SAZERO

ZERO CARBON • ZERO WASTE

POWERED BY COMMITTEE FOR ADELAIDE

ACCELERATING TO ZERO:

SA ZERO'S PATHWAYS FOR COLLABORATION

FORWARD FROM SA ZERO

South Australia has made a firm commitment to decarbonise its economy and mitigate the effects of climate change, positioning itself as a leader in sustainability and climate action.

Setting ambitious targets to reduce greenhouse gas emissions by more than 50% by 2030, 100% net renewable energy by 2030 and on the pathway to Net Zero emissions by 2050, the State has a longstanding strategy of integrating renewable energy, embracing technological innovation, and harnessing positive community sentiment to accelerate its climate change goals and ensure long-term sustainability.

South Australia will realise it's Net Zero future through continued investment in cutting-edge technologies and innovation, expanding its renewable energy capacity, continuing to build its green manufacturing capability, and pursuing its world-leading investment in green hydrogen production. This is under-pinned by dedicated climate change legislation and a progressed circular economy.

South Australia's decarbonisation commitments are ushering in a 'green reindustrialisation' of the economy, attracting new businesses and investors, creating jobs and helping to develop new skills in renewable energy, clean-technologies, and sustainable practices.

The State can seize this opportunity by ensuring the right policy settings and regulatory frameworks are in place to enable bold and pragmatic decision-making, fostering innovation, and supporting community preparedness and agility to drive a collective response.

South Australia's pathway to net zero can be designed to be both inclusive and economically viable for all, with an ongoing need to bridge the divide between those who are well-progressed on their net zero journey and those who are yet to act.

Managing transition costs, ensuring energy reliability and affordability, developing current and future skill requirements, securing sustainable investment, and maintaining public and political support present challenges that need to be carefully managed and addressed. But they also present opportunities for innovation, collaboration and leadership across government, industry, academia and the community to ascertain and safeguard a more sustainable future.

The 'Accelerating to Zero: SA ZERO's Pathways for Collaboration' report has been developed to guide the focus of SA ZERO going forward and provide a framework to catalyse action and enable South Australian businesses and organisations, large and small, to take proactive and targeted steps towards net zero. The report considers the challenges and opportunities ahead and sets out the combined efforts required to accelerate South Australia's net zero journey.

The transition to a more sustainable future cannot be solved by government or industry alone. We all have a role to play.

Done right, and with continued ambition and collaboration, South Australia is well positioned to meet its decarbonisation goals and herald in a new era of environmental stewardship and economic prosperity for the state.

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EXECUTIVE SUMMARY:

South Australia is well progressed on its decarbonisation journey, reducing emissions by 42 per cent from 2005 levels and generating over 70 per cent of its electricity from renewable sources.[1]

The State has set ambitious targets to reduce greenhouse gas emissions by 50% below 2005 by 2030 and reaching net zero by 2050, as well as a target of 100 per cent net renewable electricity generation by the end of 2027 [2].

To meet these goals, the pace and scale of decarbonisation and the circular economy across South Australia needs to be increased. This requires collaboration across the economy to overcome barriers, seize opportunities and ensure that all South Australians are well-equipped and actively contribute to the state's net zero targets.

Launched in 2023, SA ZERO is a landmark South Australian collaboration that brings together business, government and academia to share-learnings, address common challenges, identify solutions and fast-track South Australia's Net Zero pathways.

Through extensive engagement with its members, SA ZERO has identified six 'Collaboration Pathways,' each addressing opportunities and barriers to achieving zero carbon and zero waste goals:

1. **Green Skills & Capacity Building**
2. **Technology, Innovation & Scalability**
3. **Policy Development & Engagement**
4. **Reporting Standards & Requirements**
5. **Access to Financial Resources**
6. **Accurate, Timely & Meaningful Data.**

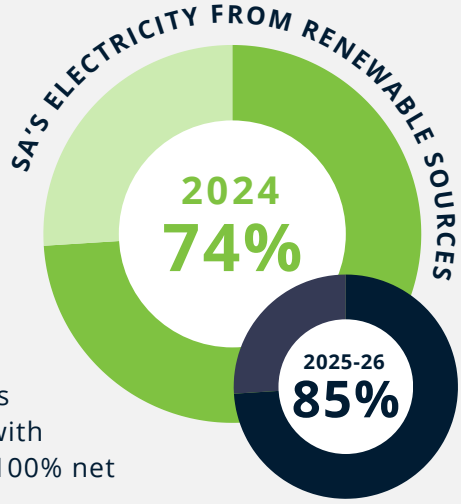
SA ZERO has identified these pathways as focus areas for future collaboration. They are also designed to assist South Australian businesses, organisations and community groups to identify meaningful and measurable steps that can be progressed through cooperation, and at the right speed and scale required, to ensure SA meets its net zero goals while embracing new avenues of economic prosperity.

[1] https://www.environment.sa.gov.au/news-hub/news/articles/2024/03/strengthening-south-australias-response-to-climate-change#:~:text=South%20Australia%20has%20reduced%20emissions,per%20cent%20by%202025%2D26.
{2} https://www.environment.sa.gov.au/topics/climate-change/net-zero-pathway

INTRODUCTION:

THE WINDOW FOR ACTION IS CLOSING

SOUTH AUSTRALIA NEEDS TO ACCELERATE PROGRESS.



South Australia has a reputation for being an early adopter, driving innovative thinking and seeking-out opportunities and embracing change.

The State's energy transition, particularly the uptake of renewable energy, is well documented and recognised globally as a success story. South Australia currently generates approximately 74% of its electricity from renewable sources, with projections that this will reach 85% by 2025-26 on the way to 100% net renewable energy by 2027. [3]

South Australia is also leading in other areas including resource recovery rates, banning single-use plastics and world-leading investment in hydrogen production.

While both the South Australian and Commonwealth Governments have committed to carbon emissions reduction goals, in pursuit of a Net Zero economy by 2050, latest assessments suggest that to limit the global warming temperature increase to within 1.5 °C by the end of the century, a rapid reduction in carbon emissions is needed over the next decade.

