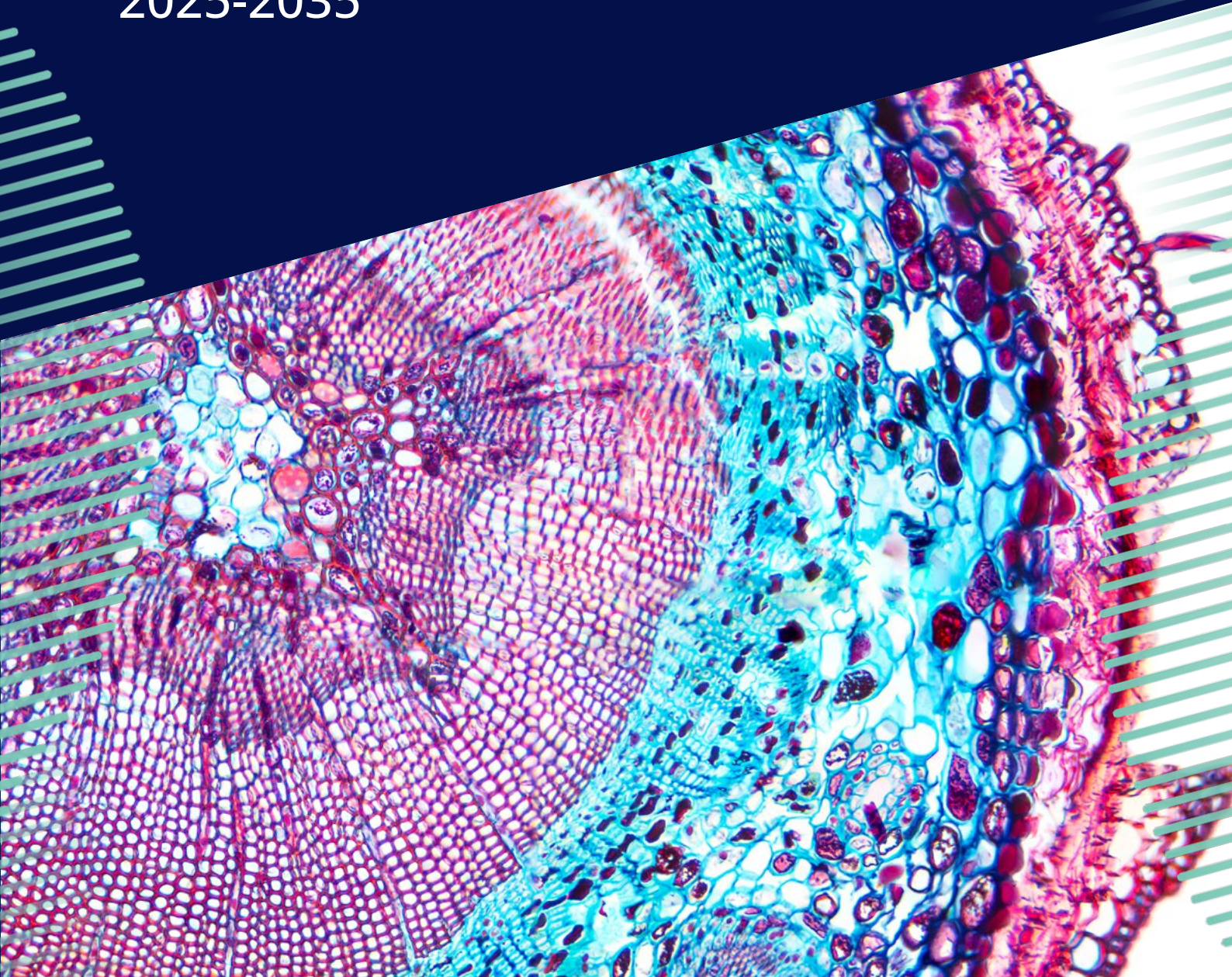




Department of
Energy and Economic
Diversification

Western Australia's 10-Year Science and Technology Plan

2025-2035





Acknowledgement of Country

The Department of Energy and Economic Diversification acknowledges Traditional Custodians throughout Western Australia and their continuing connection to the land, waters and community. We pay our respects to all members of Aboriginal and Torres Strait Islander communities and their cultures and to Elders past and present.

Acknowledgements

The Western Australian Government acknowledges and thanks the many stakeholders who have contributed to the 10-Year Science and Technology Plan, including members of the Advisory Group, Working Group and the many researchers and thought leaders who volunteered their time to support the development of the plan.

For more information, contact the **Science and Technology** division at the Department of Energy and Economic Diversification science@deed.wa.gov.au

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Cover image: Adobe

Vansittart Bay, Kimberley. CREDIT: Tourism Western Australia

Minister for Science's foreword

The long-lasting prosperity of our economy and the wellbeing of our communities depends on the growth and evolution of Western Australia's science and technology capabilities.

Whether exploring the origins of the universe, the power of the genetic code, or developing cutting edge autonomous technologies, Western Australia is poised to excel in addressing the challenges of our time.

Western Australia's scientific foundation is robust, with world-leading research institutions, exceptional universities and the ability to attract and develop top-tier talent. We also have 60,000 years of innovation and knowledge wealth held by Aboriginal peoples.

However, to address emerging challenges such as decarbonisation, cybersecurity, food security, global health and biodiversity decline, Western Australia will need to increasingly rely on the strength and capability of our science and technology capabilities. This includes finding new pathways to partner with Aboriginal peoples and learn from their rich Traditional Knowledge and support two-way science.

The foundation of any scientific endeavour is its people. We are committed to nurturing homegrown talent and attracting the brightest minds from around the world.

Our plan promotes partnerships between academia, industry and government to drive innovation and commercialise research. By fostering a collaborative ecosystem, we can accelerate the translation of scientific discoveries into practical applications that benefit society.

With the development of the 10-Year Science and Technology Plan, the Western Australian Government is acknowledging the central and enduring role science and technology will play in our State's future.

The plan sets a long-term approach to science and technology development, providing guidance for investment, decision making and clarity on strategic aims.

By prioritising research and innovation, nurturing talent, building world-class infrastructure, encouraging collaboration and embracing global opportunities, we can ensure a prosperous and sustainable future for our State.

Science and innovation result from partnerships with businesses, investors, universities, philanthropists and global collaborators. This plan's success depends on the collective efforts of all these partners. Together, we can transform challenges into opportunities and support Western Australia as a leader of scientific and technological excellence.

Hon Stephen Dawson MLC

Minister for Science



Chief Scientist's foreword

In the heart of Western Australia lies a wealth of scientific and technological potential, poised to drive our State into a future of prosperity and resilience.

As the Chief Scientist, I am honoured to present our plan for the next decade, a visionary blueprint designed to harness our strengths, address our challenges and position our State as a leader in science and technology.

Western Australia is home to world-class research institutions and globally-competitive research and manufacturing precincts.

Our State boasts cutting-edge infrastructure, a highly skilled workforce and strong industry collaboration. While we have a long history of research success, more work is needed to elevate our capabilities and capitalise on the opportunities that lay before us, particularly those associated with the energy transition.

Western Australia has never had a whole-of-government strategy to support the State's research and development activities. This plan provides crucial stability and clarity to the sector to guide the collective efforts of government, industry, academia, research institutions and community.

The decisions we make today regarding science and technology will shape our ability to respond to future challenges for decades to come.

To fully capitalise on the opportunities ahead of us, we must address our State's historical underinvestment in research

and development. It is through robust expenditure on research and development that we can harness the boundless opportunities for scientific discovery and technological advancement that lie ahead. The impact of such investments cannot be overstated. They are central to driving economic growth, job creation and societal progress through innovation and problem-solving.

I am proud to support the 10-Year Science and Technology Plan and look forward to witnessing its transformational impact over the next decade. This is an exciting time for Western Australia and I am confident that with collective effort and unwavering commitment, we will achieve extraordinary things.

