



CIRCULARITY IN AUSTRALIAN BUSINESS 2023

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Perceptions, Knowledge and Actions Beyond Recycling



ACKNOWLEDGEMENTS



The Australian Circular Economy Hub (ACE Hub) was established by Planet Ark Environmental Foundation, an Australian not-for-profit organisation with a mission to enable positive environmental change by bringing individuals, communities, businesses and governments together. Planet Ark is one of Australia's leading environmental behaviour change organisations, having focused on working collaboratively and positively for over 30 years.

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Furthermore, we are grateful to the businesses who provided content for the case studies featured in Section 3, *Circular Economy in Action*.

Section 5, *Your Call to Action*, was informed by the recently published work by Moglia et al.¹ Thank you for your generous contribution and feedback on this section.

¹Moglia, M., Nygaard, C. A., Shittu, O., Halefom, T. H., & Trewick, S. (2023). Roles of virtual intermediaries in the transition to a circular economy. In H. Lehtimäki, L. Aarikka-Stenroos, A. Jokinen, & P. Jokinen (Eds.), *The Routledge Handbook of Catalysts for a Sustainable Circular Economy* Routledge.

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ACKNOWLEDGEMENT OF COUNTRY

Planet Ark acknowledges the Traditional Custodians of Country throughout Australia. One of the most important lessons we can learn from the oldest enduring culture on earth is how to live and even thrive within nature's limits. We recognise and respect the enduring relationships they have with their land, sea and community and acknowledge that for millennia, circularity has been a way of life for First Nations people. We pay our respects to Elders past and present.



Image: Newbery Park Primary School, Planet Ark Seedling Bank beneficiary. Photo supplied by Newbery Park Primary School.

FOREWORD

Businesses and governments are increasingly setting net zero and emissions reduction targets to address growing global concerns around climate change.

The scientific consensus is that to limit global warming to no more than 1.5°C above pre-industrial levels – the level commonly recommended to ensure a livable climate – the world must reach net zero greenhouse gas emissions by 2050.²

To achieve this critical target, switching to 100 per cent renewable energy alone is insufficient. The renewable energy transition, complemented by increased energy efficiency, can only address just over half (55 per cent) of greenhouse gas emissions. The remaining 45 per cent of emissions are derived from the way we make, use and dispose of products, materials and food, and can therefore only be addressed by transforming the way we produce and consume these resources.³

At Planet Ark, we believe a circular economy offers our best means of achieving such

a transformation by offering a holistic, systems-led alternative to our current extractive ‘take-make-use-dispose’ economy. Underpinned by the transition to renewable energy sources, the core tenets of a circular economy are:

- 1 DESIGNING OUT WASTE AND POLLUTION**
- 2 KEEPING PRODUCTS AND MATERIALS IN USE**
- 3 REGENERATING NATURAL SYSTEMS**

By reconfiguring our economy to reflect these core principles, we can mimic the circular systems evident throughout nature; systems that have maintained a delicate balance where there is no such thing as ‘waste’.

However, the potential benefits of a circular economy go far beyond addressing greenhouse gas emissions. While emissions reduction should rightly be our current top priority, current linear extraction and consumption patterns also have significant negative impacts on nature and biodiversity.⁴ Numerous studies have shown the capacity for a circular economy framework to improve air quality, reduce water contamination, and protect biodiversity while benefiting all of us who rely on healthy ecosystem services for our wellbeing and livelihoods.⁵

Along with addressing some of the global environmental challenges mentioned above, transitioning to a circular economy also holds many potential benefits for



²United Nations (2023), For a livable climate: [Net-zero commitments must be backed by credible action](#)
³Ellen Macarthur Foundation (2023), [Fixing the economy to fix climate change](#)
⁴Ellen Macarthur Foundation (2023), [Shaping a nature-positive future with the circular economy](#)

businesses, including reduced supply chain risk and alignment with consumer expectations around sustainability.⁶ Not to mention the innovation opportunities that reduced material costs, increased asset utilisation, and changing customer demands would bring. Furthermore, those who adopt more circular business models now will be better positioned to capitalise on emerging opportunities in the future.

Because a circular economy involves systems level change, a huge collaborative effort between all levels of government, the business realm (regardless of organisation size or sector) and the broader community is required. Australian businesses will play a particularly important role, as the products and services they design and business models they adopt will influence the speed of Australia's transition to a circular economy.