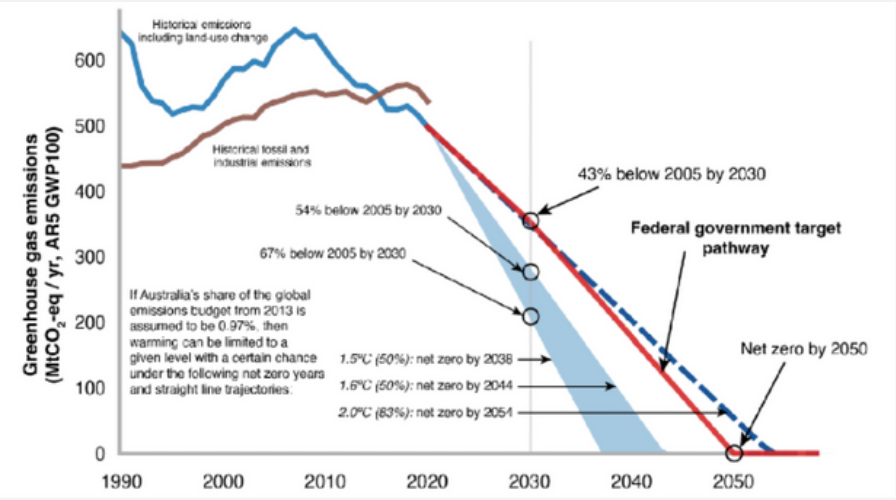


FIGURE 1.
Australia's greenhouse gas emissions trajectory compared to science-based targets [4]

[3] https://www.energymining.sa.gov.au/consumers/energy-grid-and-supply/our-electricity-supply-and-market
[4] https://www.climate-resource.com/reports/wwf/20230612_WWF-Aus-Targets.pdf

The challenge posed by climate change is much broader than reducing carbon emissions. It is important to also consider the depletion of the natural capital and the impact of climate change on the natural ecosystem, such as fresh water, soil formation, fish stocks and pollination counts, which the economy relies upon. Finding ways to reduce reliance on and therefore depletion of 'natural capital' (as depicted in Figure 2) is crucial to protecting the environment, safeguarding human health and ensuring economic stability.

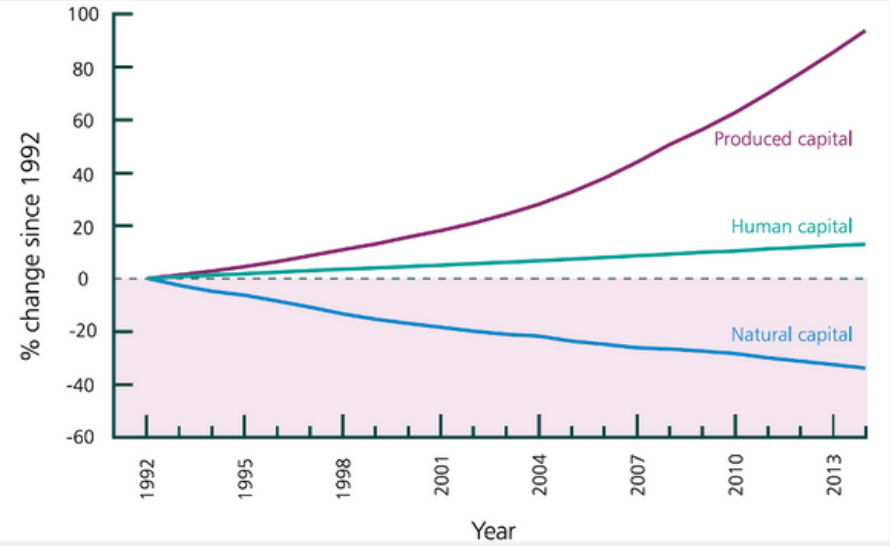


FIGURE 2
Estimates of global accounting values per capita of three classes of capital goods [5]

The South Australian economy needs to think big and move faster to make a net zero future a continued focus and part of the day-to-day reality of doing business. It's imperative for both government and industry to continue to collaborate in pursuit of a circular and regenerative economy, to unlock boundless opportunities for innovation, competitive advantage and build a thriving and sustainable economy to ensure the prosperity and wellbeing of future generations.

Moving at the pace and scale needed means addressing barriers and seizing opportunities. Collaboration is key. Changing economic and geopolitical conditions requires governments and organisations to constantly evaluate the focus of their resources, with an ongoing need to minimise costs and boost sovereign capability.

[5] The Economics of Biodiversity: The Dasgupta Review (2021) https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review

INTRODUCTION:

THE WINDOW FOR ACTION IS CLOSING

The challenge in transitioning to net zero requires that all organisations are aware of the importance of reducing emissions and the efforts required to overcome barriers, while being prepared and able to seize the opportunities.

Following extensive engagement with its members, SA ZERO has identified some of the most common challenges and opportunities from transitioning to a zero-carbon, zero-waste economy:

- A greater focus on sustainability and a resulting increase in employment opportunities has resulted in a **requirement for 'green skills'** in the local labour market. These skills cover a broad range of industry professions that are needed to design, build and maintain a zero carbon, zero waste economy.
- The **relative cost and maturity of climate focused technology** is resulting in a slow uptake of enabling innovations at scale in hard-to-abate industries.
- A continued focus on **meaningful and effective engagement is needed to shape both industry and government strategy, policy and planning** around decarbonisation initiatives.
- There are **increasingly complex and detailed reporting and disclosure requirements in the market**, requiring uplift in capability and associated capacity challenges, especially at a time of constrained resources.
- New and evolving emissions reporting requirements, especially in relation to **accurate greenhouse gas emissions data from the supply and value chain**, also requires additional focus to ensure understanding, effective decision-making and disclosure.
- The rapid transition to 'green' financing and the evolving nature of funding requirements, means that **organisations must continue to identify suitable sources of funding** to execute decarbonisation projects.

While some of these barriers are systematic, they also present opportunities for innovation and modernisation, ushering in new ways of working, increasing the speed and uptake of new technologies and a broader, longer-term focus on sustainable economic growth.