Professor Peter Klinken AC

Chief Scientist of Western Australia



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Kings Park research outcomes provide environmental benefits, from reduced water and fertiliser needs, to urban habitat for birds, insects, reptiles and small mammals. CREDIT: Kings Park & Botanic Garden

Executive summary

Western Australia's 10-Year Science and Technology Plan outlines a strategic vision to enhance the State's scientific and technological capabilities to drive economic growth, societal well-being and environmental sustainability.

Vision

Western Australia is a world leader in science and technology, which drives the ongoing wellbeing, resilience and sustainability of the community, economy and environment.

This plan addresses key challenges, such as the global energy transition, decarbonisation, food security and health.

Our aim is to position Western Australia as a leader in research and innovation.

Western Australia has unique advantages and significant capabilities in science and technology across various sectors, including mining, agriculture, biodiversity, precision medicine, autonomous systems, cybersecurity and radio astronomy.

Building on these strengths will drive economic growth and resilience.

Strategic action areas

The Western Australian Government's focus is directed across six action areas:

1. Talent, skills and workforce
2. Funding and investment
3. Physical and digital infrastructure
4. Leadership, collaboration and communication
5. Translation, commercialisation and procurement
6. Policy, regulation and governance

Research and capability priorities

This plan identifies six areas that the Western Australian Government supports as priority research and capability focus areas for the public, private and academic sectors.

These priorities will be used to inform Western Australian Government support for research and development:

1. Clean energy and decarbonisation
2. Environment and sustainability
3. Mineral supply and value-adding
4. Health and wellbeing
5. Sustainable and secure food production
6. Critical and emerging technology

Governance and implementation

Western Australia's 10-Year Science and Technology Plan will be supported by a robust governance structure, led by the establishment of a Science and Technology Council.

The Department of Energy and Economic Diversification will lead delivery of the plan, ensuring collaboration across the public sector, academia and industry.

Our plan on a page

Western Australia is a world leader in science and technology which drives the ongoing wellbeing, resilience and sustainability of the community, economy and environment.

Outcomes



Goals

Western Australia is:

- » Home to cutting-edge research and technology capability with successful translation and commercialisation.
- » A leading destination for science and technology expertise and investment.
- » Host to an interconnected network of high-quality, multipurpose physical and digital infrastructure.
- » Renowned for research and development collaborations, integration of Aboriginal communities' Traditional Knowledge, and capacity to transfer technologies within and across sectors.
- » Home to world-class STEM education, training and career pathways where all people can meaningfully participate in science and technology.
- » A place where science is celebrated, trusted and used for evidence-based decision making.

Strategic action areas



Talent, skills and workforce



Funding and investment



Physical and digital infrastructure



Leadership, collaboration and communication



Translation, commercialisation and procurement



Policy, regulation and governance

Research and capability priorities

The focus areas and their associated priorities define where the Western Australian Government will focus its science and technology efforts.

Clean energy and decarbonisation

- » Low emissions energy
- » Carbon capture, utilisation and storage and biosequestration
- » Advanced energy storage

Health and wellbeing

- » Regional, remote and Aboriginal health
- » Precision health
- » Disease prevention and community resilience

Environment and sustainability

- » Conservation, restoration and discovery
- » Climate adaptation
- » Water security
- » Recycling for a circular economy

Critical and emerging technology

- » Remote operations, robotics and autonomous systems
- » Artificial intelligence and cybersecurity
- » Data insights, linkage and optimisation
- » Quantum capabilities
- » Radio astronomy and space technology
- » Advanced and additive manufacturing

Mineral supply and value-adding

- » Mineral exploration and characterisation
- » Precision and low-impact extraction
- » Critical minerals supply
- » Value-added processing

Sustainable and secure food production

- » Climate-resilient food production
- » Land and water optimisation
- » Value-added food supply

Integrating modern technology and Aboriginal knowledge.

The importance of science and technology

Western Australia stands at a crossroads where the strategic integration of science and technology can chart a course towards a sustainable, prosperous future. The State must harness this transformative opportunity to address pressing challenges, unlock new opportunities and enrich the lives of all Western Australians.

Science and technology are cornerstones of economic growth and societal well-being. They are twin engines driving innovation, progress and prosperity through the transformation of economies, improved health outcomes and conservation of the environment¹.

Science and technology underpin every facet of our daily lives, from healthcare and education to communication and transportation. In a world of escalating global challenges, advances in science and technology offer hope for happier, healthier and longer lives, as well as by providing innovative solutions to complex problems.

Building science and technology capability will drive economic growth and resilience.

Western Australia's economy has long been driven by rich deposits of minerals, energy resources and a thriving agricultural sector. To sustain and enhance economic prosperity, the State must diversify and innovate to strengthen sovereign capability.

Science and technology are pivotal to the State's economic diversification and productivity. The integration of advanced technologies, such as automation, artificial intelligence and data analytics, is revolutionising the State's industries, making them more efficient, sustainable and resilient.

There are significant opportunities for growing globally-competitive science and technology

companies in Western Australia that can export to the world. These industries will create high-skilled jobs, attract investment, and position the State as a leader in the global knowledge economy. It is crucial to recognise Western Australia's scientific successes and inspire future generations to build research and entrepreneurial skills.

Western Australia already has outstanding capabilities in science and technology in a variety of sectors, including mining, agriculture, precision medicine, defence, autonomous systems, cybersecurity and radio astronomy.

Western Australia has numerous natural advantages, such as incredible biodiversity, an expansive coastline, clear skies, significant mineral deposits and abundant renewable energy opportunities. Building on these strengths will drive economic growth and resilience and address social and environmental challenges.

Developing, sharing and applying knowledge to improve lives and protect the environment has been practised in Australia for more than 60,000 years by Aboriginal communities. The benefits of partnering with Aboriginal communities, including Indigenous Knowledge Holders, should be shared with everyone. The Western Australian Government recognises the depth and breadth of knowledge of Aboriginal communities and is committed to partnering with Aboriginal peoples to advance understanding of land, environment and wellbeing.

Science and technology will generate improved social and environmental outcomes and enable greater inclusion.

Western Australia's biodiversity, vast landscapes and incredible ecosystems are invaluable assets that must be preserved for future generations. This is made more urgent by Western Australia being one of the regions most affected by climate change worldwide. Science and technology offer tools needed to address environmental challenges, such as climate change, habitat destruction and resource depletion. Through innovative approaches to natural resource management and decarbonisation, Western Australia can lead the way globally in environmental stewardship.

Science and technology also play a crucial role in supporting healthy and inclusive communities. Innovations in medical technologies, such as telemedicine and personalised medicine, are enhancing the ability to diagnose, treat and prevent diseases. Additionally, the application of data analytics and artificial intelligence in healthcare is

enabling more efficient and effective health services, improving patient outcomes and reducing costs. These advances, along with remote technologies and medical devices, are improving the quality of life of many Western Australians.

The Western Australian Government's vision is for the State to be globally-recognised for its unique set of strengths and highly sought after as a place to live, study and do business.

Advances in technology, allowing industries to move up the value chain and provide high-quality jobs, must be embraced by the Western Australian economy.

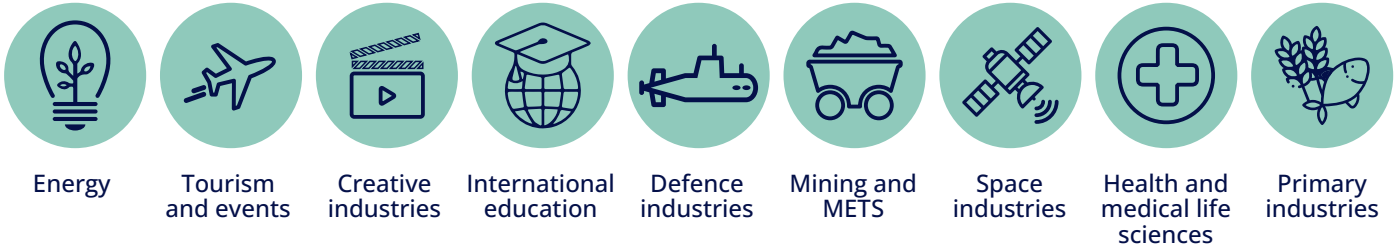
Investing in science and technology will enable Western Australia to position our State as a clean energy superpower, with high-tech defence and space industries, and a leading innovation sector.

