

South Australia Critical and emerging technologies



Invest SA is a dedicated team of investment and business professionals within the Department for Trade and Investment that can connect you with opportunities, industry networks, and other government agencies in the critical technologies sector in South Australia.

The **Critical Technologies team** collaborates with global companies and universities to provide unique opportunities to build data solutions for the world.

invest.sa.gov.au/sectors/critical-technologies

Global technology companies in South Australia for innovation



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Our strengths = your opportunity



World-leading AI and data capability

Globally competitive research and development in Artificial Intelligence (AI), machine learning, computer vision and deep learning



Australian Cybersecurity Collaboration Centre

Central connection point for cyber resilience improvement



MIT Adelaide Living Lab

Linking South Australia to the world's best data, AI and Web3 capability from MIT's world-leading secure data analysis tools and methodology to undertake ground-breaking data projects.



South Australian Space Industry Centre

Whole-of-state-government focal point, spearheading the advancement of space industry innovation, research and entrepreneurial development



World-class hi-tech capabilities

Artificial Intelligence, Augmented Reality, Virtual Reality, quantum and data analytics leadership, and top six in the world for computer vision research



Network of innovation districts and hubs

Lot Fourteen Innovation District, Tonsley Innovation District, Technology Park Adelaide, Adelaide BioMed City, Edinburgh Defence Precinct and Osborne Naval Precinct



Exceptional connectivity

Ten Gigabit Adelaide, GigCity and SABRENet - high reliability, low latency optic fibre connectivity throughout greater Adelaide



Network of national technology companies

Deloitte, PwC, Accenture, Cognizant and Commonwealth Bank of Australia



Defence Science Technology Group

Leading the delivery of innovation, science and technology programs for defence intelligence, joint capabilities and joint operations



Adelaide BioMed City investment of AUD\$3.8 billion

Home to expertise and capabilities that brings together institutes and centres from health and life sciences, clinical care, research, education and industry

"We identified Adelaide early on as the prime location for a Living Lab in Australia and the broader region due to its leadership in data analytics and machine learning. We also saw Lot Fourteen as the perfect location for a Living Lab – it's a place where entrepreneurs, investors, businesses, global industries, universities and other leading research institutions come together to share ideas and collaborate to invest in the innovation economy."

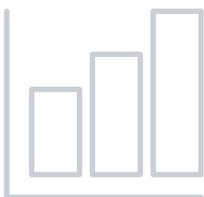
Professor Alex 'Sandy' Pentland, Massachusetts Institute of Technology

Introducing South Australia

World-class capabilities	Artificial Intelligence (AI), Augmented Reality (AR), Virtual Reality (VR), quantum and data analytics leadership. Top six in the world for computer vision research.
Collaborative ecosystem	Collaborative technology research and innovation ecosystem, linking world-leading research and development to a skilled workforce to build next generation technology products and services.
Skilled workforce	A suitably skilled and scalable workforce with the highest retention rate in Australia based on 5+ years in current main job. <i>Source: Australian Bureau of Statistics, February 2023</i>
Green economy	International leader in integrating wind, solar and battery energy system into the state's energy network with over 72% of the state's energy produced through wind and solar.



What SA offers investors



Invest SA helps facilitate:

- Working with global companies to develop leading edge data solutions
- The development of market entry approaches and strategies
- Introductions to industry partners and collaboration opportunities
- Connections across government
- Identifying a suitable location
- Connections with our global teams and identifying export opportunities

Artificial Intelligence and data

South Australia's collaborative ecosystem brings together dominant data and Artificial Intelligence (AI) capabilities as the foundational building blocks for emerging cyber security, AI and data analytics knowledge generation and commercialisation. This powers transformative digital technologies across industry sectors.

Australian Institute for Machine Learning

Location: Lot Fourteen Innovation District, Adelaide Central Business District

The Australian Institute for Machine Learning (AIML) is part of the University of Adelaide. AIML provides AI capability for global brands including Amazon Web Services, Lockheed Martin Australia, BAE Systems, GSK and BHP Billiton.

Research themes: deep learning, computer vision and robotic vision, natural language processing and visual question answering, medical machine learning, space, defence and agriculture.