It is clear that overcoming these barriers will require a combined effort across the South Australian economy.

INTRODUCTION:

ABOUT THIS REPORT

This report has been developed by SA ZERO, as part of its mission to accelerate South Australia's zero-carbon, zero-waste pathways. Driven by the Committee for Adelaide, members of SA ZERO include BHP, the City of Adelaide, CSIRO, Flinders Port Holdings Group, Flinders University, RAA and the University of Adelaide, coming together as an industry-led cluster to stimulate meaningful collaboration and action across industry, academia and government.

The objective of this report is to outline SA ZERO's focus areas, share learnings so far and identify and trial new techniques for collaboration and action. The report also aims to outline opportunities, inform decision-making and build a framework for how government, industry and academia can work together towards a zero-carbon, zero-waste future.

The report has been informed by multiple interviews and workshops with SA ZERO members and key stakeholders, along with desktop research and analysis.

The report introduces:

1. **Six key pathways for future collaboration**, each addressing key barriers and opportunities to progress towards net zero goals.

2. **A framework for defining collaborative initiatives** that accelerate our progress to zero and to help organisations determine their participation based on their impact, resources, capabilities and influence.

3. **A call-to-action** for South Australian businesses, academic institutions and government agencies to explore opportunities for collaboration, including participation in SA ZERO.

COLLABORATION PATHWAY 1:

GREEN SKILLS & CAPACITY BUILDING

SOUTH AUSTRALIA NEEDS GREEN SKILLS. AND LOTS OF THEM.

The transition to net zero requires the development and deployment of 'green skills', the expertise and knowledge required to drive the shift towards a more sustainable future.

According to the global Green Skills Report 2023, only 1 in 8 workers have one or more green skills, highlighting the significant skill creation and upskilling that is required to meet current and future sustainability needs [6]. With green skills and climate change expertise quickly shifting from being 'nice-to-haves' to critical business essentials, the report also found that demand for green skills will soon outstrip supply, with global advertisements for green jobs increasing by more than 15% in 2023 compared to the previous year.

In Australia, as many as 2 million new jobs will be required to meet net zero by 2050, with 200,000 roles needed to reach Australia's 2030 emissions reduction target [6]. These roles encompass a wide range of competencies and skillsets spanning multiple sectors including health, education, renewable energy, energy efficiency, technology, innovation, green construction, carbon accounting and finance, environmental conservation, sustainable agriculture and waste management.

In South Australia, developing green skills and capacity building across the economy is especially critical given the nature of the business environment and the heightened competition for talent across critical sectors.

Approximately 90% of South Australian businesses employ fewer than 100 people, the majority of which are without an identified sustainability resource. This increases the challenge of their preparation, transition and participation in a more sustainable, low-carbon future.

To enable businesses to innovate, grow and succeed in implementing sustainable practices and meeting decarbonisation targets, there is a critical need to prioritise investment and development of new green skills. This requires a multifaceted approach involving education, hands-on training and professional development initiatives, in addition to fostering a culture of continuous learning and equipping the current workforce with the necessary skills to thrive in a green economy through upskilling, reskilling and micro-credentialling opportunities.

[6] https://economicgraph.linkedin.com/research/global-green-skills-report
[7] https://www.eec.org.au/news/eec-news/article/media-release-australia-needs-two-million-new-workers-to-meet-emissions-reduction-targets

MORE GREEN SKILLS WILL LEAD TO A MORE SUSTAINABLE AND STRONGER ECONOMY.

Fostering a local 'green-skilled' workforce will not only enable South Australian businesses to align their operations with decarbonisation and circularity goals but also capitalise on the global green transition by scaling up the production and exportation of green energy, products and services to meet global demand.

It will support businesses to grow and innovate, create new supply-chain opportunities, trade and export markets, and attract new businesses, start-ups and investment in South Australia.

Government, industry and education institutions have the opportunity to work in close collaboration to identify and develop the skills required, share expertise, research and best practice to accelerate the deployment and application of green skills, and actively promote green skills and career pathway opportunities.

1 GROW THE GREEN ECONOMY WORKFORCE.

- Prioritise and invest in the development of green skills, capabilities and sustainability-focused curriculum across the education and training system to ensure a pipeline of green talent to meet demand. This includes integrating sustainability and green skills across multiple disciplines / roles.
- Provide on-the-job training, upskilling, reskilling and micro-credentialling opportunities to existing workforce.
- Regularly monitor skills and workforce requirements, and communicate green skill shortages and needs across government, industry, education and skills institutions.
- Establish and promote partnerships between industry, academia and other stakeholders to facilitate knowledge-sharing and best-practice.

2 CREATE AND PROMOTE GREEN JOBS AND CAREER PATHWAYS.

- Create and promote green jobs and career pathways.
- Promote the broad ecosystem of jobs and career pathways on offer across the green economy to students, parents and career advisors.
- Actively attract, recruit and retain local and international talent with green skills and credentials across all sectors.

STAKEHOLDERS INVOLVED IN DELIVERY:

State Government, Industry, Education Sector and Academic Institutions

COLLABORATION PATHWAY 2:

TECHNOLOGY, INNOVATION & SCALABILITY

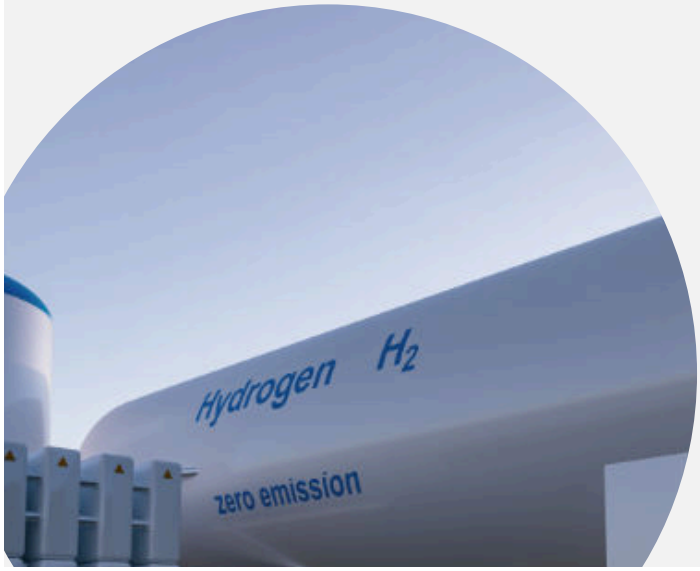
DRIVE THE UPTAKE OF ZERO-ENABLING TECHNOLOGIES.