The importance of science and technology to Western Australia cannot be overstated; with science and technology underpinning multiple long-term priorities for the State:

- » **Strong economy:** science and technology enhance productivity, agility and resilience of existing industries. Diversification is facilitated by developing knowledge-based sectors.
- » **Thriving community:** science and technology drive innovations that improve quality of life across communities, high-quality, future-focused jobs are created and the delivery of public services is enhanced.
- » **Sustainable environment:** science and technology capabilities develop new methods to reduce harmful emissions and increase the resilience of communities impacted by changing weather patterns. Discovery, restoration and conservation of unique ecosystems is dependent on science and technology.

Strong, diverse and sustainable economy

Diversify WA and industry plans



Legislation, approvals, planning, procurement plans

Land development, precincts and infrastructure plans

Science and technology plan

Innovation strategy

STEM skills strategy

Sector research strategies

Advanced manufacturing plan

ESG industry information

Science and technology are critical enablers of economic diversification and decarbonisation, recognised in the Western Australian Government's economic development framework **Diversify WA**.

Western Australia's 10-Year Science and Technology Plan complements and supports other WA Government strategies, including the **Western Australian Climate Policy** and the **Sustainable Health Review**.

Our plan will be delivered in conjunction with **Western Australia's Innovation Strategy** to ensure a continuum of support from the inception of an idea through to scaling up a business. Our plan also works in tandem with the delivery of the State **STEM Skills Strategy** and other sector-based research strategies.

Why a 10-year plan?

Western Australia stands at a critical moment where strategically enabling science and technology is essential to securing future prosperity, improving health outcomes and sustaining our unique environment.

A strategic and long-term plan is needed to coordinate cross-sector activity, boost expenditure and investment, and ensure ongoing success.

Having a vision and commitment for the coming decade is essential to unlock long term investments, retain existing talent and attract new talent, pursue research activities and build capability.

Coordinating resources and harnessing improvements in other sectors can accelerate technology transfer and innovation. Advancements in data analytics and artificial intelligence in mining, for instance, have useful applications in agriculture and offshore aquaculture.

To build on Western Australia's unique advantages and capitalise on the State's potential, strategic investment is crucial. Western Australia can improve research and development performance by leveraging the

capabilities of both the public, private and not-for-profit sectors. To support economic diversification, business investment is critical. Noting that businesses that invest in research and innovation tend to have higher productivity, create quality jobs and increase export potential.

Planning is important to improve capability. In 2014, the United Kingdom released their strategy *Our plan for growth: science and innovation*ⁱⁱ. Over subsequent years, growth in spending on research and development almost doubled from 1.5% of gross domestic product to 2.91% in 2022ⁱⁱⁱ.

Western Australia's 10-Year Science and Technology Plan provides a framework to support ongoing government action and outlines several strategic areas, including talent, funding, infrastructure, collaboration, policy and translation.



Our plan identifies several focus areas for research and development efforts, which are detailed in our accompanying **Western Australia's Research and Capability Priorities** publication.



An accompanying **Action Plan** outlines specific actions, focused on supporting capabilities that leverage Western Australia's unique geographical, economic and environmental advantages, including new energies, critical minerals, and biodiversity.

Our scope

Western Australia's 10-Year Science and Technology Plan covers many fields of science—the natural, physical and life sciences—including medical and health sciences, mathematics, engineering, data and technology-related disciplines.

Through this plan, we seek to build capability across the entire spectrum, from basic to applied scientific research, and translation and commercialisation. This plan also supports the infrastructure, skills, institutions, knowledge and policies that make this possible. In doing so, our plan seeks to encourage private and public sectors, academia, not-for-profit organisations and the community to unlock Western Australia's science and technology potential.

Central to this, will be increasing business expenditure on research and development—from large corporations to

startups. It will be critical to maintain high levels of investment and participation from the higher education sector to maximise Western Australia's performance.

The Western Australian Government has a pivotal role in conducting, funding, coordinating and promoting research and development activities, and the State's public sector has established expertise in numerous fields, including agriculture, biodiversity conservation, environmental monitoring and restoration, geoscience, and health sciences.

Development of our plan

This plan was developed by the Department of Energy and Economic Diversification on behalf of the Western Australian Government, after extensive consultation with a broad range of stakeholders across government, academia and industry.

Oversight for the plan's development was provided by an Advisory Group, chaired by the Chief Scientist of Western Australia. An inter-agency Working Group was also established with representatives from across numerous WA Government agencies, to ensure cross-sector alignment.

This plan was informed by four phases of stakeholder consultation, including workshops, surveys and written feedback. During this process, more than 1,000 stakeholders were consulted across a broad range of industries. Site visits and workshops were conducted across all regions in Western Australia to ensure input opportunities from regional and Aboriginal communities.

Targeted consultations were conducted with diverse population groups to ensure all views were considered. The priorities and action areas identified in this plan were directly informed by the consultation process and the Western Australian Government's existing policy frameworks.

Vision and goals

Vision

Western Australia is a world leader in science and technology which drives the ongoing wellbeing, resilience and sustainability of the community, economy and environment.

Goals

Western Australia is:

- » Home to cutting-edge research and technology capability with successful translation and commercialisation.
- » Renowned for research and development collaborations, integration of Aboriginal communities' Traditional Knowledge, and capacity to transfer technologies within and across sectors.
- » A leading destination for science and technology expertise and investment.
- » Home to world-class STEM education, training and career pathways where all people can meaningfully participate in science and technology.
- » Host to an interconnected network of high-quality, multipurpose physical and digital infrastructure.
- » A place where science is celebrated, trusted and used for evidence-based decision making.

Outcomes

- » A strong, diversified and sustainable economy that supports local industries and entrepreneurs.
- » Climate-resilient environments that can meet the challenges posed by climate change.
- » Safe, secure and healthy communities that are digitally-connected and actively embrace new technologies.
- » Thriving regions that are attractive places to live and work.
- » Respectful acknowledgement of Aboriginal communities' Traditional Knowledge in science and technology.

The delivery of this plan will be supported by an Action Plan, key performance indicators and a governance structure, led by a Science and Technology Council.

The Bungle Bungle Range, Purnululu National Park. CREDIT: Tourism Western Australia



Senior Grains Research Scientist Ben Congdon. CREDIT: DPIRD

Driving capability and performance

The Western Australian Government will drive improved capability and performance in science and technology across the State by taking action across six strategic areas.

Strategic actions provide high level commitments and signal to researchers, investors and businesses how the Western Australian Government aims to uplift science and technology capabilities across all sectors.

These strategic areas also frame the specific actions that the Western Australian Government will take in collaboration with relevant parties. These will be captured in our associated Action Plan that will be reviewed and updated to respond to changes in the science and technology landscape over time.

These commitments and actions will support Western Australia to reach its potential, and drive the prosperity, wellbeing, resilience and sustainability of our communities, economy and environment.



1. **Talent, skills and workforce:** growth, attraction, retention and development of STEM-qualified individuals underpins development of a competitive, innovative science and technology sector



2. **Funding and investment:** stable, long-term funding for science and technology underpins the long-term competitiveness of the State's industries and the economic and social wellbeing



3. **Physical and digital infrastructure:** development of physical and digital infrastructure supports retention of skilled researchers in Western Australia and facilitates efficient, cutting-edge research



4. **Leadership, collaboration and communication:** strong leadership and collaboration in the research and development sector promotes inter-sector knowledge sharing, innovative solutions and maximises investments in infrastructure and equipment



5. **Translation, commercialisation and procurement:** translation and commercialisation of research and development transforms new knowledge into tangible economic and social benefits for the community



6. **Policy, regulation and governance:** policy and regulation can be a strong catalyst for innovation, and research and development by fostering safe and ethical ecosystems

1. Talent, skills and workforce

The Western Australian Government will invest in world-class STEM education, training and career pathways. This will enable all Western Australians to engage in science and technology, and help attract and retain world-leading scientists and technologists.