AIML is ranked in the top six worldwide in computer vision (*csrankings.com*) and is the top site in Australasia for AI research generally, with world-class expertise in AI, computer vision and deep learning.

Centre for Augmented Reasoning

Location: Lot Fourteen Innovation District, Adelaide Central Business District

Within AIML, the Centre for Augmented Reasoning leads the research and development of new advanced augmented systems and improves machine learning technology across a range of applications including:

- machines that continually learn new things while interacting with the environment
- machines that work with data analysts to optimise business processes
- machines that can ask people questions in ways that are more natural and easier than filling in forms
- robots that can understand and follow instructions from people and factories where people and machines work seamlessly together without the need for constant reprogramming of software.

School of Computer and Mathematical Sciences

Location: University of Adelaide, Adelaide Central Business District

Recognised for world-leading rankings in the areas of computer vision, automation and control, and computer science with world-class expertise working to solve some of the most challenging societal problems in pioneering ways.

The School of Computer and Mathematical Sciences actively seeks research collaborations with industry through post-graduate student projects, student internships, short term consultancy projects and collaborative grant funding projects.

MIT Adelaide Living Lab

Location: Lot Fourteen Innovation District, Adelaide Central Business District

The MIT Adelaide Living Lab is a collaboration with the Massachusetts Institute of Technology (MIT) supported by the Government of South Australia. The Lab facilitates data focused projects that rely on collaborative innovation consortiums to create next generation data infrastructure that have global applications.

Industrial AI Research Centre

Location: University of South Australia, Adelaide Central Business District

University of South Australia's Industrial AI Research Centre brings together experts from across computer sciences to develop solutions for autonomous and augmented intelligence systems. Their researchers work with organisations around the world such as Siemens, BP Australia, and Yokogawa Electric to design sophisticated AI-driven solutions.

Interactive and Virtual Environments

Location: University of South Australia, Adelaide Central Business District

The Australian Research Centre for Interactive and Virtual Environments (IVE) is a world-leader in Augmented Reality (AR) and Virtual Reality (VR) and has produced the most AR papers of any institute or university in the world.

IVE is a unique alignment of computer science, engineering, art, architecture and design. IVE is responding to the challenge of increased global demand for AR and VR technologies, with leading research including wearable computing, interface design, empathic computing, 3D visualisation, perception and telepresence.

South Australia's cyber ecosystem advantage

South Australia has world-leading capabilities in cyber security, and with the Australian Cyber Collaboration Centre, fosters an ecosystem where industry, researchers and government can collaborate, support and enhance Australia's reputation as a cyber security leader that delivers smart solutions. As the defence state, defence, defence science, university research and defence industries also underpin this capability.

Australian Cyber Collaboration Centre

Location: Lot Fourteen Innovation District, Adelaide Central Business District

The Australian Cyber Collaboration Centre builds cyber capacity and security across Australia's digital landscape. The Australian Cyber Collaboration Centre assists businesses to understand and navigate the cyber specialists and ecosystem to address their specific cyber needs. It connects leaders, thinkers and doers of today and tomorrow with real opportunities to learn, activate businesses, adapt to change and solve challenges within the digital domain.

The Australian Cyber Collaboration Centre is a central connection point for businesses looking to improve their cyber resilience by:

- raising awareness of cyber vulnerabilities and challenges
- providing and facilitating rigorous testing of hardware and software
- providing world-class cyber training to upskill and increase the pool of cyber talent
- linking and coordinating the right capability development
- tracking the progress and value of investments.

Defence Science and Technology Group – Cyber, Intelligence and National Security division

Location: Edinburgh Defence Precinct

The Cyber, Intelligence and National Security division leads the delivery of innovation, science and technology programs for defence intelligence, joint capabilities and joint operations.

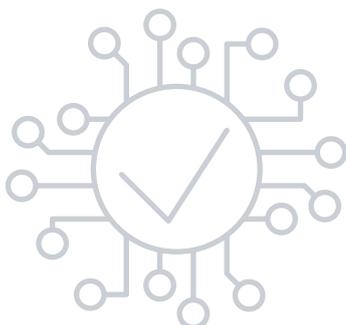
The division focuses on:

- national security
- artificial intelligence
- quantum
- intelligence
- cyber
- joint electronic warfare.

