



Australia's National
Science Agency

Sustainability Report

2023





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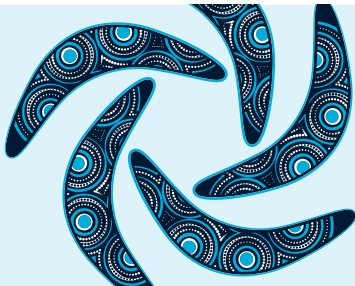
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Acknowledgement of Country

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the area that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present.





Message from our Chief Executive

As Australia's national science agency, CSIRO is committed to delivering national benefit for the community, both in the sustainable solutions our science creates and in the way we implement sustainable practices in our organisation every day. I'm pleased to present our second annual Sustainability Report, celebrating the progress we've made against our Sustainability Strategy 2020–2030 over the past year and looking forward to the enhancements we're committed to into the future. Sustainability is essential to the long-term success of CSIRO, and of our nation.

Last year, the Australian Government made it clear CSIRO has a crucial role in Australia's ambitions to achieve a net zero emissions future and to become a renewable energy superpower with an amendment to our legislation, reflected in our Statement of Expectations. These updates build on many decades of CSIRO research in energy and environmental science to develop solutions for all Australians, and flow through to how we run our operations.

This year, we continued to explore increasing renewable energy generated on our own sites – such as the 1.2 megawatt ground-mounted photo voltaic system at Tidbinbilla in the ACT – and made progress on our goal for our Newcastle Energy Centre in NSW to be our first net zero site by 2025. Further, to date we have achieved a 79 per cent reduction in scope 1 and scope 2 greenhouse gas emissions from our 2019 baseline and continued to improve our energy efficiency, with a seven per cent reduction in electricity and gas consumption across all buildings since our last report.

Harnessing our own research and innovative thinking, over the coming 12 months we will work closely with our experts in climate science to improve our understanding of CSIRO's exposure to climate-related risk, and to continue to progress mitigation and adaptation measures supported by our newly formed climate risk working groups. This year we also made progress in implementing ideas generated by our own people to make our sites more efficient, including experimenting with generating power inside our greenhouses in Brisbane by replacing shade curtains with solar film, which also filter the light and may enhance plant growth conditions.

Sustainability is broader than environmental considerations. It also includes ensuring CSIRO is a diverse, inclusive and vibrant place for our people to do their best work for Australia. This year, we achieved gender balance at both Board and Executive team levels; we welcomed our first Indigenous Board Member, Professor Alex Brown; and we endorsed our Diversity, Inclusion and Belonging Strategy 2023–2026. As we work on our fourth Reconciliation Action Plan this year, we remain committed to working more closely with Australia's first scientists on science solutions prioritised by Indigenous Australia; developing pathways that embrace Indigenous leadership in how we deliver our science; and fostering talent that is inspired and equipped to make a difference for the nation.

This Sustainability Report demonstrates our commitment and progress in strengthening CSIRO's sustainability performance so we can deliver on our purpose to solve the greatest challenges through innovative science and technology, both in our research and our operations. On a personal note, as I take up the position of Chief Executive at our national science agency, I am excited about the potential of our talented people to continue to drive new and innovative solutions to our diverse sustainability challenges. I share our people's passion for ensuring CSIRO is here for many generations to come and look forward to many future successes in sustainability.



Doug Hilton
Chief Executive

2022–2023

financial year highlights

First Indigenous
Board member
appointed



Gender
balance
at board and
executive level



Workplace Gender
Equality Agency

Among the first public sector
organisations to voluntarily
report to the WGEA

Diversity, Inclusion
and Belonging
Strategy
refreshed

Named Most Trusted
Government Service

Roy Morgan's Trusted
Brand Awards

Winner: Australian Financial Review
Sustainability
Leaders Award
Research and Development Leader



Climate-risk
working group
formed

3 Sustainability
Steering Committee
meetings held



7% reduction

in electricity and gas consumption
in CSIRO buildings since FY22



79% reduction

in scope 1 and 2 greenhouse gas
emissions from 2019 baseline

Modern slavery
training
developed

About

About CSIRO

We are Australia's national science agency. We play a foundational and multifaceted role in the economy, in Australia's innovation ecosystem, and in the global research and innovation landscape.

We provide the essential platforms and advice needed by a broad range of stakeholders, including conducting research pursuant to national priorities and directives. We collaborate with innovators to convert their discoveries and ideas into technologies, services, and best practices that benefit the nation. Our influence extends beyond Australia. We are a regional leader in international policy and development for climate, biodiversity, sustainability and food security.

We are an Australian Government statutory authority, with a board and Chief Executive. We are established by and operate under the provisions of the *Science and Industry Research Act 1949* (SIR Act), which sets out our functions and powers. The governance, performance and accountability of our operations, including the use and management of public resources, are set out in the *Public Governance, Performance and Accountability Act 2013* (PGPA Act) and related rules.

About this report

This report outlines our sustainability performance for the year ending 30 June 2023 (FY23) for our Australian operations. This is our second published sustainability report and should be read in conjunction with our Annual Report 2022-23¹, Modern Slavery Statement and Sustainability Data Pack.

This report was prepared in accordance with the Global Reporting Initiative (GRI) 2021 Universal Standards. It is also informed by recommendations from the Task Force on Climate-related Financial Disclosures (TCFD) and the United Nations Sustainable Development Goals (UN SDGs). The topics and disclosures that we report have been determined through our materiality process², which will be refreshed in FY24. KPMG has provided limited assurance over a selection of performance disclosures as outlined in their assurance statement³.

Our annual report provides a summary of our activities and performance for the financial year ending 30 June 2023 against the planned objectives and outcomes in our corporate plan and portfolio budget statements and aligned with our Ministerial Statement of Expectations.

¹ <https://www.csiro.au/about/Corporate-governance/annual-reports>




² See Appendix - Materiality

³ See Appendix – Limited Assurance Statement

Our approach to sustainability

At CSIRO, sustainability principles are at the heart of our purpose; they are fundamental to our science and how we operate as an organisation. Our operational approach is captured in [CSIRO's Sustainability Strategy 2020–2030⁴](#), which was developed in conjunction with key stakeholders and informed by international frameworks. The strategy was approved by our board in December 2020.

Table 1: CSIRO sustainability strategy

TARGETS AND MEASURES	FY23 PROGRESS	FURTHER INFORMATION	UN SDG
STRATEGIC FOCUS AREA 1: Better governance and transparency of sustainability performance			
Regular reporting to board, executive and steering committees	Reports to board: 1 Reports to executive team: 4 Sustainability Steering Committee meetings: 3	<i>Sustainability Report 2023 Oversight p. 8</i>	
Regular public reporting	Published first sustainability report in FY22 This FY23 report is the second public sustainability report published by CSIRO	<i><u>Sustainability Report 2022 – CSIRO</u></i>	
STRATEGIC FOCUS AREA 2: Working with our scientists to solve operational challenges			
Increased engagement with scientists and Missions on key sustainability issues	Preparing for future carbon offsetting	<i>Sustainability Report 2023 p. 38</i>	
	Phase 1 ‘shark tank’ project completed	<i>Sustainability Report 2023 p. 13</i>	
	Progressed climate risk management	<i>Sustainability Report 2023 p. 36</i>	
Establish Sustainability Advisory Panel (SAP) incorporating CSIRO science expertise	The SAP has not yet been established	<i>Sustainability Report 2023 p. 9</i>	
STRATEGIC FOCUS AREA 3: Building our capacity and understanding of sustainability issues			
Increase sustainability-related engagement activities	Joined a number of Australian Government working groups	<i>Sustainability Report 2023 p. 65</i> <i><u>APS Net Zero Emissions by 2030 Department of Finance</u></i>	
	Increased engagement activities with CSIRO people about local sustainability challenges and opportunities	<i>Sustainability Report 2023 p. 43</i>	
Analyse training needs and develop training materials	Modern slavery (MS) training needs assessment; developed MS training materials, conducted MS training for high-risk areas	<i><u>Modern Slavery Statement – CSIRO</u></i> <i>Sustainability Report 2023 p. 48</i>	

⁴ <https://www.csiro.au/en/about/strategy/sustainability/Sustainability>

TARGETS AND MEASURES	FY23 PROGRESS	FURTHER INFORMATION	UN SDG
STRATEGIC FOCUS AREA 4: A sustainable property portfolio			
Consolidate property footprint	Reduced our property footprint by almost 10,000 m ²	<i>Sustainability Report 2023 p. 39</i>	7 AFFORDABLE AND CLEAN ENERGY 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
Embed ecologically sustainable design (ESD) policy and principles into capital works	Incorporated ESD technical and reporting requirements into business processes	<i>Sustainability Report 2023 p. 41</i>	11 SUSTAINABLE CITIES AND COMMUNITIES 13 CLIMATE ACTION
	Developed smart buildings roadmap	<i>Sustainability Report 2023 p. 41</i>	
Undertake physical climate risk assessment	Developed baseline heat map of CSIRO sites	<i>Sustainability Report 2023 p. 36</i>	
STRATEGIC FOCUS AREA 5: Transition to a clean energy future			
Achieve scope 1 and scope 2 net zero emissions (NZE) by 2030	Reduced scope 1 and 2 emissions (market-based) by 79% from baseline year Reduced scope 1 and 2 emissions (location-based) by 8% since FY22 Reduced scope 2 emissions (location-based) by 16% since FY22	<i>Sustainability Report 2023 pages 44–46</i> <i>Sustainability Report 2023 Appendix, Data pack pages 66–69</i>	7 AFFORDABLE AND CLEAN ENERGY 12 RESPONSIBLE CONSUMPTION AND PRODUCTION 13 CLIMATE ACTION
Newcastle site net zero by 2025	Began installation of new ground-mounted solar PV; installed new reverse cycle chiller	<i>Sustainability Report 2023 p. 40</i>	
Understand transitional risks related to climate change	Formed climate risk working group	<i>Sustainability Report 2023 p. 36</i>	
	Progressed decarbonisation initiatives	<i>Sustainability Report 2023 p. 36</i>	
STRATEGIC FOCUS AREA 6: Responsible value chain and resource use			
Divert 80% waste from landfill by 2030	Appointed FTE to address waste target	<i>Sustainability Report 2023 p. 47</i>	6 CLEAN WATER AND SANITATION 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
	Commenced development of Waste Avoidance and Resource Recovery Strategy (WARRS)		
	WARRS working group formed		15 LIFE ON LAND
Integrate sustainability-related risk into procurement processes	Held monthly working group meetings	<i>Sustainability Report 2023 pages 48–50</i>	
	Developed draft sustainable purchasing tool; modern slavery risk assessment and training		
Implement supplier due diligence processes	Progressed SPIP actions; developed draft principles for responsible sourcing		

Oversight

Our sustainability strategy highlighted the need for greater transparency and governance of our sustainability performance. This includes greater transparency with internal stakeholders such as our staff and leadership teams, as well as external stakeholder groups, including the Australian community. Last year we published our first public sustainability report. We have a commitment to report to our board at least once per year, and we report regularly to our executive team on key issues.

Support at the board, executive and senior leadership level is critical to integrating good sustainability management into our culture and business processes.

In 2021 we formed the Sustainability Steering Committee (Committee). This is an executive-level committee that provides oversight and strategic direction to support the delivery of our sustainability strategy. As at 30 June 2023, membership included our Chief Operating Officer, our Chief Scientist, the Executive Director People, Executive Director Future Industries, Director Business and Infrastructure Services, Director Energy, Executive Manager Performance and Evaluation, and an external industry representative with extensive sustainability experience. The Committee Chair operates on a 12-month rotational basis, and as at 30 June 2023 this position was held by the Executive Director People. Over the reporting period, the Committee met three times.

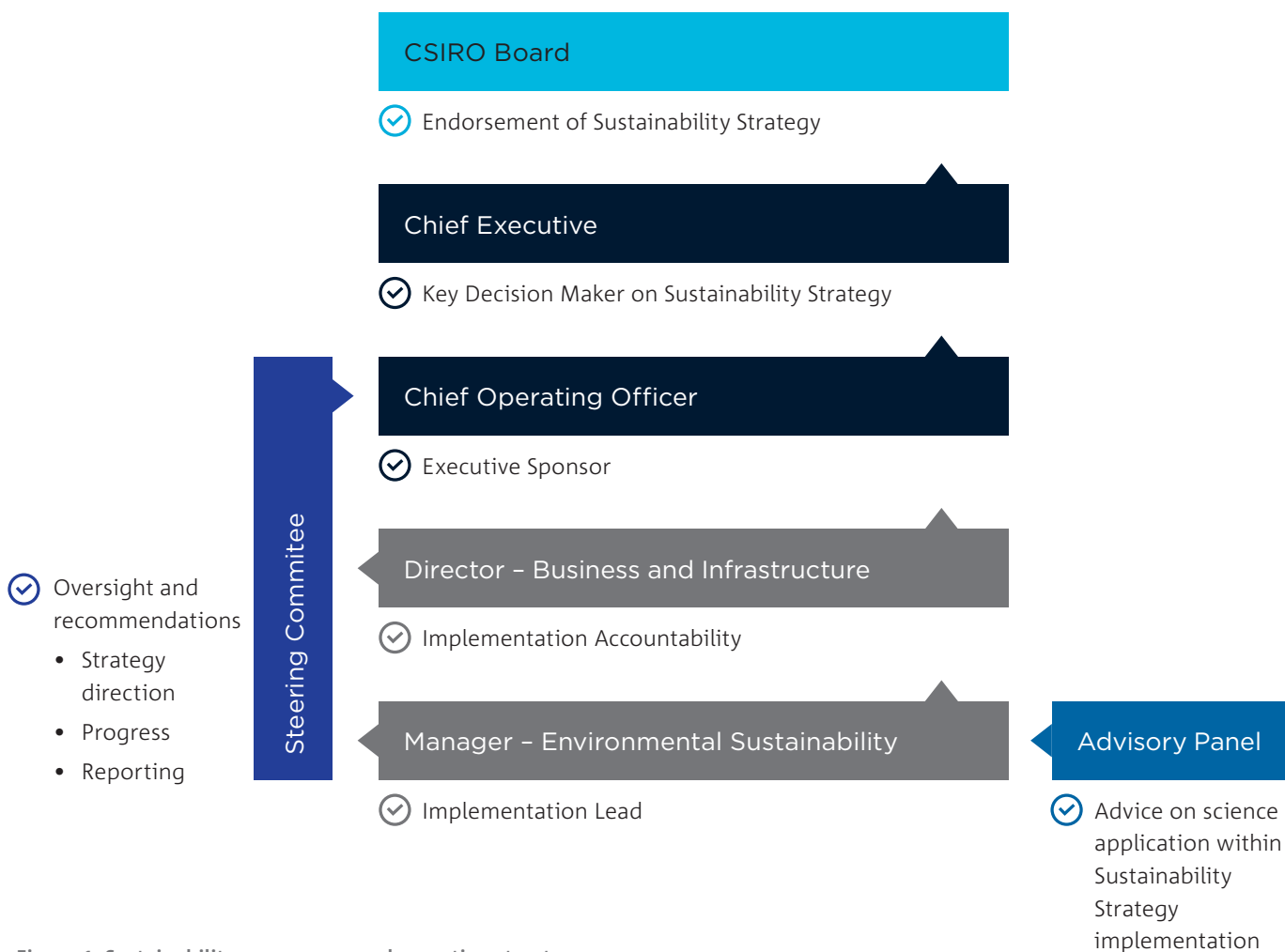


Figure 1: Sustainability governance and reporting structure.

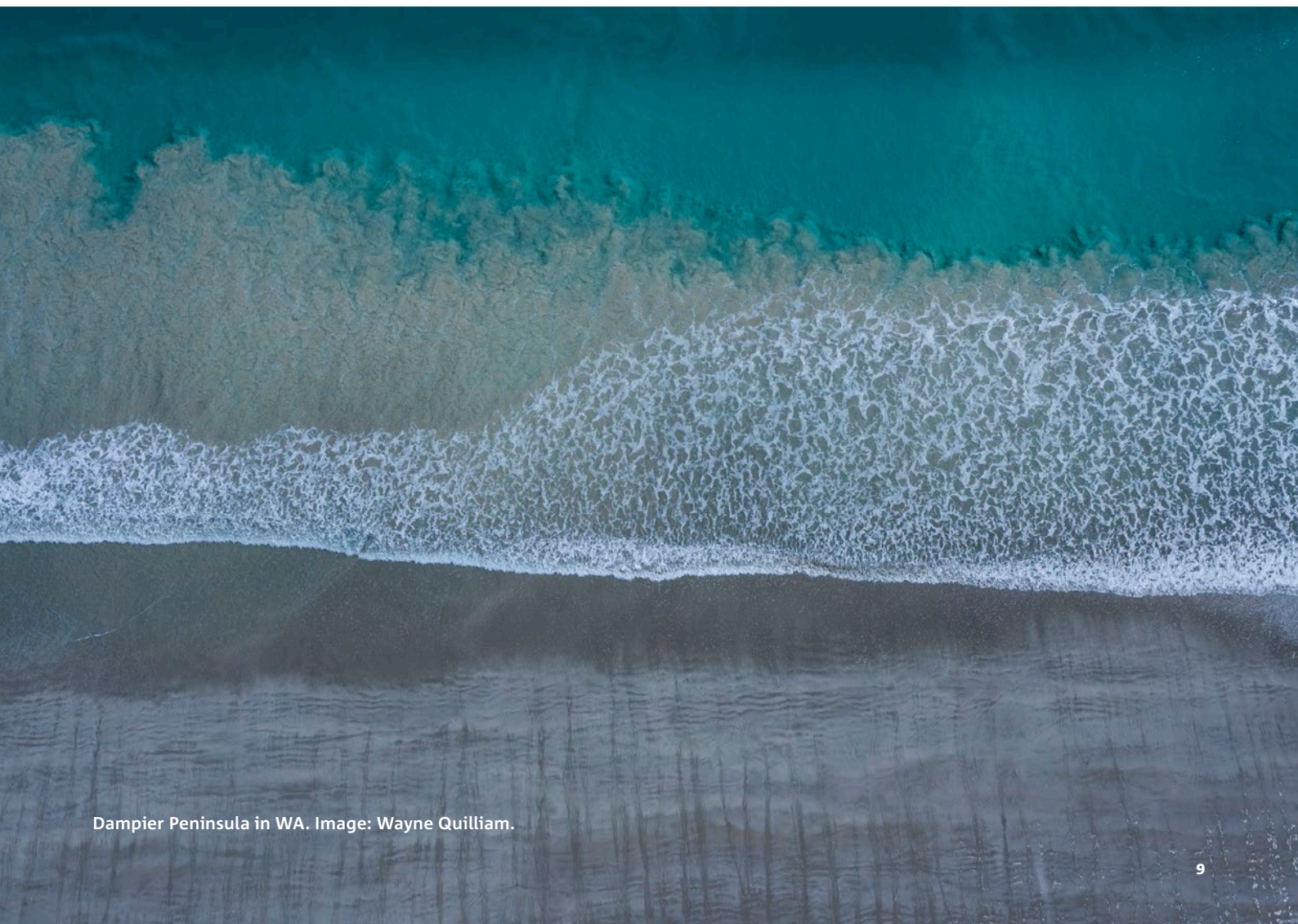
Topics reported on during the year included:

- Sustainability Strategy progress updates
- sustainable procurement, responsible sourcing, and human rights
- review of the FY22 Sustainability Report
- the Green Impact program
- smart buildings roadmap
- the CSIRO Diversity, Inclusion and Belonging Strategy
- waste management
- the Australian Public Service (APS) Net Zero policy.

Our Chief Operating Officer (COO) is the executive sponsor of our Sustainability Strategy, and our Director Business and Infrastructure Services (CBIS) is responsible for its overall implementation.

Our overall performance is supported by our system of governance, which prioritises accountable decision-making, and helps to ensure we conduct our work ethically, with integrity, and consistent with legislation. We consider and review our governance arrangements in light of public sector best practice, and also seek to ensure that lessons learned through our assurance, compliance, and audit programs are used to strengthen our systems, policies and processes. Our commitment to sound governance processes reflects our organisational values, and our understanding that high-quality governance is a driver of high performance.

We did not progress the establishment of the Sustainability Advisory Panel this year due to competing commitments. However, we did engage with our scientists through alternative pre-existing channels. In the next reporting period, we will review the advisory panel concept to determine whether it still represents the best governance model, or whether other pre-existing channels would equally support our purpose.





Our science

As Australia's national science agency, excellent science is central to our objective to deliver impact to industry, society and the environment. The work of more than 6,000 CSIRO scientists and support staff is centred around the sustainable development of our nation. Sustainability is at the heart of our purpose and is reflected throughout our science agenda. We work with industry, government and the research community to turn science into solutions to address Australia's greatest challenges⁵, including:

- **Food security and quality:** Achieve sustainable regional food security and grow Australia's share of premium AgriFood markets.
- **Health and wellbeing:** Help enhance health for all through preventative, personalised, biomedical and digital health services.
- **Resilient and valuable environments:** Enhance the resilience, sustainable use and value of our environments, including by mitigating and adapting to the impacts of climate and global change.
- **Sustainable energy and resources:** Build regional energy and resource security and Australia's competitiveness while lowering emissions.
- **Future industries:** Help create Australia's future industries and jobs by collaborating to boost innovation performance and Science, Technology, Engineering and Maths (STEM) skills.
- **A secure Australia and region:** Help safeguard Australia from risks (war, terrorism, regional instability, pandemics, biosecurity, disasters and cyber-attacks).

We identified these challenges through analysis of our own trend modelling and forecasting, including the Australian National Outlook report,⁶ engagement with our partners in industry, government and academia, and a review of Australian and international priorities (including the Australian Science and Research Priorities and the United Nations' Sustainable Development Goals (UN SDGs)).

To optimise the impact of our research, it is important that it is effectively planned, conducted, disseminated, adopted, and evaluated. Since 2010, we have developed and implemented an organisation-wide impact framework⁷ to plan, monitor, and evaluate the impact of our research in a consistent and comprehensive manner. Impact and evidence-based planning, monitoring and evaluation is an intrinsic element of our Planning and Performance Framework. This framework relies on engagement with all actors along the impact pathway to ensure our research is relevant and realistic, and that risks are identified and mitigated.

Close engagement with our stakeholders supports effective planning for the dissemination and application of our work. For example, our Missions program brings together research agencies, universities, industry, government, and community to work collaboratively on outcomes that lead to positive benefit, new jobs and economic growth.

Our commitment to ensuring the integrity of our research is enshrined in the Science and Delivery Policy and

supported by our Code of Conduct⁸ along with a vast array of supporting principles and procedures. These policies reflect the requirements specified in the Australian Code for the Responsible Conduct of Research⁹ (Code) for ensuring high-quality research, credibility, and community trust in the research. The Code is a national framework developed by the National Health and Medical Research Council (NHMRC), Australian Research Council (ARC) and Universities Australia. The Ethics and Integrity Team engage with relevant stakeholders across the organisation to improve and maintain compliance with the Code, the guides and guidelines that support it and other relevant legislation, regulations, and best-practice standards. Our commitment to the Code is a self-imposed obligation and requires continuous monitoring, review, and improvement across a wide range of areas related to research ethics and integrity.

Our adherence to strong ethical standards is an important part of maintaining our social licence to operate. The Ethics and Integrity Team aims to support this through the provision of advisory services to support informed and considered research planning and design, proactively identifying areas where practices can be improved and by providing targeted training and support to assist in developing skills and knowledge where it is needed. This promotes a strong and supportive ethical culture in the organisation and helps to ensure that we meet not only our own expectations, but also those of our stakeholders and the Australian people.

5 <https://www.csiro.au/en/about/challenges-missions/Challenges>

6 <https://www.csiro.au/en/work-with-us/services/consultancy-strategic-advice-services/CSIRO-futures/Innovation-Business-Growth/Australian-National-Outlook>

7 <https://www.csiro.au/en/about/Corporate-governance/Ensuring-our-impact/A-CSIRO-wide-approach-to-impact>

8 <https://www.csiro.au/en/about/Policies/Code-of-Conduct>

9 <https://www.nhmrc.gov.au/about-us/publications/australian-code-responsible-conduct-research-2018>

ETHICS awards

Any research involving the data, opinions and perspectives of people carries a special responsibility and the ethical standards around it must be of the very highest order. Celebrating best practice at CSIRO and showcasing the rigorous standards required in this field is recognised through a special award – the annual Award for Excellence in Research Ethics – introduced as part of our annual CSIRO Excellence Awards.

The 2022 award was presented to the Impact and Evaluation Team within CSIRO's Education and Outreach Unit. The team was recognised for its work on evaluation projects that explored the impact of CSIRO's educational programs where the application of strong ethical principles ensured participants could be confident their data would be secure, their wishes respected, and that they clearly understand the purpose of the evaluation.

'As a team, we feel our ethical practice is a continuous process of careful reflection and constant improvement, and we are really excited that our efforts have been acknowledged,' Executive Manager of CSIRO's Education and Outreach Impact & Evaluation team Chris Banks said.

'The team monitors and evaluates a range of STEM education programs and activities including Generation STEM, STEM Together, and the Digital Careers program to assess whether they are achieving their intended outcomes.'

'We seek feedback, insights, and self-reported changes in skills and attitudes directly from program participants and stakeholders who are often in the best position to assess the benefits of the program. Participants include students, parents, teachers, STEM professionals and industry representatives; so, having a robust framework of human research ethics approval in place is critical.'