Western Australia has a strong labour market, with the energy and resources sector attracting top talent from around the world. However, there is a need to address declining participation of students in science and mathematics subjects, and remedy causes for this decline. This will ensure we can sustain a highly-skilled local workforce that is prepared for the jobs of the future.

Developing clear, stable pathways for STEM graduates to move into industry, academia and research roles will help to diversify career opportunities and support Western Australian organisations to attract and retain the best talent.

Growing linkages between government, industry and academia will be crucial to support careers and facilitate knowledge transfer.

There is a need for a clear cross-sector approach to plan for the workforce needs associated with future industries, including across critical technology, defence and green energy generation.

The Western Australian Government will continue to promote diversity within the science and technology workforce. This includes supporting Aboriginal peoples to engage in the science and technology sector, whether as STEM professionals and/or Traditional Knowledge Holders partnering with scientists and technologists.

Ongoing work is needed to support under-represented groups, including women, people with disability and/or neurodiversity, and people from culturally and linguistically diverse backgrounds, to pursue STEM careers.

Creating a constant pipeline of talent with exciting new career opportunities and stable job pathways will ensure that Western Australia's science and technology industries are supported by a technologically advanced workforce.

Strategic objectives

- » Ensure the growth of a strong, skilled STEM workforce through a State-wide STEM skills strategy.
- » Increase awareness of science and technology careers and associated education and training opportunities to grow local talent.
- » Expand support for under-represented groups in STEM.
- » Partner with Aboriginal communities to deliver new pathways for Aboriginal peoples to participate in science and technology industries and maximise opportunities for two-way knowledge exchange.
- » Attract and retain local talent through funding programs.
- » Celebrate and communicate local success and support strong networks of top talent.

International Centre for Radio Astronomy Research

Established in 2009 to support Australia's bid to host the Square Kilometre Array (SKA), the International Centre for Radio Astronomy Research (ICRAR) is a State-funded joint venture of Curtin University and The University of Western Australia, that has grown into a globally-renowned research centre. It has contributed to breakthroughs in radio astronomy, engineering, space domain awareness, data-intensive astronomy and astrophotonics.

ICRAR has demonstrated significant returns, highlighting the benefits of focusing government funding on science and technology. By engaging students and nurturing early-career researchers, ICRAR has provided invaluable guidance to scientists and has cultivated a skilled workforce that includes many Australian Research Council Discover Early Career Researcher Award (ARC DECRA), Laureate and Future Fellowships and Super Stars of STEM recipients. Researchers benefit from access to advanced technology and involvement in ambitious projects like

the SKA, which enhances Australia's standing in the global scientific community. In addition to scientific advancements, ICRAR has successfully translated radio astronomy-associated knowledge, expertise, and technology to industry.

The advantages of this investment extend beyond ICRAR, benefiting the broader scientific ecosystem in Western Australia, including encouraging increased participation of women in STEM. Collaborations with local universities, research institutions and industry partners have led to knowledge exchange and technological advancements across disciplines. ICRAR's presence attracts top talent to Perth and regional Western Australia, promoting a culture of innovation and driving economic growth. Through fostering a vibrant scientific community, government investment in ICRAR catalyses discoveries, inspires future generations and positions Western Australia as a leader in cutting-edge research on the global stage.



The International Centre for Radio Astronomy Research (ICRAR) outreach and education program promotes science, computing and engineering, improving science literacy and participation in STEM fields. CREDIT: ICRAR

2. Funding and investment

Investment in research and development will grow to match the State's ambition of being a leading destination for science and technology.

Western Australia has a thriving economy and is in a unique position to build on the successes of the resources sector by supporting the growth of emerging science and technology opportunities.

Continuing to attract new funding, and increasing private sector expenditure and investment in science and technology, will be critical to improving research performance and impact. High levels of local investment and playing to local strengths will support increased Commonwealth funding for Western Australia.

Stable and long-term funding mechanisms for science and technology are crucial to support sustained research efforts, build robust infrastructure and cultivate world-class talent needed to support the development of the State's capabilities.

The Western Australian Government is committed to identifying strategic opportunities to invest and partner in science and technology that align with the State's strengths and priorities. By investing in science and technology now, we will ensure the foundations needed to support the State's ongoing economic diversification ambitions.

Strategic objectives

- » Ensure stable and long-term State Government investment in research and development, including the exploration of co-investment models.
- » Align investment strategically with science and technology priorities.
- » Work with industry, investors and philanthropic partners to increase private expenditure and investment in science and technology within Western Australia.
- » Capitalise on Western Australia's competitive advantages to leverage Commonwealth funding opportunities.
- » Evaluate the success of funding mechanisms to optimise the impact of State Government investment without compromising funding stability.
- » Promote Challenge Programs and other innovative processes and programs to deliver impactful solutions and build local capability.

The Western Australian Future Health Research and Innovation Fund

The Future Health Research and Innovation (FHRI) Fund is backed by the State's sovereign wealth fund. The capital balance of the FHRI Fund builds through annual credits of one per cent of the State's royalty income and the annual investment income, amounting to approximately \$50 million per year, is used to drive health and medical research, innovation and commercialisation.

The FHRI Funds sets out to:

- » improve the financial sustainability of the health system
- » improve the health and wellbeing of the community
- » contribute to Western Australia's economic prosperity
- » advance Western Australia to being, or maintaining the State's position as, a national or international leader.

The FHRI Fund's programs and initiatives have facilitated the creation of new jobs and industries; led to breakthroughs in healthcare technologies, treatments and practices, resulting in improved health outcomes and quality of life for Western

Australians; contributed to the development of more efficient and effective healthcare delivery models; and attracted talent, investment and collaboration opportunities on a national and international scale.

One of the many projects supported through the FHRI Fund involves researchers 3D printing food with the aim of making meals more interesting and more enticing to groups who may not get their daily serve of two fruit and five vegetables. Depending on the audience, these custom-designed meals can either look like the real thing or resemble animals, spacecraft and abstract geometric shapes. 3D printing food also helps to reduce food waste by using produce deemed unsuitable by retailers due to blemishes or unusual shapes.

Investment through the FHRI Fund has led to tangible benefits to the State, the Western Australian health system and the Western Australian community. It is a significant, strategic investment by Government for the health and prosperity of Western Australia.



The FHRI Fund is supporting the Rare Care Centre to establish a leading Collaborative Centre for Research and Innovation Excellence for Rare and Undiagnosed Diseases. CREDIT: WA Health

3. Physical and digital infrastructure

The Western Australian Government is committed to building an interconnected network of accessible and multipurpose physical and digital infrastructure to underpin research, science and technology activities.

Western Australia is home to world-leading infrastructure, including national facilities such as the Pawsey Supercomputing Centre, the Australian National Fabrication Facility, Australian Automation and Robotics Precinct and the Australian National Phenome Centre. The State will also be home to the world's largest radio telescope, the Square Kilometre Array.

Building on these capabilities through continued investment in new and upgraded research facilities and equipment will support Western Australia as an attractive destination for interstate and international researchers.

The Western Australian Government is focused on prioritising investment in science and technology infrastructure to boost local science and technology capability while supporting the State's research priorities.

The existence of local infrastructure is important, given Western Australia's geographic location, including an inability to utilise other national facilities.

Importance will be placed on leveraging the National Collaborative Research Infrastructure Strategy and co-investment in common-use-infrastructure to optimise local resources utilisation while facilitating knowledge transfer and collaboration.