Royal Australian Air Force – cyber capability

Location: primarily based at Edinburgh Defence Precinct

The Royal Australian Air Force's (RAAF) leading cyber warfare capability provides expert advice and accreditation of the RAAF's standalone mission systems and networks. In addition, the RAAF supports exercises and operations around the world, receiving widespread recognition for their cyber capability effectiveness and cutting-edge approach.



All your partners here

The world's largest technology companies have established AI-focused innovation hubs in Adelaide. These organisations are aligning their strategy for the next decade on the ability to deliver AI-focused projects and have selected Adelaide as the best location for cyber, AI and big data capabilities.

Global technology companies in Adelaide for innovation

Accenture announced a 2000-person practice in Adelaide driving innovation in AI, data analytics and cyber security for the Asia Pacific region.

Amazon Web Services established their Australian applied sciences team in Adelaide to work with AIML to develop new AI applications.

Boeing Defence Australia has grown to over 300 employees in South Australia, supporting the P-8A Poseidon RAAF Base Edinburgh as well as advanced research, development and innovation capabilities in their Capability Hub.

Cognizant expanded operations into South Australia with the opening of a global delivery centre, creating 1,600 digital roles.

Defence Science and Technology Group develop military capabilities and critical technologies, such as artificial intelligence and quantum technologies for the land, maritime, air, space, and information and cyber warfare domains.

Deloitte announced a 1,500-person Centre for Innovation and Technology in Adelaide.

Lockheed Martin, already established in South Australia, opened a national office in Adelaide in 2022 to accommodate over 90 staff to build on a local network encompassing approximately 1,200 staff nationwide, of which 520 are based in South Australia.

Microsoft established their Azure Space team in Adelaide.

MIT Adelaide Living Lab, the world's leading data analytics capability, have partnered with the state to build our hi-tech capabilities in health.

MTX Group announced their first technology innovation hub in the APAC region, based in Adelaide, for 500 staff.

Nokia established their Australian 5G industrial incubator in Adelaide.

Rigetti, a world leading quantum computing company who pioneered hybrid quantum-classical computing systems, merged with Adelaide-headquartered QxBranch in 2019.

Telstra Health's international growth function is led from Adelaide.

Global technology companies in Adelaide for innovation

These leading technology companies continue to build around South Australia's connected technology ecosystem driving global businesses well into the future.

accenture

"We are incredibly proud of the success of our Adelaide capability and our contribution to the growth of Australia's sovereign capabilities. Adelaide is a highly attractive destination for companies and first-class talent looking to deliver technological and scientific excellence and we are privileged to be a part of this momentum.

Peter Burns,
CEO Accenture Australia and New Zealand

aws

"Amazon Web Services recognise that South Australia has a rich community of both innovation and entrepreneurship, and we're excited to continue to support our customers and partners in South Australia out of our office in the innovation district of Lot Fourteen in Adelaide."

Rianne van Veldhuizen,
Managing Director, Amazon Web Services ANZ

Deloitte.

"We have chosen Adelaide as the home of our first Australian Centre for Innovation and Technology because we have enormous confidence in the South Australian economy and the exceptional talent market that exists in the region."

Hendri Mentz,
Adelaide Office Managing Partner

NOKIA

"Nokia is delighted to establish our National 5G Industrial Incubation Lab in South Australia, an important step forward to harnessing the power of 5G for all Australian industries."

Andrew Cope,
Nokia Managing Director of Australia and New Zealand

cognizant

"Adelaide's vision to become a centre for innovation and technology aligns with our focus to accelerate the digital agenda and sustainability ambitions of Australian businesses."

Jane Livesey,
CEO, Australia and New Zealand

Microsoft

"Having maintained a presence in South Australia for over 30 years, it has been wonderful to see the significant development of the local ICT industry over the last few years. Adelaide is fast becoming a hub for technology innovation and we're excited to continue our commitment to the state."

Mark Cuggy,
State Manager, South Australia

MIT ADELAIDE LIVING LAB

"We identified Adelaide early on as the prime location for a Living Lab in Australia and the Indo-Pacific region due to its leadership in data analytics and machine learning."