South Australia's net zero targets cannot be achieved without the rapid adoption of sustainable technologies.

While some of the technologies required to decarbonise exist, such as within the renewable energy sector, it is clear that for some of South Australia's hard-to-abate sectors, innovative climate technology solutions are yet to become readily available at scale and at cost effective rates that enable accelerated adoption.

In many cases, technology is continuing to evolve, including in green hydrogen and sustainable aviation fuel, battery-recycling, decarbonised heavy-vehicles, carbon capture and storage, alternatives to single-use plastics, regenerative agriculture, and circular building materials.

There are a myriad of barriers affecting technology innovation and uptake. In some cases, it's a technological maturity barrier where the required technologies are still in the development or early deployment stages, requiring further R&D investment to become commercially viable.



In other cases, it's a financial barrier, with the high upfront costs required to deploy new technologies becoming cost-prohibitive for companies, especially for small and medium-sized enterprises (SMEs) which compromise a significant proportion of the South Australian economy.

Collaboration provides a way to potentially address these barriers by creating the opportunity to co-invest in early-stage technology development, share the financial risk of pilots and trials, and create economies of scale to meet market demand and lower-capital costs.

For example, transport emissions account for a significant portion of South Australia's overall emissions, with heavy trucks and buses alone contributing around 10-15% of total transport emissions in the state.

Leading the charge in technology innovation and adoption will create new sources of competitive advantage for South Australia.

The global market potential for decarbonisation and circular economy technologies will be a multi-trillion-dollar industry by 2030 [8]. By fostering an environment of rapid technology development, incubation and deployment, South Australia businesses will benefit from new sources of competitive advantage and export potential to meet demand.

With the Government of South Australia firmly recognising the foundational role of advanced manufacturing to a smart, sustainable and inclusive economy [9], the rapidly growing demand for these technologies creates the opportunity for new jobs, both directly in the design, manufacturing, installation, maintenance and operation, and indirectly via supporting industries such as professional services, logistics, retail and supply chain.

1 INCREASE INVESTMENT IN SUSTAINABLE TECHNOLOGY INNOVATION, ADOPTION & R&D.

- Encourage investment and adoption of sustainable technologies and smart systems across private and public sectors to accelerate decarbonisation and circularity targets.
- Support and encourage collaboration and co-investment in technology research, trials and adoption across industry, government, academia, researchers and start-ups.
- Incentivise R&D partnerships between industry, research institutions and academia to enhance technology development, utilisation and commercialisation.
- Attract, promote and provide access to seed-funding, capital and financing to support early-stage development, growth and scaling of South Australia green technology companies and start-ups.

2 POSITION SOUTH AUSTRALIA TO BE A WORLD-LEADER IN LOW-CARBON TECHNOLOGIES AND INNOVATION.

- Leverage and grow South Australia's specialist sustainability strengths and credentials across renewable energy, clean hydrogen, green iron and waste management to encourage continuous improvement, technology innovation, knowledge-sharing and commercialisation of IP.
- Foster an enabling environment for South Australian businesses to test and trial locally developed green technologies and innovations to support early market advantage.
- Support existing and new 'innovation hubs' that bring together researchers, startups, businesses and customers together to identify, co-create and test innovative green technology and scalability solutions to accelerate decarbonisation goals.

STAKEHOLDERS INVOLVED IN DELIVERY:
State Government, Industry, Research and Academic Institutions.

[8] https://www.weforum.org/agenda/2023/09/iea-clean-energy-investment-global-warming/; https://www.ellenmacarthurfoundation.org/press-release-circular-business-models
[9] https://cms.dis.frame.hosting/assets/uploads/downloads/diis/South-Australia-Advanced-Manufacturing-Strategy-2023.pdf

COLLABORATION PATHWAY 3:

POLICY DEVELOPMENT & ENGAGEMENT

MEANINGFUL AND EFFECTIVE ENGAGEMENT TO SHAPE STRATEGY, POLICY AND PLANNING.

It is important that all stakeholders, including governments, industry and academic institutions, continue to work together in setting appropriate zero-carbon, zero-waste goals and standards.

The Commonwealth and South Australian Government are responsible for setting national and state climate change policies, targets and reporting standards, consistent with global goals, including those of the Paris Agreement. Government also plays a key role as a regulator, setting optimal regulatory frameworks to drive investment, innovation and competition to enable decarbonisation efforts across the economy.

Government intervention through regulation can act as both a driver and a means to achieving net zero targets.

Given that the government's climate change targets and regulations have direct implications for South Australia's major industry sectors, industry input is essential when developing and reviewing policies, goals and regulations to ensure they are fit-for-purpose and achieve their desired outcomes and impact. Meaningful and effective consultation across government, industry and other key stakeholders can help to unpack issues and identify opportunities, influences, solutions and risks that need to be addressed and mitigated. Early and sustained engagement can also reduce red-tape, provide business certainty, speed-up decision making and streamline regulatory processes without comprising intended objectives.

Regulatory flexibility is also required when new trends, products or services emerge. In order to accelerate decarbonisation targets, businesses need to be able to quickly adapt and respond to market-trends and innovations. Policy and regulations therefore need to allow for some flex to enable business dynamism, provide certainty and de-risk project ventures, along with streamlined and fast approval processes.

Industry also has a role to play in communicating and advising government of issues, challenges and opportunities on the pathway to net zero. This will help to align government policy and goals with business capability, market trends and projections.