More on the team's projects can be found on our website¹⁰.

The Excellence in Research Ethics award was originally established by CSIRO's Social Science Human Research Ethics Committee at the end of 2011 to recognise research that clearly embeds the ethical principles of respect, justice, and beneficence for research participants into a project's design and implementation. In 2022 the award was broadened to encompass all human research – both social science and health and medical research.



Presentation of the 2022 Award for Excellence in Human Research Ethics. Pictured are Sarah Renals, Lisa Walker, Chris Banks and Associate Professor Eric Vanman (Chair of the CSSHREC).



¹⁰ <https://www.csiro.au/en/education/programs/digital-careers>

During FY23, in accordance with our annual Statement of Expectations, we continued to have a strong focus on climate change, renewable energy, promoting STEM education and careers, and First Nation scientists. Our performance is extensively reviewed in our Annual Report 2022–23.

Climate change legislation

The Australian Government's climate change legislation package came into force on 13 September 2022. Among other things, the package enshrines Australia's commitment under the Paris Agreement to reduce its carbon emissions by 43 per cent below 2005 levels by 2030 and achieve net zero emissions by 2050.

To support this commitment, our statutory functions under s9(1)(a) of the *Science and Industry Research (SIR) Act 1949* (Cth) have been expanded to include:

(iiia) contributing to giving effect to Australia's obligations under the Paris Agreement;

This is consistent with our existing long-standing function to contribute to the achievement of Australia's national objectives and the research we already conduct to mitigate the impacts of climate change, develop adaptation pathways, and support Australia's transition to net zero emissions. The [Explanatory Memorandum](#)¹¹ to the amending bill acknowledges that the new function is not intended to limit, restrict or otherwise alter the other functions or powers already conferred on CSIRO by the SIR Act.

We have a unique opportunity within CSIRO to be able to engage with leading edge science when it comes to tackling our own sustainability challenges. In line with our strategy objective to work more closely with our scientists to apply our own expertise to operational challenges, last year the sustainability team hosted a series of net zero emissions (NZE) science workshops with the aim of identifying our science projects that can help us lower our emissions.

In June 2022 researchers from across CSIRO were invited to take part in an ideation process or shark tank type event to identify opportunities to apply their research to our own NZE challenges. A total of 24 teams of researchers were supported in articulating their plan to take their research through a commercialisation pathway.

This initiative gets the green light to help us reach net zero

When it comes to our organisational sustainability, we're very grateful to be able to pick the brains of our own innovative researchers.

Researchers from our Manufacturing, and Agriculture and Food business units presented their winning innovation at our first *shark tank* competition in 2022. The winning pitch to the shark tank was designed to reduce emissions by replacing shade curtains with solar film in our glasshouses.

The proposal was to install lightweight, semi-transparent, printed solar films that would generate power to run the glasshouses, while also potentially enhancing growth conditions through the manipulation of transmitted light waves.

As well as helping us explore how we can use our glasshouses to reduce emissions and improve plant growth, this project also has exciting research potential in the field of agrivoltaics.

The team has just installed the first solar films in our St Lucia (Qld) glasshouse and will work with the Manufacturing team to monitor plant growth and solar cell performance. The results will be used to develop solar cells that are optimised for plant growth, with further testing in the field to follow. A final report will look at plant growth and solar cell performance and calculate the potential emissions reduction if the technology was deployed in glasshouses across CSIRO.



11 <https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22legislation%2Fbillhome%2Fr6886%22>

Table 2: Stakeholder impacts by material topic

EXCELLENT SCIENCE		
MATERIAL TOPIC	KEY ASPECTS OF OUR RESPONSE IN FY23	STAKEHOLDERS MOST INVOLVED OR IMPACTED
National and international research partners	<ul style="list-style-type: none"> continued to develop new relationships and nurtured our established relationships to deliver impactful science across the CSIRO challenges continued to progress Missions program continued to participate in Collaborative Research Centres (CRCs) continued to progress joint publications with national and international research partners 	G E R C
Research dissemination and application, and impact measurement	<ul style="list-style-type: none"> launched three new Missions continued to develop impact case studies continued to progress Open Access arrangements to our research outputs continued to implement our Planning and Performance Framework 	G E R C
Impactful science and research areas	<ul style="list-style-type: none"> continued to progress research in areas responding to Australia's greatest challenges continued to operate national research infrastructure 	
Ethical science and research	<ul style="list-style-type: none"> full implementation of all recommendations from recent ethics in research internal audit to ensure best practice standards are being maintained revised internal procedures for human research ethics commenced digitisation project to assist with future streamlining of internal processes contributed to the development of a national Openness Agreement on Animal Research and Teaching in Australia increased levels of mandatory training for research staff to enhance capability levels continued to apply the <i>Australian Code for the Responsible Conduct of Research</i> via our <i>Code of Conduct</i> and <i>Science and Delivery Policy</i> continued to comply with internal and external monitoring and reporting requirements with support from the Ethics and Integrity team continued to operate independent ethics committees for all human and live animal research 	G E R C

G Government
 E Employees
 R Research and industry
 S Suppliers
 C Communities



Dampier Peninsula in WA. Image: Wayne Quilliam.

Our stakeholders

Solving the greatest challenges through innovative science and technology cannot be done by one organisation alone. We can only deliver on our purpose if we collaborate with our partners. That's why we continue to work with governments, businesses of all sizes, Australian and international universities and the wider research sector, the community, and internationally. We aim to harness the exponential power of our diverse, inclusive partnerships to amplify our impact and increase the benefit we deliver.

Effective and agile engagement with our stakeholders¹² is critical to achieving impact and delivering on our purpose. Our materiality assessment identified the importance of our stakeholders to organisational sustainability, with our relationships with government, collaborations with business and industry and our national and international research partners identified as key collaborations.

- We continue to be a key partner of government in provision of advice, assisting with decision-making and supporting the implementation of policies, programs and projects.
- Industry partnerships are a fundamental component of our approach to addressing national challenges, achieving impact, and supporting Australia's interests. We also support large corporates via dedicated innovation programs to address industry or market challenges.
- We have a long history of working with Australian small to medium enterprises (SMEs). The SME Collaboration Initiative supports SMEs to pursue their research and development (R&D) ambitions with improved and simplified access to innovation services and skills, training, and funding.
- We continue to collaborate with researchers in the wider scientific community, sharing knowledge, expertise, equipment and resources.
- CSIRO Global connects and strengthens Australia and the region's science and innovation ecosystem at an international level through key strategic partnerships.
- We deliver communications that engage, inform, and inspire the community, demonstrating the important role we play in helping Australia solve its greatest challenges.
- We work with Aboriginal and Torres Strait Islander communities and organisations to create Indigenous-driven science solutions that support sustainable futures for Indigenous peoples, cultures and Country.
- CSIRO's Education and Outreach programs contribute to widening and strengthening our national STEM talent pipeline.

We review our performance each year in our annual report, and explore our collaborations with small and large businesses, government bodies, international organisations, universities and others in greater detail.

¹² See Appendix – How we engage with our stakeholders

Working with our stakeholders

New biocontrol agent to help farmers fight fast-spreading weed

Our weed ecology expertise is tackling one of Australia's most challenging agricultural weeds, flaxleaf fleabane (*Conyza bonariensis*), which causes grain crop revenue losses of more than \$43 million each year. Flaxleaf fleabane is a fast-spreading weed from South America, growing up to one metre and is a prolific seed producer. Each plant can produce over 100,000 seeds and these can disperse long distances with the help of wind, water, animals, and vehicles, explaining its rapid spread throughout many cropping regions in recent times. Grain growers have battled flaxleaf fleabane for many years as the weed competes for soil and water across multiple stages of the crop cycle, which directly impacts production. Once established, it is very difficult to control.

In August, our researchers launched a pilot program to release a rust fungus from Columbia called *Puccinia cnici-oleracei* as a biocontrol agent to reduce the growth and seed output of flaxleaf fleabane. We imported the fungus to our high-security quarantine facility in Canberra and studied it extensively to determine if it would be safe to introduce to Australia, confirming all non-target plant species tested were resistant to infection.

We launched a small pilot biocontrol agent release program in September 2022 in partnership with more than 50 key stakeholders from the grains sector across Australia. Releases were focused on areas where flaxleaf fleabane infestations cause the greatest impacts on crop yield across New South Wales (focus on the Riverina region), Queensland (Darling Downs region), South Australia and Victoria.

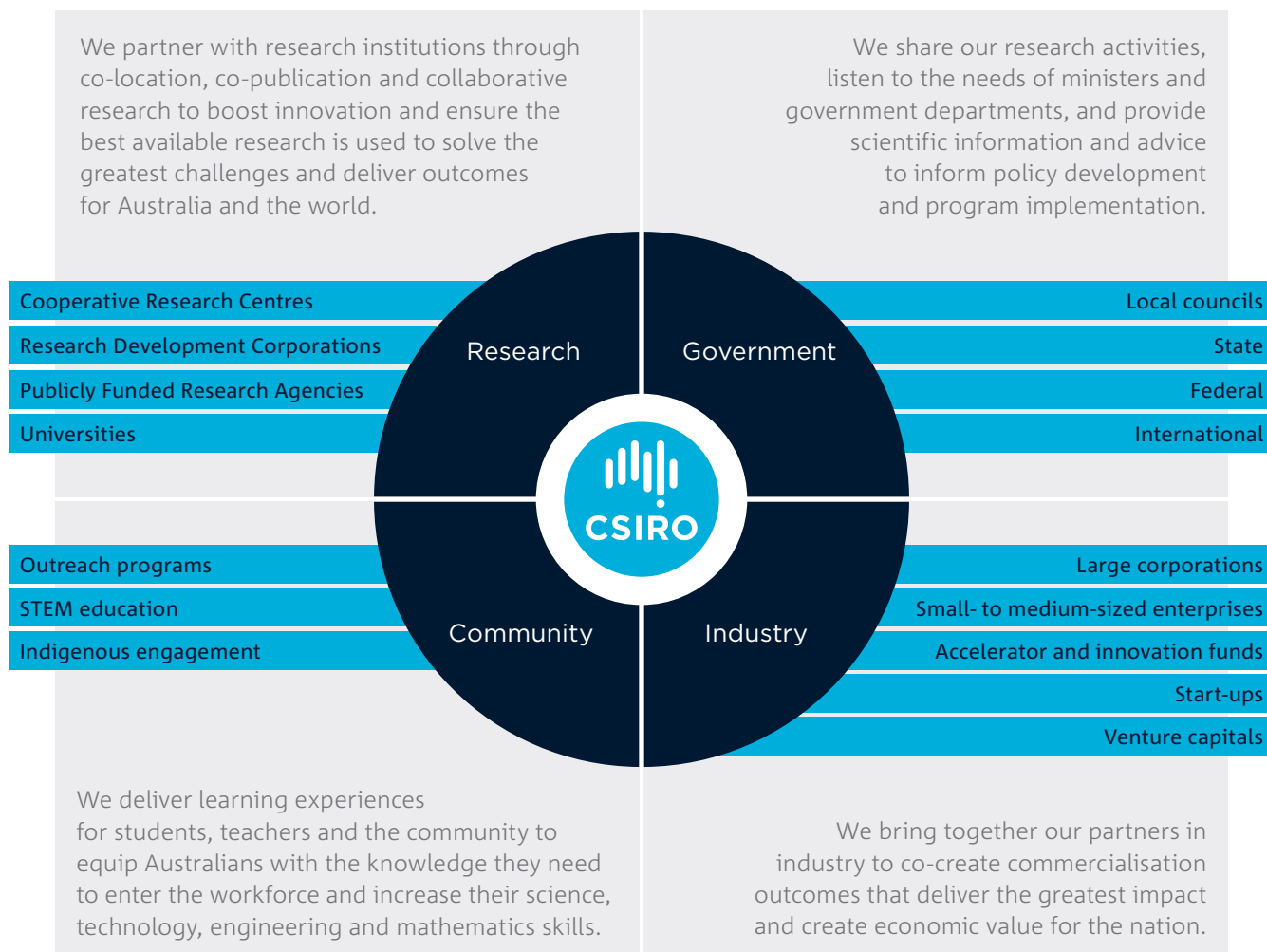
Preliminary results are showing that the fungus can successfully reduce flaxleaf fleabane seed set under conditions promoting fungal infection. The fungus is showing promise as a tool for controlling the weed that may reduce long term need for chemical herbicide application in some situations.

The spread of the rust fungus may accelerate as it increases in prevalence. Although highly effective, biocontrol agents can take many years to become widely established and thus represent long-term, sustainable and environmentally sensitive means of controlling weeds at a landscape scale.

The program was led by AgriFutures Australia and supported by the Grains and Research Development Corporation (GRDC), the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF), and the NSW Biocontrol Taskforce.



The fungus only infects flaxleaf fleabane, while all non-target plant species tested were resistant to it.



Understanding how our business partners and community view our organisation is important for future growth. We use the Net Promotor Score (NPS), staff surveys and other sentiment surveys to monitor our progress. The NPS is a customer loyalty metric that measures the likelihood of customers recommending CSIRO to others. A score of +49 represents a two-point increase from 2021–22 but did not reach the target KPI of +51.

As NPS scores range from -100 to +100 our score of +49 represents a good result which is considered excellent by industry standards. The survey indicates that 88 per cent of the respondents think we perform ethically, 91 per cent believe our science is of high quality, and 94 per cent like the way that they are treated. Staff availability and pace of engagement were noted as two areas where we could improve. We are evaluating this feedback as we focus on engaging for impact and improving our systems and processes to better enable us to move at the speed of business.

Table 3: Stakeholder impacts by material topic

PARTNERSHIPS AND ENGAGEMENT		
MATERIAL TOPIC	KEY ASPECTS OF OUR RESPONSE IN FY23	STAKEHOLDERS MOST INVOLVED OR IMPACTED
Relationship with government	<ul style="list-style-type: none"> adhered to the Australian Government's Statement of Expectations in line with our Statement of Intent continued to conduct research programs in collaboration with government continued to engage with our responsible Minister and other government departments and agencies 	G R
Collaboration with business and industry	<ul style="list-style-type: none"> continued to support partnerships with business and industry continued to progress mission program with business and industry launched the first national Community of Practice on SME Research collaboration continued to support the SME Collaboration Initiative continued to develop commercial applications of CSIRO research through industry partnerships 	G E R C
Community engagement and capacity building	<ul style="list-style-type: none"> continued to operate education and outreach programs expanded our virtual work experience program continued to manage the citizen science program STEM Together program continued to operate our Child Safe Office, improving our systems to increase compliance and developing education and training for our people and third party providers 	E R C
Action for reconciliation	<ul style="list-style-type: none"> launched Indigenous Research Grants program launched Indigenous Graduate program launched Indigenous Employment strategy continued to implement our third Innovate Reconciliation Action Plan 2021–23 managed the new Indigenous Science program and portal implemented new RAP reporting and planning processes implemented Weavr management program 	E R C

G Government
 E Employees
 R Research and industry
 S Suppliers
 C Communities



Our people

At CSIRO, our people are our greatest asset and at the core of our success. We work hard to attract and retain diverse, world class talent and provide an environment that prioritises the wellbeing, safety and security of our people, together with compelling and fulfilling career experiences. We are an inclusive and equitable organisation that values diversity and invests in the future capability of our workforce. We attract and retain great people through our compelling employee value proposition including benefits such as flexible work arrangements, promotions and reward options, scholarships, and awards.

Our Enterprise Agreement 2020–2023¹³ supports the success of our people through working conditions that attract and reward highly skilled and team-oriented people, support a safe and respectful workplace and enable a positive work-life balance. Our values are the foundation not only for the work we do, but also for the way we do it, and the way we work with our colleagues and a variety of partners every day.

CSIRO values

People first

People first behaviours are respectful, caring and inclusive.

Our first priority is the safety and wellbeing of our people. We believe in, and respect, the power of diverse perspectives. We seek out and learn from our differences. We do our very best to get all this right.

Trusted

Trusted behaviours are accountable, authentic and courageous.

We're driven by purpose but remain objective. We fight misinformation with facts. We earn trust everywhere through everything we do. We trust each other and we hold each other accountable. Together our actions drive Australia's trust in CSIRO.

Further together

Further together behaviours are partnering, cooperative and humble.

We achieve more together than we ever could alone. We listen and collaborate, in teams, across disciplines, across boundaries. We embrace ambiguity and use discussion and persistence to generate unique solutions to complex problems.

Making it real

Making it real behaviours are curious, adaptive and entrepreneurial.

We do science with real impact. We thrive when taking on the big challenges facing the world. We take educated risks and defy convention. We celebrate successes and failures and leverage them to learn as we strive to be the force for positive change.

¹³ <https://www.csiro.au/en/about/Policies/CSIRO-Enterprise-Agreement>

Building capabilities

Our mission at CSIRO is focused on solving Australia's most pressing challenges by harnessing the power of innovative science and technology. In this pursuit, our workforce's skills and readiness for future challenges are paramount, and our people hold the key to achieving our purpose. We are deeply committed to nurturing the capabilities, confidence, and connections of our people. We understand that fostering the right mindsets within our workforce is instrumental in driving our innovation performance and ensuring value creation for our customers. Our organisational learning approach is not confined to formal training events, but rather ingrained into our day-to-day operations.

Talent mobility

We have continued to invest in talent mobility through the *Talent Marketplace* initiative which will enable ongoing mobilisation of our people through short-term, development-focused work assignments across the organisation. Building on the previous Interchange program which delivered an internal talent marketplace for our people, *Talent Marketplace* will provide an enduring and systematic means for rapid matching of our peoples' skills to important strategic work, creating organisational flexibility, and unlocking career-defining on-the-job development experiences. *Talent Marketplace* will also provide us with a clearer view of skills across the organisation, making it a vital tool for us as we meet the challenges of a hypercompetitive talent market.

Our **Impossible Without You** recruitment campaign aims to attract Australia's next generation of inventors, innovators and change makers to CSIRO; maximising the impact of our science by recruiting the right people to help us deliver on our strategic priorities and missions.

This year we created 200 early to mid-career researcher roles and 50 roles targeted for Aboriginal and Torres Strait Islander graduates, the latter making up 20 per cent of our Impossible Without You campaign roles, tracking to exceed our initial target of three per cent. As at 30 June 2023, six per cent of new starters identified as Aboriginal and Torres Strait Islanders and our focus on diversity and inclusivity resulted in new starter appointments of

51 per cent identifying as male and 48 per cent identifying as female (with the remaining choosing not to identify as male or female), consistent with gender diversity targets of at least 40 per cent male and at least 40 per cent female. The campaign was a landmark program to build our future research capabilities and develop our brand as a destination employer.

In the final quarter of FY23 we launched our graduate programs to refresh our professional support services and create supported pathways for Indigenous scientists and engineers to develop research careers. Our campaign generated unprecedented interest in careers at CSIRO, attracting early mid-career researchers of diverse backgrounds from around the country and including Australians returning home from overseas. The advertising and recruitment process was deliberately inclusive of people from diverse backgrounds and demographics and emphasised further when we tweaked the campaign to 'Impossible without Diversity' to link with Diversity Month, the Sydney Mardi Gras and International Women's Day.

As the successful recruits have been commencing in their new roles, we have been piloting an enhanced orientation program to create interconnected cohorts, to catalyse boundary-spanning collaboration that builds the multi-disciplinary capability of CSIRO.

Talent attraction and retention

Talent attraction and talent retention are intricately connected, forming two essential facets of a unified strategy rather than isolated efforts. Our commitment to fostering talent attraction, coupled with our ongoing dedication to enhancing the employee experience, collectively establishes the ideal environment for nurturing and retaining our valuable talent. This dual approach is instrumental in securing and preserving our exceptional workforce.

Key programs include, among others, a refreshed enterprise-wide approach to onboarding and orientation for all new starters to encourage their engagement and support their success, a review and adjustment of our employee value proposition in order to attract and retain critical talent, building leader capability to support development of their people and create leadership career paths through a consistent approach, and continued proactive development planning for all of our people through the annual performance appraisal (APA) process.



The Indigenous Jobs Map

Indigenous ways of knowing and doing offer unique perspectives that are valuable for many employers and industries. However, Aboriginal and Torres Strait Islander peoples represent less than two per cent of the Australian workforce.

To successfully recruit from this small but highly sought-after pool of talent, employers need an understanding of the location, skills and qualifications of the Indigenous workforce.

Over the year we've developed the Indigenous Jobs Map¹⁴ to unearth these insights. The online platform collates big data on the Indigenous workforce in Australia. It also visualises market demand for Indigenous talent, using artificial intelligence to identify online job ads which either specifically target, or encourage applications from Aboriginal and Torres Strait Islander peoples.

Understanding the demand and supply of Indigenous workers can help employers increase Indigenous representation in their workforce. It can also inform Aboriginal and Torres Strait Islander students, carers, teachers, advisors and workers' career decisions, by revealing sectors and regions where they are in demand and the types of formal qualifications sought in these roles.

The map was developed by an Indigenous-led CSIRO team with representation from Data61, the Office for Indigenous Engagement, Science Connect, Environment, Operations, and Agriculture and Food, guided by a panel of Indigenous employment experts from the community and industry. We've made the map accessible and free online to encourage a holistic, collective response to increasing Indigenous employment in Australia.



Butchulla woman and research technician on the Indigenous Jobs Map project, Shanae Burns, with the Indigenous Jobs Map.

14 <https://indigenous-jobsmap.csiro.au/#/>

Indigenous Employment Strategy

Our new Indigenous Employment Strategy was launched in May 2023 as part of our National Reconciliation Week activities. The strategy provides strategic direction to the organisation and supports us in achieving a three per cent employment rate of Aboriginal and Torres Strait Islander staff and stretches this rate to five per cent to align with the Australian Government's employment targets.

The strategy focusses on holistic strength-based models of employment that build capability from innovation and accountability. This was demonstrated by the development and implementation of a unique and bespoke Indigenous Graduate program and the establishment of a CSIRO Indigenous STEM undergraduate and postgraduate scholarship scheme at 11 Australian Universities.

Graduate programs

We launched two new graduate intake programs to attract fresh talent into our research and enterprise services (ES) teams.

Our **Indigenous Graduate Program** was launched in March 2023 to deliver against national priorities in supporting the Indigenous science and technology sector by building the capability of Aboriginal and Torres Strait Islander graduates and developing the pipeline of future leaders of the innovation system. Our program offers three unique streams across enterprise services and research with a particular focus on supporting graduates through Higher Degree by Research studies to develop the next generation of Indigenous scientists and STEM professionals. The program welcomed 12 Indigenous graduates across the three streams in June 2023 with a further 38 positions to be filled next financial year.

This year we launched our inaugural **Enterprise Services Graduate Program**, an 18-month structured development program to invest in entry level talent for our enterprise services functions. Positions are being offered on an ongoing basis, with the formal program commencing 5 February 2024. The attraction campaign was hugely successful, attracting 1,577 applications for the 41 positions available across 12 different enterprise streams – 21 females, 20 males, including one Indigenous graduate. A six-month pre-engagement program will ensure that the graduates remain excited and committed to joining CSIRO in February 2024. The graduates will be supported during this period by a buddy, and the program will include several development touchpoints and enterprise leader question and answer sessions.



Health, safety and wellbeing

At CSIRO, the health and safety of our people is our top priority. Our Health, Safety and Environment (HSE) Policy demonstrates our public commitment to health, safety, and the environment, with commitments enabled through the HSE Management System (HSEMS) and broader framework. The HSEMS framework enables organisational leaders, with the support of a dedicated HSE team, to positively lead safe work practices and facilitate continuous improvement.

During the reporting period there was measurable progress across the HSE Strategic Plan. This included the implementation of an organisational wide approach to HSE management review, initiation of targeted assurance activities on core HSEMS elements, initiation of targeted HSEMS procedure reviews, initiation of core capability programs to enable researchers, operators and leaders to improve their HSE capabilities, refinement of HSEMS tools and supporting instruments, and commencement of frameworks for psychosocial risk, mental health and fitness for work.

A focus on finalising HSE Strategic Plan deliverables and revisitation of HSE fundamentals off the back of fresh reviews is planned over the next year. The implementation of the enterprise wide digital HSE Information Management System concluded with planned releases of assurance focused modules. These modules facilitate opportunities to measure performance, set baselines and explore opportunities for continuous improvement. Ongoing refinement and enhancement of the HSE Information Management System is scheduled over the coming year.

We value a balanced approach to understanding HSE performance, focusing on leading indicators reflecting positive initiatives and behaviours, and lagging indicators informing opportunities for incident prevention. We actively reviewed critical risks, demonstrating an ongoing culture of proactive critical risk management. Performance continued to rise for both hazard reporting and HSE conversations across the organisation. Strong commitment to HSE focused training was demonstrated with HSE induction, HSE supervisors and managers, and HSE risk management training completion ongoing at near 100 per cent. Total Recordable Injury Frequency Rate (TRIFR) dropped from 3 to 2.92 (2.85 if excluding contractors¹⁵), a welcome outcome, surpassing the 3.0 target.

Connected and collaborative

CSIRO has a geographically diverse workforce with over 6,300 employees working at 49 sites across Australia. The accelerated adoption and pace of new and flexible ways of working, due in part to the pandemic, has reinforced the way we work as a key enabler of the CSIRO strategy. The execution of key enterprise programs to improve how work gets done is how we will achieve our strategic vision.