Professor Alex 'Sandy' Pentland,
Massachusetts Institute of Technology

Commonwealth Bank

"The focus on Cyber Security and AI within Adelaide and Lot Fourteen, and the depth of the local talent pool in these topics are big attractors for us. AI and data are key to the next generation of digital personalisation, and the local focus on Augmented Reasoning, in particular, is very exciting when we think about how we can use AI technology to better empower our staff to serve our customers."

Brendan Hopper,
CIO for Technology, Commonwealth Bank of Australia

Skilled talent pipeline

South Australia's three public universities are ranked in the top two per cent in the world. Vocational training providers work in partnership with business and the Government of South Australia to co-design innovative programs that supply workforce-ready graduates.

South Australia ranks higher than the top performing Organisation for Economic Co-Operation and Development (OECD) country for citation impact in physical sciences, macromolecular and materials chemistry, mathematical sciences, ICT, chemical engineering, interdisciplinary engineering, materials engineering, AI and image processing, computational theory and mathematics, and applied mathematics.

- health and biotech
- energy, mining and resources
- advanced manufacturing
- agri-food and wine.

The IPAS is conducting research and delivering quantum-enabled technologies for a safer, wealthier and healthier world.

University of Adelaide

A leading university in the Asia-Pacific region conducting research into AI and machine learning. Global research impact is achieved hand-in-hand with outstanding graduate career outcomes.

The University of Adelaide's **Institute of Photonics and Advanced Sensing (IPAS)** is a world-class research institute that creates disruptive new sensing and measurement technologies.

Their research in advanced manufacturing has application for:

- space science and astrophysics
- defence and security

Quantum Materials

Ranked number five globally in quantum materials*, the University of Adelaide's Quantum Materials strategy focuses on cutting-edge fundamental research and delivering new quantum-enabled technologies.

The University of Adelaide's Chair of Quantum Materials, Professor Glenn Solomon is an esteemed scientist whose research combines quantum optics techniques and semiconductor crystal growth and processing. He is one of few scientists in the world who has fabricated nanostructures of quantum dots and performed quantum optics experiments on devices made from them.

*Source: University of Adelaide: 2022 Institute of Photonics and Advanced Sensing Annual Report.

Flinders University

Flinders University runs multiple AI research labs, including the **Artificial Intelligence and Language Technology Laboratory (AiLab)** that focuses on those aspects of artificial general intelligence and robotics that have to do with language, learning and cognition-developing cloud-based machine learning platforms. The university specialises in health-based big data and AI activities.

Flinders University



University of South Australia

The University of South Australia (UniSA) is Australia's University of Enterprise, known on the global stage for relevance, equity and excellence.

UniSA's **Computational Learning Systems Laboratory** conducts research on the engineering and science of machines and organisms that change their behaviour when exposed to new data. Their research intersects computer science, electronic engineering, applied mathematics and neuroscience.

The **Institute for Telecommunications Research (ITR)** is one of Australia's most significant research centres in wireless telecommunications. ITR partners with industry to deliver leading edge communication technologies.

Advanced technology infrastructure

Cloud infrastructure

ASX 100-listed technology company NEXTDC is building an Uptime Institute Tier IV certified data centre facility in Adelaide, in proximity to the Lot Fourteen Innovation District.

Asia-Pacific leader DCI Data Centers' Uptime Institute Tier III certified data centre is located just 10 minutes from the CBD and Adelaide Airport. A second data centre is in development.

Adelaide has a connectivity ecosystem made up of 24 colocation data centres, 177 cloud service providers, 24 network fabrics and 50 service providers.

Ten Gigabit Adelaide

Ten Gigabit Adelaide is a high-speed, high-performance fibre optic data network across Adelaide commercial buildings enabling businesses to share and receive high volumes of data at 10 gigabits per second.

Australia's first GigCity

The GigCity network provides affordable gigabit-speed internet to tenants at designated innovation precincts and co-working spaces across Adelaide, harvesting a new era in digital connectivity and collaboration.

SABRENet

SABRENet is a fibre-only telecommunications network constructed to raise the performance of South Australia's education, research, and innovation.