With the proliferation of digital technology and increased digitisation of the economy, further investment in digital infrastructure is needed. This includes data storage, processing capabilities and digital connectivity to ensure Western Australia's ongoing scientific research and technology development.

Strategic objectives

- » Ensure Western Australia has leading-edge infrastructure to support the State's science and technology needs.
- » Improved utilisation of current science and technology infrastructure and equipment.
- » Develop state-of-the-art common-user infrastructure and precincts.
- » Future proof the State's digital capabilities through infrastructure, cybersecurity, data storage, networking and processing facilities.

Pawsey Supercomputing Research Centre

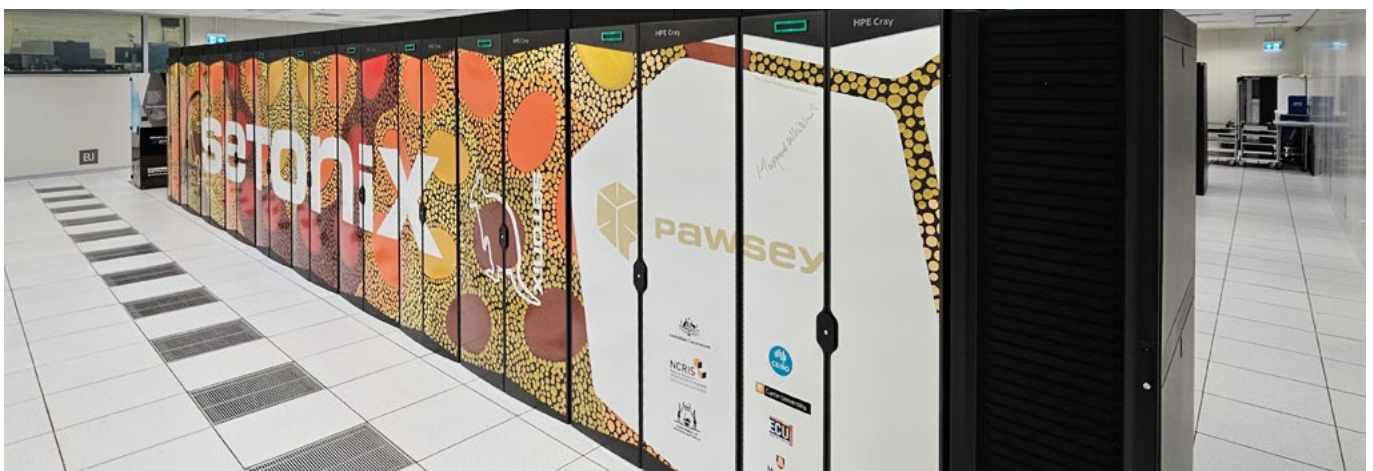
The Pawsey Supercomputing Research Centre exemplifies a successful partnership between the Western Australian and Australian Governments, as well as numerous university and industry collaborators, to establish cutting-edge infrastructure that supports local and national research capabilities.

Pawsey houses Setonix, the Southern Hemisphere's fastest and most energy-efficient research supercomputer. The centre is crucial in delivering national and international scientific projects like Australia's Square Kilometre Array.

As a world-class facility dedicated to accelerating scientific discoveries, Pawsey is jointly operated by CSIRO, Australia's national science agency, and three public universities in Western Australia. It supports hundreds of organisations and thousands of researchers, catering to various domains including radio astronomy, energy, bioinformatics, and health sciences. Additionally, it serves as a National Quantum Supercomputing Innovation Hub, collaborating with quantum engineers, technology providers and industry experts to address scientific and industrial challenges.

Supported by funding from the Western Australian and Australian Governments, and with more than 200 research projects currently underway, Pawsey has contributed to:

- » advancements in scientific research, such as breakthroughs in radio astronomy and health sciences
- » economic benefits from innovation, including the creation of high-tech jobs and spin-off industries
- » enhanced global competitiveness in high-tech industries, positioning Western Australia as a leader in scientific innovation
- » green-oriented energy solutions that other data and digital infrastructure projects can look to adopt in an increasingly energy-conscious environment
- » supporting a competitive agricultural industry with high-performing and resilient crops
- » improving our understanding of climate change through climate modelling.



Pawsey Supercomputing Research Centre in Western Australia. CREDIT: Pawsey

4. Leadership, collaboration and communication

The Western Australian Government will provide strong leadership and support productive collaboration among scientists and technologists to generate and transfer knowledge across sectors.

Increasing cross-sector networks and collaboration at local, national and international levels is critical. They bolster multi-disciplinary responses to pressing and complex challenges facing the State, including climate change, an ageing population and resource scarcity.


The Western Australian Government is committed to building local science and technology capabilities. This can be achieved by supporting global knowledge sharing, providing strong leadership and identifying strategic opportunities to partner with industry, academia and other organisations.

Knowledge and contributions of Aboriginal peoples should be recognised and respected. Aboriginal peoples' voices must be included in science and technology developments. The Western Australian Government will empower science and technology activities led by Aboriginal communities, as well as seek opportunities to partner with Aboriginal peoples and interweave Traditional Knowledge with future scientific endeavours.

Strong public trust and engagement in research and technology is important in building a culture of curiosity and optimising the social impact of science.

Strategic objectives

- » Establish a Science and Technology Council to promote cross-disciplinary collaboration and provide strategic advice to the Western Australian Government on science and technology opportunities and challenges.
- » Promote a strong Western Australian science brand by celebrating local successes that highlight world-leading science and technology.
- » Improved connectivity between scientists, researchers and technologists across the public and private sector.
- » Support multi-disciplinary responses to complex problems and facilitate knowledge transfer between sectors.
- » Increase public engagement and participation in science and technology.



Western Australian Marine Science Institution (WAMSI) is a collaboration supporting critical marine science research. CREDIT: WAMSI

Western Australian Biodiversity Science Institute and the Western Australian Marine Science Institution

The Western Australian Biodiversity Science Institute (WABSI) and the Western Australian Marine Science Institution (WAMSI) are examples of how Western Australian Government investment can enhance research collaboration across priority areas. Established with support from the Western Australian Government and a joint venture partnership model, these organisations unite leading research entities to conduct multi-disciplinary research in biodiversity and marine science.

WABSI and WAMSI leverage diverse expertise and pooled resources, providing independent, transparent and collaborative scientific partnerships. This approach maximises the return on investment by reducing duplication and facilitating cross-sector knowledge transfer. The collaborative framework ensures research is driven by end-user needs, enabling independent, peer-reviewed studies that inform more effective decision-making.

These collaborations have generated hundreds of scientific papers, disseminating critical knowledge across sectors and aiding proponents, regulators

and decision-makers in achieving an optimal balance of strategic development, conservation and management objectives. The Western Australian Government's investment in WABSI and WAMSI not only boosts scientific knowledge but also delivers substantial economic, environmental and social benefits to Western Australia. These benefits include an estimated \$100 million in economic gains through improved resource management and conservation practices, job creation in the scientific community and enhanced environmental sustainability, reinforcing the value of strategic government funding.

WAMSI and WABSI have worked together to support improvements in the way science data from the public and private sectors is collected and shared. The work focuses on enhancing access, aggregation, interpretation and management of Western Australia's biodiversity information. This can support environmental assessments, determine capability needs and prioritise effort across the information and analytic supply chain that supports national decision making.



5. Translation, commercialisation and procurement

The Western Australian Government will improve research translation, support technology transfer and maximise opportunities for commercialisation.

To increase the State's global competitiveness and support economic diversification, local scientists and technologists need to be supported to turn their ideas into products and services here in Western Australia.

A workforce skilled in translation, as well as a supportive policy environment, is required to support effective protection of intellectual property and facilitate start-up activities.

Western Australia has pre-existing strengths in this area, with established innovation hubs across a range of industries, including life sciences, creative technologies, data science, cybersecurity and green technology.

Western Australia will continue to focus on building the capacity of these hubs to help overcome barriers associated with translation, commercialisation and technology transfer.