We aim to operate with more adaptability, resilience, and responsiveness with a focus on enhancing our people experience and working seamlessly across the organisation to drive a more networked, sustainable, and impactful organisation. Key programs of work have progressed our goal of being more adaptive. We invested in our enterprise services functions to improve staff experiences with increased automation, self-service, and accessibility of information.

To ensure we can deliver on strategic objectives and commitments, we surveyed our people to understand how clear and aligned they are. This enables us to identify

and address cultural elements that are less visible when using engagement measures alone. The research-based tool we use to assess organisational culture, provides links between culture and organisational performance outcomes, and as such, is valuable for ensuring the sustainability of the organisation. We continue to invest in measuring and acting on our people's feedback about our culture to identify and implement improvements in how we work.

People Connect

In November 2022 we introduced People Connect, via our PeopleHub as our first port of call for all people (human resources – HR) related information and queries. People Connect is a one-stop online portal for HR matters and improves the way we can access our HR information and support. We now have the ability to comprehensively search for existing answers to our most frequently asked HR or people-related questions as well as submit a request for support, ensuring the right team can respond at the right time.

Showcases and webcasts

The People function supports regular showcases to draw perspectives from others across CSIRO at key points in the development of projects and programs. The cohorts invited to participate differ based on which groups will be most impacted by the change, but as a series, they foster a cooperative learning and listening culture and drive a customer focused approach to People initiatives.

Frontline leaders are a key cohort for the interpretation and realisation of strategic objectives. Their behaviours, attitudes and decisions greatly influence the actions of their teams, connecting strategic priorities to actions on the ground. Timely awareness of initiatives and opportunities that are on the horizon and a clear understanding of what actions are expected of frontline leaders is invaluable.

Leadership Bites is a monthly webcast series targeting our frontline leaders. This webcast series provides brief, clear, actionable updates on important organisational changes and initiatives.

¹⁵ For the purpose of the inaugural limited assurance for the employee TRIFR metric, contractors are excluded. Refer to appendix for KPMG Limited Assurance Statement. Data for the reporting period was extracted for assurance purposes on 19/09/2023.

Diversity, inclusion and belonging (DI&B)

Our vision as a leader in the public sector is to deliver a great experience for all our people. We are committed to building a workforce for the future that is agile, innovative and where each person feels like they belong and can contribute meaningfully.

Since the inception of our first Indigenous Engagement Strategy in 2007, we have made significant progress towards creating diverse and inclusive working environments. In recent years we have implemented a number of award-winning initiatives in key focus areas.

Our Diversity, Inclusion and Belonging (DI&B) Strategy 2023–26 was launched in January 2023. The strategy takes an integrated approach to DI&B. It builds on our strengths and identifies focus areas for organisational investment as we strengthen an inclusive *one-CSIRO* culture where we maximise talent and foster innovation.

This strategy is critical to our continued success as an inclusive employer. The strategy takes into consideration our legislative requirements as an equal opportunity employer, as well as key policies such as the Code of Conduct, our cultural aspirations, and our values.

As we go forward, it will be important to pay more attention to a multi-dimensional view of diversity and the skills and capabilities required for inclusive leadership. While the focus will be on intersectionality, targeted action plans aligned to our priority groups will enable us to make accelerated change through tailored initiatives.

Intersectionality is how we can understand and acknowledge that everyone has their own combination of unique experiences. People's lives are shaped by their identities, relationships and social factors. These can overlap to create advantages and disadvantages depending on a person's situation. It's how these factors combine that makes our experiences distinctly ours.

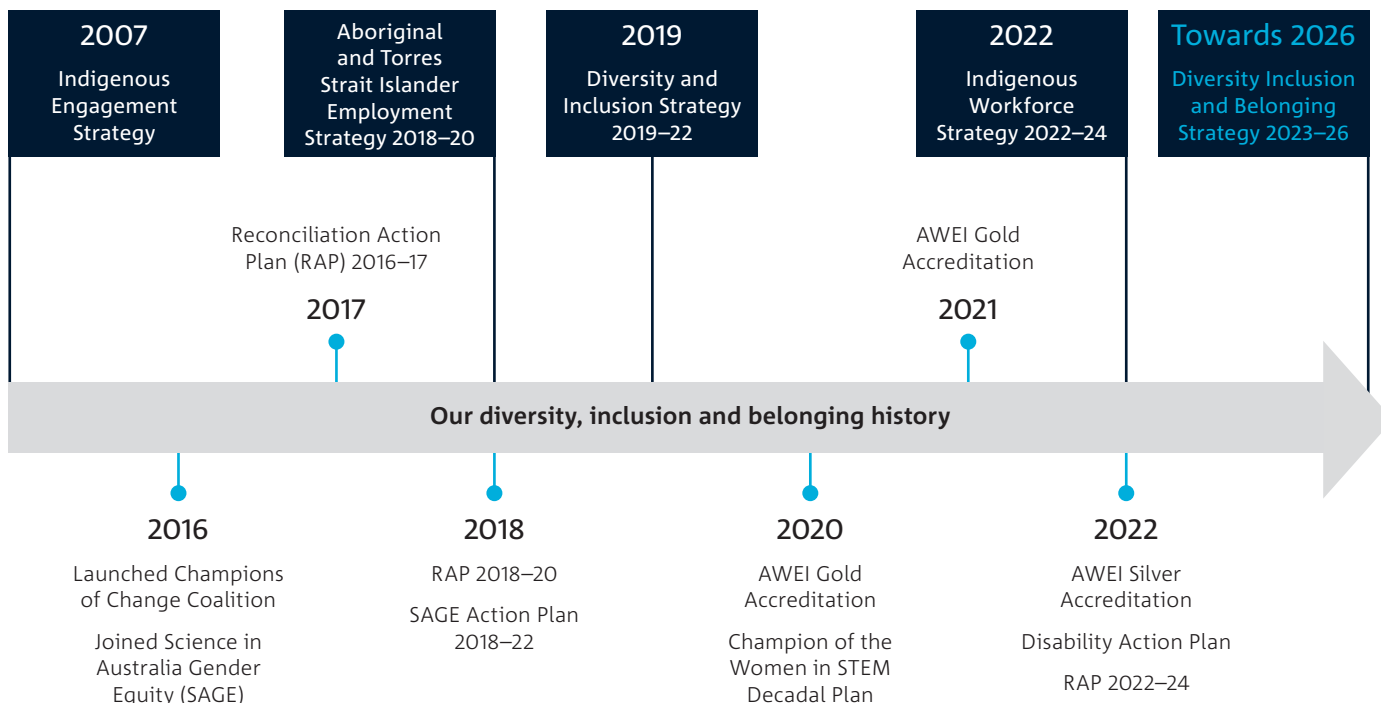


Table 4: Key focus areas of our DI&B Strategy

<p>Aboriginal and Torres Strait Islander people</p> <p>We will collaborate with our internal and external partners to improve employment outcomes for Indigenous People, working with our RAP to better understand the impacts of intersectionality.</p>	<p><i>Indigenous support network</i> <i>Office of Indigenous Engagement</i> <i>Reconciliation Action Plan (RAP) 2021–23</i> <i>Indigenous Employment Strategy</i></p>
<p>Gender equity</p> <p>We will adopt a broader view of gender equity, inclusive of diverse genders and identities. We acknowledge that as part of this work we must address gendered violence and abuse in the workplace.</p>	<p><i>Science in Australia Gender Equity (SAGE) Athena Swan Bronze accreditation (to 2026)</i> <i>Gender pay gap 2022 – 14% (total remuneration) based on calendar year 2021 data¹⁶</i> <i>Member, Champions of Change Coalition</i> <i>Women in STEM Decadel Plan Champion</i> <i>Domestic and family violence leave</i></p> <p>Positions held by women in CSIRO at 30 June 2023:</p> <ul style="list-style-type: none"> • 50% board positions • 50% executive team positions • 43.3% leadership positions • 37.9% research positions • 32.8% research leadership positions
<p>Disability and neurodiversity</p> <p>We will evaluate the work required to ensure that the social aspects of disability such as built environments, systems, attitudes and practices are minimised, so that people with disability can fully participate in work at CSIRO.</p>	<p><i>Disability Inclusion and Access Action Plan (DIAAP) 2023–26</i> <i>Disability working group</i> <i>Shine@CSIRO</i></p>
<p>LGBTIQ+</p> <p>We will continue to grow a safe and inclusive culture that celebrates and makes visible CSIRO's LGBTIQ+ community.</p>	<p>70 marchers in the 2023 Sydney Gay & Lesbian Mardi Gras Parade <i>Member, Pride in Diversity</i> <i>Australian Workplace Equality Index (AWEI) Silver Accreditation to Dec 2023</i> <i>Pride@CSIRO</i></p>
<p>Faith and culture</p> <p>We recognise that our workforce consists of many varied cultures and faiths, and crosses nations abroad. As part of the refreshed strategy this is a new priority for CSIRO. We will undertake to work with communities to provide culturally appropriate services and support</p>	<p>New in 2023</p>

The strategy is supported by an extensive suite of training modules offered to all staff including topics such as unconscious bias, disability inclusion, LGBTIQ+ inclusion, building psychological safety, and preventing bullying and harassment, to name a few.

¹⁶ Most recent available data

Workplace Gender Equality Act (WGEA)

In 2023, all government entities will be required to participate in WGEA reporting. As a leader in science and innovation we voluntarily reported in 2022. Our gender pay gap for 2022 (based on calendar year 2021 data)¹⁷ is 14 per cent (total remunerations). The gap compares favourably to our Professional, Scientific and Technical Services industry average of 24.4 per cent (February 2022 data published by WGEA).

The establishment of the Gender Action Plan working group will see the development and implementation of initiatives to address gaps focusing on growing our talent pipeline to increase the number of women at more senior levels (noting we have delivered balance at board and executive levels).



Among the first public sector organisations to voluntarily report to the Workplace Gender Equality Agency (WGEA)

Gender affirmation leave

Gender affirmation leave as a specific category of paid leave at CSIRO came into effect in January 2022, as a result of a partnership between the Pride@CSIRO network and workplace relations. Before this, we had been supporting staff affirming their gender using a range of leave and flexible working provisions, however specific

gender affirmation leave provides clearly communicated recognition and assistance for employees to undertake activities relating to affirming their gender without utilising other leave provisions. This is one of the many initiatives that volunteers at Pride@CSIRO have collaborated on to improve the experiences of LGBTIQ+ people in CSIRO. The work is undertaken using information and resources provided through our membership of Pride in Diversity and contributes to the Australian Workplace Equality Index benchmarking assessment.

Australian Workplace Equality Index (AWEI)

We have a long-standing commitment to LGBTIQ+ initiatives and have an active PRIDE network and working group, Pride@CSIRO. The network provides professional and social networking opportunities for LGBTIQ+ identifying staff and LGBTIQ+ friendly staff (allies). The working group promotes the inclusion of LGBTIQ+ employees by increasing the visibility of LGBTIQ+ identities and experiences and taking practical action to improve belonging, recognising the intersectional nature of LGBTIQ+ identities and experiences.

We are a member of Pride in Diversity, the not-for-profit employer support program for workplace inclusion, and have participated in the AWEI since 2020. The AWEI sets a comparative benchmark for LGBTIQ+ workplace inclusion for employers across all sectors. It compares organisations across a wide range of equality metrics, including policy, culture and training.



¹⁷ Based on calendar year 2021 data

Table 5: Stakeholder impacts by material topic

OUR PEOPLE		
MATERIAL TOPIC	KEY ASPECTS OF OUR RESPONSE IN FY23	STAKEHOLDERS MOST INVOLVED OR IMPACTED
An agile, future-focused workforce	<ul style="list-style-type: none"> reimagined People enterprise services functions to increase automation, self-service, and accessibility launched new graduate programs launched new Annual Performance Agreement (APA) system continued to implement the 'Impossible without you' campaign continued to develop the Talent Mobility Platform developed the Indigenous Employment Strategy developed the Leading@CSIRO framework 	E R
Connected and collaborative ways of working	<ul style="list-style-type: none"> launched new 'People Connect' platform continued to evolve our Ways of Working program conducted 'pulse' employee culture survey 	E R
Health, safety and wellbeing	<ul style="list-style-type: none"> launched 'Donesafe' safety reporting tool Implemented the enterprise digital HSE system began development of comprehensive HSE audit program enhanced CSIRO's Health, Safety and Environment management System maintained the HSE Resource Hub continued to conduct mandatory training 	E
Diversity, inclusion and belonging (DI&B)	<ul style="list-style-type: none"> launched Diversity, Inclusion and Belonging (DI&B) Strategy 2023–26 launched Disability Access and Inclusion Action Plan 2023–26 continued Workplace Gender Equality Agency (WGEA) reporting continued to operate DI&B focused recruitment and employment programs progressed SAGE Action Plan and associated programs 	E

G Government
 E Employees
 R Research and industry
 S Suppliers
 C Communities



Research Vessel Investigator returns to port in Hobart. Image: Matt Morrison.

Our business

We recognise that we hold a trusted position as the national science agency and that robust governance, risk management frameworks, data security, privacy and ethics are essential foundations for our business. They help us maintain our integrity and are central to our role as trusted advisor to government, industry, and the communities in which we operate. They support us to deliver on our purpose in accordance with our values. We have positioned ourselves to ensure that we are ready to face challenges as the world transitions to a digital future. We have implemented robust systems and processes to lay the foundation for our operational and financial sustainability.

The Australian community expects Australian Government entities like CSIRO to manage public funds effectively. Our freedom to operate relies on us having a sound financial management and accountability framework¹⁸. Our framework is built upon effective financial management strategies, procedures and practices, delegated financial authority at the appropriate level, and robust accountability systems that support the delivery of our science and strategy. The CSIRO Board is accountable for the delivery of financial management and accountability directives from the Australian Government. The CSIRO Finance business unit facilitates the acquittal of those financial obligations to the CSIRO Board via the Board Audit and Risk Committee.

We conduct our activities ethically and with integrity. Our conduct as an organisation is guided by our commitment to always act in the national interest. Maintaining our integrity is central to our culture, our scientific practice, and developing good business relationships. It ensures that we maintain public confidence in the science we undertake. Our Code of Conduct,¹⁹ Service Charter,²⁰ Fraud and Corruption Control Plan and the Public Interest Disclosure Scheme²¹ provide the foundations for our management approach.

The global security environment continues to evolve new challenges, and foreign interference and cyber security pose an ever-increasing threat to the integrity of our research. Maintaining a culture of collaboration and openness is important to our sharing of knowledge and expertise with partners around the world and to the development of science solutions and breakthroughs. Accordingly, security at CSIRO takes a risk-managed approach that balances the need for collaboration with appropriate protections for our people, research, national infrastructure, and data.

The safety of our people is our first priority, and a critical element in supporting them to deliver the cutting-edge science Australia expects. Our physical security approach is focused on our people's safety, providing advice, and delivering solutions that protect our people from security threats in their environments. The integrity and assurance of our information and communication technology operations and data is paramount as the organisation continues digital transformation in both the science and business spheres. The key focus is to maintain our ability to conduct global collaborations on secure platforms and facilities that provide the necessary confidence and assurance to our partners and customers. Cyber security is a shared responsibility within CSIRO with all parties playing key roles in maintaining overall organisational security hygiene.

We build trust by ensuring that we are responsible and transparent in our business practices, prioritise our people's health and wellbeing and listen to stakeholder feedback.

This year we won the inaugural **'Most Trusted Government Services Brand'** at the Roy Morgan Trusted Brand Awards²². We have remained the most trusted brand in the industry for over two years. The Roy Morgan Trusted Brand Awards bring together outstanding companies and brands across a range of industries to celebrate and recognise the unmatched levels of trust these organisations hold when compared to their competitors in their respective categories.



Roy Morgan CEO Michele Levine with 'Most Trusted Brand in Government Services' Award for 2022 winner CSIRO, represented by Head of Growth Jonathan Law.

18 <https://www.csiro.au/en/about/policies/finance-policy>

19 <https://www.csiro.au/en/about/Policies/Code-of-Conduct>

20 <https://www.csiro.au/en/work-with-us/Working-with-CSIRO/Service-Charter>

21 <https://www.csiro.au/en/about/Corporate-governance/Access-to-information/Public-Interest-Disclosure-Scheme>

22 <https://www.roymorgan.com/findings/9103-trusted-brand-awards-services-brands-and-companies>

Table 6: Stakeholder impacts by material topic

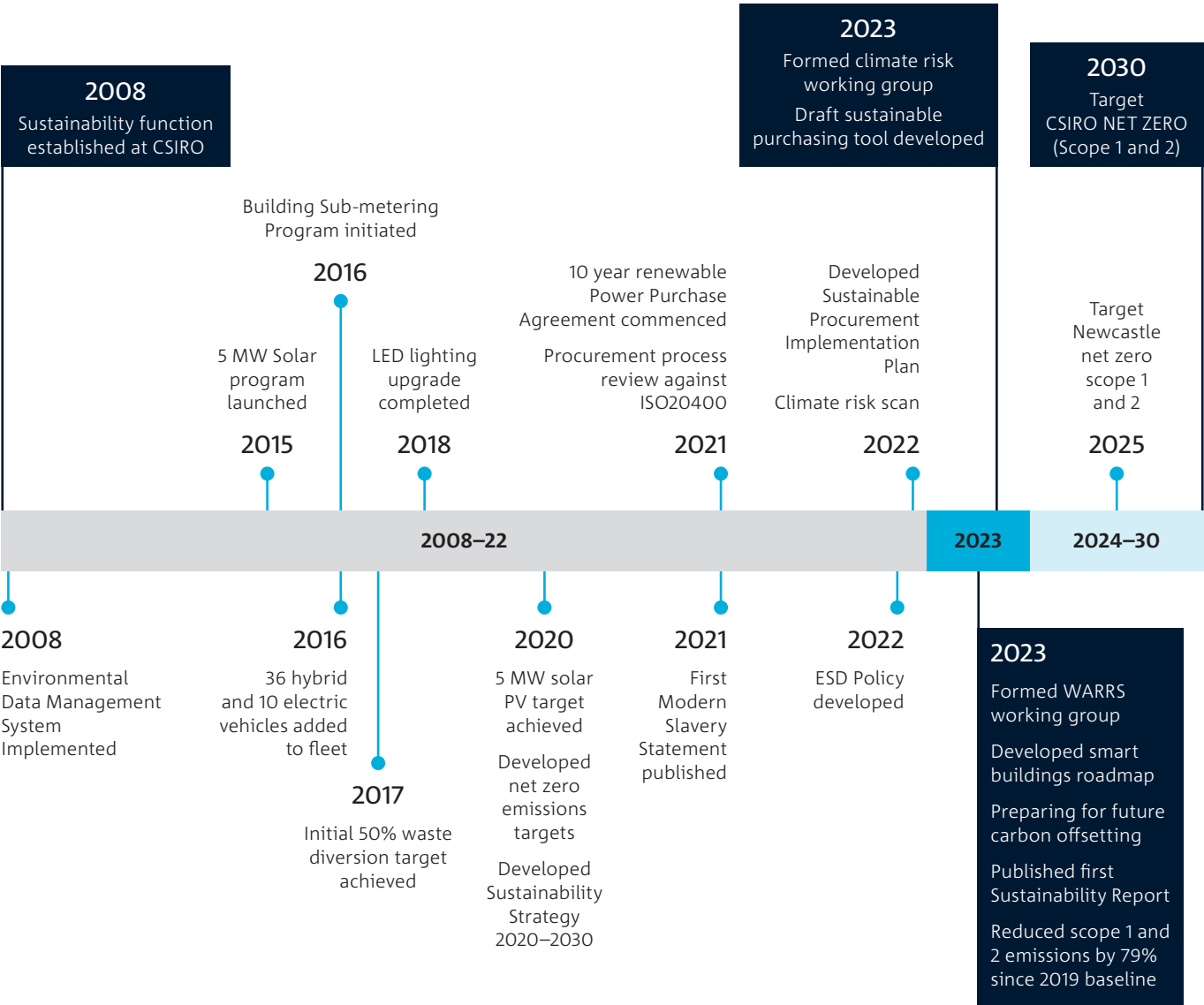
FOUNDATIONS FOR A SUSTAINABLE BUSINESS		
MATERIAL TOPIC	KEY ASPECTS OF OUR RESPONSE IN FY23	STAKEHOLDERS MOST INVOLVED OR IMPACTED
Financial sustainability	<ul style="list-style-type: none"> developed the Finance transformation program launched new Finance Service Desk partially automated credit card management system launched new procurement portal to provide an improved experience and better capture our commitments continued to evolve our annual performance and investment review (APAIR) to address financial planning on a four-year rolling basis continued to report financial performance in our Annual Report continued to apply our risk management framework and finance policy 	G E R S
Culture, ethics, integrity and trust	<ul style="list-style-type: none"> participated in <i>Communities of Practice</i> fora continued to engage with Australian Government and agencies continued to apply CSIRO Values continued to apply our Code of Conduct and Fraud and Corruption Control Plan, and maintained the Public Interest Disclosure Scheme continued to drive an engaged organisational fraud control culture launched the Speakup@CSIRO platform continued to conduct mandatory training 	G E R C
Data security and privacy	<ul style="list-style-type: none"> collaborated with Secure Australia Mission to effectively support national security hosted due diligence workshops bringing together government, university and research sectors to address key security issues began development of new security e-learning module to protect CSIRO people and CSIRO research in an increasingly challenging environment established a refreshed security committee conducted data clinics with more than 350 staff focused on research data governance and management continued to deliver the Cyber Security Uplift Program, aligning with industry baselines and standards continued to develop and implement our Privacy Management Plan, aligning to the Australian Government Agencies Privacy Code, reviewing year on year continued to conduct mandatory training 	G E R S C
Digital disruption and innovation	<ul style="list-style-type: none"> appointed new Chief Digital Officer completed rollout of the Science Digital Program, including the Data Stewardship program continued to evolve Labs of the Future initiative invested in high performance computing continued to deliver the Enterprise Services of the Future (ESOF) program, using digital technologies to support and enable critical business process improvement and transformation began development of The CSIRO Way and the Powering Collaboration Playbook 	E R C

G Government
 E Employees
 R Research and industry
 S Suppliers
 C Communities

Our environmental and social impact

As a leader in sustainability research, we recognise our responsibility to ensure we have sustainable operations, sites, and infrastructure that support our science. Since the establishment of our first sustainability team in 2008, we have been working to improve our operational impact. The Sustainability Strategy 2020–2030 provides the framework to responsibly manage our social and environmental impacts; while a robust data management system underpins our ability to accurately monitor our performance.

This year we continued to progress key actions under our Sustainability Strategy. Key programs of work centred on material issues including reducing our carbon footprint, ensuring a responsible value chain, understanding and responding to the risks and opportunities of the global climate transition, and the efficient management of our resources.



Risks and opportunities of the global climate transition

From higher temperatures, more extreme droughts and fire seasons, to floods and more heavy rainfall – Australia is already experiencing the impacts of climate change. Shareholders and regulators, in response, are demanding that businesses better assess and manage climate risks. Australian financial regulators now consider future climate risks to be material, foreseeable and actionable by businesses. As a result, companies are under increasing pressure to understand their climate risk across supply chains and to accelerate their climate transition.

CSIRO Climate Science Centre

Our science-led climate risk offering is empowering businesses to understand physical and transitional climate risk and prepare their business right down to the asset-level. Our holistic consideration of climate risk capabilities along with other emerging sustainability reporting requirements, such as nature-related financial risks, allows us to offer integrated assessments to support businesses through the development of environmental, social and governance (ESG) reporting and strategic asset management, investment decision-making and transition risk guidance. This information will assist businesses and their boards to meet their sustainability reporting requirements and help to strengthen Australia's overall resilience to climate change.

In 2023, the International Sustainability Standards Board (ISSB) introduced International Financial Reporting Standards (IFRS) S2 (final standard) for climate-related disclosures. It is anticipated that disclosure of climate-related risks will become a regulated requirement of Australia's largest companies in FY24, after these have been adapted for Australia by the Australian Accounting Standards Board (AASB). In addition, company directors who ignore or mismanage climate-related risks could be held personally liable for breaching their legal duties under the *Corporations Act 2001*.

We have long been an international research leader in developing the evidence, data and models that show how the climate is changing, and documenting government, business, and societal responses to increasing climate-related risks. We are working with industry, governments and technical partners to ensure that Australian climate risk reporting is appropriately informed, and that businesses are able to interpret the climate change knowledge landscape to translate it into actionable insights. We are also working closely with Australian financial regulators to provide best practice advice on how to set climate risk disclosure regulations, and help companies get the information they need to understand their risk; all to enable climate-informed decision-making and actions across all sectors.

Our work in helping business to understand climate risk draws upon a broad portfolio of multidisciplinary research and development across our entire organisation including environmental science and climate modelling. Data provenance and robustness are key features of our climate data and analytics.

We are providing access to a range of tailored climate data and synthesised information for the Australian private sector. This effort orchestrates meaningful engagement between industry and deep expertise from across CSIRO and the broader scientific community, to ensure climate intelligence solutions are solving priority industry challenges.