The SABRENet network extends over 400 kms of fibre optic cable with data speeds from one gigabit to 100 gigabits per second and connects more than 230 locations in the greater Adelaide metropolitan area including:

- universities
- innovation precincts
- teaching hospitals
- TAFE campuses
- schools.

Indigenous programs, culture and research

The Circle – First Nations Entrepreneurs Hub

The Circle, located at Lot Fourteen Innovation District, offers a range of free programs designed to bolster First Nation participation in South Australia's start-up sector. The Circle provides tailored expert business advice through increased connections, capacity, capability and confidence across various stages of business growth.

Participants have opportunities to also participate in subsidised programs and networking opportunities that aim to help Aboriginal Australians join new industries in the innovation precinct while capitalising on their own ideas.

Wardliparingga Aboriginal Health Equity Unit

SAHMRI's Wardliparingga Aboriginal Health Equity Unit is Australia's largest dedicated indigenous health research unit. The unit is focused on understanding, monitoring, responding to, and reducing inequity in health and wellbeing among Aboriginal and Torres Strait Islander communities. The Unit is also investing in, and developing, the next generation of indigenous research leaders.

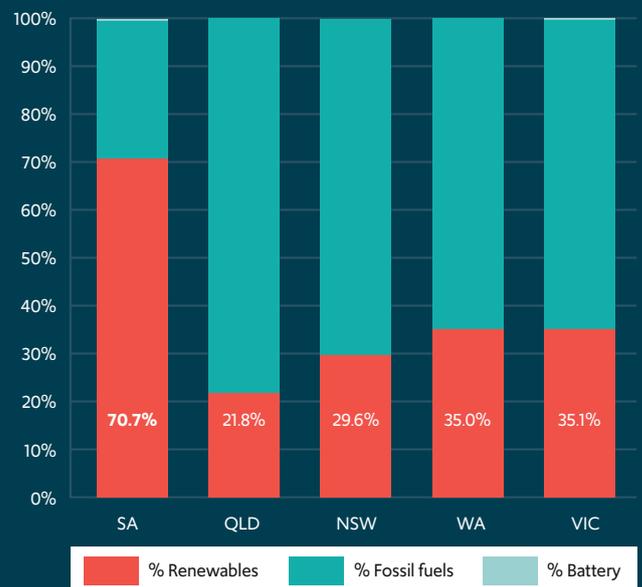
Leading toward Net Zero

Technology is critical to South Australia's net zero ambitions. With strengths in AI, green energy and data capabilities, South Australia is an innovation hub that attracts large global technology partners and environmental, social and governance leaders to the state.

Announced in mid-2022, the Government of South Australia has committed AUD\$593 million towards construction of a new world-leading hydrogen power station, electrolyser and storage facility in the state.

With leading technology companies already in South Australia and ready to partner, the perfect ecosystem exists for building a global presence in green economy, meeting emissions targets, and bolstering sustainability goals and credentials for brands.

Contribution to electricity generation by state



Source: Open NEM (2022)

"South Australia is better equipped to respond to the challenges and opportunities of climate change than any other Australian state and nearly all of the world's sub-national jurisdictions."

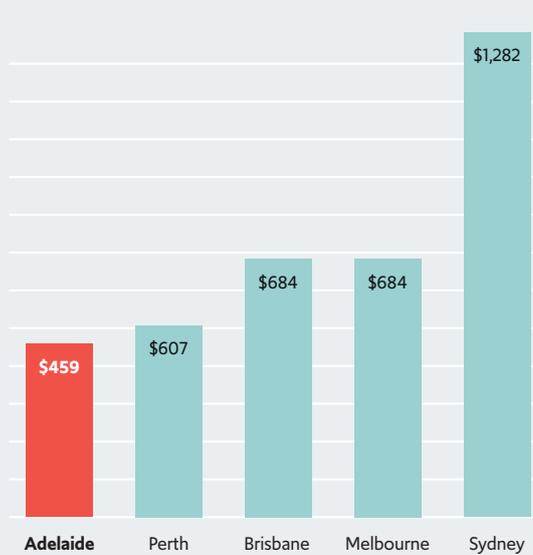
Professor Ross Garnaut

Australia's most cost competitive city

South Australia's competitive business environment supports commercial success and scaling of operations.