A recent example of effective policy development is the recent enactment of the Hydrogen and Renewable Energy Act 2023, which provides a framework for the licencing and regulatory system for hydrogen and renewable energy projects. Before this, approvals would span multiple pieces of legislation and require significant timeframes for applications and approvals [10]. Extensive engagement between government and industry has led to the establishment of a new regime that provides confidence for investors seeking to resolve critical issues such as land access, environmental impacts, and native title rights into a single regulatory framework [11].

1 SET CLEAR, EFFECTIVE AND ROBUST CLIMATE CHANGE POLICY, REGULATIONS AND INCENTIVES.

- Continue to ensure government climate change policy, goals and regulations are informed through genuine and extensive consultation with industry, academia and community to ensure goals and deliverables are fit-for-purpose and achieve desired outcomes and impact.
- Simplify and streamline climate change policy, goals and regulations to make it easier for industry, academia and community to support, deliver and excel.
- Foster an environment of collaboration, transparency and continuous improvement across government, industry and community.

2 PROVIDE REGULATORY FLEXIBILITY TO ENABLE INNOVATION AND BUSINESS DYNAMISM.

- Ensure climate change policy and regulations enable businesses to innovate, adapt and respond to market trends, technological advancements and Net Zero opportunities.
- Reduce red-tape and speed up decision-making across the public and private sector to ensure policy and regulations respond to changing economic, social, and technological conditions.
- Ensure South Australia's regulatory framework stays ahead of the curve to stimulate investment, attract new and support existing businesses and start-ups, and boost international competitiveness.

STAKEHOLDERS INVOLVED IN DELIVERY:
State and Federal Government.

[10] https://www.indaily.com.au/news/2023/09/13/law-change-to-open-sa-up-to-renewable-and-hydrogen-gold-rush
[11] https://esdnews.com.au/south-australia-passes-bill-to-accelerate-hydrogen-projects/

COLLABORATION PATHWAY 4:

REPORTING STANDARDS & REQUIREMENTS

SUPPORT BUSINESSES TO NAVIGATE AND RESPOND TO SUSTAINABILITY REPORTING STANDARDS AND REQUIREMENTS TO IMPROVE CONSISTENCY AND TRANSPARENCY.

There has been a proliferation of sustainability standards and reporting requirements in recent years, from traditional ISO system standards around environmental management and product life cycle analysis, through to public reporting and corporate disclosures, building sustainability performance, product sustainability standards, greenhouse emissions accounting, greenwashing guidelines and carbon neutrality standards such as the Australian Government's Climate Active.

The volume and diversity in climate change standards and guidelines has emerged due to sector-specific needs, regional and regulatory differences, the evolution of existing standards, market-led pressures and community and shareholder demand [12]. Inconsistencies between standards and requirements have also arisen, leading to confusion, distrust and variability in reporting. For example, Climate Active and the Science Based Targets Initiative (SBTI) have differing views on the acceptable use of carbon offsets to achieve emissions reduction and carbon neutral targets, making it unclear to organisations as to which standard is more credible to adopt.

Furthermore, many standards and reporting obligations require significant time and resources to prepare, which for many businesses puts additional pressures on already constrained resources. At the same time, implementing thorough sustainability reports and disclosures can significantly enhance business transparency, accountability and stakeholder trust, leading to increased sales and growth.

[12] EY (2021) The future of sustainability reporting standards

In 2025, the mandatory climate-related financial reporting will commence in Australia for large companies (Group 1) under the Australian Sustainability Reporting Standards (ASRS). Large corporations, National Greenhouse and Energy Reporting Scheme Act reporters and asset owners and managers will be required to provide comprehensive reporting on climate-related financial information including climate risks, opportunities and greenhouse gas emissions. Preparing for these disclosures will require significant investment in new systems, processes and training to meet the requirements. Even smaller companies which may not meet the reporting threshold may still be affected by these disclosure requirements through their involvement in the supply chain of covered entities.

The South Australian Government is helping to prepare local businesses to respond to reporting standards and requirements through initiatives such as the 'Small Business Sustainability Program' [13]. Working together and sharing expertise, knowledge and resources across the South Australian business community, will help to demystify and simplify the standards and reporting landscape. It will also help bridge the divide between those organisations who are well equipped in sustainability action and reporting and those who are yet to act.

1 SUPPORT SOUTH AUSTRALIAN BUSINESSES AND ORGANISATIONS TO NAVIGATE AND RESPOND TO SUSTAINABILITY REPORTING STANDARDS AND REQUIREMENTS.

- Clearly communicate the purpose, benefit and obligation of sustainability reporting standards and requirements to all South Australian businesses and organisations.
- Provide support services, helpful tools and easy-to-use templates for businesses to understand, meet and improve sustainability reporting disclosures and requirements.
- Support South Australian business to identify and align with international and region-based sustainability standards and certifications to improve access to international markets and jurisdictions.

2 INVEST IN TECHNOLOGY AND SMART SYSTEMS TO IMPROVE EFFICIENCIES.

- Support the uptake of digital technologies, smart systems and artificial intelligence tools to assist government and businesses in identifying and abiding by sustainability standards, accreditations and reporting standards, including automation and collation of data to improve accuracy and timeliness of reports.
- Encourage and support businesses to utilise reporting data to improve operational efficiencies and improvements to products and services.

STAKEHOLDERS INVOLVED IN DELIVERY:

State Government, Industry, Research and Academic Institutions

[13] https://business.sa.gov.au/programs/sustainability-support-program

COLLABORATION PATHWAY 5:

ACCESS TO FINANCIAL RESOURCES

IMPROVE ACCESS TO FINANCIAL RESOURCES.

Accelerating the transition to net zero requires substantial access to financial resources across various sectors, with estimates that Australia will require $1.2 to $1.5 trillion in investment by 2030 and a total of $7 to $9 trillion by 2060 [14]. From early-stage research and product development, smart technology trials and deployment to large public infrastructure projects to support the transition to renewables, funding will be required across all stages of the transition.

Financial resources can be accessed through a range of options including:

Public finance options including government grants and subsidies such as the Australian Renewable Energy Agency's funding programs, the South Australian Government's Small Business Energy Grants Program,[13] or Green Industries SA's Recycling Infrastructure Grants.