CSIRO climate research

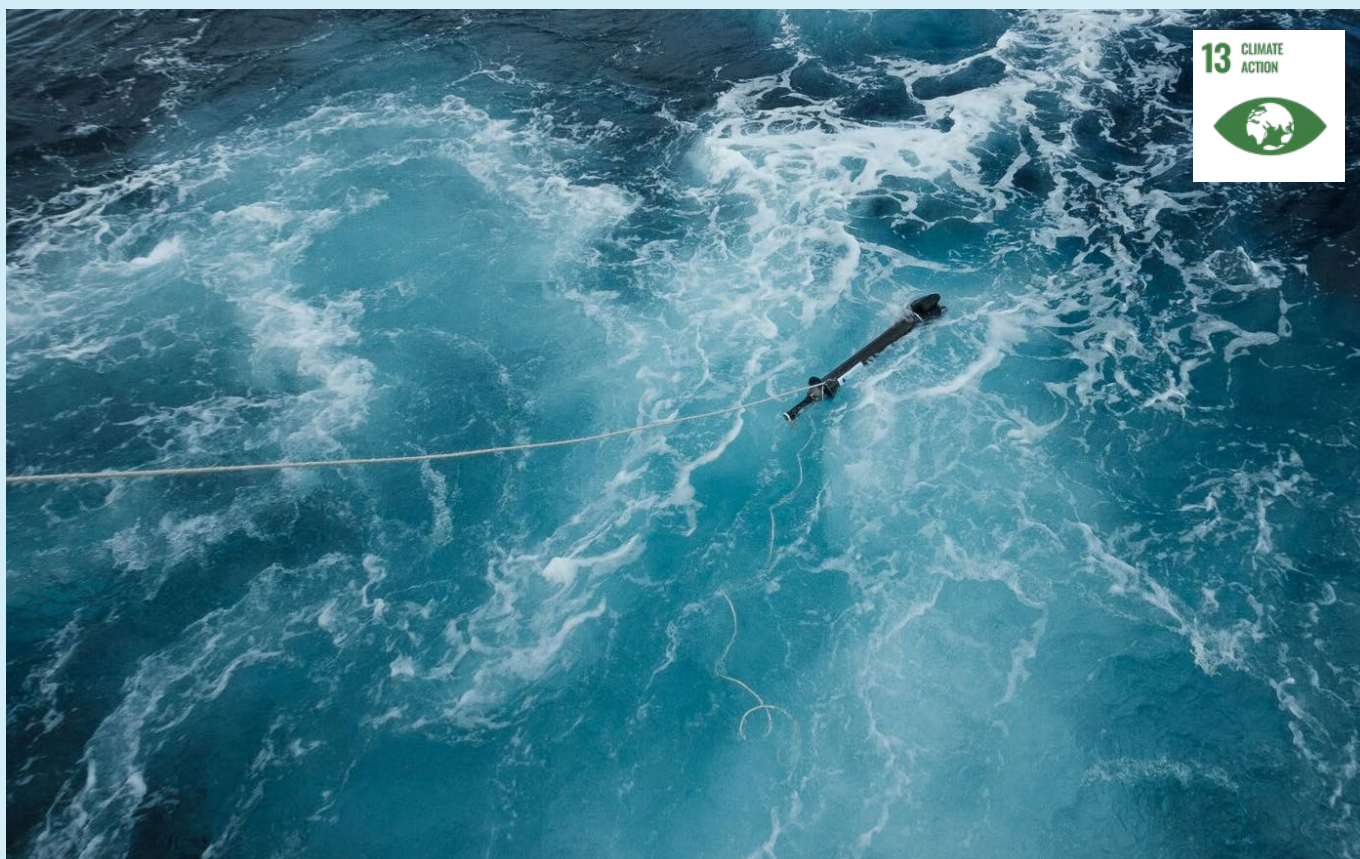
Our world-leading science around climate, earth, and environmental system modelling and collection and maintenance of long-term, sustained observations on oceans, atmosphere and climate underpin our deep climate knowledge, and actively help Australia fulfil its obligations under international environmental agreements, such as the Paris Agreement which aims to limit global warming to well below two degrees Celsius.

Our research portfolio comprises essential research involving decades of work in high quality, long-term atmospheric composition observations and climate modelling. We contribute to the *Global Carbon Project*, which develops annual global budgets for carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), the three greenhouse gases that contribute most to human-induced global warming.

We contribute to international efforts to collect ocean observations and provide leadership in ocean observing systems. These efforts enable continued ocean detection and monitoring studies which underpin more reliable weather forecasting and climate projections models.

For example, we're part of a major international program to fill key knowledge gaps in our understanding of the ocean through the use of a global array of robotic floats, known as Argo floats. Since launching the first ten Argo floats in the Indian Ocean in 1999 there are now thousands of Argo floats in operation world-wide. Given that our oceans strongly influence our weather and climate on land, this major scientific undertaking is enabling us to better understand Australia's climate, seasonal variability and climate extremes.

CSIRO's capability in Earth system model development is also world leading. Through continued investment in developing Australia's Earth system climate model, *ACCESS*, we continue to contribute to international climate change assessments that underpin future climate projections. Model data are used to drive higher resolution downscaling simulations to focus on regional responses for climate change. Our model capability contributes to natural hazard risk assessments to help prepare Australia to better manage weather and climate impacts and the associated future risks and opportunities.



Argo float deployed from Research Vessel *Investigator* Credit: Thomas Moore, CSIRO

Our progress

Last year we took our first steps towards understanding our own organisational exposure to climate-related risk, through an identification process with our Environment Business Unit (formerly Land and Water), using the Climate Compass framework²³. That process provided an initial high-level identification of potential areas of exposure, along with recommendations to progress our understanding, including improved governance and oversight through our Board Audit and Risk Committee (BARC).

To better understand physical climate risks, this year our Environment Business Unit developed a climate risk heat map of CSIRO sites, based on national-scale mapping of historical and current exposure to extreme climate events, developing a vulnerability score for each site based on factors such as climate hazard risk, staff numbers and exposure, and key research and scientific equipment vulnerability. This map helps to inform future planning and provides a baseline for future scenario analysis.

Our approach towards mitigating transitional climate change risks includes decarbonising our operations and transitioning to net zero emissions²⁴ by 2030. Our actions to date have focused on:

- setting a board-approved net zero emissions target²⁵
- developing our organisational net zero roadmap
- monitoring our emissions and energy use and improving our governance and reporting capabilities
- continuing to source as much of our energy use as possible from renewable sources
- focussing on energy efficiency measures
- consolidating our property footprint
- considering the future role of carbon offsets.

We have also formed a working group with a cross-section of representation across our business units and enterprise services teams to drive this work and help to integrate consideration of climate risk into business planning and risk management activities.

Over the next 12 months, we will be working with our scientists to better align our approach with new regulatory requirements, such as the anticipated new AASB changes, and best practice guidance on managing climate-related risk.

²³ Climate Compass – A Climate Risk Management Framework for Commonwealth Agencies (CSIRO, 2018). Climate Compass is a framework designed to help Australian public servants manage the risks of the changing climate on policies, programs and asset management. It was developed by CSIRO as part of the work plan of the Australian Government Disaster and Climate Resilience Reference Group.

²⁴ See Appendix – Glossary

²⁵ See Our performance p 44.

Transitioning to a clean energy future

As one of the larger emitters of greenhouse gases (GHG) amongst Australian Government agencies, and as a leader in climate science, we recognise our responsibility to manage our carbon footprint in alignment with global goals. This includes transitioning our organisation to a clean energy future through a mixture of technologies, energy procurement decisions, and financial instruments.

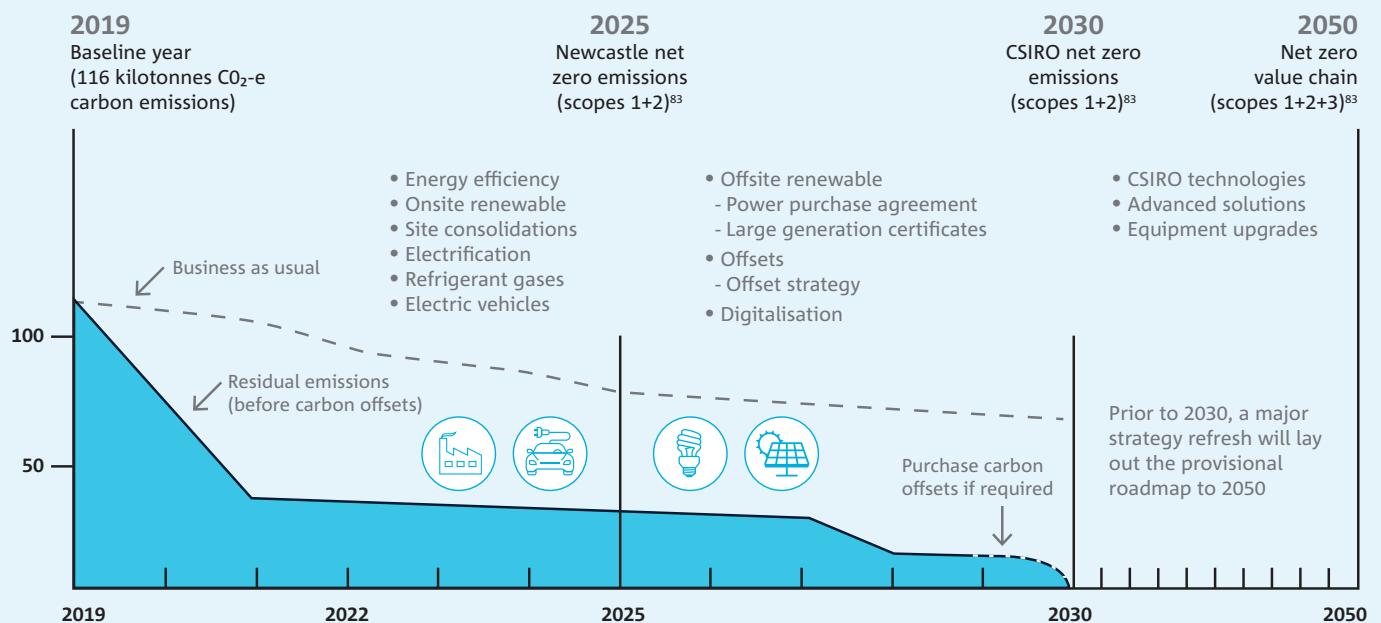
Our focus on managing electricity consumption is directly related to the significant impact it has on our overall emissions profile. Electricity is our primary energy source across the organisation and accounts for approximately half of our overall energy consumption. However, the associated scope 2 emissions are disproportionately larger at approximately 80 per cent of our total emissions²⁶. Therefore, our approach centres on improving energy efficiency, increasing on-site renewable electricity generation, and sourcing renewable electricity.

Our 10-year renewable electricity power purchase agreement (PPA) with Zen Energy continues to provide the strong foundation for the reduction of CSIRO's scope 2 emissions. Under the agreement, we purchase renewable electricity generated from Numurkah and Nevertire solar farms equivalent to our electricity requirements. We also purchase the associated Large Generation Certificates (LGCs) that are

subsequently surrendered voluntarily to the Clean Energy Regulator (CER) to abate our electricity-related emissions. In FY23, CSIRO surrendered 53,735 LGCs, equivalent to a reduction of 46 kilotonnes (kt) CO₂e.

In FY23, we continued to explore opportunities to increase renewable energy generated on our sites. We have almost completed the construction of a 1.2 MW ground mounted photovoltaic (PV) system at our Tidbinbilla site and began replacement of PVs damaged by hail at our Black Mountain site in 2019. We expect to recover capacity for on-site solar generation of 1,113 kW as PV systems come back online through FY24. We also assessed delivery models to install a 618 kW PV system at our Hobart site.

We have entered into a 12-month contract commencing FY24 for the supply of renewable electricity and LGCs at CSIRO-managed South Australian sites, which will place us on track to source more than 70 per cent of our grid-fed electricity requirements from renewable energy sources. This will significantly reduce our electricity-related emissions and complement our on-site solar PV infrastructure. We are currently investigating alternative contract models to ensure the longer-term supply of renewable electricity.



CSIRO pathway to net zero emissions

²⁶ Prior to accounting for surrender of Large Generation Certificates (LGCs).

A cleaner fleet

This year we worked with our business units to promote the more efficient use of our (more than) 740 fleet assets. We were able to reduce the number of vehicles down to 247 vehicles, a reduction of 21. Fleet vehicles include passenger, light and heavy commercial, and trucks used in a variety of research programs such as farming and marine research. Our Environmental Fleet Strategy aims to transition passenger vehicles to low or no exhaust emissions, while ensuring safety and fitness for purpose as our top priorities. This year we increased our number of electric vehicles (EVs) to 14, while reducing hybrids to 43.

There continue to be challenges in the transition to low emission vehicles, with limited choices that are fit for purpose, especially in the light to heavy commercial vehicle range, and access to supporting infrastructure such as charging points across our sites. EV chargers have been installed at the Black Mountain (ACT) and Clayton (VIC) sites. Further work is being done to determine opportunities to install chargers at our Kensington (WA), Geelong (VIC), and New Norcia (WA) sites. We are also investigating options to replace two light commercial vehicles at the Newcastle site by 2025, possibly through the electric conversion of existing vehicles.

Carbon offsetting

During the reporting period, we continued to develop our strategy and implementation plan for future use of carbon offsets to achieve our NZE targets. Although emissions reduction strategies are our priority in working towards NZE, a small portion of our scope 1 and 2 emissions will be hard to abate by our NZE target dates

(for example, emissions generated by use of diesel fuel on CSIRO's Research Vessel *Investigator*). We also anticipate that some carbon offsetting activities will be required to meet our beyond net zero target for abatement of material scope 3 emissions by 2050. Accordingly, we are laying the groundwork to enable future offsetting of those residual emissions. Some key questions we have been considering as part of this process include:

- What type of carbon credits we should consider acquiring?
- What kind of commercial arrangements should we use to meet our offsetting needs in the short, medium and long term, for example, purchasing carbon credit units from the spot market, entering into an agreement directly with one or more Emissions Reduction Fund (ERF) project operators, or establishing our own ERF project to generate carbon credits?
- How can our science support this process?
- What governance and risk management structures, systems and processes will be required to enable our future carbon dealings?

We are leveraging the expertise of our science and technical teams in answering these questions, through collaboration with our Towards Net Zero Mission and [CarbonLock](https://research.csiro.au/48lock/)²⁷ teams. Our Sustainability Steering Committee, as well as internal support functions such as Legal, Governance, Procurement and Finance, are also supporting this work, with input from external stakeholders and subject matter experts (such as carbon markets advisers) where required. We are also engaging with the Australian Government's broader APS Net Zero team, which is considering similar questions in relation to other parts of the Commonwealth.



27 <https://research.csiro.au/48lock/> CarbonLock is Australia's preeminent research program focused on permanent atmospheric carbon removal and is already playing a significant role in driving high-level engagement, new science, and policy nationally and internationally. CarbonLock continues working closely with partners, including other FSPs, universities and industry to develop verifiable, scalable, fast, responsible, and permanent carbon removal technologies.

A sustainable property portfolio

As an organisation, we have existed for over 100 years and have accumulated an extensive property portfolio over that time. One of our challenges has been to determine the best way to manage our ageing portfolio. This year we continued to implement our Property Strategy 2019–29, which provides the framework, process and governance for infrastructure decisions that underpin our science. A key component of the strategy is to consolidate our property holdings, allowing us to create a sustainable and efficient

portfolio, which delivers innovative labs of the future, vibrant sites and dynamic work and collaboration spaces that support and enable our science.

During FY23 we further reduced our property portfolio by almost 10,000m², totalling almost 70,000m² since we began implementing the strategy. Vacating sites can bring a range of challenges and impacts, but as we reduce our property footprint and the burdens of managing ageing infrastructure, we can focus on building or refurbishing our remaining facilities for the science of the future.

Labs of the Future (LOTF)

This year we continued to progress our LOTF program, designed to keep our facilities at the cutting edge of science and technology. A key principle of LOTF is to integrate digital technologies throughout our labs and equipment for improved safety, scientific excellence, and optimised efficiency. These may include digital assistants, augmented reality, automation and robotics, and electronic notebooks. The future lab capability will integrate virtual and physical technology and will often be shared between teams and across organisations.

A current example of a LOTF initiative is the new biological collections facility in Canberra (ACT), opening in 2024. LOTF principles have been incorporated into the design to enable delivery of the mission to discover and characterise Australia's unique biodiversity so that it can be conserved, managed and used to benefit our people, industry and environment.



Artist's impression of the exterior of the new National Collections Building, Black Mountain (ACT)

In addition to reducing our ageing property footprint, we have implemented activity based working (ABW) across select sites, with the intention that ABW is further applied across the portfolio as the opportunity arises. In addition to improving the utilisation and efficiency of existing and new sites, ABW offers our people flexibility and choice in how they work on site. With most of our people now adopting a hybrid model of working, ABW gives us the ability to reduce our desk-based footprint and to design spaces that meet the site-based needs of our people, focused on collaboration and team activities.



An ABW office space at our new Westmead (Sydney) site

Newcastle Energy Centre

We have set an ambitious target for our Newcastle (NSW) site to reach net zero emissions by 2025. This year, we initiated the construction of a ground-mounted PV system, which will increase our solar generation capacity by 264 kW, taking our total on-site solar generation capacity to 480 kW.

We also installed a 500 kW reverse cycle chiller, that will supply the site’s space heating and cooling requirements. This is expected to reduce the site’s scope 1 emissions by approximately 70 per cent, with detailed feasibility studies to be completed in FY24 to address the remaining heating load.



In addition to consolidating our property footprint, new builds and refurbishments are being guided by our Ecologically Sustainable Design (ESD) Policy and principles to futureproof our portfolio. The ESD Policy provides recommendations to achieve energy, emissions, and water efficiency and encourages a more sustainable supply chain by setting embodied carbon and waste targets.

We continued to work with our capital works team to socialise and assess the application of our ESD policy to our property program. We incorporated technical and reporting requirements into business processes, and our new National Collections Building provided an opportunity to apply the policy guidelines to an active construction project. In FY24, we aim to apply ESD policy guidelines to our Black Mountain Greenhouse Redevelopment Project.

Increasing the energy efficiency of our existing buildings is critical to meeting our NZE targets. In FY23 we worked closely with our facilities management teams to conduct detailed energy audits at our Clayton (VIC), Black Mountain (ACT), Hobart (TAS), Kensington (WA), and Waterford (WA) sites, which combined contribute to 35 per cent of our scope 1 and 2 emissions. The energy audits uncovered significant emissions reduction opportunities which have been included in our site-based sustainability management plans. We aim to deliver these over the next three years, with an estimated emissions reduction of 3.4 ktCO₂e.

Energy efficiency initiatives have been ongoing at our Clayton (VIC) site this year, with the optimisation of our largest chiller plant and the refurbishment of old air handling units with variable-speed electronically commutated (EC) fans. These upgrades have reduced our emissions by 250 tCO₂e per annum.

In FY23 we began investigating possible electrification of gas-fired plant and equipment on our sites. The on-site combustion of natural gas is primarily used for water heating and contributed to 46 per cent of our scope 1 emissions this year, though this figure is subject to annual variability based on our use of other fuel sources. Further detailed studies will be conducted in FY24 to guide future electrification projects.

This year we also initiated the first phase of our smart buildings roadmap. Focusing on robust data and digitalisation of our facilities, we have upgraded our building management system infrastructure at certain sites and continued using the i-Hub Data Clearing House (DCH) technology as an independent data layer to consolidate data collection. Underpinned by data in the DCH, we have initiated pilot projects which have already identified ongoing faults and new energy efficiency opportunities.

↓ **7% reduction** in electricity and gas consumption in our buildings since FY22



Digital-ready facilities

Increasing the efficiency and sustainability of legacy buildings present a challenge commonly faced by the building industry, as they often have poor infrastructure and systems to enable optimisation.

Having made several buildings digital-ready through our DCH technology, we ran a pilot project to test fault detection analytics at our Hobart (TAS) site. Using advanced algorithms to analyse data in the DCH, the analytics helps our operations staff proactively identify energy efficiency opportunities and faulty equipment.

The results from the pilot project have been extremely positive for both our research and operations. Our researchers have been able to gain new insights into how other buildings in the industry can be made digital-ready, while using the DCH has allowed our operations team to address potential cybersecurity risks, while achieving greater efficiencies than initially expected.



Engaging with our workforce

This year we continued to gather valuable insights from our people about local sustainability challenges and opportunities in their workplaces:

- Engaging through our Sustainable CSIRO Viva Engage (formerly Yammer) page, community discussion groups such as the CSIRO Climate Action Group, and site sustainability committees and working groups.
- We continued to roll out live energy dashboards at our Black Mountain (ACT) and Hobart (TAS) sites and learned about the significant energy savings being uncovered through careful monitoring of the dashboard at our Waite (SA) site.
- We ran online engagements and competitions with our people on HS-Me Day to promote more effective source separation and resource recovery.
- We supported our people in recovering, reusing, and recycling material at our Clayton site in Victoria through their site clean-up and surveyed participants to learn how we can do this better at future clean-ups.
- We supported staff in avoiding over 7000 single-use coffee cups through our participation in the Green Caffeine program at onsite cafes at our Black Mountain (ACT), Clayton (VIC), Hobart (TAS) and Kensington (WA) sites.
- We engaged with our scientists and sustainability champions in developing our first Green Impact program toolkit, which will be trialled in the second half of 2023, with support from Australasian Campuses Towards Sustainability (ACTS). The program will promote and incentivise sustainable actions aligned to our sustainability strategy and the UN SDGs and will inform future training and capacity building needs.

Also, in the year ahead we'll be...

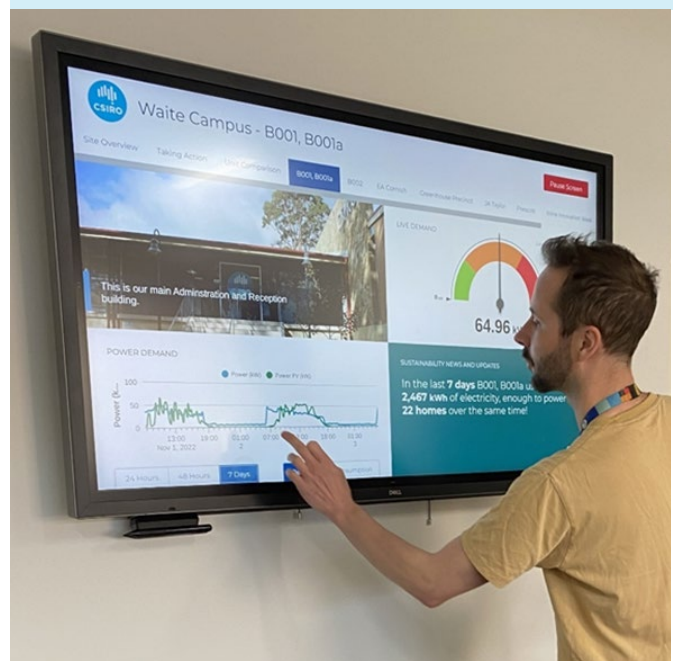
- collaborating with our Legal, HSE, Finance and Governance teams to develop improved guidelines for responsible redeployment and disposal of CSIRO assets, plant and equipment
- engaging with our operations team on the roll out of our smart buildings roadmap
- supporting our people in making a personal commitment to achieving sustainable outcomes through their Annual Performance Agreements (APAs)
- consulting with stakeholders across CSIRO on priority projects and programs as part of the development of our Waste Avoidance and Resource Recovery Strategy
- sharing learnings from our Newcastle site's pathway to NZE.

Dashboard data uncovers energy savings

Our live energy dashboards are proving to be an effective tool for highlighting electricity consumption and potential efficiencies on our sites.

At our Waite campus in South Australia the dashboard has already provided some valuable insights. Thanks to the vigilance of the Facilities Advisor on site, anomalies are being detected and investigated in response to dashboard data.

For example, in one of the buildings on site, energy consumption was remaining steady throughout the seven-day week. Guessing it must be the heating, ventilation and air conditioning system, the Facilities Advisor checked it out and found a faulty timer not distinguishing between weekdays and weekends. The timer was quickly replaced, and weekend electricity consumption instantly dropped by 80 per cent.



Live energy dashboards allow site electricity consumption and solar power generation data to be accessed by anyone on site.

Our performance

As part of our annual reporting obligations²⁸, we submit energy and emissions data to a number of regulatory bodies, including the Clean Energy Regulator and to our Australian Government portfolio Minister in line with the Energy Efficiency in Government Operations (EEGO) Policy. Our energy and emissions are reported in accordance with each program's organisational boundaries and methodologies. However, for the purposes of this report, we have adopted the EEGO boundary²⁹ for our energy and emissions footprint and net zero targets, as referenced in Table 7 below. A full breakdown of our data can be found in the environmental data pack in the appendix.

Over the reporting period our PPA delivered the equivalent of 66,176 Megawatt hours (MWh) of renewable electricity for CSIRO sites and abated 46 ktCO₂e of emissions, through the acquisition and voluntary surrender of LGCs. During the reporting period, we also reduced our gas consumption in buildings by eight per cent, and electricity consumption by six per cent. In addition, our onsite solar systems generated a total of 6000 MWh of renewable electricity for onsite consumption.

We continue to adopt a dual reporting approach, which has enabled us to claim a reduction of our overall GHG emissions inventory from our energy procurement decisions. This approach is consistent with the World Resources Institute (WRI) Greenhouse Gas (GHG) Protocol Scope 2 Guidance, which requires scope 2 emissions to be calculated and reported by both location-based and market-based methods³⁰. The market-based approach allows us to recognise GHG emissions reductions from the purchase and surrender of renewable energy certificates, such as LGCs, including LGCs surrendered under jurisdictional emission reduction policies (such as the ACT Government).