South Australia offers a suitably skilled and scalable workforce with competitive labour costs and high staff retention rates. The Adelaide Central Business District rental space is the lowest in mainland Australia.

A-grade CBD office - net face rent (\$/sqm pa)



Source: CBRE Research - Australian Office Q2 2022

Staff retention rates, 5+ years in current main job (% of employed)



Source: Australian Bureau of Statistics - Job Mobility [Table 1.2 - Labour mobility, retrenchments and duration of employment by state and territory, February 2023]



Adelaide CBD
Image courtesy of
Lightly Salted/Liam West

Innovation districts

Our sectors co-exist in hi-tech hubs and research centres, forging collaborative ecosystems that open doors and inspire new ways of thinking.

Defence Super District

34 kms from CBD

Key national defence research, manufacturing and sustainment hub housing the RAAF Base Edinburgh, Defence Science and Technology Group and major defence companies.

Osborne Naval Precinct

26 kms from CBD

Australia's largest naval shipbuilding hub incorporating a critical mass of world-class warship design and construction skills. Significant upgrades are slated to make it the most technologically advanced naval shipyard in the world.

Technology Park

17 kms from CBD

Hub for systems development and integration, information communications technology, advanced manufacturing and electronics, and home to over 100 small to medium enterprises, multinationals and start-ups.

Adelaide BioMed City

Adelaide CBD

AUD\$3.8 billion and medical innovation district with leading edge anchor institutes and companies that cluster and connect with start-ups, business incubators and accelerators.