Public-private partnerships (PPPs), which are collaborations between governments and private sector companies to combine public and private capital to finance large-scale projects.

Private finance options including private equity and venture capital to fund start-ups or the growth of innovative companies offering sustainable products, solutions or technologies. It also includes products such as 'Sustainability-Linked Loans' which are provided by financial institutions to companies for projects with environmental benefits as well as 'Green Bonds', which are issued to finance projects that have positive environmental benefits.

Market-based instruments, which includes Renewable Energy Certificates (RECs), carbon credits or an internal price on carbon.

[14] EY (2021) The future of sustainability reporting standards

The key challenge for South Australia is ensuring businesses, especially small and medium sized enterprises, can access the necessary financial resources to implement net zero initiatives that benefit business performance and accelerate the State's transition.

Collaboration can increase investment flows and position the State for economic growth.

By working together, governments, private sector entities, financial institutions and other stakeholders can create an enabling environment for accessing the necessary financial resources.

1 LEVERAGE SOUTH AUSTRALIA'S GREEN CREDENTIALS TO ATTRACT INVESTMENT AND CAPITAL.

- Continue to promote and showcase South Australia's green economy and climate-change leadership to attract new businesses and global investors.
- Support South Australian start-ups and SMEs to identify, connect and access national and international investment funds, grants, public and private financing options and other sources of capital to accelerate net zero goals.

2 EXPLORE NEW AND COLLABORATIVE WAYS OF ACCESSING FINANCE.

- Facilitate private and public sector partnerships to de-risk and fund large-scale decarbonisation projects.
- Support a broader range of businesses to access untraditional finance sources such as green bonds, sustainability-linked loans and carbon credits.
- Provide technical assistance and capacity building to local businesses and financial institutions to better understand implement sustainable finance mechanisms.

STAKEHOLDERS INVOLVED IN DELIVERY:
State Government, Industry, Banking and Finance Sector

COLLABORATION PATHWAY 6:

ACCURATE, TIMELY & MEANINGFUL DATA

PROVIDE ACCESS TO ACCURATE AND MEANINGFUL DATA TO INFORM DECISION-MAKING.

Accessing accurate and meaningful emissions data is essential for tracking progress, identifying emissions reduction opportunities, responding to customer and regulatory demands, and building trust with key stakeholders. Ensuring data is collected in a consistent and benchmarked way will also enable appropriate short-term and long-term decision making.

Whilst significant progress is being made in formulating Scope 1 and Scope 2 emission tracking requirements, particularly in organisations who will be subject to mandatory reporting, the vast majority of South Australian businesses and organisations are not fully aware of requirements or have the necessary skills to determine what data to collect about their emissions. This has implications for those organisations who are seeking to calculate and track their Scope 3 emissions, which depending on the type of business and industry, can account for between 65%-95% of a business's carbon footprint [15].

COLLABORATION CAN STREAMLINE AND IMPROVE ACCESS TO ACCURATE AND MEANINGFUL GREENHOUSE GAS EMISSIONS DATA ACROSS THE STATE'S KEY VALUE CHAINS.

1 STANDARDISE CALCULATION METHODOLOGIES AND SHARE LOCAL EMISSIONS-RELATED DATA.

- Foster collaboration across government, industry and academia to develop and adopt standardised calculation methodologies and share localised emissions-related data for purchased goods and services.
- Provide support to South Australian start-ups and SMEs to access and utilise standardised calculation methodologies and localised emissions-related data to deliver efficiencies and improve data accuracy and consistency.
- Consider developing sector-specific tools and guidelines to make it easier for businesses to gather and report Scope 3 emissions data accurately.

2 PROVIDE REGULATORY FLEXIBILITY TO ENABLE INNOVATION AND BUSINESS DYNAMISM.

- Enable the collaborative development of technology platforms to streamline data collection and reporting, including creating databases or block chain systems to track emissions data throughout the supply chain.
- Encourage South Australian businesses to work together to identify solutions to shared problems relating to emissions calculations and data collection.
- Provide information and incentives to start-ups and SMEs to measure and improve emissions tracking and reporting which will help businesses respond to emerging market demands and identify emissions reduction initiatives that improve profitability and success.

STAKEHOLDERS INVOLVED IN DELIVERY:

State Government, Industry, Research and Academic Institutions.

[15] https://theconversation.com/big-businesses-will-this-year-have-to-report-their-environmental-impacts-but-this-alone-wont-drive-change-224743

FROM INTENTION TO ACTION

A NEW MODEL FOR DEFINING COLLABORATIVE INITIATIVES.

Collaboration between industry, academia and government will play a big role in addressing the key challenges and opportunities presented under each Collaboration Pathway.

Through deep engagement with its members, SA ZERO has defined an approach that they will use to identify which level of collaboration is of interest based on their appetite, resources, capabilities and influence. This model defines five distinct Collaboration Levels to define and accelerate practical action across each Collaboration Pathway:

Level 1 - Zeroing [15] our Operations: This level of collaboration occurs between individual organisations, where they work together on discrete projects that accelerate each other's decarbonisation objectives at the operational level. For example, two agribusinesses in the mid-North co-investing in trial of electric cropping vehicles.

Level 2 - Zeroing our Supply Chains: This level of collaboration happens across our shared supply chains, where organisations can focus their collective efforts on initiatives that support the decarbonisation of the State's extensive supplier base. For example, a wine maker can partner with their glass supplier to co-invest in a circular economy project to take-back used bottles.

Level 3 - Zeroing our Customers: Collaboration can also occur downstream of our businesses, where we can work together with our shared customers to rethink and create market demand for zero carbon and zero waste products and services. For example, a food distributor can collaborate with the chef of a local restaurant to explore sustainable food menu options.

Level 4 - Zeroing our Precincts: Collaboration to decarbonise our precincts, which is a place-based innovation approach where benefits are realised through shared geographies. For example, extending on the Hydrogen Jobs Plan for Whyalla and the Upper Spencer Golf to explore and implement a range of zero carbon, zero waste initiatives.