Table 7: CSIRO facility arrangements (EEGO boundary) for reporting purposes

FACILITY ARRANGEMENT	REPORTING BOUNDARY (EEGO BASIS)	EXAMPLE FACILITY
CSIRO-owned and operated (CSIRO staff, with or without tenants on-site)	Included, minus tenant energy use	Newcastle
CSIRO-leased and CSIRO-managed (CSIRO staff, with or without tenants on-site)	Included, minus tenant energy use	Waite campus, Adelaide
CSIRO-managed (on behalf of other entities) (CSIRO staff)	Included	Tidbinbilla
CSIRO-leased, site managed by landlord	CSIRO-only energy use included	St Lucia, Dutton Park
CSRO-owned, managed by third party	Included	RV <i>Investigator</i>

²⁸ See Appendix - Environmental reporting

²⁹ This boundary is based on the Energy Efficiency in Government Operations (EEGO) Policy boundary. It excludes tenants on CSIRO operated sites but includes sites where we are a subtenant. By contrast, the National Greenhouse and Energy Reporting Act (2007) boundary is based on operational control, and includes all tenants on CSIRO operated sites, but excludes sites where we are a subtenant and do not have operational control of the facility.

³⁰ The location-based method reflects the average emissions intensity of the electricity grids on which electricity consumption occurs (which in our case is the relevant State/Territory emissions factor) and does not consider our procurement decisions for renewable energy. Whereas the market-based method reflects the renewable electricity in our supply from procurement decisions. For example, contractual arrangements such as our PPA with purchase and voluntary surrender of LGCs. Under the market-based emissions, the residual mix factor was used to estimate emissions from the residual grid electricity, which is in accordance with section 6.11.4 of the GHG Protocol Scope 2 guidance.

³¹ The RV *Investigator* is a 94-metre ocean research vessel capable of delivering up to 300 research days each year. The vessel is available to Australian researchers for research, education and training activities. <https://mnf.csiro.au/en/RV-Investigator>

Location-based reporting method

Using the location-based carbon accounting methodology, in FY23 our total scope 1 and scope 2 emissions decreased by eight per cent from the previous year, and 23 per cent from the average of the previous five years.

Our total energy usage (including on-site-generated renewable electricity) was 685,226 GJ, up by six per cent from the previous year, and down by six per cent from the average of the previous five years. This year's increase in scope 1 emissions is largely due to the increased diesel consumption of the RV Investigator³¹ post-covid.

Jurisdictional impacts

At the time of our FY22 sustainability report, the ACT Government had established renewable energy and/or emissions-reduction targets, achieving 100 per cent renewable electricity for the Territory. The ACT Government purchased and surrendered LGCs on behalf of ACT-based businesses and residents, with the cost of the LGCs passed through to consumers. Hence, the ACT Government effectively surrendered LGCs attributed to electricity

consumption at CSIRO's ACT-based sites. Our FY22 figures for market-based emissions therefore applied the full benefit of that emissions reduction to our FY22 results.

Through our participation in the Corporate Emissions Reduction Transparency (CERT) Report, in FY23 we have adopted the market-based accounting method³² proposed by the Clean Energy Regulator to recognise the LGCs surrendered on behalf of a jurisdiction – in this instance the ACT. To ensure consistency, we have therefore applied this accounting method to our FY22 emissions calculations and have restated our FY22 emissions in Table 8 below. We have also adjusted the figures in the data pack in the appendix to reflect the new FY22 calculations. We will continue to apply this accounting method beyond FY23.

Table 8: FY22 emissions figures re-stated

METRIC	DATA PACK REFERENCE	FY22 REPORTED EMISSIONS	FY22 RE-STATED EMISSIONS
Scope 2 emissions (ktCO ₂ e) market-based	Table E1	4	6
Total market-based emissions (ktCO ₂ e)	Table E1 Chart E1	20	21
Electricity (grid, market-based) (tonnes CO ₂ e)	Table E3	2,792	4,190
Total scope 1 and 2 emissions (market-based) (tonnes CO ₂ e)	Table E3	19,759	21,157
Greenhouse gas emissions (tonnes/FTE)	Table E5	4	4 (immaterial change)

32 CERT report reader's guide (cleanenergyregulator.gov.au)

Market-based reporting method

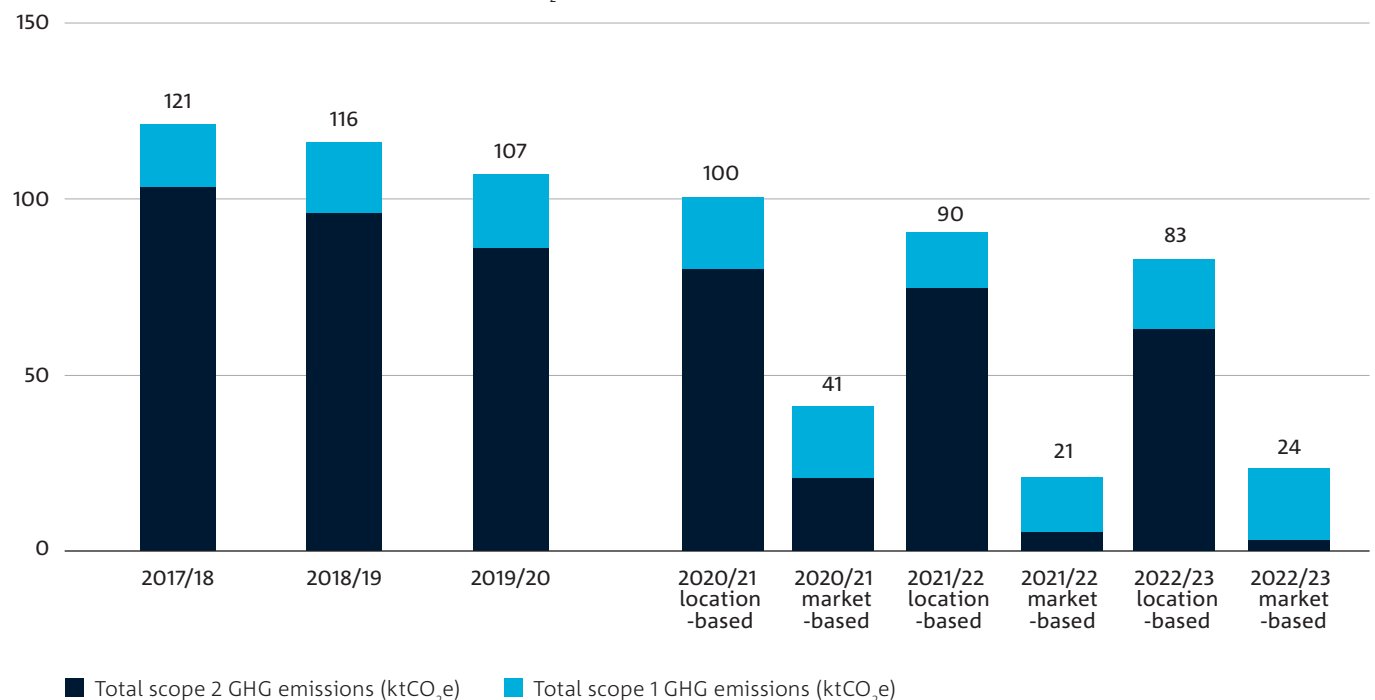
Using the market-based methodology, in FY23 our market-based scope 2 emissions fell to approximately four ktCO₂e, largely through the voluntary surrender of our LGCs and the impact of the ACT Government's renewable energy policy, whereby the ACT Government surrenders LGCs on behalf of business and residential electricity consumers as described above. As we have several sites located in the ACT, the LGCs surrendered by the ACT Government based on electricity consumption at our ACT-based sites have been included in our emission reduction calculations.

Our total residual scope 1 and scope 2 (market-based) emissions for FY23 were 24 ktCO₂e. This equates to a 12 per cent increase over the previous year (re-stated) and was largely due to increased scope 1 emissions compared to FY22 (29 per cent) from increased diesel consumption. Under the market-based accounting methodology,

our total emissions are significantly lower when compared to the location-based accounting method. As such, the increase in scope 1 emissions made a material increase to our total market-based emissions, which was only partially offset by the reduction in our scope 2 emissions (36 per cent) after the surrender of LGCs.

Since the 2019 baseline, we have reduced our electricity-based emissions by approximately 96 per cent³³ due to the purchase of grid-fed renewable electricity and surrender of associated LGCs, ACT jurisdictional impacts and on-site renewable electricity generation. However, future step-change emission reductions will be very challenging, given that CSIRO will be addressing the hard-to-abate emissions attributed to natural gas, transport and non-transport fuels. We do not intend to purchase carbon offsets to abate these emissions in the short term, preferring to focus on the implementation of long-term emission reduction solutions first.

TOTAL GREENHOUSE GAS EMISSIONS KILOTONNES (kt) CO₂e



CSIRO location-based versus market-based emissions

³³ FY23 market-based emissions compared with FY19 stated emissions.

Responsible resource use and value chain

Waste, water and air travel

The diversity of our research, the diversity of waste streams and the geographic spread of our sites makes a standardised approach to our waste management challenging. Our diversion rates have been declining in recent years and we recognised that we needed to concentrate our efforts to make improvements. At the end of FY21 we instigated audits at four key sites to better understand the challenges related to source separation and identify specific areas for improvement. We have also appointed a dedicated waste manager to help us reach our diversion from landfill targets and appointed a new waste management and resource recovery contractor covering our owned sites and some services at leased sites.

In FY23 we've been working to address the recommendations from the waste audits and to develop a new approach to waste management. In March 2023 we convened the first meeting of our Waste Avoidance and Resource Recovery Strategy (WARRS) working group. The group represents various business units across CSIRO and is supporting the development of our strategy and implementation plan to map our pathway to achieving our 80 per cent waste diversion from landfill target by 2030. Consultation on the draft strategy is now underway with key internal stakeholders.

Other initiatives have included revising our source separation education materials to clearly communicate

acceptable items and material for the various waste streams included in our waste management contract. We have worked with our new waste contractor to develop signage and online learning modules to provide staff with clear guidance on correct source separation.

Over the past year we've supported teams and business units with waste management through ad hoc site clean-ups and site divestments and we're working with our legal team and others to clarify our policy and guidelines with regards to safe reuse of plant and equipment within and outside the business.

Waste data integrity and accuracy has presented a challenge for us in FY23. During the reporting period we undertook a national transition from one waste management contractor to another, spanning a six-month period from late September 2022 through to early February 2023. Data reported for FY23 therefore comprises a composite of two data sources that overlapped during the transition phase, resulting in inherent potential for data errors. Best endeavours have been made to reduce errors to improve comparability to previous years.

Timely, complete and transparent reporting implemented by our new waste contractor will allow for a full financial year baseline to be set in FY24. To ensure that we set a baseline with a high confidence level in the integrity, completeness, and accuracy of data, an external data audit will be undertaken for FY24.



This year we undertook a risk-based approach to water management, conducting a risk assessment to identify sites prone to water resource stresses. Looking forward to FY24, we aim to work closely with internal stakeholders to develop water management plans for those sites to increase our resource efficiency and our resilience to water stress events.

Building on the water audits undertaken in FY22, this year we implemented water-saving measures at our Black Mountain (ACT) site. We addressed leaks, saving up to 24,000 kilolitres (kL) of water annually. We also upgraded water metering across the site to establish regular monitoring, which will allow us to proactively address excess consumption and detect further leaks.

The audits also provided high level designs for stormwater harvesting systems. The proposed systems have the potential to reduce our water use by 8,500 kL annually and will be considered as part of site master planning activities moving forward. Meanwhile, our ESD and smart buildings programs will improve our water efficiency through the installation of more water efficient fittings and improved monitoring of water consumption data.

Our air travel has continued to increase over the last two years with the lifting of restrictions following the COVID-19 pandemic, thereby increasing our scope 3 emissions. We work extensively with national and international research partners and staff dispersed across the country, necessitating air travel. We are aware of the impact of our air travel and shall undertake further analysis in FY24 with the view to developing a strategic position and emissions management plan.

Table 9: Waste, water and air travel

RESOURCE AND OPERATIONAL METRICS	GRI	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Mains Water Usage (ML)	303-5(a)	321	320	345	277	230	282
Waste Generation (tonnes)	306-3	2,380	2,370	2,085	1,721	1,384	1,588
Recycling Rate (%)	306-4	46	49	38	36	39	40
Air Travel (million passenger kilometres (pkm))		114	123	84	7	13	70
Air Travel (tonnes CO ₂ e, domestic)	305-3	-	5,211	3,303	748	1,084	4,023
Air Travel (tonnes CO ₂ e, international)	305-3	-	4,918	3,206	162	323	2,853

Our supply chain

We have a large and complex supply chain, and our procurement decisions can have a material impact on our environmental, social and economic performance. As an Australian Government statutory authority, we must comply with the Commonwealth Procurement Rules³⁴ (CPRs) when engaging in the procurement of goods, services and construction services. The CPRs are the keystone of the Australian Government's procurement policy framework and reflect the Government's commitment to sustainable procurement practices as well as emphasising the importance of paying suppliers on time, particularly small businesses.

We have a robust procurement framework. Oversight is provided by the Strategic Procurement team under Corporate Finance, which supports our staff to plan, source and manage the procurement of goods and services³⁵, ensuring compliance with both government and CSIRO policies and procedures, and achieving value for money for the organisation. We source a broad array of procurements from construction services to scientific equipment to energy, to name a few. In line with the Senate Order for Entity Contracts, we are required to publish biannually on our website a list of all contracts with a value of \$100,000 or more that fall within the reporting period.³⁶

We publish an Annual Procurement Plan (APP)³⁷ on AusTender, which provides information on significant procurements that we plan to undertake over the coming 12 months. The APP includes a concise strategic procurement outlook statement that broadly sets out any key major or strategic initiatives from which CSIRO expects procurements to arise.

Responsible and ethical procurement

This year we continued to implement the actions and initiatives set out in our Sustainable Procurement Implementation Plan (SPIP). The SPIP is a three-stage process over several years, transitioning from risk mitigation through to a shared value approach. The aim of the SPIP is to establish foundational and ongoing frameworks for us to assess and address environmental and social risks in our supply chain, such as greenhouse gas emissions, waste and modern slavery risk.

Over the reporting period we substantially progressed the first phase of the SPIP largely comprising risk mitigation activities, including:

- consistent monthly meetings of the Sustainable Procurement Working Group (SPWG) to drive SPIP actions
- identifying sustainability-related risks and opportunities
- assessing and defining higher-risk procurements through development of a sustainability impact matrix
- development of a draft sustainable purchasing tool
- development of draft principles for responsible business
- an independent review of modern slavery risks in our operations and supply chain
- development of modern slavery training materials and workshops
- engagement across the organisation on broader human rights issues
- a review of available grievance mechanisms.

34 <https://www.finance.gov.au/government/procurement/commonwealth-procurement-rules>

35 valued over \$400,000 GST inclusive

36 <https://www.csiro.au/en/about/Corporate-governance/Access-to-information/Contracts>

37 <https://www.tenders.gov.au/App/Show/4FDC9EA2-9DD7-B623-2CE6-67947907F0F0?ppId=&btnsubmit=View+Annual+Procurement+Plan>

Sustainable purchasing tool

Identification and reduction of our material scope 3 emissions is a key component of our beyond net zero target. To better understand these impacts, we undertook an initial high-level review of our procurement spend data. High-level emission estimates were calculated for each general ledger (GL) code using input-output data to identify emissions hotspots. Individual GL codes were then tested against adjusted GHG Protocol criteria, and prioritised as either high, medium, or low. This resulted in a prioritised list, focussing on high and medium risk procurement activities. Prioritisation processes were also undertaken for waste and modern slavery risk.

Based on these risk outputs, a decision support tool for our staff was developed to help drive sustainable purchasing decisions. The tool identifies key risks based on GL codes, the risk rating, suggests provisions for inclusion in tenders and provides support to evaluate tender responses. The tool is currently undergoing user testing and review by the working group.



Addressing modern slavery

We monitor the effectiveness of our modern slavery approach and are committed to continuous improvement. To measure the effectiveness of our actions, we continue to track our progress in our modern slavery statements. Through the modern slavery risk assessment conducted in FY22, we identified gaps in understanding which informed the development of training materials for our workforce. Over the reporting period we conducted several face-to-face workshops for staff working in areas of higher risk and developed online training materials for the wider workforce.

Raising concerns

We have implemented internal procedures to comply with the *Public Interest Disclosure Act 2013* (Cth) (PID Act) through a Public Interest Disclosure Scheme (the PID Scheme)³⁸. The PID Scheme promotes integrity and accountability by encouraging the disclosure of information about suspected wrongdoing, protecting people who make disclosures and ensuring we take appropriate action.

There are a number of other mechanisms within CSIRO to raise concerns. These include emails and contact lines, a centralised case management team, the Ethics and Integrity Team and Research Integrity Advisors. For non-PID matters, the recently launched SpeakUp@CSIRO platform provides a simple clear pathway to report concerns, allowing individuals to remain anonymous and to only be identified if they choose to be. The platform acts as a triage point and refers matters to the most appropriate teams to investigate, resolve or manage, and allows for consolidated reporting and monitoring of matters. SpeakUp@CSIRO was launched to create a safer CSIRO for everyone and to ensure that there are safe and trusted avenues, in addition to the already established pathways for our people and external stakeholders to speak-up on issues that are of concern to them.

During the reporting year, we also undertook an independent review of our current grievance mechanisms against the guidance under the UN Guiding Principles on Business and Human Rights (UNGPs).

³⁸ <https://www.csiro.au/en/about/Corporate-governance/Access-to-information/Public-Interest-Disclosure-Scheme>

Encouraging supplier diversity

Indigenous businesses

We aim to achieve greater Indigenous participation and are actively pursuing further opportunities to incorporate supplier diversity within the organisation through promoting the Australian Government Indigenous Procurement Policy (IPP).³⁹ We have voluntarily supported the IPP since July 2016. The purpose of the IPP is to leverage the Australian Government's annual, multi-billion-dollar procurement spend to drive demand for Indigenous goods and services, stimulate Indigenous economic development and grow the Indigenous business sector. We are also a member of Supply Nation, which has been endorsed by the Australian Government as the leading directory of Indigenous businesses. Indigenous businesses are defined in the Commonwealth Procurement Rules to be small to medium enterprises with at least 50 per cent Indigenous ownership. This year, we spent over \$10.4 million with Aboriginal and Torres Strait Islander-owned enterprises.

Over \$10.4 million

spent with Aboriginal and Torres Strait Islander-owned enterprises.

Small businesses

The Payment Times Reporting Scheme⁴⁰ (Scheme) aims to improve payment outcomes for small businesses⁴¹. It creates transparency on how and when large businesses pay their small business suppliers. The scheme gives small businesses (and members of the public) access to information on large business's payment performance. This helps small businesses make informed decisions about who they do business with. Making payment information available to the public also encourages large businesses to improve their payment times. The first reporting period for businesses with common income years was 1 January 2021 to 30 June 2021.

For the FY23 reporting year, we paid 97 per cent of small business suppliers within 20 days, and 98 per cent small business suppliers within 30 days⁴². Our six-monthly government reporting obligation data for small businesses is publicly accessible via our ABN search⁴³.

CSIRO named Sustainability R&D Leader

We were excited to be named Sustainability R&D Leader in The Australian Financial Review's Sustainability Leaders list in June 2023.



We were recognised for our sustainability strategy and annual sustainability report, which keeps us accountable, tracking our progress against our strategic goals. Chief Operating Officer, Tom Munyard, said, 'CSIRO's inaugural Sustainability Report shows the progress we've made in improving our environmental, economic and social impact, but we have significant and exciting work ahead to realise our ambitions. Driven by our passionate people, CSIRO is intent on becoming more sustainable and reaching net zero emissions, and inspiring Australia to do the same.'



Sustainability R&D Leader in The Australian Financial Review's Sustainability Leaders list in June 2023.



³⁹ <https://www.niaa.gov.au/resource-centre/indigenous-affairs/indigenous-procurement-policy>

⁴⁰ The scheme is governed by the Payment Times Reporting Act 2020 and the Payment Times Reporting Rules 2020. <https://paymenttimes.gov.au/>

⁴¹ Small businesses are identified under the Scheme using the Small Business Identification Tool (SBI Tool). A business is identified as a small business if they carry on an enterprise in Australia, have an ABN, had annual turnover below \$10 million for the most recent income year.

⁴² Calculated by value (\$ spend) of total small business spend in the relevant period

⁴³ <https://register.paymenttimes.gov.au/>

Table 10: Stakeholder impacts by material topic

ENVIRONMENTAL AND SOCIAL IMPACT		
MATERIAL TOPIC	KEY ASPECTS OF OUR RESPONSE IN FY23	STAKEHOLDERS MOST INVOLVED OR IMPACTED
Reducing our carbon footprint	<ul style="list-style-type: none"> commenced construction of carpark solar PV system at Newcastle contract secured to supply renewable energy for South Australian sites for FY24 completed phase 1 of Agrivoltaics <i>shark tank</i> project continued to consider our approach to carbon offsetting continued to implement CSIRO's net zero emissions (NZE) roadmap continued to manage Power Purchase Agreement (PPA) for provision of renewable energy 	G E S
Risk and opportunities of the global climate transition	<ul style="list-style-type: none"> began implementing recommendations of climate risk report formed climate risk working group 	G E R C
Resource efficiency	<ul style="list-style-type: none"> appointed a new FTE resource dedicated to waste management formed the Waste Avoidance and Resource Recovery Strategy (WARRS) working group developed detailed sustainability management plans across major sites ESD document suite embedded into capital works documentation new energy dashboards at 2 sites smart buildings roadmap developed continued to apply Property Strategy Implementation Plan to reduce our property footprint 	G E S
Responsible value chain	<ul style="list-style-type: none"> developed a draft sustainable purchasing tool to aid in the identification of sustainability-related risk and tender and evaluation support held regular meetings of the Sustainable Procurement Working Group developed modern slavery and human rights training and conducted workshops with higher-risk areas continued to implement the Sustainable Procurement Implementation Plan (SPIP) independent modern slavery risk assessment completed continued to apply Commonwealth Procurement Rules and processes 	G E S

G Government
 E Employees
 R Research and industry
 S Suppliers
 C Communities



Dampier Peninsula in WA. Image: Wayne Quilliam.

Appendix

Materiality

Understanding the issues that are material to us and to our stakeholders is important for developing a comprehensive approach to managing our sustainability impacts. Defining our material issues helps to ensure that our efforts and resources are directed to activities that manage the impact of our operations and generate value for our stakeholders. In 2020 we undertook a materiality assessment to develop a list of 20 topics⁴⁴ considered material to CSIRO. The assessment involved consideration of peer approaches to sustainability, interviews with internal and external stakeholders, a review of internal policies and strategies, industry trends and a media analysis. The topics were tested through stakeholder workshops and a validation workshop with members of CSIRO's Executive Team. The stakeholder engagement approach considered leading practice frameworks used by organisations to demonstrate leadership and performance in accountability, responsibility, and sustainability⁴⁵.

The 20 topics fall into five key themes, with the materiality matrix shown, and the definitions of each topic included in the appendix. Some topics represent our organisational impact on the most critical issues of our time, mirroring the approach of our world class research, whilst others represent significant issues that impact our organisation or stakeholders. These material issues informed the development of our Sustainability Strategy, and they will continue to help us define our short, medium, and long-term sustainability goals, and direct our risk management efforts. We will regularly review these topics and refresh our materiality assessment every three to five years to identify new or emerging issues.

Through the materiality process we identified priority actions or initiatives that form the basis of our approach to sustainability and provide a platform on which to better communicate with our stakeholders on the issues that matter. Our sustainability strategy focuses on six key action areas. We believe improvements in these areas will provide the most immediate impact on our performance and will better place us to respond to sustainability issues. Improved transparency through stronger governance processes and a commitment to public reporting are key elements that will help to keep our progress on track.

STRATEGIC FOCUS AREA 1: Governance and transparency

Increase transparency around sustainability performance through improved governance processes and systems, including regular public reporting aligned to the SDGs.

STRATEGIC FOCUS AREA 2: Excellent and impactful science

Apply CSIRO's technical expertise to solve internal challenges and respond to global priorities by creating internal and external partnerships that contribute to the SDGs.

STRATEGIC FOCUS AREA 3: Our people and capacity building

Create a culture that supports our highly capable and diverse workforce on sustainable practices, and promote capacity building and understanding of sustainability issues through community and industry engagement.

STRATEGIC FOCUS AREA 4: Sustainable property portfolio

Ensure fit-for-purpose buildings, aspiring to net zero carbon impact, that stimulate excellent science and improve staff health and well-being.

STRATEGIC FOCUS AREA 5: Transition to a clean energy future

Improve energy demand management and efficiency to support the transition to net zero emissions.