As evidenced by this third edition of the *Circularity in Australian Business* report, business leaders recognise the importance of the circular economy for the future of their business. The role of the ACE Hub is to help convert this recognition into deeper understanding and action. Through the ACE Hub's work in supporting knowledge-sharing and collaboration, as well as offering a range of circular economy solutions to be outlined in our 2024 – 2026 ACE Hub Strategy, we aim to ensure the opportunities and benefits that a circular economy brings are fully realised in Australia.



Rebecca Gilling
CEO and Executive Director
Planet Ark

“Those who adopt more circular business models now will be better positioned to capitalise on emerging opportunities in future.”

⁵Ellen Macarthur Foundation (2021), *Completing the picture: How the circular economy tackles climate change*

⁶Accenture (2014), *Circular Advantage: Innovative Business Models and Technologies to Create Value in a World without Limits to Growth*, p. 4

EXECUTIVE SUMMARY

Since 2020, the *Circularity in Australian Business* report series has investigated the state of circular economy thinking within the Australian business community. The series supports government at all levels, industry, circular economy practitioners and the ACE Hub team to identify strategies to accelerate implementation of circular principles.

This third edition of the report takes a closer look at the perspectives of senior management and the implementation of circularity among Australian businesses in their role as key decision makers in the transition towards a more circular economy.

Strategic research consultancy Pollinate was commissioned by Planet Ark to conduct the research which forms the basis of this year's report. Data was collected via the same research methods used for the [2021 report](#). This included a quantitative survey of 500 business decision makers (survey participants), including C-level executives, non-executive directors and senior management, and interviews with 11 senior decision makers (interview participants) considered knowledgeable of the circular economy who have responsibility over sustainability initiatives within their organisation.

This year's report extends beyond these surveys and interviews by showcasing some Australian businesses who, based on ACE Hub sourced case studies, have already embarked on their circular economy journey. Also included is a call to action for business decision makers, as well as educators and advocates of the circular economy, providing readers with specific actions drawn from the ACE Hub's first three years of learning and collaboration.

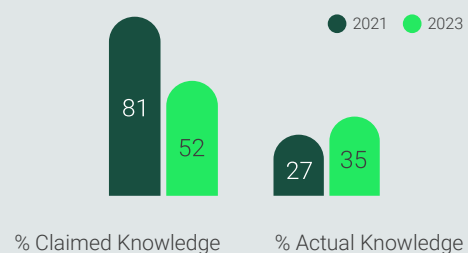
The key takeaways are as follows:

AWARENESS OF CIRCULAR ECONOMY IS HIGH, KNOWLEDGE IS MODERATE

82 per cent of **survey participants** said they were aware of the concept of a circular economy. However, only half (52 per cent) claimed to be knowledgeable.

THE CONFIDENCE-KNOWLEDGE GAP IS CLOSING

This year, the proportion of **survey participants** who correctly identified that a circular economy 'is designed to ensure regenerative processes and products' increased from 27 percent in 2021 to 35 per cent. Those who were confident in their knowledge dropped from 81 per cent in 2021 to 52 per cent. These results strongly align with the Dunning Kruger effect which explains that with complex concepts, confidence often starts high before sharply decreasing as our actual knowledge increases, before a tipping point is reached and confidence begins to return.



A CIRCULAR ECONOMY IS IMPORTANT FOR THE FUTURE OF AUSTRALIAN BUSINESS

Around 82 per cent of **survey participants** said making the transition was either extremely, very, or somewhat important to the future of their business.

Additionally, 67 per cent of **survey participants** said they were likely to attend a circular economy event such as a workshop or webinar in the next 12 months, demonstrating a willingness to act on this belief.

COST SAVINGS AND INCREASED EFFICIENCY ARE COMMONLY IDENTIFIED BENEFITS

Survey participants were aware of the many benefits of transitioning to more circular business models, including internal, external, financial and social benefits.

The most popular business benefit identified was reducing costs (58 per cent), followed by increasing efficiency (47 per cent) - this potentially points to an increasing understanding of the positive impact of a circular economy on a business' bottom line.

FIRST MOVERS ARE ALREADY REAPING THE BENEFITS

The ACE Hub has published over 50 case studies highlighting the actions Australia's circular economy first movers have taken, and the financial, environmental and social benefits they have realised as a result. **Section 3, *Circular Economy in Action***, showcases a selection of these first

movers in the hope they will serve as inspiration for more businesses to begin their own circular journeys.