There is an ongoing commitment to support commercialisation activity and address translation hurdles, building on existing innovation, support and capital attraction. It is recognised that local procurement contracts can be one of the best ways to support local businesses to build capacity and increase competitiveness.

Further efforts will continue to be made, so that State Government procurement practices enable local innovators and startups to benefit from support to market access.

Strategic objectives

- » Ensure that funding mechanisms support local ideas and innovations being commercialised.
- » Improve support for scientists, researchers, technologists and innovators to manage their intellectual property.
- » Enhance commercialisation of ideas by building local capabilities and ensuring a supportive policy environment.
- » Support translation of new ideas through piloting programs for new technologies.
- » Establish mechanisms for tracking research impact and measure levels on investment.
- » Support ongoing reform of local procurement practices to support Western Australian businesses, with a particular focus on supporting innovative small and medium enterprises and Aboriginal businesses to enter the market.

Australian Export Grains Innovation Centre

The Australian Export Grains Innovation Centre (AEGIC) is an investment of the Western Australian Government and Grains Australia. It was established in 2012 to increase value in the Australian grains industry and help position Australian grain as the preferred choice in international markets.

AEGIC delivers value by understanding the needs of grain customers, identifying and supporting grain market opportunities, educating customers on the benefits of Australian grain, and innovating to develop new solutions and high-value uses.

AEGIC is focused on Australia's major crops, including wheat, barley, canola, oats, and pulses.

AEGIC works to help the Australian grains industry breed, classify, grow, and supply grain that markets prefer. Its research facilities are focused on milling, baking, malting, noodles and pulse protein processing, and commercial analytical laboratories.

AEGIC's unique combination of market insight expertise and scientific innovation helps identify and create new opportunities for Australian grains. For example, AEGIC has identified a market opportunity to expand Australian oats beyond the breakfast table and developed innovative new product technologies for oat noodles and oat rice, creating new value for the industry.

AEGIC works closely with government departments, universities, and stakeholders across the Australian grain supply chain, including Grains Australia and the Grains Research Development Corporation (GRDC), as well as breeding companies, grain traders, and international customers.

AEGIC's primary beneficiaries are Australian grain growers, and the impact of AEGIC's work spans the whole grains supply chain: from the grower in Australia, whose grain is valued internationally, to the consumer who enjoys excellent noodles, baked products and beer made from Australian grain.



The Australian Export Grains Innovation Centre (AEGIC) conducts a range of research projects to improve Australian wheat. CREDIT: AEGIC

6. Policy, regulation and governance

The Western Australian Government will ensure an effective, streamlined and risk-based policy and regulatory environment to support science and technology innovations.

A consistent policy environment with clear governance is essential to fostering the growth of science and technology and can spur the development of new industries.

The Western Australian Government will support the sector by providing clear guidance on intellectual property and information sharing.

The implementation of the updated Western Australian Government Intellectual Property (IP) Policy will support investment in innovation and the commercialisation of ideas originating in public sector agencies. IP protection is important to drive productive partnerships between researchers across government, industry and academia.

Effective information sharing and utilisation of Western Australia's rich datasets are critical to the success of science and technology endeavours. The Western Australian Government is supporting this through robust privacy and information sharing legislation.

Strategic objectives

- » Establish policies and regulatory frameworks to support the establishment and growth of emerging industries.
- » Support safe and effective data sharing to support research, development and decision making.
- » Develop pro-innovation regulations and standards to commercialise science and technology applications.

Privacy and responsible information sharing legislation

To protect the personal information of Western Australians and facilitate responsible use and sharing of government information, the Western Australian Government is developing privacy and responsible information sharing legislation.

The proposed legislation will provide Western Australians with greater control over their personal information and improve the delivery of Western Australian Government services. This legislation will enable information to be shared within

government for the right reasons and provide greater accountability and transparency about how government handles personal information.

The legislation will drive positive social and governance outcomes regarding the collection, protection, use and disclosure of personal information across the Western Australian public sector. It aims to enhance public trust in data sharing initiatives, while ensuring compliance with ethical standards and supporting Aboriginal data governance.



Learning in a computer lab at Curtin University, Perth. CREDIT: DEED



Consultant Neonatologist and researcher Dr Shail Mehta. CREDIT: South Metropolitan Health Service

Research and capability priorities

The identified strategic action areas can support an uplift in science and technology capability across any field. To support strategic decision making and prioritise activity, Western Australia's 10-Year Science and Technology Plan identifies six key areas to focus research and development efforts.

Focus areas for research and development efforts:

The Western Australian Government's focus is directed across six areas:

1. Clean energy and decarbonisation
2. Environment and sustainability
3. Mineral supply and value-adding
4. Health and wellbeing
5. Sustainable and secure food production
6. Critical and emerging technology.

These six areas were identified through extensive consultation and respond to the opportunities and complex challenges that Western Australia faces in coming decades.

While these focus areas have global relevance, specific research priorities have been identified within each area. They also identify areas where Western Australia can contribute to broader national priorities, including through initiatives such as the National Reconstruction Fund and Future Made in Australia.



Seeds for Snapper aims to restore Cockburn Sound's vibrant underwater world by cultivating seagrass meadows, a vital habitat for marine life. CREDIT: OzFish

1. Clean energy and decarbonisation

Western Australia will be a leader in clean energy and green technologies.

Western Australia has a significant opportunity to capitalise on its assets to be a world leader in low emissions energy generation.

Transition to a net zero economy will underline Western Australia's economic diversification, leading to the creation of new industries, such as renewable hydrogen and green metals. However, reducing emissions will be challenging, given Western Australia's energy-intensive industries and projected growth in the resources sector.

Western Australia has extensive experience delivering science and technology across the resource sector. This includes world leading capabilities in remote operations, automation and robotics, developed through the State's engagement in the space industry and its cutting edge mining, mining equipment, technology and services (METS) sector. Focusing this effort towards decarbonisation will support ongoing efforts to accelerate the energy transition.

Western Australia can also supercharge the development of technologies that capitalise on abundant renewable energy resources, available land and sea areas and mineral deposits. Western Australia has established trade relationships to develop new industries involved in low emissions energy, carbon capture and advanced energy storage.

The Western Australian Government will actively collaborate with industry and research institutions to support the development of new energy technologies. The Western Australian and Australian Governments are investing significantly in building these capabilities through numerous funding initiatives^{iv}.

Western Australia is home to research centres including the Future Energy Exports Cooperative Research Centre. In addition, the establishment of the Clean Energy Centre of Excellence will drive collaboration with industry, education and training institutions, which will support skills and workforce development.

Additionally, Western Australia's GreenTech Hub will support local green technology businesses and drive innovation to support a sustainable, low carbon future.

Research and capability priorities:

- » Low emissions energy
- » Carbon capture, utilisation, storage and biosequestration
- » Advanced energy storage.

Renewable hydrogen

Western Australia is at the forefront of developing a renewable hydrogen industry, driven by a commitment to transition to a low-carbon economy. Renewable hydrogen offers a sustainable energy alternative and supports the State's broader environmental goals to reduce carbon emissions.

Through industry and government coordination, extensive work is underway to develop hydrogen hubs in the Pilbara, Mid West and Kwinana, including the activation of Strategic Industrial Areas. Hydrogen hubs are intended to improve competitiveness by co-locating users and producers of renewable hydrogen and attracting investment through infrastructure provision.

- » The Western Australian and Australian Governments are co-funding the delivery of the Pilbara Hydrogen Hub as a major future centre for hydrogen production, use and export.
- » The Western Australian Government is investing in the Mid West Hydrogen Hub to leverage private sector investment and employment outcomes in an area renowned for wind resources and potential for magnetite resource development.
- » The Australian Government has committed funding for H2Kwinana in the Kwinana Strategic Industrial Area, with the aim to support the established industry to decarbonise and support renewable hydrogen domestic offtake.

The construction and operation of the hydrogen hubs are expected to create thousands of jobs during construction and generate significant economic benefits for regional communities.