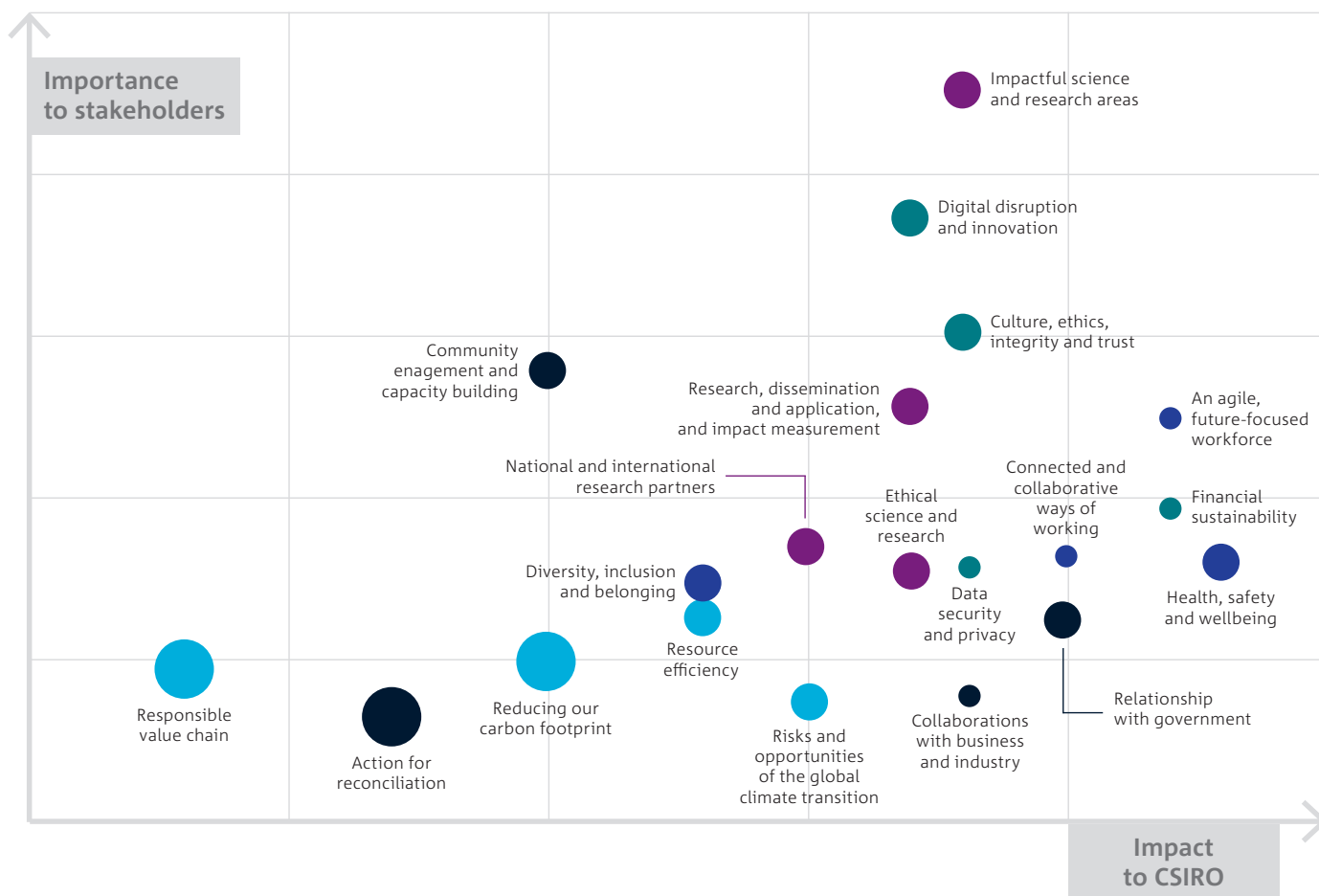
STRATEGIC FOCUS AREA 6: Responsible value chain and resource use

Understand the environmental and social impacts of purchase decisions, and embed circular economy thinking and the highest standards of responsible procurement.



⁴⁴ See Appendix – Material topic definitions

⁴⁵ GRI Reporting Principles, AA1000APS and AA1000SES



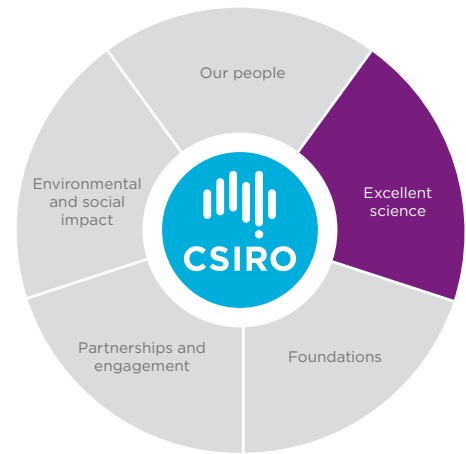
Time Scale

- Short term (feeling the impact now)
- Medium term (impact will become material in the next five years)
- Long term (impact felt out beyond five years)

Material topics

- Environmental and social impact
- Excellent science
- Foundations
- Our people
- Partnerships and engagement





Materiality matrix (topics by theme)



Material topic definitions

EXCELLENT SCIENCE

Maximising the benefit of CSIRO research through solving the greatest challenges, and conducting it in innovative and ethical ways.

MATERIAL TOPIC	DEFINITION	MANAGEMENT APPROACH	RELEVANT SDGS
Ethical science and research	Upholding strong processes, systems, safeguards, and people that support scientific integrity.	<i>Annual Report 2023 Part 4</i> <i>Our operations, Our governance;</i> Building better practice governance arrangements	
Impactful science and research areas	Identifying and solving the greatest challenges facing Australia through innovative science and technology. Ensuring we take a future-focus to our research and engagement, including through exploring how megatrends may affect the challenges we aim to solve.	<i>Annual Report 2023 Part 1</i> <i>Our purpose</i> <i>Annual Report 2023 Part 3</i> <i>Our priorities, Objectives 1 and 2</i>	
Research dissemination and application, and impact measurement	Facilitating dissemination and application of our research among communities, business, and industries, to maximise the social, environmental, and economic benefits of our work. Measuring and reporting on the impact of our research and using this data to continually improve.	<i>Annual Report 2023 Part 3</i> <i>Our priorities, Objectives 1 and 2</i>	
National and international research partners	Partnering with universities and publicly funded research organisations and maintaining stewardship of science infrastructure to boost innovation and capacity and ensure optimum research outcomes	<i>Annual Report 2023, Part 3 Objective 4.2 Exponential networks</i> Strategic partnerships program	



PARTNERSHIPS AND ENGAGEMENT








Collaborating with partners, businesses, industry and the community to support innovation and maximise benefits of CSIRO research

MATERIAL TOPIC	DEFINITION	MANAGEMENT APPROACH	RELEVANT SDGS
Relationship with government	Working with, and maintaining our positive standing with government, to fulfil our function of undertaking science in the national interest, while maintaining our independence	<i>Annual Report 2023</i> Meeting expectations <i>Annual Report 2023 Part 3 Objective 4.2 Exponential networks</i> Strategic partnerships program	16 PEACE, JUSTICE AND STRONG INSTITUTIONS  17 PARTNERSHIPS FOR THE GOALS 
Collaboration with business and industry	Collaborate closely with industry and business to enable more targeted and efficient delivery of technology and innovation, build capacity, and support Australia's future industries and jobs. This includes making it easier to do business with CSIRO.	<i>Annual Report 2023 Part 3 Objective 4.2 Exponential networks</i> Strategic partnerships program	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE  17 PARTNERSHIPS FOR THE GOALS 
Community engagement and capacity building	Engaging the community in an ongoing two-way conversation, to inform our research areas, share important research and innovation developments, and maintain awareness of and trust in the work we do.	<i>Annual Report 2023, Part 3 Objective 3.2</i> World class talent <i>Annual Report 2023 Part 3 Objective 4.2 Exponential networks</i> Strategic partnerships program	4 QUALITY EDUCATION  17 PARTNERSHIPS FOR THE GOALS 
Action for reconciliation	Engaging with Aboriginal and Torres Strait Islander peoples through science, education, and employment opportunities, and through pursuing innovation outcomes that create a positive impact for First Nations people.	<i>Annual Report 2023, Part 1 Our purpose</i> , Advancing First Nations science <u>Indigenous engagement – CSIRO</u> <u>CSIRO's Reconciliation Action Plan – CSIRO</u>	8 DECENT WORK AND ECONOMIC GROWTH  10 REDUCED INEQUALITIES  17 PARTNERSHIPS FOR THE GOALS 



OUR PEOPLE







Attracting and supporting a skilful, agile, and diverse workforce, and keeping CSIRO people safe and healthy.

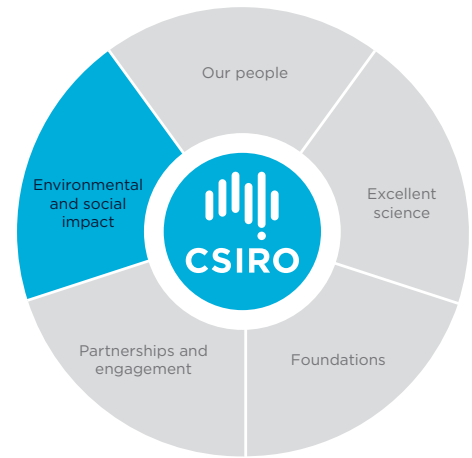
MATERIAL TOPIC	DEFINITION	MANAGEMENT APPROACH	RELEVANT SDGS
An agile, future-focused workforce	Ensuring we have highly capable individuals with the skillsets we need now and for the future and building and sharing our people's capabilities and knowledge to support an agile workforce.	<i>Annual Report 2023, Part 3 Objective 3.2 World class talent; Objective 3.3 Greater adaptiveness</i>	<div>4 QUALITY EDUCATION</div>  <div>8 DECENT WORK AND ECONOMIC GROWTH</div> 
Connected and collaborative ways of working	Supporting our geographically diverse and skilled workforce to connect, collaborate, innovate, and work productively, maximising the impact we can create.	<i>Annual Report 2023, Part 2 Analysis of our performance, Objective 4 Build collaborative networks</i> <i>Part 3 Objective 3.3 Greater adaptiveness; Objective 4 Build collaborative networks</i>	<div>8 DECENT WORK AND ECONOMIC GROWTH</div>  <div>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</div> 
Health, safety, and wellbeing	Protecting and promoting the health, safety and wellbeing of our people, partners, infrastructure, and environments in which we operate through effective safety risk management and promoting a safety culture.	<i>Annual Report 2023 Part 3 Our priorities, Healthy and safe people and environment</i>	<div>3 GOOD HEALTH AND WELL-BEING</div> 
Diversity, inclusion and belonging	Creating and embracing an environment where each individual is included and supported and can realise their full potential and implementing business practices that leverage our diversity of talent, thoughts and ideas.	<i>Annual Report 2023 Part 3 Our priorities, Diversity, inclusion and belonging</i> <u>Diversity and inclusion – CSIRO</u>	<div>5 GENDER EQUALITY</div>  <div>10 REDUCED INEQUALITIES</div> 



FOUNDATIONS

Managing the risks and harnessing the opportunities of a digital world. Having robust systems and processes to support financial and operational sustainability.

MATERIAL TOPIC	DEFINITION	MANAGEMENT APPROACH	RELEVANT SDGS
Culture, ethics, integrity and trust	Developing and maintaining a culture of continuous improvement, good governance, and ethical and moral conduct to remain Australia's most trusted research institution.	<i>Annual Report 2023 Part 4 Our operations, Our governance; Internal controls; Building better practice governance arrangements</i>	
Financial sustainability	Developing and implementing strategies, new business models and commercialisation approaches that compliment CSIRO's strategic objectives to achieve long-term growth and sustainability.	<i>Annual Report 2023, Part 3 Objective 3.3 Greater adaptiveness</i> <i>Annual Report 2023, Part 5 Financial statements</i>	
Digital disruption and innovation	Continually assessing and leveraging digital innovation, to remain at the cutting edge of ways of doing research and facilitate a connected and agile workforce able to address the challenges and opportunities that arise from digital disruption.	<i>Annual Report 2023 Part 3 Our priorities, Objective 1, Deliver impact through innovation; Objective 1.2 Digital transformation; Objective 3.3 Greater adaptiveness</i>	 
Data security and privacy	Protecting the privacy of our workforce, and security of scientific data, through maintaining trust and competency in IT systems and defences against cyber security breaches.	<i>Annual Report 2023 Part 3 Our priorities, Security controls</i> <i>Annual Report 2023 Part 4 Our operations, Management and accountability</i>	 



ENVIRONMENTAL AND SOCIAL IMPACT

Minimising the negative environmental and social impact of CSIRO's operations, buildings, and supply chains.

MATERIAL TOPIC	DEFINITION	MANAGEMENT APPROACH	RELEVANT SDGS
Resource efficiency	Ensuring efficient waste, water, materials, and energy management to minimise the negative impact of our actions and operations on our environment. Considering and minimising the environmental footprint of our buildings and business travel.	<i>Sustainability Report 2023</i> Responsible resource use and value chain	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Responsible value chain	Minimising the upstream environmental and social risk of the goods and services we procure through updating our procurement processes and working with key suppliers.	<i>Sustainability Report 2023</i> Responsible resource use and value chain	10 REDUCED INEQUALITIES 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Reducing our carbon footprint	Minimising the carbon footprint of our assets and operations to contribute to global efforts to mitigate climate change.	<i>Sustainability Report 2023</i> Transitioning to a clean energy future	7 AFFORDABLE AND CLEAN ENERGY 13 CLIMATE ACTION
Risks and opportunities of the global climate transition	Understanding and responding to the risks and opportunities of climate change and the transition to a lower carbon economy for our business and stakeholders, including adapting our research focus areas to better respond.	<i>Annual Report 2023 Part 1 Our purpose</i> <i>Sustainability Report 2023</i> Risks and opportunities of the global climate transition	13 CLIMATE ACTION 16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Glossary

TERM	DEFINITION
AA1000APS	The purpose of the AA1000APS (2008) is to provide organisations with an internationally accepted, freely available set of principles to frame and structure the way in which they understand, govern, administer, implement, evaluate and communicate their accountability. The AA1000 AccountAbility Principles provide the basis for understanding and achieving sustainability assurance.
Challenges	<p>The six challenges CSIRO is focused on are:</p> <ul style="list-style-type: none"> • food security and quality • health and wellbeing • resilient and valuable environments • sustainable energy and resources • future industries • a secure Australia and region. <p>CSIRO's Corporate Plan contextualises these challenges so the solutions from science focus on these priorities into the future.</p>
Circular economy	A circular economy is an economic system focused on eliminating waste and the continual use of resources. In circular economies, resources are recycled, re-used, shared, repaired, refurbished to create a closed-loop system, in turn reducing raw input use and the creation of waste.
EEGO	Means the Energy Efficiency in Government Operations Policy
Emissions	<p>When referred to throughout this report means greenhouse gas (GHG) emissions, unless otherwise stated. All GHG emissions are measured in CO₂ equivalent (CO₂e) and are based on the emissions factors in the National Greenhouse Accounts Factors published annually by the Department of Climate Change, Energy, the Environment and Water (DCCEEW).</p> <p>Where we report direct (scope 1) emissions from the combustion of stationary and transport fuels, this includes carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O).</p> <p>Where we report indirect (scope 2) emissions from the purchase of electricity, this includes carbon dioxide (CO₂) only.</p>
Exemplar	One that serves as a model or example: such as an ideal model. A person or thing serving as a typical example or appropriate model.
Global Reporting Initiative (GRI)	The GRI Sustainability Reporting Standards (GRI Standards) are the first and most widely adopted global standards for sustainability reporting. GRI helps businesses and governments worldwide understand and communicate their impact on critical sustainability issues such as climate change, human rights, governance and social wellbeing.
Materiality	Materiality is a concept founded in financial accounting procedures, which has been adapted and applied to nonfinancial information. In sustainability reporting, material issues are those which are important enough to influence a stakeholder's decisions in relation to the business.
Modern Slavery Act 2018	An Act to require some entities to report on the risks of modern slavery in their operations and supply chains and actions to address those risks, and for related purposes.
Net zero emissions	'Net zero' refers to achieving an overall balance between emissions produced and emissions taken out of the atmosphere.
NGERS	Means the National Greenhouse and Energy Reporting Scheme
Responsible procurement	A procurement process that considers social, environmental and economic impacts to support sustainable development
Scope 1, Scope 2 and Scope 3 emissions	Greenhouse gas emissions are categorised into three groups or 'scopes' by the most widely used international accounting tool, the Greenhouse Gas (GHG) Protocol. Scope 1 covers direct emissions from owned or controlled sources. Scope 2 covers indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting company. Scope 3 includes all other indirect emissions that occur in an organisation's value chain.

How we engage with our stakeholders

STAKEHOLDER GROUPS	CHANNELS FOR ENGAGEMENT	KEY TOPICS OF ENGAGEMENT
Our customers		
Australian Government and its agencies; state and territory governments and their agencies	<ul style="list-style-type: none"> • annual report and corporate plan • official reporting channels, including Ministerial briefings and correspondence • regular meetings, targeted briefings, reports, submissions to formal consultation processes • research collaborations and partnerships • working groups and committees 	We share our research activities, listen to the needs of ministers and government departments, and provide scientific information and advice to inform policy development and program implementation.
Australian and global businesses and industries	<ul style="list-style-type: none"> • surveys • research collaborations and consortiums • education and outreach program partnerships • missions program • membership of or participation in industry associations or professional groups such as the Business Council of Australia and the Australian Climate Leaders Coalition • membership of international business networks • multi-stakeholder fora including the Energy Efficiency Council, Australian Ocean Energy Group, Future Earth • Cooperative Research Centres (CRCs) • SME programs • advisory services • innovation services 	We bring together our partners in industry to co-create commercialisation outcomes that deliver the greatest impact and create economic value for the nation.
Australian and international research organisations and universities	<ul style="list-style-type: none"> • research collaborations • strategic partnerships with other national science and research agencies • membership of peak bodies such as Science & Technology Australia and Standards Australia and Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART) • multi-stakeholder fora including the Energy Efficiency Council, Australian Ocean Energy Group, Future Earth • CRCs 	We partner with research institutions through co-location, co-publication, and collaborative research to boost innovation and ensure the best available research is used to solve the greatest challenges and deliver outcomes for Australia and the world.
The Australian and international community	<ul style="list-style-type: none"> • website • social media and podcasts • national research infrastructure • education and outreach programs • publications, including through CSIRO Publishing • citizen science program • CSIRO Discovery Centre • CREST program • community and customer surveys • published reports 	We deliver learning experiences for students, teachers, and the community to equip Australians with the knowledge they need to enter the workforce and increase their science, technology, engineering, and mathematics skills.
Employees	<ul style="list-style-type: none"> • internal communication channels, including all staff meetings • leadership blog and communications • employee engagement surveys • culture and pulse surveys • annual reporting • complaints process and PID Scheme • HSE resource hub • People Hub 	We engage with our people on our strategic objectives, which includes delivering impact through innovation; having purpose driven science and technology; engaging and empower talent; and building collaborative networks, as well as topics related to capabilities and sustainability.
Suppliers	<ul style="list-style-type: none"> • Procurement and contract management channels 	Business continuity, data security, modern slavery

Environmental reporting

CSIRO has extensive mandatory and voluntary reporting obligations. As well as progress against our NZE target which we report in detail in this sustainability report, our additional reporting includes:

Table 11: CSIRO mandatory and voluntary environmental reporting

REPORTING FRAMEWORK	BOUNDARY	OTHER INFORMATION
Environmental Protection and Biodiversity Conservation (EPBC) Act 1999	s.516A	https://www.legislation.gov.au/Details/C2014C00506
National Greenhouse and Energy Reporting Scheme (NGERS)	As per NGERS methodology	https://www.cleanenergyregulator.gov.au/NGER/About-the-National-Greenhouse-and-Energy-Reporting-scheme
Corporate Emissions Reduction Transparency (CERT) Report	As per CERT methodology	https://www.cleanenergyregulator.gov.au/Infohub/Markets/cert-report
APS Net Zero Report (new in FY23)	As per APS net zero methodology Note: includes some scope 3 emissions	https://www.finance.gov.au/government/managing-commonwealth-resources/planning-and-reporting/annual-reports-corporate-commonwealth-entities-rmg-136
Energy Efficiency in Government Operations (EEGO) Policy	As per EEGO boundary	https://www.energy.gov.au/publications/energy-efficiency-government-operations-policy
National Pollutant Inventory (NPI)	Four of our sites are required to report under the NPI which is administered by state and territory-based environmental protection agencies.	https://www.dcceew.gov.au/environment/protection/npi

Section 516A of the EPBC Act requires that we report annually on how we accord with and contribute to ecologically sustainable development (ESD), including our environmental performance covering the impact that our activities have on the natural environment, how these are mitigated and will be managed into the future. These are covered in detail throughout this report.

Corporate Emissions Reduction Transparency (CERT) report

In 2021, Australia's Clean Energy Regulator (CER) commenced a new pilot energy and emissions reporting program, called the Corporate Emissions Reduction Transparency (CERT) report⁴⁶. It aims to improve the accountability and transparency of organisations with voluntary emissions reduction commitments. To support the development of this report, we participated in stakeholder consultations, and joined the FY21 pilot program, with data published by the CER in July 2022. We have adjusted our emissions performance to align with the NGER boundary managed by the CER⁴⁷.

This year, we entered into the second year of CERT reporting. The CERT report is published around June of each year and is based on the previous year's reporting results. Table 12 outlines the commitments made by CSIRO under the CERT report for FY21, and the estimated progress towards those commitments in FY22 against a 2019 baseline.

Table 12: CSIRO commitments under the CERT report

	COMMITMENT 1	COMMITMENT 2
Commitment Type	Net-only Commitment (progress verified) combined net and gross emissions	Commitment (progress verified) renewable electricity consumption percentage
Statement	Net zero scope 1 and scope 2 emissions by 2030, applies to all sites where CSIRO staff are located, including where we are a tenant ⁴⁸ .	100% renewable electricity supply for all CSIRO sites by 2030
Estimated Progress FY22	78.5%	88.6%

⁴⁶ <https://www.cleanenergyregulator.gov.au/Infohub/Markets/cert-report>

⁴⁷ This has resulted in a slight variance of 4% in overall emissions between the CERT report and CSIRO's sustainability report. We have also elected to apply a market-based accounting standard for our scope 2 emissions.

⁴⁸ For the purposes of the CERT report, our emissions performance has been adjusted to align with our NGER boundary.

APS net zero

During the reporting year, the Australian Government introduced *APS Net Zero 2030*⁴⁹, the Australian Government's policy for the Australian Public Service (APS) to reduce its greenhouse gas emissions to net zero by 2030, and transparently report on its emissions. As part of this, non-corporate and corporate Commonwealth entities (such as CSIRO) are required to report on their operational greenhouse gas emissions using this methodology. We have been reporting on our greenhouse gas emissions under the NGER Scheme since 2008.

The Greenhouse Gas Emissions Inventory presents greenhouse gas emissions over the FY23 period. Results are presented on the basis of Carbon Dioxide Equivalent (CO₂-e) emissions. Greenhouse gas emissions reporting has been developed with methodology that is consistent with the Whole-of-Australian Government approach as part of the APS Net Zero 2030 policy. Further information related to the APS Net Zero 2030 policy can be found at:

www.finance.gov.au/government/aps-net-zero-emissions-2030

Table 13 sets out our FY23 reporting against the new APS Net Zero 2030 policy. Under the APS net zero methodology, figures are to be published each year in our annual report based on the best available data as at the 30 June submission deadline⁵⁰. These figures include some scope 3 emissions, including those related to air travel⁵¹. In addition, the figures also include supply chain emissions associated with power loss in transmission or distribution, and extraction, refinement and shipping of fuels. We have not previously reported these emissions.

The emissions calculation methodology applied by the APS Net Zero Policy for air travel emissions differs to that used to date by our corporate travel agency, hence the calculations will differ from those that we have previously reported year on year⁵². This is the first year that government entities will report under this policy and our reporting will continue to evolve as this process matures.

Table 13: CSIRO's performance under the new APS Net Zero 2030 policy, available data as at 30 June 2023

EMISSION SOURCE	SCOPE 1 KG CO ₂ -e	SCOPE 2 KG CO ₂ -e	SCOPE 3 KG CO ₂ -e	TOTAL KG CO ₂ -e
Electricity (Location Based Approach)	N/A	59,606,194	5,610,786	65,216,981
Natural Gas	9,018,907	N/A	1,155,852	10,174,760
Fleet Vehicles	9,842,171	N/A	2,421,676	12,263,847
Domestic Flights	N/A	N/A	5,462,197	5,462,197
Other Energy	785,638	N/A	251,047	1,036,685
Total kg CO ₂ -e	19,646,717	59,606,194	14,901,558	94,154,469

* Other energy includes non-transport fuel and RV Investigator diesel consumption

⁴⁹ <https://www.finance.gov.au/government/aps-net-zero-emissions-2030>

⁵⁰ Note that this will differ to the figures available elsewhere in the Sustainability Report, which has a later submission deadline, allowing for greater accuracy. More accurate figures will be re-stated in the following year's Annual Report. Wherever relevant, prior period figures will be restated when there have been material changes to the methodologies for data calculation and estimation.

⁵¹ Note: These figures are differentiated from our net zero by 2030 target, which addresses our scope 1 and 2 emissions only.

⁵² APS net zero applies UK flight emissions factors for transparency, consistency and reliability, supported by clear research and methodology.

Data pack

This data pack should be read in conjunction with our Sustainability Report 2023. It comprises our sustainability performance for the financial year ending 30 June 2023. Our performance data and metrics have been stated at the enterprise level.