AUSTRALIA REMAINS IN THE EARLY PHASE OF OUR TRANSITION

Whilst there has been some great progress, **interview participants** stressed Australia still has a lot to learn when it comes to circular economy implementation. Some views indicate Australia is behind much of the world and action is required quickly to ensure we do not fall further behind.

“... *Australia still has a lot to learn when it comes to circular economy implementation.*”

LACK OF INFORMATION AND BUSINESS CULTURE ARE PERCEIVED AS KEY BARRIERS

The need for more accessible and practical information on a circular economy and what it entails was identified as a barrier to action by 36 per cent of **survey participants**. This reinforces the need for further investment in and promotion of platforms such as the ACE Hub, which serve as knowledge brokers for the business community.

Interview participants also highlighted Australia's business culture and legislative framework as being too focused on competition and not conducive to the type of collaboration at scale required for effective circular economy implementation.

BUSINESSES HAVE INCORPORATED SOME CIRCULAR STRATEGIES

A majority of **survey participants** reported taking some action (beginning discussions, having a strategy in place or implementing) on R strategies higher up the ladder of circularity:⁷

- 63 per cent reported taking action on Rethink strategies (making product use more intensive, eg through the sharing economy)
- 58 per cent reported taking action on Redesign strategies (designing products and processes for increased circularity)
- 56 per cent reported taking action on Regeneration strategies (actively using products or services that regenerate nature)

Some survey participants who claimed to have not yet considered the circular economy, or felt it does not apply to their business, said they had already implemented R strategies. Therefore, breaking the complex concept of a circular economy into some workable components (such as R strategies and the ladder of circularity) may help start discussions around the topic with less engaged or less informed businesses.

THE MAJORITY LEARN FROM FIRST MOVERS

First movers are defined here as businesses more receptive to new ideas and more willing to take risks and embrace change. The challenge is how to get the rest of Australian businesses, forming the majority, to follow their lead and adopt circular economy practices sooner. First movers play

a crucial role in leading Australia's transition and can serve as effective educational and motivational tools for other businesses by offering practical case studies that demonstrate real-world benefits and learnings.

THE IMPORTANT ROLE OF THE ACE HUB

It is clear Australian businesses require further education on the circular economy to enable action. Platforms like the ACE Hub can help drive the type of system change required through education and collaboration channels such as the [Knowledge Hub](#), [ACE Hub Portal](#), annual [Circularity](#) conference and other targeted education tools, creating more focused and ultimately greater impact.

YOUR CALL TO ACTION

Businesses cannot achieve circularity individually. To bring a circular economy to reality in Australia, all industries and links throughout supply chains must be on board. However, there is a need to adopt more targeted engagement strategies that appeal to the motivations of different business types and are therefore more likely to drive behaviour change.

There are some simple actions all businesses as well as circular economy educators and advocates can start today – **Section 5** is [Your Call to Action](#).

⁷See **Section 2.3.2** for more information on the ladder of circularity and an in-depth discussion of circular strategies claimed to be in progress or already adopted by survey participants.

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1. INTRODUCTION

The current take-make-use-dispose approach to production and consumption, known as the linear economy, is not sustainable. Transitioning to a carbon neutral and circular economy provides a solution.⁸ A circular economy is a systems-level framework that provides a solution for the triple planetary challenge of climate change, biodiversity loss, and waste and pollution.⁹

Global interest in circular economy practice is growing as policymakers and industry address the need to bring our production and consumption patterns back in line with earth's planetary boundaries.¹⁰

A core aim of a circular economy is to retain the value embedded within materials and products, rather than losing this value from the system as waste. Value here includes not only the financial worth of materials and products but also the embodied energy, raw materials, natural resources and human labour associated with manufacturing, transportation and consumption.



1.1 RECENT PROGRESS TOWARDS A CIRCULAR ECONOMY IN AUSTRALIA

The importance of a circular economy for Australia's future is becoming more widely recognised, as highlighted by increasing discussions of the topic within government. In October 2022, Australia's environment

ministers agreed "to work with the private sector to design out waste and pollution, keep materials in use and foster markets to achieve a [more] circular economy by 2030".¹¹ Since then, the Circular Economy Ministerial Advisory Group was formed to help develop a national framework to guide Australia's transition to a circular economy.¹² Planet Ark is pleased to be represented on this group by Executive Director and Chief Sustainability Advisor, Paul Klymenko.¹³ There has also been progress at the state and local levels, with a number of governments incorporating circular economy principles in their strategies, policies and procurement guidelines.¹⁴

The current take-make-use-dispose approach... is not sustainable.