Lot Fourteen Innovation District

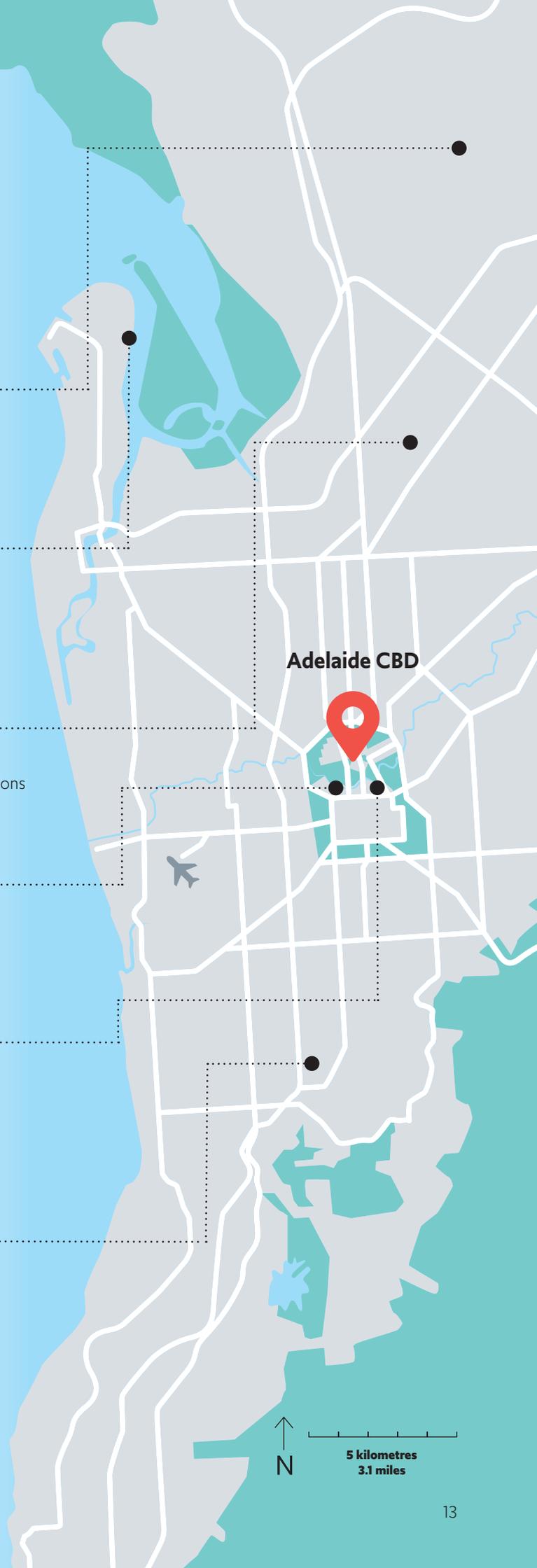
Adelaide CBD

Australia's first ideas and innovation neighbourhood and home to the Australian Space Agency, SmartSat CRC, Defence and Space Landing Pad, Stone & Chalk Start-up Hub, Adelaide, MIT Adelaide Living Lab, Australian Institute for Machine Learning and the Australian Cyber Collaboration Centre.

Tonsley Innovation District

12kms from CBD

Home to high-value manufacturing industries including defence, health, medical devices and assistive technologies, clean tech and renewable energy, software and simulation, mining and energy services.



Advantage Adelaide – live, work & play

South Australia is a great place to live, work and play. The capital Adelaide, is consistently ranked as one of the most liveable cities in the world.

Adelaide is a progressive, cosmopolitan capital offering a premium lifestyle with world-renowned festivals, major sporting events and iconic locations, such as the Barossa Valley, Kangaroo Island and Flinders Ranges.

South Australia's innovative, cost competitive and agile nature is luring more young talent, and the ability to rapidly scale and provide skilled workers in critical sectors has caught the attention of world-class companies.

We're forging global partnerships and leveraging our position as one of the most liveable and safest cities to grow our state and opportunities for everyone.

There's a strong commitment to collaboration among industries with specialist precincts, such as the Tonsley Innovation District and Lot Fourteen Innovation District, encouraging companies to thrive.

- **Shortest daily work commute of the major mainland cities – 21% less than Sydney¹**
- **One of the lowest cost of living capital cities in Australia²**
- **Adelaide's median house price is \$680,000 – 44% lower than Sydney³**

¹ Melbourne Institute: Applied Economic & Social Research, The Household, Income and Labour Dynamics in Australia Survey

² Mercer 2023 Cost of Living city ranking – Sydney 58, Melbourne 67, Brisbane 84, Perth 97, Adelaide 102

³ Australian Bureau of Statistics, March quarter 2023



Riverbank Precinct, Adelaide
Image courtesy of Olivia Dowling



The Gallery, Adelaide CBD
Image courtesy of South Australian Tourism Commission

The South Australian lifestyle

There is a year-round calendar of large events, entertainment, culture and excitement. Some of the best known cultural and arts events include the Adelaide Festival, WOMADelaide, Tasting Australia, Adelaide Fringe, Adelaide Cabaret Festival and OzAsia Festival. South Australia also hosts international and national sporting events including cycling's Tour Down Under and the Adelaide 500 car race.

Our Mediterranean climate – hot, dry summers and mild, wet winters – enables an exciting outdoor lifestyle. In Adelaide, you can dine outside, visit bustling laneways and rooftop bars. The thriving restaurant scene delivers a myriad of cuisines and memorable experiences. Visit over 680 wineries and more than 340 cellar doors - 200 within one hours drive of Adelaide.

Adelaide's coastline stretches more than thirty kilometres, delivering wide, golden beaches with clean seas for swimming, kayaking, surfing and more.

It's hard not to escape into nature with parks and walking trails everywhere.

Best of all, getting around Adelaide is effortless. Nothing is really more than 30 minutes away by car so it's easy to have a family, sporting and social life every evening and an action packed, or relaxing, weekend!

Adelaide delivers a better, more affordable lifestyle and opportunities – whether in the city or suburbs, on the coast or in the hills.