In Australia, our environmental data is reported with both the Energy Efficiency in Government Operations (EEGO) boundary and *National Greenhouse and Energy Reporting Act (2007)* (NGERS) operational control boundary. The basis of this data pack is our EEGO boundary, unless otherwise stated. We have adopted the EEGO boundary for our energy and emissions footprint and net zero targets. Where data was unavailable at the time of publication, estimates have been made based on historical consumption trends or financial year activity data. As a result of earlier annual report printing deadlines, the environmental performance figures may differ slightly between the CSIRO Annual Report and Sustainability Report.

Environmental data

Boundary: Energy Efficiency in Government Operations

Table E1

SCOPE 1 AND 2 GREENHOUSE GAS EMISSIONS SUMMARY (EEGO)	GRI	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Scope 1 GHG emissions (ktCO ₂ e)	305-1	18	20	21	20	16	20
Scope 2 GHG emissions (ktCO ₂ e) Location-based	305-2	103	96	86	80	75	63
Scope 2 GHG emissions (ktCO ₂ e) Market-based	305-2/ 305-5	n/a	n/a	n/a	21	6	4
Total Location-Based Emissions (ktCO ₂ e)		121	116	107	100	90	83
Total Market-Based Emissions (ktCO ₂ e)	305-5	n/a	n/a	n/a	41	21	24

Notes: **1.** This boundary is based on the Energy Efficiency in Government Operations (EEGO) Policy boundary. It excludes tenants on CSIRO operated sites, but includes sites where we are a subtenant. **2.** The basis of our performance metrics and breakdowns are based on the EEGO boundary. **3.** Scope 1 and 2 emissions are for Australian sites only, and do not include our international sites. However, our international sites are immaterial to our footprint. **4.** Market-based emissions account for our renewable energy purchases, including the surrender of Large-scale generation certificates from our PPA. Under market-based emissions, the residual mix factor was used to calculate the emissions from the residual grid electricity, which is in accordance with Section 6.11.4 of the GHG Protocol Scope 2 guidance. **5.** Dual figures are reported in accordance with the WRI's Greenhouse Gas Protocol – scope 2 guidance. **6.** FY22 figures may differ from the Annual Report due to its earlier reporting deadlines. Data is updated prior to our regulatory reporting deadlines. **7.** FY19 is the base year for CSIRO's net zero calculations **8.** FY22 market-based emissions are re-stated.

Table E2

ENERGY CONSUMPTION AND EXPORTED BY FUEL SOURCE (GJ)	GRI	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Electricity (grid)	302-1	445,881	403,044	371,773	354,283	339,835	318,784
Electricity (solar)	302-1	2,765	6,260	19,818	19,638	21,196	21,607
Electricity (off-grid)*	302-1	0	10,106	9,929	7,559	8,547	7,582
Electricity (exported to grid)	302-1	-	-	-	623	1,038	595
Natural gas	302-1	210,020	204,852	205,819	204,399	198,527	181,653
Diesel	302-1	90,762	116,511	138,763	125,188	68,272	142,447
Petrol	302-1	6,040	6,327	5,161	4,603	3,510	5,996
LPG	302-1	8,520	8,428	4,204	5,285	5,617	4,454
Ethanol	302-1	84	54	18	12	0	131
Other	302-1	10,510	767	3,292	2,910	2,563	2,572
Total Energy Consumed (GJ)		774,583	756,349	758,777	723,877	648,066	685,226

Notes: **1.** Data based on invoices. Where unavailable metered data and costs (as proxy) used. Where data has been unavailable estimates have been made based on historical usage and / or activity data. **2.** Electricity (solar) is based on energy consumed from our onsite PV systems. It is considered 'behind the meter' usage. **3.** Electricity (Horizon Power *) is based on an off-grid electricity source from a diesel power plant provided by a third party retailer. **4.** Energy conversion factors for Scope 1 and 2 emissions sources are based on the National Greenhouse and Energy Reporting (NGER) (Measurement) Determination 2008 up to and including the FY22 reporting period. Starting from the FY23 reporting period, the energy conversion factors are based on the National Greenhouse Accounts Factors (NGAF). **5.** We do not sell electricity, heating, cooling or steam.

TOTAL GREENHOUSE GAS EMISSIONS KILOTONNES (kt) CO₂e

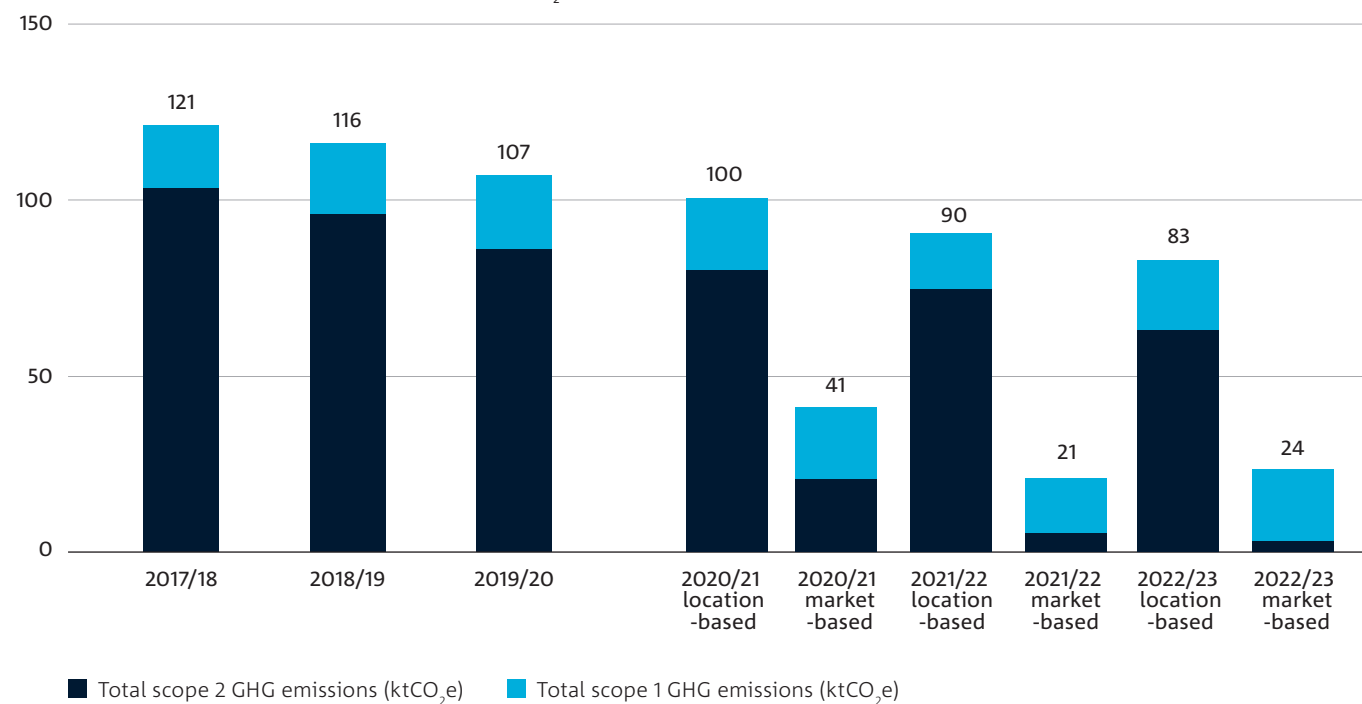


Chart E1: Scope 1 and 2 greenhouse gas emissions (EEGO) boundary

TOTAL ENERGY CONSUMPTION BY SOURCE ('000 GJ)

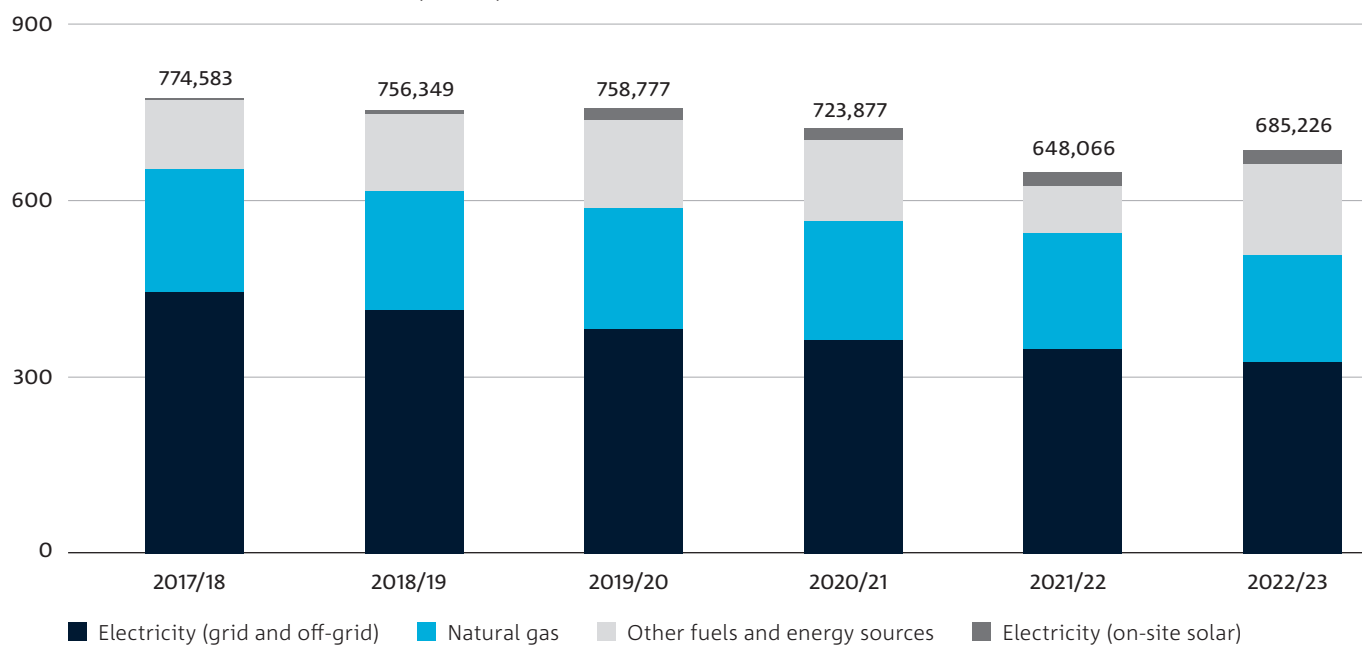


Chart E2: Energy usage by major energy sources

Table E3

GREENHOUSE GAS EMISSIONS BY FUEL SOURCE (TONNES CO ₂ e)	GRI	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Scope 1	305-1						
Stationary							
Natural Gas	305-1	10,782	10,499	10,606	10,533	10,230	9,361
Diesel	305-1	443	579	727	379	623	491
Petrol	305-1	6	83	96	92	79	124
LPG	305-1	516	511	255	320	326	264
Other	305-1	0	3	3	2	0	2
Transport							
Diesel	305-1	5,961	7,642	9,043	8,435	4,182	9,536
Petrol	305-1	403	345	254	220	158	290
Ethanol	305-1	0	0	0	0	0	0
LPG	305-1					14	6
Scope 2	305-2						
Electricity (off-grid*)	305-2	-	1,757	1,738	1,302	1,353	1,137
Electricity (grid, Location-based)	305-2	103,342	94,538	84,422	78,686	73,194	61,632
Electricity (grid, Market-based)	305-2	-	-	-	19,699	4,190	2,406
Total (scope 1 and scope 2 (location-based))		121,454	115,955	107,142	99,968	90,160	82,844
Total (scope 1 and scope 2 (market-based))		-	-	-	40,872	21,157	23,618

Notes: **1.** Emission factors for scope 1 and 2 emissions are based on the National Greenhouse and Energy Reporting (NGER) (Measurement) Determination 2008 up to and including the FY22 reporting period. Starting from the FY23 reporting period, the emission factors are based on the National Greenhouse Accounts Factors (NGAF). **2.** Location-based emissions are calculated in accordance with the Greenhouse Gas Protocol, and in alignment with Australian frameworks. **3.** Electricity (Horizon Power*) emissions are calculated based on the default factors provided in the NGER Determination. **4.** Sum of individual energy sources may differ to “total” due to rounding. **5.** Market-based emissions have not been restated for 2019–20 and prior. No LGCs were purchased or surrendered in those years. **6.** Off-grid scope 2 emissions calculated in accordance with Section 6.11.4 of GHG Protocol scope 2 guidance. **7.** FY22 market-based emissions are re-stated.

Table E4

RESOURCE AND OPERATIONAL METRICS	GRI	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Mains Water Usage (ML)	303-5(a)	321	320	345	277	230	282
Waste Generation (tonnes)	306-3	2,380	2,370	2,085	1,721	1,384	1,588
Recycling Rate (%)	306-4	46	49	38	36	39	40
Air Travel (million passenger kilometres (pkm))		114	123	84	7	13	70
Air Travel (tonnes CO ₂ e, domestic)	305-3	-	5,211	3,303	748	1,084	4,023
Air Travel (tonnes CO ₂ e, international)	305-3	-	4,918	3,206	162	323	2,853

Notes: **1.** Where data was unavailable for water usage (specifically for sites where we do not readily have separate metering due to tenancy), estimates have been made. **2.** Waste data is based on sites where we have contractual arrangements, and excludes sites where we do not have control of the facility. It does not include contractor managed waste streams. **3.** Air travel data and metrics are provided by our service provider and are based on the methodology adopted by the International Civil Aviation Organisation. It does not currently take into account the radiative forcing impacts.

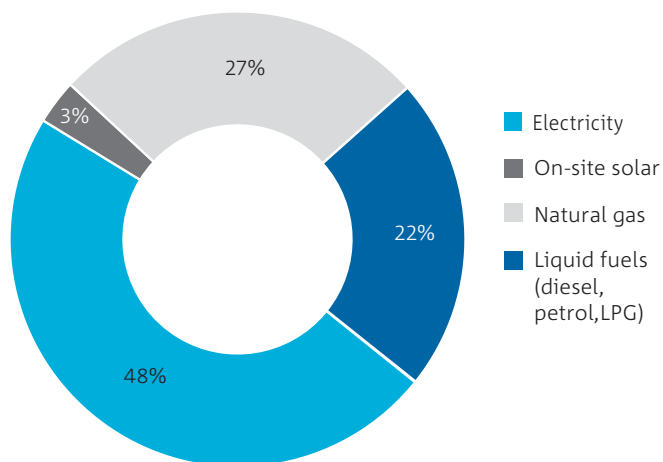


Figure E1: Energy consumption by fuel source

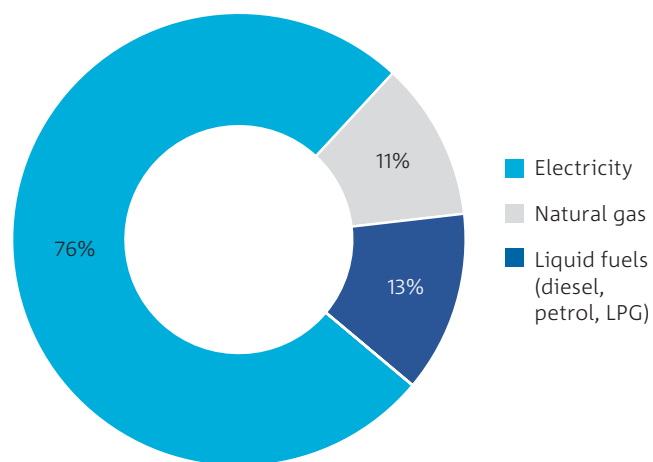


Figure E2: Emissions by fuel source

Table E5

RESOURCE AND OPERATIONAL METRICS BY FTE	GRI	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Greenhouse gas emissions (tonnes/per FTE)	305-4	23	22	21	8	4	4
Energy (GJ/FTE)	302-3	149	141	150	146	123	115
Waste generation (kg/FTE)		459	442	412	348	262	267
Mains water usage (kilolitres/FTE)		62	59	68	61	44	48
Air Travel (thousand pkm/FTE)	305-3	22	23	17	1	3	12

Notes: **1.** FY21 and FY22 tonnes CO₂-e/FTE is based on scope 1 and scope 2 market based emissions. **2.** All calculations based on Australian FTE figures. **3.** FY22 market-based emissions are re-stated.

Our people

Note: all data excludes affiliates unless otherwise specified.

Table P1

EMPLOYEES BY GENDER	GRI	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Total employees	102-8	5767	5915	5319	5221	5672	6316
Male (%)	405-1(b)	58.6%	57.8%	58.8%	57.9%	56.0%	54.7%
Female (%)	405-1(b)	41.4%	42.1%	41.1%	42.0%	43.8%	44.9%
Non-binary/ prefer not to say (%)	405-1(b)	0.0%	0.1%	0.1%	0.2%	0.2%	0.4%

Note: **1.** Total employees by headcount as at 30 June. **2.** Percentages represent percentage of total employees.

Table P2

EMPLOYEES BY CONTRACT TYPE	GRI	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23	
		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Permanent (ongoing) – Full Time (%)*	102-8	43.2%	21.7%	42.4%	22.7%	46.3%	25.1%	45.9%	25.6%	42.1%	24.5%	39.2%	23.8%
Permanent (ongoing) – Part Time (%)*	102-8	1.7%	8.0%	1.7%	7.7%	1.7%	8.4%	1.7%	8.0%	1.5%	7.5%	1.3%	6.4%
Temporary (non-ongoing) – Full Time (%)*	102-8	9.9%	7.0%	10.2%	7.2%	9.6%	5.9%	9.0%	6.1%	10.3%	8.2%	12.1%	11.1%
Temporary (non-ongoing) – Part Time (%)*	102-8	3.8%	4.7%	3.5%	4.5%	1.2%	1.7%	1.3%	2.1%	2.2%	3.7%	2.0%	3.6%
Employees completing Annual Performance Appraisal (%)**	404-3	96.2%	95.7%	97.2%	96.5%	97.7%	96.3%	96.3%	95.6%	94.4%	93.1%	-	-

Notes: **1.** Sum of percentages do not add up to 100, with remaining identifying as non-binary/prefer not to say. **2.** FY23 Annual Performance Appraisal (APA) completion not available at time of publication due to timing of reporting and timing of APA finalisation. **3.** Casual employees included in Temporary (non-ongoing) - Part Time. **4.** There are no significant seasonal variations. **5.** * represents percentage of total employees per financial year; **represents percentage of reference group in column heading.

Table P3

EMPLOYEES BY AGE, AND DIVERSITY GROUPS	GRI	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23	
		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Employees < 30 years old (%)	405-1(b)	5.7%	4.7%	5.8%	4.4%	3.8%	2.7%	3.7%	2.6%	4.8%	3.6%	4.8%	4.5%
Employees >30 years old <50 years old (%)	405-1(b)	32.1%	23.9%	31.0%	24.2%	31.9%	24.0%	30.5%	24.3%	28.8%	25.0%	29.1%	25.8%
Employees > 50 years old (%)	405-1(b)	20.8%	12.8%	21.0%	13.5%	23.1%	14.4%	23.7%	15.1%	22.5%	15.3%	20.8%	14.5%
Employees who identify as Aboriginal and Torres Straight Islander (%)	405-1(b)	0.8%	1.1%	0.8%	1.2%	0.6%	1.0%	0.5%	1.0%	0.5%	1.2%	0.5%	1.3%
Employees who identify with a disability (%)	405-1(b)	2.4%	1.6%	2.4%	1.7%	2.4%	1.6%	2.4%	1.7%	2.4%	1.9%	2.5%	2.0%

Notes: **1.** Sum of percentages do not add up to 100, with remaining employees identifying as non-binary/prefer not to say. **2.** Percentages represent percentage of total employees per financial year.

Table P4

LEADERSHIP OF GOVERNANCE BODIES BY GENDER AND AGE	GRI	2020–21				2021–22				2022–23			
		BOARD	EXEC TEAM	CLT	ALL LEADERS	BOARD	EXEC TEAM	CLT	ALL LEADERS	BOARD	EXEC TEAM	CLT	ALL LEADERS
Gender – Male (%)	405-1 (a)	50.0%	62.5%	68.2%	62.4%	37.5%	50.0%	52.0%	58.90%	42.9%	50.0%	64.0%	56.68%
Gender – Female (%)	405-1 (a)	50.0%	37.5%	31.8%	37.6%	62.5%	50.0%	48.0%	41.10%	57.1%	50.0%	36.0%	43.25%
Age < 30 years old (%)	405-1 (a)	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.7%
Age >30 years old <50 years old (%)	405-1 (a)	12.5%	0.0%	27.3%	51.8%	12.5%	25.0%	24.0%	53.7%	0.0%	25.0%	16.0%	56.1%
Age > 50 years old (%)	405-1 (a)	87.5%	100.0%	72.7%	47.6%	87.5%	75.0%	76.0%	45.8%	100.0%	75.0%	84.0%	43.3%

Notes: **1.** Executive team includes our Chief Executive. **2.** CLT means CSIRO Leadership Team and for reporting purposes includes all employees at Director level, excluding those considered 'General Managers'. **3.** CSIRO does not currently have any leaders of governance bodies identifying as non-binary/prefer not to say, however 0.1% of All Leaders do. **4.** Leaders include any person whose job title contains the word 'Manager', 'Director', 'Leader' or 'Executive'; excluding 'Executive Assistant' or 'Executive officer'. **5.** Percentages represent percentage of reference group in column heading.

Table P5

EMPLOYEE CATEGORIES BY GENDER, AGE AND DIVERSITY GROUPS	GRI	2020–21		2021–22		2022–23	
		RESEARCH STAFF	NON-RESEARCH STAFF	RESEARCH STAFF	NON-RESEARCH STAFF	RESEARCH STAFF	NON-RESEARCH STAFF
Gender – Male (%)	405-1(b)	64.90%	46.40%	63.50%	44.30%	61.50%	44.10%
Gender – Female (%)	405-1(b)	34.90%	53.50%	36.30%	55.60%	38.00%	55.60%
Gender – Non-binary (%)	405-1(b)	0.20%	0.10%	0.20%	0.10%	0.50%	0.30%
Age <30 years old (%)	405-1(b)	6.30%	6.30%	8.90%	7.70%	9.60%	9.10%
Age >30 years old <50 years old (%)	405-1(b)	55.30%	54.30%	54.50%	52.80%	56.10%	53.80%
Age > 50 years old (%)	405-1(b)	38.40%	39.40%	36.60%	39.40%	34.30%	37.00%
Employees who identify as Aboriginal and Torres Straight Islanders (%)	405-1(b)	1.30%	1.80%	1.40%	2.10%	1.20%	2.80%
Employees who identify with a disability (%)	405-1(b)	4.10%	4.00%	4.20%	4.40%	4.40%	4.70%
Employees from non-English speaking backgrounds (%)	405-1(b)	31.50%	12.10%	32.50%	13.10%	35.50%	14.20%

Note: **1.** Percentages represent percentage of reference group in column heading.

Table P6

NEW HIRES AND TURNOVER BY GENDER	GRI	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23	
		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Number of new hires	401-1	615	568	605	553	161	138	255	249	554	628	691	725
Turnover (%)	401-1	10.9%	9.8%	11.7%	10.8%	12.8%	9.7%	10.2%	10.7%	11.1%	11.9%	9.4%	10.4%

Note: **1.** *represents percentage of reference group in column heading.

Table P7

WORKFORCE TRAINING BY GENDER	GRI	2020–21		2021–22		2022–23	
		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Average Hours of Mandatory Training (LMS) completed per employee (hours)	404-1	n/a	n/a	n/a	n/a	n/a	n/a
Mandatory training completed (%)*	404-1	98.3%	98.9%	97.5%	97.9%	99.2%	99.3%

Notes: **1.** Mandatory training completed (%) includes active staff only – excludes casuals, affiliates and staff on long term absence. **2.** New method for recording mandatory training from FY21 onwards. **3.** *represents percentage of reference group in column heading. **4.** We will no longer report average hours of mandatory training per employee as the data and methodology for collection are inaccurate.

Table P8

ETHICS AND CORRUPTION TRAINING	GRI	2020–21	2021–22	2022–23
Code of Conduct (%)	205-2	99.5%	100.0%	98.7%
Security Awareness (%)	205-2	98.1%	99.7%	99.9%
Fraud Awareness (%)	205-2	98.6%	99.7%	99.9%
Conflict of Interest (%)	205-2	New 2022	86.6%	99.1%
Privacy (%)	205-2	New 2022	83.9%	99.5%
Phishing (%)	205-2	98.3%	99.7%	99.8%
Percentage of researchers trained in Research Excellence (%)	102-17	99.5%	99.5%	99.2%

Note: **1.** Mandatory training completed (%) includes active employees only – excludes casuals, affiliates and staff on long term absence.

Table P9

HSE TRAINING (MANDATORY AND NON-MANDATORY)	GRI	2020–21	2021–22	2022–23
Starting with your safety (% completion)	403-5	99.98%	Course no longer offered	Course no longer offered
The Work Health & Safety Act: Your Legal Duties (% completion)	403-5	100.00%	Course no longer offered	Course no longer offered
HSE Induction (new in FY22)	403-5	n/a	99.83%	99.84%
HSE for Supervisors & Managers (% completion)	403-5	99.98%	96.46%	98.32%
HSE Risk Management (% completion)	403-5	n/a	n/a	99.36%

Notes: **1.** Compliance rates for those assigned the training; exclude affiliates, casual staff and staff on long term absence. **2.** HSE Induction was new for FY22 and replaced the two courses referred to above no longer offered in FY22. **3.** Mandatory training completed (%) includes active staff only – excludes casuals, affiliates and staff on long term absence. **4.** New HSE Risk Management Module was introduced in FY23.