The ACE Hub has also made significant progress since 2020.¹⁵ The ACE Hub's Knowledge Hub has provided valuable educational materials and circular success stories via case studies to over 75,000 website users.¹⁶ In 2021, Planet Ark launched the ACE Hub Portal, an online platform bringing over 1,700 key players in the circular economy transition together to exchange ideas, share projects and take action.¹⁷ Planet Ark also brought Australia's circular economy community together in-person for the ACE Hub's inaugural Circularity conference in 2022.¹⁸

⁸Ellen Macarthur Foundation (2023), *What is a circular economy?*

⁹Ellen Macarthur Foundation (2023), *Completing the Picture: How the Circular Economy Tackles Climate Change*; Ellen Macarthur Foundation (2023), *Shaping a nature-positive future with the circular economy*

¹⁰Ellen Macarthur Foundation (2023), *How the circular economy can help us stay within planetary boundaries*

¹¹Department of Climate Change, Energy, the Environment and Water (2022), *Environment Ministers Meeting - 21 October 2022 Agreed Communiqué*

¹²Department of Climate Change, Energy, the Environment and Water (2023), *Environment Ministers' Meeting - 9 June 2023 Agreed Communiqué*

¹³Department of Climate Change, Energy, the Environment and Water (2023), *Circular Economy Ministerial Advisory Group*

¹⁴See page 17 of the ACE Hub's *Interim Outcomes Report* (2022) for some examples

¹⁵ACE Hub (2022), *Strategic Action Plan 2020-2023 Interim Outcomes Report*

¹⁶ACE Hub Knowledge Hub

¹⁷ACE Hub Portal

¹⁸Circularity Conference



1.2 PURPOSE OF THE CIRCULARITY IN AUSTRALIAN BUSINESS REPORT SERIES

A key action of the ACE Hub is to deliver original circular economy research that provides both knowledge-sharing and collaboration opportunities. Under the ACE Hub's current three-year work plan, a key activity is to assess the knowledge and perceived implementation of circular economy in Australian business as well as investigate barriers to implementation.¹⁹

The findings of the *Circularity in Australian Business* report series provide Australia's only research to date that captures the sentiment of Australian businesses in their circular economy journey over time. This third edition of the report takes a closer look at the perspectives of senior management and the implementation of circular economy among Australian businesses in their role as key decision makers in the transition towards a more circular economy.



1.3 REPORT OBJECTIVES

The 2023 *Circularity in Australian Business* report has three objectives:

- 1 Understanding the current knowledge of, interest in, and practical applications of the circular economy among Australian businesses;
- 2 Understanding perceptions of the benefits of and barriers to the transition to a circular economy among Australian business decision makers; and
- 3 Providing tangible examples of the benefits to businesses already on their journey towards circularity.



1.3.1 METHODOLOGY

The methodology used for the 2023 data included in the research results section continues to adopt the two research methods used for the 2021 edition of this report, with different research participants involved. The first was a quantitative survey of 500 mixed-level decision makers (including C-level executives, non-executive directors and senior management). This was conducted via online sampling and surveying. Strategic research consultancy Pollinate was commissioned by Planet Ark to conduct the research and partnered with an International Organization for Standardization (ISO) approved sampling panel to ensure quality of respondents and data throughout the life of the project.

A range of industries and business sizes were included to ensure a robust sample. With a sample size of 500 and a 95 per cent confidence interval, the margin of error in this research is +/- 4.4 per cent. Comparisons across sectors were not considered due to base sizes for some industries being low or not representative of the sector size, making it unsuitable to assess any significant differences. Key sample representation for this dataset can be found in Appendix Figure A1. Throughout the report, this sample is referred to as '**survey participants**'.