Solar Farm. CREDIT: Tourism Western Australia

2. Environment and sustainability

Western Australia will foster world-leading research to support evidence-based adaptation and conservation of our local ecosystems.

Western Australia is vast, with unique landscapes and unparalleled biodiversity and is home to two internationally acclaimed terrestrial and marine biodiversity hotspots, 12 wetlands of global significance, and eight of Australia's national biodiversity hotspots.

Protection of the State's ecosystems against climate change, intrusion of pests and diseases and other threats is urgent.

Cutting-edge scientific knowledge is crucial for understanding and preserving the intricate balance of these diverse landscapes, ensuring they thrive for generations to come.

The Western Australian Government is dedicated to conserving these unique ecosystems, securing our water resources and combating the impact of extreme climate events on the environment. It is also important to ensure that our cities and regions can adapt to the impact of climate change and move towards a circular economy. Working with Aboriginal peoples and learning from Traditional Knowledge will be crucial in developing effective solutions to these problems.

Western Australia is home to leading institutions at the forefront of research and technology development across a range of environmental sciences. The Western Australian Government conducts considerable research activity in these areas and is a leader in the scientific monitoring of Western Australia's land, oceans and waterways.

The Western Australian Government also collaborates with universities and research institutions, including the Western Australian Biodiversity Science Institute and Western Australian Marine Science Institution, to improve scientific knowledge and facilitate environmental research.

Research and capability priorities:

- » Conservation, restoration and discovery
- » Climate adaptation
- » Water security
- » Recycling for a circular economy.

Walk together to create waterwise communities

Kep Katitjan – Gabi Kaadadjan, meaning ‘water knowledge’ in Whadjuk and Bindjareb Noongar languages, symbolises the essence of the second Waterwise Perth Action Plan. Kep Katitjin – Gabi Kaadadjan – Waterwise Perth Action Plan 2 is part of the 10-year Waterwise program, a collaborative effort across 11 State Government agencies, that seeks to deliver a suite of programs to support water efficiencies, creating more liveable communities and addressing ecological health.

Waterwise recognises the impact of climate change on our water resources and the need for an adaptive and collaborative, whole-of-system approach, with place-based outcomes that can build greater resilience and regenerate our urban areas.

From its inception in 2019 to 2023, the Waterwise Action Plan has had a wide range of positive impacts for the water management of Boorloo | Perth and Bindjareb | Peel:

- » more than 12,000 million litres of water have been saved
- » 179,000 waterwise plantings and a further 6,779 trees planted to reduce urban heat in our suburbs and promote biodiversity
- » 129,711 students engaged in the Waterwise Schools program
- » 100% of Boorloo | Perth and Bindjareb | Peel councils endorsed as waterwise, with 88% recognised as gold waterwise councils.

Launched in 2021, Kep Katitjin – Gabi Kaadadjan – Waterwise Perth Action Plan 2 builds on the excellent foundation established through the award-winning first Waterwise Perth Action Plan and outlines the next steps towards establishing world-leading waterwise communities for Boorloo | Perth and Bindjareb | Peel by 2030.

A key aspect of the plan is the involvement of Aboriginal culture, particularly the Noongar communities. Traditional ecological knowledge from the Noongar people has guided sustainable water management practices.

The plan incorporates innovative measures such as water-efficient infrastructure, community education and incentives for sustainable water use. These efforts not only protect the environment but also yield economic benefits. The saving in water treatment and supply costs demonstrates a strong return on government investment.



Lake Goegrup, Mandurah. CREDIT: Tourism Western Australia

3. Mineral supply and value-adding

Western Australia will grow its science and technology capability to be a global leader in the supply of minerals.

Western Australia is internationally-recognised for the State's advanced and successful resources sector, with considerable reserves of iron ore, gold, natural gas and critical minerals. Western Australia is the world's largest producer of lithium and a leading supplier of critical minerals.

The mining sector has a vital role to play in global decarbonisation, as a wide range of raw materials are needed to support the global energy transition. This must be achieved with improved environmental, social and governance performance, including a reduction in emissions from this sector.

With a focus on new and innovative methods to find, extract and process minerals, the State can position itself as a global-leader in ethical mining and value-adding practices. Reducing emissions from this sector is also a priority. Continuing to advance local downstream mineral processing will diversify supply chains and support the Australian Government's commitment to expand domestic battery manufacturing capabilities.

Western Australia has significant scientific and technological capability in the mining and mining equipment, technology and services (METS) sectors. Expertise spans geoscience, mining engineering, remote operations and mine rehabilitation.

The Western Australian Government actively supports these endeavours, funding activities such as the Geological Survey of Western Australia and WA Array. Western Australia is also home to the Mineral Research Institute of Western Australia and other leading institutions, including CSIRO's National Resource Sciences Precinct and other centres with Western Australian universities.

Research and capability priorities:

- » Mineral exploration and characterisation
- » Precision and low-impact extraction
- » Critical minerals supply
- » Value-added processing.

Geological Survey of WA and Perth Core Library

The Western Australian Government has significantly invested in the Geological Survey of Western Australia (GSWA) and the Perth Core Library. For more than 130 years, GSWA has been the government authority responsible for surveying and exploration of Western Australia's geological resources. The Western Australian Government has allocated funding towards these initiatives, which have boosted the State's economy.

Perth Core Library, a key facility within GSWA, is the largest core library in the southern hemisphere and houses an extensive collection of drill cores and geological samples acquired during mineral and petroleum exploration.

This resource has enabled researchers and mining companies to access valuable geological data efficiently. As a result, new mineral discoveries have been facilitated, contributing to Western Australia's status as a world-leading mining region.

The Western Australian Government's support of these initiatives has delivered significant outcomes for Western Australia, including advanced geological mapping, increased exploration activities and a surge in private sector investments.

These developments have not only supported the success of the mining sector but have also created job opportunities for Western Australians.



New technologies, such as augmented reality, improve the experience of those accessing the Perth Core Library. CREDIT: Department of Mines, Petroleum and Exploration

4. Health and wellbeing

Western Australia will build knowledge about health and diseases which translates into improved community outcomes.

Western Australia has an excellent health system. However, with an ageing population, the total disease burden in people aged over 65 years has increased in recent years^v. Western Australia has the added challenge of providing equitable access to services across a vast geographical area.

Ongoing advances in science and technology will support prevention, early disease detection, and personalised approaches to treatment, and these initiatives will expand equitable access to care. Western Australia has considerable opportunities to develop new technological solutions to health problems and improve access to healthcare services. Ongoing research and development, in partnership with consumers, will strengthen the health system's capability to protect the community.

Western Australia has long benefited from significant engagement from the philanthropic and not-for-profit sector in health and medical research, which enables groundbreaking discoveries and the development of new treatments. This includes the Telethon Trust, McCusker Charitable Foundation, Stan Perron Charitable Foundation and the Cancer Research Trust.

Western Australia has a long history of medical research and innovation, producing Nobel Laureates and Australians of the Year. Significantly, seven of 16 drugs produced by the Australian research sector approved by the United States Food and Drug Administration originated from Western Australia.

Western Australia has a highly-skilled network of researchers and innovators that benefit from the Western Australian Government's \$1.8 billion Future Health Research and Innovation Fund to support research and innovation.

The establishment of electronic medical records will be critical to modernising healthcare in Western Australia, as identified in the Sustainable Health Review and the WA Health Digital Strategy 2020-2030. Western Australia also has considerable infrastructure established across tertiary hospitals, five universities and medical research institutes.

Targeted support for health research and innovation centres has also led to the establishment of the WA Life Sciences Innovation Hub, a collaboration across industry, government and academia.

Research and capability priorities:

- » Regional, remote and Aboriginal health
- » Precision health
- » Disease prevention and community resilience.

PeopleWA

PeopleWA is a linked data asset that offers a powerful tool to address complex social, health, and environmental and economic issues facing the State.