Level 5 - Zeroing our State: Collaboration across the entire South Australian economy, where many macro-projects will ensure that the economy thrives through its pursuit of a zero carbon, zero waste future. For example, creating opportunities for industry and government to collaborate on the co-design of policies to accelerate our progress towards net zero by 2050 or sooner.

[15] 'Zeroing' refers to zero carbon, zero waste (the precise nature and timing will vary across organisations)

COLLABORATION TO ZERO:

PROPOSED INITIATIVES

Collaboration Level	**Collaboration Pathway 1:** Green Skills & capacity building	**Collaboration Pathway 2:** Technology, innovation & scalability	**Collaboration Pathway 3:** Policy Development & Engagement
Level 1: Zeroing our Operations	Example: Establish a 'sustainability champions' initiative, inviting emerging sustainability leaders across South Australian businesses to participate in initiatives that build their capacity	**SA Zero to host 'Technology & Innovation' workshop to identify critical technologies required to transition key industries and value chains, including opportunities to test, trial and co-invest.**	Example: Support the launch of a whole-of-SA Government register that provides individual businesses with access to all zero carbon and circular economy-related programs, grant funding opportunities, rebate schemes and resources.
Level 2: Zeroing our Supply Chains	Example: Large SA businesses can co-invest in sustainability training programs for shared local supply chains, with a specific focus on building skills and capability in small business. **SA Zero to host 'Green Skills' workshop with supply chain stakeholders on requirements and opportunities to close critical skill gaps.**	As above.	Example: Work with government to configure policy levers to accelerate business activity for zero carbon and zero waste across value chains, particularly those for which Government is a customer. Example: Create targeted platforms for industry and Government to connect and discuss complex topics relating to zero carbon and zero waste, which will productively inform both policy development and industry strategy.
Level 3: Zeroing our Customers		Example: Create market demand for innovation, with local businesses with common customer bases collaborating to explore opportunities to trial innovative products/services.	
Level 4: Zeroing our Precincts	**SA Zero to help facilitate 'Introduction to Sustainability' workshop for SMEs.**	Example: Combine industry purchasing power to adopt regionally-specific decarbonisation or circular initiatives at scale (e.g. large-scale hydrogen or biogas production).	
Level 5: Zeroing our State	Example: Participate in a 'green skills' mapping study to determine the skills required to drive the uptake of key technology adoption priority areas for the state (e.g. EVs, electrification, hydrogen), and strategies to fast-track skills development.	Example: Co-invest in a 'shark tank' or accelerator-style program to invite innovators, entrepreneurs and start-ups to solve issues specific to the SA economy (but with the potential for national/ international reach)	**SA Zero to host workshop to identify and discuss the key policy priorities that exist and work through with State Government and industry to identify opportunities to accelerate action.**

Collaboration Level	**Collaboration Pathway 4:** Reporting Standards & Requirements	**Collaboration Pathway 5:** Access to Financial Resources	**Collaboration Pathway 6:** Accurate, Timely and Meaningful Data
Level 1: Zeroing our Operations	Example: Establish a **platform that consolidates all the current and emerging standards** and regulations driving zero carbon, zero waste for SA businesses (in easy-to-understand language).	Example: **Engage with the banking sector to provide clear and practical education to business** on the range of finance options available to fund projects that support decarbonisation and circularity. **SA Zero to host workshop on financing low carbon transition including identifying priority projects, and the best funding avenue to approach as a group.**	Example: **Develop South Australian-specific spend-based emission factors** (to support Scope 3 emissions quantification) that more accurately reflects the State's current position of having a low-emissions electricity grid (national spend-based emissions factors do not currently account for this).
Level 2: Zeroing our Supply Chains	Example: Enable the State's leading **industry associations and peak bodies to promote the adoption of relevant standards their benefits,** such that all businesses across major supply chains are adopting a consistent approach to carbon accounting and reporting.		**SA Zero to host workshop with supply-chain stakeholders on existing standards and approach for calculating and reporting Scope 3 data and emissions factors.**
Level 3: Zeroing our Customers	Example: Develop **practical guidance for SA businesses on the sustainable certification of products & services**, and interpretation of the ACCC's greenwashing guidance in order to provide businesses with confidence to communicate their activities and commitments.	Example: **Engage with the investment community** to explore emerging product/service trends relating to zero carbon and zero waste, and opportunities for investment. This involves connection with local entrepreneurs, universities and research institutions.	Example: Establish a support program that encourages **conducting life cycle assessments of key products and services** produced in South Australia. As we gather more of this information, we should also encourage sharing for mutual benefit.
Level 4: Zeroing our Precincts		Example: **Jointly pursue grant funding** (eg ARENA, GISA, Australian Government) and/or finance to accelerate decarbonisation initiatives in the regions.	
Level 5: Zeroing our State	**SA Zero to host Public Forum with partners to provide an overview of mandatory financial disclosure requirements.**		Example: **Engage with the Universities to develop a data reporting framework** that guides the economy with understanding the value of data beyond greenhouse gas emissions.

MAKE A DIFFERENCE

Meeting carbon and sustainability targets will require rapid and purposeful collaboration, addressing specific challenges and seizing opportunities for change with defined end-goals in mind.

The framework for action in this report is designed to encourage debate, catalyse action and take proactive and targeted steps towards pursing collaborative initiatives and ventures. The idea is that collective efforts on addressing the biggest challenges will accelerate Australia's transition to a zero carbon, zero waste economy.

All organisations are encouraged to get involved in a conversation around what's possible through collaboration, whether it be with peers, supply chain, customers, or the Government.

