologies, circular systems and capacity building. Recycling is growing, with increasing recycled content in a range of applications. However, the supply and demand of circular materials needs to be coordinated in partnership with policy makers, research and academia, and consumers to create viable market demand, enabling the substitution of fossil-based feedstocks with recycled feedstock over time, to achieve sustainable production and consumption of plastics.

UN Treaty on Plastic Pollution

The introduction of global caps on plastics production could negatively impact Australia's ability to achieve its circular economy ambitions as basic polymer infrastructure, including crackers, will play a critical role in advanced recycling systems.

Global production caps may also impact Australia's ability to realise the full potential of its natural resources through high-value-adding chemistry investment.

Government should:

15. Introduce a national framework to guide the development and implementation of circular economy policy and programs;*

*Ensure harmonisation of federal, state and local government policies and activities to remove barriers to collaboration and investment.

16. Support a suitably ambitious, balanced UN Treaty to eliminate plastic pollution that is an enabler of Australian circularity; **

**This should exclude caps on primary polymer production that will add cost to businesses and consumers for no net benefit, and not duplicate the roles of existing treaties to manage chemicals.

17. Ensure life cycle and circular economy principles are applied in policy development across government; ***

***This includes the selection of all materials for applications, including plastics alternatives, based on merit, using sound science, risk-based principles and applying a whole of life cycle approach – including to account for the full impacts of unintended consequences and regrettable choices.

18. Establish and mandate standards to ensure design for recyclability and re-use;

19. Set suitably ambitious targets, including mandated recycled content levels to incentivise investment, supported by incremental market development arrangements and underpinned by informed consumer demand;

20. Support and enable mass-balance accounting for recycled content traceability, including the free attribution methodology;

21. Implement education and information campaigns to stimulate demand for circular products.

Leveraging chemistry to deliver net zero

The net-zero challenges across all sectors of our economy, including the built environment, minerals processing, transportation and agriculture, depend on chemistry.

Government should:

22. Continue to support investment in critical minerals (chemicals) to ensure that Australia leverages the maximum economic return from its natural mineral endowment, increasing our economic complexity;

23. Continue to support the investment in alternative fuels and feedstocks through the Future Fuels Fund;

24. Adopt the “energy efficiency first” principle within the built environment through the deployment of energy efficiency technologies such as insulation by:

24.1. Implementing incentives that increase the building envelope energy efficiency and resilience of Australia's 11 million existing dwellings;

24.2. Ensuring energy efficiency first principles are deployed for retrofitting social housing, including public and community housing, where insulation enhancement is generally the highest priority;

24.3. Introducing minimum standards for insulation in rental properties;

24.4. Introducing mandatory energy rating disclosure when homes are sold or leased;

24.5. Regulatory intervention to stimulate residential retrofit, keeping installers safe, and improve standards of quality and conformance; and

24.6. Improving the general compliance and enforcement systems for installation of insulation in new buildings, including inspections prior to plaster.

Safeguard Mechanism

The path to net zero is particularly challenging for chemistry facilities covered by the safeguard mechanism. Many key abatement technologies depend on the successful deployment of other enabling technologies like CCS, CCUS and a reliable supply of sufficient low-cost renewable electricity (e.g. low-emissions and green hydrogen).

Requiring safeguard facility operators to purchase GHG emission offsets above their declining baseline while they endeavour to fund capital investment in emissions-reducing technology increases the cost of the net zero transition. It reduces the funds available to invest in the emissions reduction task, as funds are diverted to purchasing offsets.

Indeed, it may also be counterproductive; it acts as a disincentive for emissions-reducing investment and incentivises operators to purchase offsets and shutter facilities when they are no longer viable. The safeguard mechanism should recognise operators' investment in emission-reducing technology.

Government should:

25. Prevent carbon leakage through Carbon Border Adjustments or other financial support to emissions-intensive trade-exposed sectors of our economy;

26. Adopt a technology-neutral approach to emissions reduction, recognising that different technologies may deliver effective, lowest-cost emissions reductions in different locations and for different business operations;

27. Recognise the time-lag between capital expenditure on emissions-reducing technology and the commissioning of that technology (the delivery of emissions reduction), modify the safeguard mechanism to allow emission-reducing capital expenditure to be used to offset GHG emissions above baselines;

28. Provide financial incentives and implement policy measures (including targets) that support investment in a suite of recycling technologies able to transform used products back into high-value resources and build recycling capacity;

29. Support an ambitious, balanced outcome from the UN Treaty to End Plastic Pollution. However, this support should not extend to global production caps.



About us

Chemistry Australia is the pre-eminent national body representing the \$48 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®

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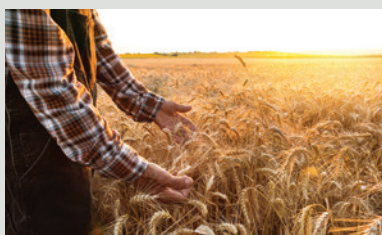
Supporting Australia's mining and resources industry with specialist mining equipment, chemicals, technologies, and services to extract and process minerals and precious metals more efficiently.



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.

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