The initiative builds on the State's existing strengths in data linkage, bringing together comprehensive datasets across agencies, including from Departments of Communities; Education; Health; Justice and the Western Australia Police Force, to enhance policymaking and public services and benefit the Western Australian public. The initiative will provide researchers with opportunities to develop novel solutions to the State's biggest policy challenges.

PeopleWA focuses on security and streamlined applications processes. The dataset is protected by international best practice for transparent data governance, safeguards for personal and sensitive information and robust cyber security controls.

Administered by the Office of Digital Government in collaboration with participating agencies, PeopleWA represents the WA Government's commitment to data-driven decision making and research.



PeopleWA is a powerful tool for research, government policy and service improvement. CREDIT: WA Health

5. Sustainable and secure food production

Western Australia will be a leader in research and technology development to support sustainable and high-value food production.

Food production is a vital component of the Western Australian economy, contributing billions of dollars to local and export markets.

Western Australia's primary industries are under threat from climate change, pests and diseases. Ensuring the resilience of the State's food production systems is crucial for providing high-quality food and sustaining a robust economy.

Western Australia is internationally-renowned for its research, development and adoption of innovative farming techniques and drought-tolerant crops. These technologies enable farmers to maximise output despite challenges like declining rainfall and rising temperatures.

Western Australia has an opportunity to leverage its extensive capability in automation, robotics, remote sensing and data analytics to help producers improve efficiency and progress towards low-emissions production systems.

Opportunities also exist in the value-added food and beverage industry. Moving up the value chain improves food sovereignty and contributes to economic diversification.

Research and innovation have also driven the sustainability of Western Australia's fisheries.

In 2000, a Western Australian fishery was the first in the world to be certified as ecologically-

sustainable by the Marine Stewardship Council. Western Australia now proudly supports 12 fisheries accredited through this rigorous process.

Collaboration between the Western Australian Government and universities, grower groups and producers, has supported the continued success of this sector. Additionally, the Western Australian Government maintains infrastructure across the State to support research and development, including grains, horticulture and aquaculture research facilities in Albany, Carnarvon, Esperance, Geraldton, Katanning, Kununurra, Manjimup, Merredin and Northam.

Western Australia's ChemCentre provides additional capabilities through product testing, analysis and development of standards. In addition, the Rural Research and Development Corporations incentivise primary producers to support research and development through levies which are invested in key industry areas.

Research and capability priorities:

- » Climate-resilient food production
- » Land and water optimisation
- » Value-added food supply.

Western Australian Agricultural Research Collaboration

The Western Australian Government has invested \$25 million to bring together leading scientists from government, CSIRO, universities and grower groups. The collaboration fosters transformative research, empowering farmers with valuable insights to improve farming practices and combat the impacts of climate change.

The Western Australian Agricultural Research Collaboration (WAARC) delivers a set of research and development programs addressing northern agriculture, grains transformation, climate resilience, agricultural technologies, Aboriginal science engagement and capacity-building and extension. The WAARC is also offering scholarships to PhD students, providing skills and career development opportunities. These initiatives will strengthen the research, development and extension capabilities of Western Australia's agriculture and food sectors.

WAARC has numerous grains projects underway, including the Wheat Nitrogen Use Efficiency project, that will run to March 2029, and addresses a key research priority of both the Grains Research and Development Corporation (GRDC) and WAARC. The project will help growers to maximise yield and grain quality, while minimising environmental impact.



The Western Australian Agricultural Research Collaboration (WAARC) aims to reinvigorate agricultural research, development and extension capabilities. CREDIT: WAARC

6. Critical and emerging technology

Western Australia will be renowned for its capability in the development and application of critical technologies.

The strategic application of critical technologies can offer substantial benefits for Western Australia such as economic growth, new jobs and improved quality of life. These technologies are transforming the global economy and the way we live our lives. They also have considerable implications for security and defence.

To remain internationally-competitive, maintain sovereign capability and safeguard the future of the State's industries, Western Australia must build further capability in the development and application of emerging technologies.

Western Australia has a significant opportunity to build the State's leadership in critical technology through involvement in the AUKUS Agreement^{vi}. AUKUS is set to be a transformative force in science and technology through enhanced collaboration in fields such as artificial intelligence, quantum computing and cybersecurity. The AUKUS Agreement promises increased investment in research and development, leading to accelerated technological advancements. Western Australia needs to position itself to best capitalise on these opportunities which stimulate domestic industries, create local jobs, foster deep collaboration and drive innovation in critical technological fields.

Western Australia already has considerable strength in radio astronomy, remote operations, cybersecurity and quantum technologies.

Talent and capability are being built through innovation hubs, cooperative research centres and precincts which support the development, testing and adoption of new technology, especially in automation and robotics.

In addition, Western Australia is a host of the Square Kilometre Array, which will be the largest radio telescope on Earth and presents numerous unique opportunities for our State.

Developing critical technology capabilities will support Western Australia to take a share of the space economy, which is expected to present a \$1.8 trillion opportunity globally^{vii}.

Research and capability priorities:

- » Remote operations, robotics and autonomous systems
- » Artificial intelligence and cybersecurity
- » Data insights, linkage and optimisation
- » Quantum capabilities
- » Radio astronomy and space technology.

The Australian Automation and Robotics Precinct

The Australian Automation and Robotics Precinct (AARP), delivered by CORE Innovation Hub and managed by DevelopmentWA, is Australia's largest test and development site for advancing automation, robotics, remote operations and zero emissions technologies globally.

This state-of-the-art facility offers local, national and international industry, innovators and researchers unparalleled opportunities for technology development, testing and demonstration, all without disrupting on-site production and activities.

With strategic investment by the Western Australian Government, the AARP serves as a strategic initiative to propel the development and application of robotics and autonomous systems across diverse sectors. Over 51 hectares, its six large test zones and AARP Headquarters provide essential infrastructure, including office spaces, laboratories, workshops and training facilities. This investment ensures significant returns by fostering innovation, driving technological advancements and enhancing Western Australia's competitiveness across industries such as mining, energy, agriculture, space, defence, advanced manufacturing and construction.



A world-leading collaborative innovation hub, the Australian Automation and Robotics Precinct (AARP) is Australia's largest test and development site supporting advancement of automation, robotics, remote operations and zero emissions technologies globally. CREDIT: AARP

Ensuring success

Our 10-Year Science and Technology Plan and the strategic actions will enhance existing efforts and support future initiatives to uplift Western Australian science and technology capability and performance.

It is important to understand how well the strategy is performing to ensure success, provide community confidence and guide future action.

To achieve this, the Western Australian Government will develop a framework for implementing the plan, which includes guidance on monitoring, evaluating and reporting. Key Performance Indicators and metrics for measuring progress will be established.

Robust governance will be established to oversee delivery of the plan. To support this, the Western Australian Government will establish a Science and Technology Council. The role of the Council will be to monitor the progress of the plan's implementation and provide advice to the Department of Energy and Economic Diversification on the

development and delivery of associated actions. The Council will also contribute to ongoing horizon scanning, which will help to identify future opportunities and threats that emerge.

The Department of Energy and Economic Diversification will have lead responsibility for the delivery of the plan, and will ensure collaboration across the Western Australian public sector and strong engagement and consultation with universities and industries. Heads of relevant agencies will be engaged to deliver on the plan.

Progress with implementation of the plan will be reviewed periodically which will include ongoing updates to an Action Plan, this will ensure that funding and resources are optimally allocated.

The summit, Frenchman Peak, Cape Le Grand National Park, Western Australia.
CREDIT: Aeyung Photography



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Key resources



Western Australia's economic development framework:
Future State: Accelerating Diversify WA



Western Australia's STEM skills strategy:
Future jobs, future skills – Accelerating
STEM skills for Western Australians



The 10-Year Science and Technology Plan
supports numerous government strategies, a
full list can be found online

Statement of accessibility

This publication is available in alternative formats on request for persons with accessibility requirements, please contact the Department of Energy and Economic Diversification.



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