Table P10

HEALTH AND SAFETY INDICATORS	GRI	2019–20	2020–21	2021–22	2022–23 (including employees and contractors)	2022–23 (including employees only)
Lost Time Injury (LTI)	403-9	36(2)	24	12 (1)	21	21
Medical Treatment Injury (MTI)	403-9	33(1)	24	25 (2)	18	16
Total hours (hours)	403-9	12,036,188	11,875,834	12,454,261	13,333,612	12,963,646
Total Recordable Injury Frequency Rate (TRIFR)	403-9	5.70	3.90	3.00	2.92	2.85

Notes: **1.** Incidents are reported, assessed, classified and statistically represented in accordance with the CSIRO Health Safety and Environment Management System (HSEMS) and supporting Standard Operating Procedure for reporting. **2.** 2022–2023 data was extracted 19/09/2023. **3.** Lost Time Injury (LTI): A work-related injury/illness that results in the loss of one or more complete work days/shifts any time after the day or shift on which the injury or illness occurred. **4.** Medical Treatment Injury (MTI): A work-related injury/illness requiring medical treatment beyond first aid or extensive therapeutic treatment prescribed by a medical practitioner but has not resulted in lost time from work. **5.** Total Hours: Work schedules of CSOF staff minus leave plus estimated hours for affiliates workers covered under the HSEMS. **6.** Total Recordable Injury Frequency Rate (TRIFR): Total Recordable Injury Frequency Rate = number of MTIs + LTIs per million hours worked. **7.** Number in (parentheses) is contractor injuries that are not included in the frequency rate calculations 2019–20 and 2021–22. **8.** CSIRO updated its definitions for recordable injuries from 1 July 2019 and changed the calculated hours worked to include an estimation of affiliate hours worked. **9.** For the purposes of the inaugural limited assurance of the employees work-related injuries metrics in Table P10, contractors are excluded, with data represented separately for 2022–2023. Refer to appendix KPMG Limited Assurance Statement. Data for the reporting period was extracted for assurance purposes on 19/09/2023. **10.** Contractor hours are estimated from an internal survey from July 2021 to June 2022 and averaged for the following 12 month period.

Table P11: Work-related ill health indicators – Deleted

Note: **1.** A review of 'work related ill health' indicator definition and value has been undertaken for the FY23 reporting period. This indicator is not currently utilised at CSIRO for benchmarking or HSE management review purposes. CSIRO utilises alternative metrics as already outlined in P12, P10 and P9. The 'work related ill health' indicator is also a subset of the Total Recordable Injury Frequency Rate which incorporates a wider scope of injury or illness to more accurately reflect injury severity.

Table P12

LEADING HEALTH AND SAFETY INDICATORS	GRI	2019–20	2020–21	2021–22	2022–23
Health and Safety Actions Completed %	403-2	-	99%	88%	92%
Proactive Hazard Reporting	403-2	521	481	771	1125
% to target	403-2	69%	45%	71%	n/a
HSE Contacts	403-2	2079	2559	2315	3186
% to target	403-2	94%	106%	97%	n/a
Combined Proactive Hazard Reporting and HSE Contacts	403-2	n/a	n/a	n/a	4311
% to target	403-2	n/a	n/a	n/a	399%

Note: **1.** 'Actions' means any HSE-related corrective action recorded in our reporting system. **2.** Contacts are short visits or discussions by senior leaders with CSIRO team members in their work environments. **3.** Targets shift from year to year. In FY23 Hazards and HSE Contacts were combined to form a single lead reporting metric.

Table P13

ACTION FOR RECONCILIATION	GRI	2020–21	2021–22	2022–23
Annual expenditure on Indigenous owned/operated businesses	204-1	\$9,763,890	\$3,966,700	\$10,437,976
Employees completing cultural awareness training (%)	404-1	98.89%	99.62%	98.97%

Note: **1.** Mandatory training completed (%) includes active staff only – excludes casuals, affiliates and staff on long term absence.

Table P14

ETHICS AND TRUST SENTIMENTS	GRI	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Business sentiment survey 'extremely trustworthy' score (%)	n/a	58%	48%	Not conducted	59%	64%	72%
Community sentiment survey 'extremely trustworthy' score (%)	n/a	43%	36%	40%	43%	60%	58%
Customer satisfaction Net Promoter Score	n/a	+40	+45	Not conducted	+51	+47	+49
Our people are proud to be associated with CSIRO (%)	n/a	90%	92%	95%	93%	93%	not conducted

Note: **1.** Customer satisfaction and advocacy is an organisational Key Performance Indicator (KPI) measured on an annual basis using the industry benchmark of Net Promoter Score (NPS). The primary objective of the NPS methodology is to infer customer loyalty. It is calculated by deducting the percentage of low-scoring 'detractors' from the percentage of high-scoring 'promoters', in answer to the question "How likely are you to recommend CSIRO to others?".

Table F1: Economic (Financial) Impacts

SUPPLY CHAIN EXPENDITURE WITHIN AUSTRALIA	GRI	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Small business suppliers paid within 20 days (%)	204-1	n/a	n/a	n/a	n/a	97%	97%
Small business suppliers paid within 30 days (%)	204-1	n/a	n/a	n/a	n/a	99%	98%
Small business annual expenditure (\$'000)	204-1	n/a	n/a	n/a	n/a	190,450	251,010

Note: **1.** FY22 is the first full financial year of reporting on payments to small business. **2.** Small business is defined by the *Payment Times Reporting Act 2020*.

TCFD reporting index

An overview of the Taskforce on Climate-related Financial Disclosures recommendations. We will continue to refine these disclosures as our progress matures over the coming years.

TCFD RECOMMENDED DISCLOSURE	OUR APPROACH
GOVERNANCE: Disclose the organisation's governance around climate-related risks and opportunities	
a. Describe the board's oversight of climate-related risks and opportunities.	Risks and opportunities of the global climate transition p. 36
b. Describe management's role in assessing and managing climate-related risks and opportunities.	Risks and opportunities of the global climate transition pages 34–36
STRATEGY: Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material	
a. Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long terms.	Risks and opportunities of the global climate transition pages 34–36
b. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	Risks and opportunities of the global climate transition pages 34–36
c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios including a 2°C or lower scenario.	Risks and opportunities of the global climate transition pages 34–36
RISK MANAGEMENT: Disclose how the organisation identifies, assesses and manages climate-related risks	
a. Describe the organisation's process for identifying and assessing climate-related risk.	Risks and opportunities of the global climate transition pages 34–36
b. Describe the organisation's process for managing climate-related risks.	Risks and opportunities of the global climate transition pages 34–36
c. Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management.	Risks and opportunities of the global climate transition pages 34–36
METRICS AND TARGETS: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material	
a. Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	See Appendix – Data pack Tables E1 to E5; Charts E1 and E2
b. Disclose scope 1, 2 and, if appropriate, scope 3 greenhouse gas emissions, and the related risks.	See Appendix – Data pack Tables E1 to E5; Charts E1 and E2
c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	Sustainability Report 2023 <i>Transitioning to a clean energy future – Our performance</i> ; Data pack Tables E1 to E5; Charts E1 and E2 CSIRO Sustainability Strategy 2020–2030

GRI Content Index

Statement of use	CSIRO has reported in accordance with the GRI Standards for the period 1 July 2022 to 30 June 2023.
GRI 1 used	GRI 1: Foundation 2021

DISCLOSURE	LOCATION	COMMENT
GRI 2: GENERAL DISCLOSURES 2021		
2-1 Organisational details	<i>Annual Report 2023 Part 1 Our purpose</i> <i>Annual Report 2023 Our locations</i> https://www.csiro.au/en/contact https://www.csiro.au/en/about/locations https://www.csiro.au/en/About	
2-2 Entities included in the organisation's sustainability reporting	This report relates to CSIRO's Australian operations.	For the purposes of reporting, this includes the SIEF and NICTA subsidiaries, but does not include the CSIRO Chile Research Fundacion or the US Office as referred to in the consolidated financial statements.
2-3 Reporting period, frequency and contact point	This report covers the financial year FY23 and aligns with our financial and annual reporting periods. Any enquiries about this report should be directed to sustainability@csiro.au	
2-4 Restatements of information	<i>Sustainability Report 2023 Jurisdictional impacts</i> <i>Sustainability Report 2023 Appendix Data Pack</i>	FY22 market-based emissions are restated to take into account the Clean Energy Regulator market-based methodology for jurisdictional impacts. In FY22 we incorrectly stated that our onsite solar systems generated 5.9 MWh of renewable electricity, when in fact they generated 5,888 MWh of renewable electricity
2-5 External assurance	See Limited Assurance statement - Sustainability Report 2023 Appendix	
2-6 Activities, value chain and other business relationships	<i>Modern Slavery Statement 2022</i> Our supply chain https://www.csiro.au/en/work-with-us/Working-with-CSIRO/Service-Charter https://www.csiro.au/en/work-with-us https://www.csiro.au/en/about https://www.csiro.au/en/work-with-us/International	
2-7 Employees	<i>Sustainability Report 2023 Appendix – Data pack, Our People</i>	
2-8 Workers who are not employees	CSIRO also has a number of affiliates covering a wide range of work-related activities. We had 2403 affiliates as at 30 June 2023, including students, contractors, visiting scientists and Fellows. There are notable fluctuations in numbers over the summer (Dec/Jan) when we have our summer vacation student intake.	

DISCLOSURE	LOCATION	COMMENT
2-9 Governance structure and composition	https://www.csiro.au/en/about/Corporate-governance/Minister-and-Board https://www.csiro.au/en/about/Corporate-governance/Chief-Executive-and-Executive-Team Annual Report 2023 Part 4 Our operations, Management and accountability	
2-10 Nomination and selection of the highest governance body	<i>Annual Report 2023 Part 4</i> Management and accountability, Our governance https://www.csiro.au/en/about/Corporate-governance	
2-11 Chair of the highest governance body	Ms Kathryn Fagg AO, Chair (non-Executive)	
2-12 Role of the highest governance body in overseeing the management of impacts	<i>Sustainability Report 2023</i> Oversight <i>Annual Report 2023 Part 4</i> Management and accountability, Our governance	
2-13 Delegation of responsibility for managing impacts	<i>Sustainability Report 2023</i> Oversight <i>Annual Report 2023 Part 4</i> Management and accountability, Our governance https://www.csiro.au/en/about/Corporate-governance	
2-14 Role of the highest governance body in sustainability reporting	The CSIRO Board approved the CSIRO Sustainability Strategy 2020-2030, which incorporates our material topics. The Annual Report, containing sustainability information, is approved by the board. The Sustainability Report is approved by our Chief Operating Officer. The Sustainability Steering Committee reviews the Sustainability Report and provides input and guidance.	
2-15 Conflicts of interest	<i>Annual Report 2023 Part 4</i> Disclosure of interests and related entity transactions	
2-16 Communication of critical concerns	There were no instances of significant non-compliance requiring Accountable Authority notification to the Minister in the FY23 reporting period.	
2-17 Collective knowledge of the highest governance body	https://www.csiro.au/en/about/Corporate-governance/Minister-and-Board <i>Annual Report 2023</i> Our Board	
2-18 Evaluation of the performance of the highest governance body	https://www.csiro.au/en/about/We-are-CSIRO Service Charter - CSIRO <i>Annual Report 2023 Part 4</i> Our governance	
2-19 Remuneration policies	<i>Annual Report 2023 Part 4</i> Remuneration	
2-20 Process to determine remuneration	<i>Annual Report 2023 Part 4</i> Remuneration https://www.csiro.au/en/about/Corporate-governance/Minister-and-Board/BPHSC https://www.csiro.au/en/about/Policies/CSIRO-Enterprise-Agreement	
2-21 Annual total compensation ratio	<i>Annual Report 2023</i> Remuneration CSIRO does not currently report this metric but will consider for future reporting years	
2-22 Statement on sustainable development strategy	<i>Sustainability Report 2023</i> , Message from our Chief Executive	

DISCLOSURE	LOCATION	COMMENT
2-23 Policy commitments	https://www.csiro.au/en/about/Policies https://www.csiro.au/en/about/Corporate-governance <i>Annual Report 2023 Part 4</i> Policy framework <i>Sustainability Report 2023</i> Responsible resource use and value chain <i>Modern Slavery Statement 2022</i>	
2-24 Embedding policy commitments	<i>Annual Report 2023 Part 4</i> Management and accountability <i>Sustainability Report 2023</i> Responsible resource use and value chain <i>Modern Slavery Statement 2022</i>	
2-25 Processes to remediate negative impacts	<i>Annual Report 2023 Part 4</i> Management and accountability <i>Sustainability Report 2023</i> Responsible resource use and value chain; Raising concerns <i>CSIRO Modern Slavery Statement 2022</i>	
2-26 Mechanisms for seeking advice and raising concerns	<i>Annual Report 2023 Part 4</i> Management and accountability <i>Sustainability Report 2023</i> Raising concerns <i>CSIRO Modern Slavery Statement 2022</i>	
2-27 Compliance with laws and regulations	There were no instances of significant non-compliance requiring Accountable Authority notification to the Minister in FY23	
2-28 Membership associations	<i>Sustainability Report 2023 Appendix</i> How we engage with our stakeholders	CSIRO memberships extend across a breadth of business, industry, government and scientific organisations, as referenced at times in this report
2-29 Approach to stakeholder engagement	<i>Annual Report 2023</i> Objectives 3 and 4 <i>Sustainability Report 2023</i> Our stakeholders; <i>Appendix</i> How we engage with our stakeholders	
2-30 Collective bargaining agreements	<i>Annual Report 2023 Part 4</i> Our Operations, Remuneration, Enterprise Agreements; Remuneration policy, strategy and governance https://www.csiro.au/en/about/Policies/CSIRO-Enterprise-Agreement	<p>In accordance with section 53 of the Fair Work Act 2009, this Agreement covers:</p> <ul style="list-style-type: none"> • The CSIRO Chief Executive, on behalf of CSIRO; • All CSIRO Officers other than senior executives who are members of the Executive Team and officers covered by the CSIRO Canberra Deep Space Communication Complex (CDSCC) Enterprise Agreement 2018 - 2021 [AG2018/6866] or any successor Agreement covering employees at the Canberra Deep Space Communication Complex, Tidbinbilla, as approved by the Fair Work Commission; and • Subject to a decision of the Fair Work Commission, those unions approved to be covered by the Agreement. <p>The Executive Team is not covered by bargaining agreements, but are engaged under individual agreements which provide similar terms and conditions to those under the collective agreements.</p>

DISCLOSURE	LOCATION	COMMENT
GRI 3: MATERIAL TOPICS 2021		
3-1 Process to determine material topics	<i>Sustainability Report 2023</i> Appendix, Materiality	
3-2 List of material topics	<i>Sustainability Report 2023</i> Appendix, Material topic definitions	
3-3 Management of material topics	<i>Sustainability Report 2023</i> Appendix, Material topic definitions	
GRI 201: ECONOMIC PERFORMANCE 2016		
201-1 Direct economic value generated and distributed	<i>Annual Report 2023 Part 5</i> Financial statements https://www.csiro.au/en/about/Corporate-governance/Ensuring-our-impact/Auditing-our-impact	
201-2 Financial implications and other risks and opportunities due to climate change	<i>Sustainability Report 2023</i> Risks and Opportunities of the Global Climate transition <i>Sustainability Report 2023 Appendix</i> TCFD Reporting Index	
201-4 Financial assistance received from government	<i>Annual Report 2023 Part 5</i> Financial statements	
GRI 203: INDIRECT ECONOMIC IMPACT 2016		
203-2 Significant indirect economic impacts	<i>Annual Report 2023 Part 3</i> Objectives 1 and 2 https://www.csiro.au/en/about/Corporate-governance/Ensuring-our-impact/Auditing-our-impact	
GRI 204: PROCUREMENT PRACTICES 2016		
204-1 Proportion of spending on local suppliers	<i>Annual Report 2023 Part 5</i> Financial statements <i>Sustainability Report 2023</i> Responsible resource use and value chain; Appendix Data pack, Table F1	
GRI205: ANTI-CORRUPTION 2016		
205-2 Communication and training about anti-corruption policies and procedures	<i>Sustainability Report 2023</i> Our business; Appendix Data pack, Table P8	
GRI 302: ENERGY 2016		
302-1 Energy consumption within the organisation	<i>Sustainability Report 2023</i> Transitioning to a clean energy future; Appendix Data Pack Table E2, Chart E2	302-1d CSIRO does not sell electricity, heating, cooling or steam
302-3 Energy intensity	<i>Sustainability Report 2023</i> Transitioning to a clean energy future; Appendix Data pack Table E5	
GRI 303: WATER AND EFFLUENTS 2018		
303-5 Water consumption	<i>Sustainability Report 2023</i> Responsible resource use and value chain; Appendix Data Pack Table E5	

DISCLOSURE	LOCATION	COMMENT
GRI 305: EMISSIONS 2016		
305-1 Direct (scope 1) GHG emissions	<i>Sustainability Report 2023</i> Transitioning to a clean energy future; Appendix Data Pack Tables E1, E3, Chart E1	
305-2 Energy indirect (scope 2) GHG emissions	<i>Sustainability Report 2023</i> Transitioning to a clean energy future; Appendix Data Pack Tables E1, E3, Chart E1	
305-3 Other indirect (scope 3) GHG emissions	<i>Sustainability Report 2023</i> Transitioning to a clean energy future; Appendix Data Pack Table E4	
305-4 GHG emissions intensity	<i>Sustainability Report 2023</i> Transitioning to a clean energy future; Appendix Data pack Table E5	
305-5 Reduction of GHG emissions	<i>Sustainability Report 2023</i> Transitioning to a clean energy future; Appendix Data Pack Chart E1	
GRI 306: WASTE 2020		
306-1 Waste generation and significant waste-related impacts	<i>Sustainability Report 2023</i> Responsible resource use and value chain	
306-2 Management of significant waste-related impacts	<i>Sustainability Report 2023</i> Responsible resource use and value chain	
306-3 Waste generated	<i>Sustainability Report 2023</i> Responsible resource use and value chain; Appendix Data Pack Table E4	
306-4 Waste diverted from disposal	<i>Sustainability Report 2023</i> Responsible resource use and value chain; Appendix Data Pack Table E4	
306-5 Waste directed to disposal	<i>Sustainability Report 2023</i> Responsible resource use and value chain; Appendix Data Pack Table E4	
GRI 401: EMPLOYMENT 2016		
401-1 New employee hires and employee turnover	<i>Sustainability Report 2023</i> Appendix Data Pack Table P6	
GRI 403: OCCUPATIONAL HEALTH AND SAFETY 2018		
403-1 Occupational health and safety management system	<i>Sustainability Report 2023</i> Health, safety and well-being Annual Report 2023	
403-2 Hazard identification, risk assessment, and incident investigation	<i>Sustainability Report 2023</i> Health, safety and well-being	
403-3 Occupational health services	<i>Sustainability Report 2023</i> Health, safety and well-being	
403-4 Worker participation, consultation, and communication on occupational health and safety	<i>Sustainability Report 2023</i> Health, safety and well-being	
403-5 Worker training on occupational health and safety	<i>Sustainability Report 2023</i> Health, safety and well-being; Appendix Data pack Table P9	

DISCLOSURE	LOCATION	COMMENT
403-6 Promotion of worker health	<i>Sustainability Report 2023</i> Health, safety and well-being	
403-8 Workers covered by an occupational health and safety management system	<i>Sustainability Report 2023</i> Health, safety and well-being	
403-9 Work-related injuries	<i>Sustainability Report 2023</i> Health, safety and well-being; Appendix Data pack Table P10	
403-10 Work-related ill health	<i>Sustainability Report 2023</i> Health, safety and well-being; Appendix Data pack Table P11 notes	Note: No longer reported – see Data pack Table P11 notes
GRI 404: TRAINING AND EDUCATION 2016		
404-3 Percentage of employees receiving regular performance and career development reviews	<i>Sustainability Report 2023</i> Appendix Data Pack Table P2	
GRI 405: DIVERSITY AND EQUAL OPPORTUNITY 2016		
405-1 Diversity of governance bodies and employees	<i>Sustainability Report 2023</i> Diversity, inclusion and belonging ; Appendix Data Pack Tables P1, P3, P4, P5	
405-2 Ratio of basic salary and remuneration of women to men	<i>Sustainability Report 2023</i> Diversity, inclusion and belonging	
GRI 408: CHILD LABOR 2016		
408-1 Operations and suppliers at significant risk for incidents of child labor	https://www.csiro.au/en/about/policies/child-safe-policy	
GRI 411: RIGHTS OF INDIGENOUS PEOPLES 2016		
411-1 Incidents of violations involving rights of indigenous peoples	https://www.csiro.au/en/about/Indigenous-engagement https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan	
GRI 414: SUPPLIER SOCIAL ASSESSMENT 2016		
414-2 Negative social impacts in the supply chain and actions taken	<i>Sustainability Report 2023</i> Responsible and ethical procurement <i>Modern Slavery Statement 2022</i>	
GRI 418: CUSTOMER PRIVACY 2016		
418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	<i>Annual Report 2023 Part 4</i> Management and accountability, Archives, privacy and administrative decisions	

Limited Assurance Statement



Independent Limited Assurance Report to the Directors of Commonwealth Scientific and Industrial Research Organisation

Conclusion

Based on the evidence we obtained from the procedures performed, we are not aware of any material misstatements in the Information Subject to Assurance, which has been prepared by Commonwealth Scientific and Industrial Research Organisation (CSIRO) in accordance with the Global Reporting Initiative (GRI) Universal Standards 2021 and CSIRO's own basis of preparation disclosed in the CSIRO Sustainability Report 2023 and Sustainability Report 2022-2023 Data Pack for the year ended 30 June 2023 (Sustainability Report 2023).

Information Subject to Assurance

Information Subject to Assurance, as presented in the Sustainability Report 2023, includes:

Total Energy of 685TJ
Total Scope 1 GHG emissions of 20kt CO ₂ e
Total Scope 2 GHG emissions of 63kt CO ₂ e (location based method)
Total Scope 2 GHG emissions of 4kt CO ₂ e (market based method)
Employees Loss Time Injury of 21
Employees Medical Treatment Injury of 16
Employees Total Hours of 12,963,646.00
Employees Total Recordable Injury Frequency Rate of 2.85

(collectively, the Information Subject to Assurance).

Criteria Used as the Basis of Reporting

The Information Subject to Assurance has been prepared in accordance with the GRI Universal Standards 2021 and CSIRO's own basis of preparation disclosed in the Sustainability Report 2023 (*"the criteria"*).

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Basis for Conclusion

We conducted our work in accordance with Australian Standard on Assurance Engagements ASAE 3000 *Assurance engagements Other Than Audits or Review of Historical Financial Information* (Standard). In accordance with the Standard, we have:

- used our professional judgement to plan and perform the engagement to obtain limited assurance that we are not aware of any material misstatements in the Information Subject to Assurance, whether due to fraud or error;
- considered relevant internal controls when designing our assurance procedures, however we do not express a conclusion on their effectiveness; and
- ensured that the engagement team possess the appropriate knowledge, skills and professional competencies.

Summary of Procedures Performed

Our limited assurance conclusion is based on the evidence obtained from performing the following procedures:

- enquiries with relevant CSIRO personnel to understand the internal controls, governance structure and reporting process of the Information Subject to Assurance;
- reviews of relevant documentation including relevant CSIRO policies and management reporting to the CSIRO Board;
- analytical procedures over the Information Subject to Assurance;
- walkthroughs of the Information Subject to Assurance to source documentation;
- evaluating the appropriateness of the criteria with respect to the Information Subject to Assurance; and
- reviewed the Sustainability Report 2023 in its entirety to ensure it is consistent with our overall knowledge of assurance engagement.

How the Standard Defines Limited Assurance and Material Misstatement

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Misstatements, including omissions, are considered material if, individually or in the aggregate, they could reasonably be expected to influence relevant decisions of the Directors of CSIRO.

Use of this Assurance Report

This report has been prepared for the Directors of CSIRO for the purpose of providing an assurance conclusion on the Information Subject to Assurance and may not be suitable for another purpose. We disclaim any assumption of responsibility for any reliance on this report, to any person other than the Directors of CSIRO, or for any other purpose than that for which it was prepared.



Management's responsibility

Management are responsible for:

- determining that the criteria is appropriate to meet their needs and the needs of *other intended users*;
- preparing and presenting the Information Subject to Assurance in accordance with the criteria; and
- establishing internal controls that enable the preparation and presentation of the Information Subject to Assurance that is free from material misstatement, whether due to fraud or error.

KPMG

Our Responsibility

Our responsibility is to perform a limited assurance engagement in relation to the Information Subject to Assurance for the year ended 30 June 2023, and to issue an assurance report that includes our conclusion.

Our Independence and Quality Management

We have complied with our independence and other relevant ethical requirements of the *Code of Ethics for Professional Accountants (including Independence Standards)* issued by the Australian Professional and Ethical Standards Board, and complied with the applicable requirements of Australian Standard on Quality Management 1 to design, implement and operate a system of quality management].

Partner

Melbourne

16 October 2023

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Dampier Peninsula in WA. Image: Wayne Quilliam.

As Australia's national science agency, CSIRO is solving the greatest challenges through innovative science and technology.

CSIRO. Creating a better future for everyone.

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