- **Most affordable unit rents and third most affordable house rents of any Australian capital city⁴**
- **Affordable and accessible childcare**
- **Good public transport and no toll roads**
- **Great public and private schools**
- **Adelaide's three public universities are ranked in the top 2% in the world**

4 Domain Rental Report, June 2023



WOMADelaide, Adelaide
Image courtesy of Grant Hancock

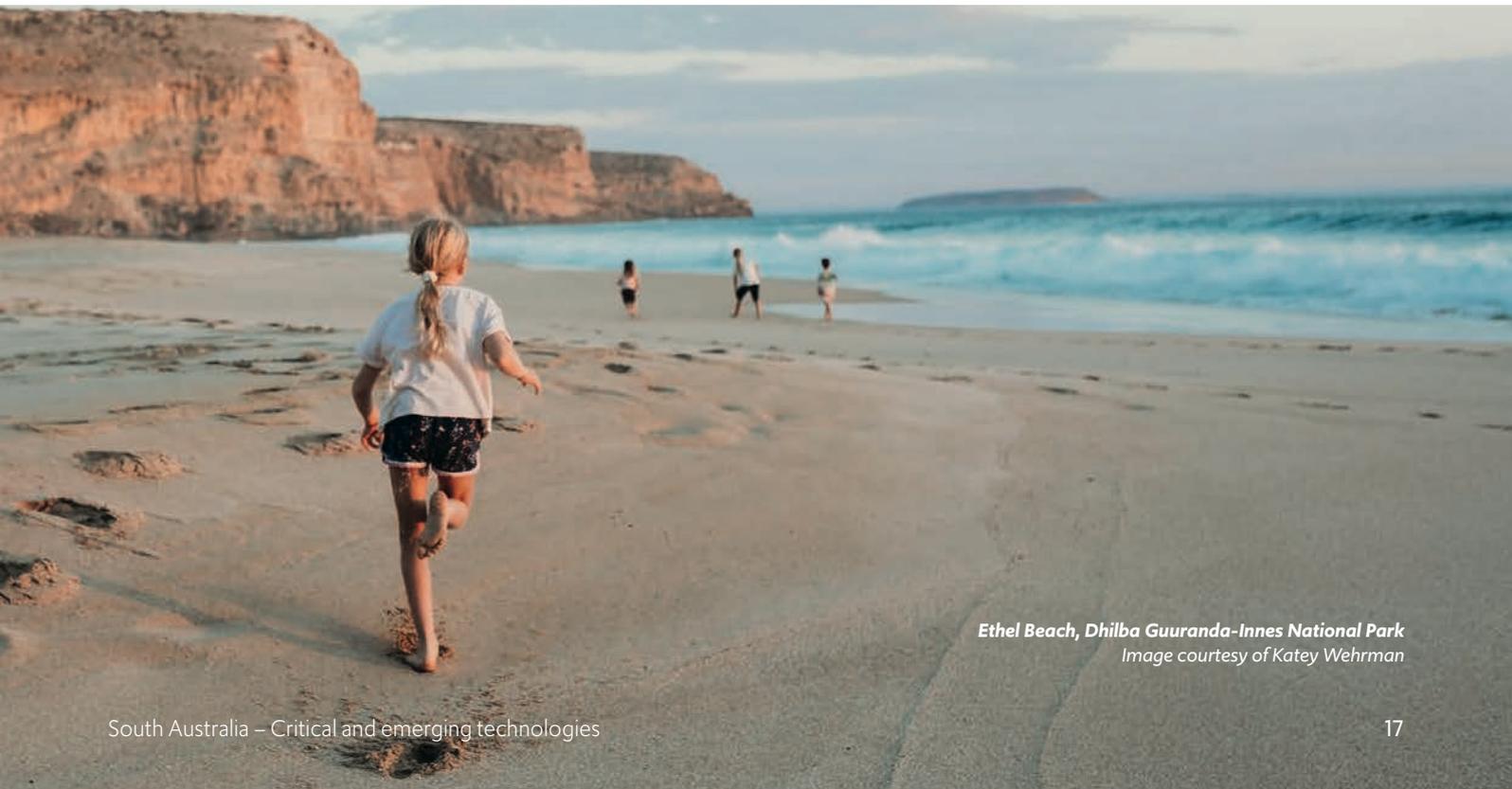
Barristers Block, Adelaide Hills
Image courtesy of South Australian Tourism Commission



The Arkaba Walk, Flinders Ranges
Image courtesy of South Australian Tourism Commission



d'Arenberg Cube, McLaren Vale
Image courtesy of South Australian Tourism Commission/ d'Arenberg Cube



Ethel Beach, Dhilba Guuranda-Innes National Park
Image courtesy of Katey Wehrman

Let's talk

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