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GLOSSARY

Australian Renewable Energy Agency (ARENA)
ARENA is a government agency established by the Australian Government, whose mission is to support the global shift to net-zero emissions by funding projects that advance renewable energy technologies and innovations. ARENA provides financial assistance and shares knowledge to improve the competitiveness and supply of renewable energy, fostering innovation and the uptake of energy efficiency and electrification to benefit Australian consumers, businesses, and workers.[i]

Australian Sustainability Reporting Standards (ASRS)
A set of reporting standards introduced by the Australian Government to mandate large corporations, NGERS Act reporters, and asset owners and managers to provide comprehensive reporting on climate-related financial information. These standards include disclosures on climate risks, opportunities, and greenhouse gas emissions, aiming to enhance transparency and consistency in sustainability reporting across Australia.[ii]

Carbon offsets
A financial instrument used to compensate for emissions an organisation produces, to help reduce their carbon footprint. Offset units are generated by projects that reduce, remove or capture emissions from the atmosphere such as reforestation, renewable energy or energy efficiency.[iii]

Climate Active
An Australian Government initiative to certify businesses and organisations that have proven that they are measuring, reducing and offsetting their emissions to achieve carbon neutrality. Climate Active certification is available for organisations (business operations), products, services, events, precincts and buildings.

Collaboration Pathways
Specific areas identified by SA ZERO where collaborative efforts can effectively address barriers to achieving zero carbon and zero waste targets. These include skills and capacity building, technology innovation and scalability, public-private policy development, standards for consistency and transparency, access to financial resources, and access to accurate and meaningful data.

Collaboration Levels
Specific levels of collaboration identified by SA ZERO, based on the appetite, resources, capabilities, and influence of the interested parties.

Emissions reduction targets
Specific goals set by governments or organisations to reduce the amount of greenhouse gases they emit into the atmosphere within a defined timeframe.

Environmental, Social and Governance (ESG)
ESG stands for Environmental, Social, and Governance. These are the three central factors used to measure the sustainability and ethical impact of an investment in a company or business.[iv]

Global Reporting Initiative (GRI)
The Global Reporting Initiative (GRI) is an international independent standards organisation that helps businesses, governments, and other organisations understand and communicate their impacts on critical sustainability issues such as climate change, human rights, governance, and social well-being.[v]

Green hydrogen
Green hydrogen is hydrogen produced using renewable energy sources, such as wind or solar power, through a process called electrolysis.

Green skills
Skills and knowledge required to support environmentally sustainable practices and technologies, including areas such as renewable energy, energy efficiency, sustainable construction, and waste management.

Greenhouse gases (GHG)
A gas that contributes to the greenhouse effect by absorbing infrared radiation.[vi]

Greenhouse and Energy Minimum Standards (GEMS)
GEMS is an Australian national framework established under the Greenhouse and Energy Minimum Standards Act 2012. GEMS regulates the energy efficiency and environmental performance of appliances and equipment. The GEMS Act sets out the requirements for products to meet Minimum Energy Performance Standards (MEPS) and mandates the use of Energy Rating Labels to inform consumers about the energy efficiency of products.[vii]

Greenhouse Gas Protocol
The Greenhouse Gas (GHG) Protocol establishes comprehensive global standardised frameworks to measure and manage greenhouse gas emissions from private and public sector operations, value chains and mitigation actions. It is delivered through a partnership between the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).[viii]

GreenStar
Green Star is an internationally recognized sustainability rating system for the design, construction, and operation of buildings, fit-outs, and communities in Australia. Developed by the Green Building Council of Australia (GBCA), Green Star assesses the sustainability attributes of projects across various categories, including energy and water efficiency, indoor environmental quality, materials, land use, and innovation.[ix]

IFRS S2
IFRS S2 is part of the International Financial Reporting Standards (IFRS) Sustainability Disclosure Standards developed by the International Sustainability Standards Board (ISSB). IFRS S2 focuses on climate-related disclosures, providing guidelines for companies to report on climate-related risks and opportunities. The standard aims to improve the consistency, comparability, and reliability of climate-related financial disclosures, helping investors make informed decisions.[x]

National Australian Built Environment Rating System (NABERS)
NABERS is a performance-based rating system for buildings in Australia that measures a building's energy efficiency, water usage, indoor environment quality, and waste management practices. NABERS ratings provide a clear and independently verified measure of a building's environmental impact, helping property owners and managers to improve their sustainability performance and reduce operating costs.[xi]

National Greenhouse and Energy Reporting Scheme (NGERS)
The National Greenhouse and Energy Reporting Scheme (NGERS) is an Australian government framework established by the National Greenhouse and Energy Reporting Act 2007. NGERS mandates that corporations exceeding certain thresholds in greenhouse gas emissions, energy production, or energy consumption report their data to the Clean Energy Regulator.[xii]

Natural capital
Natural capital refers to the world's stock of natural resources, including geology, soils, air, water, and all living organisms. It is the basis for ecosystem services that provide value to humans, such as clean water, fertile soil, and pollination of crops. The concept of natural capital emphasises the economic value of these natural assets and the need for their sustainable management to support long-term economic and environmental health.[xiii]

GLOSSARY

Science-based targets (SBTs)
Science-based targets provide a clearly-defined pathway for companies to reduce greenhouse gas emissions, helping prevent the worst impacts of climate change and future-proof business growth. Targets are considered 'science-based' if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement. [xiv]

Science Based Targets Initiative (SBTI)
The Science Based Targets initiative (SBTi) is a global organisation that helps companies set ambitious and measurable climate targets based on the latest climate science.[xv]

Scope 1, 2 and 3 emissions
Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting organisation, including both upstream and downstream emissions. [xvi]

Small and medium-sized enterprises (SMEs)
Small and Medium-Sized Enterprises (SMEs) are businesses with a small to medium number of employees and revenue. In South Australia, small businesses are defined as having 0-19 full-time employees, while medium-sized businesses typically have up to 200 employees. SMEs play a crucial role in the South Australian economy, representing the majority of businesses and contributing significantly to employment and economic output.[xvii]

Zero-Carbon
A term used to describe an economy where no net carbon dioxide emissions are produced, typically achieved through a combination of reducing emissions and offsetting remaining emissions with carbon removal projects.
SA ZERO uses this term interchangeably with net zero emissions, carbon neutral and decarbonisation.[xviii]

Zero-Waste
A term SA ZERO uses to describe an economy in which waste is eliminated and resources are used in a circular manner through principles like reuse, repair, refurbishment, and recycling, in contrast to a traditional linear economy that follows a 'take, make, dispose' model. SA ZERO uses this term interchangeably with circular economy and circularity.

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