A number of questions from previous reports have been repeated to enable a longitudinal analysis of participant perceptions and knowledge. Throughout the research results, and where relevant, comparisons are made between the 2023 and 2021 survey data. However, it is not appropriate to directly compare results as sample representations differ, and it would be unreliable to make like-for-like assumptions except where confidence that a trend is consistent across representations is high. For example, the 2023 survey sample had significantly fewer survey participants from the Financial and Insurance Services industry (seven per

¹⁹ACE Hub 3 Year Work Plan 2020-2023, Activity 2.1.8

cent in 2023 versus 23 per cent in 2021), significantly more participants in senior management positions (74 per cent in 2023 versus 43 per cent in 2021) and fewer participants in C-suite positions (24 per cent in 2023 versus 53 per cent in 2021). The 2023 sample also had fewer participants from businesses with 200+ employees (29 per cent in 2023 versus 36 per cent in 2021). For transparency, sample representation for the 2021 survey can also be found in Appendix Figure A1.

The second method involved in-depth qualitative interviews with 11 senior decision makers with responsibility for sustainability initiatives within their respective organisations. Participants were recruited via peer-to-peer recommendations and professional networks and received no incentives for their time. A summary of the participants is presented in Appendix Table A1, noting that some participants chose to remain anonymous. Throughout the report, this sample is referred to as '**interview participants**'.

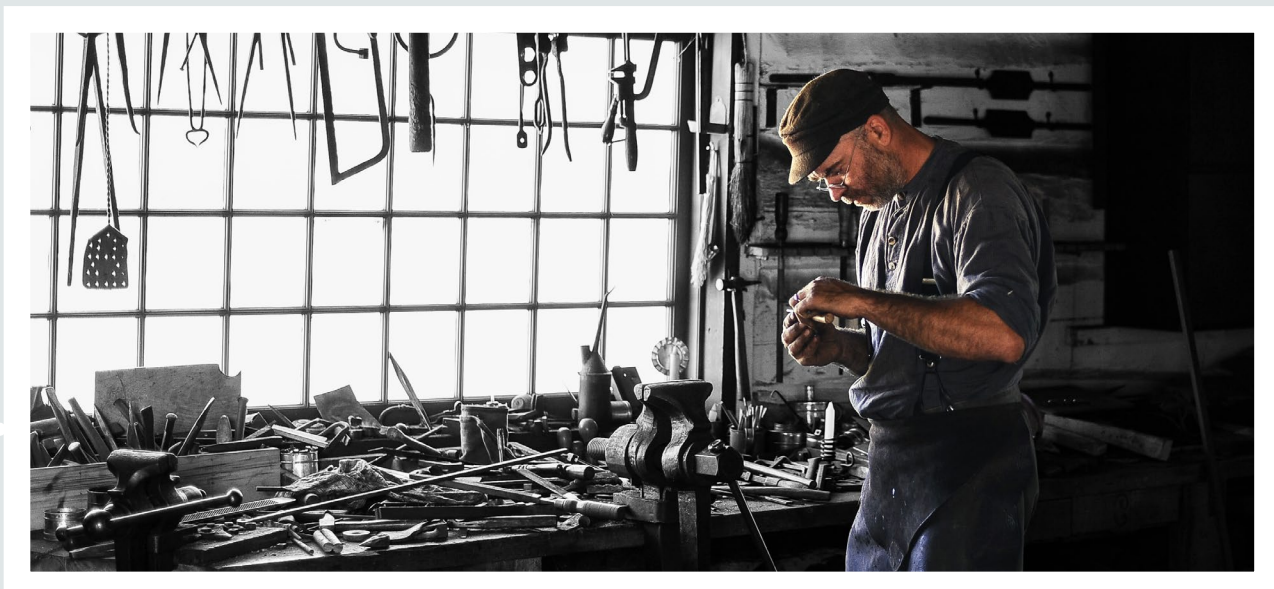
The survey results form the basis of the analysis demonstrating the broad perceptions and knowledge among business decision makers in **Section 2, Research Results**. They are supplemented with commentary and deeper insights from the 11 interview participants who were knowledgeable of the circular economy,

providing business leaders' perspectives with advanced circular thinking.

In line with the report's third objective, **Section 3, Circular Economy in Action**, extends beyond the data to provide practical information for businesses by showcasing organisations who are already adopting more circular strategies and business models. These case studies were generated by the ACE Hub through engagement with organisations who have learnings to share with the broader circular economy community and not via the survey or interview methods outlined above. You will find a complete list of circular economy case studies on the [ACE Hub website](#).

Section 4, Conclusions, considers the key findings of the research, what the examples of organisations taking action indicate and what is required to enable a more rapid transition to a circular economy.

Section 5, Your Call to Action, provides readers with specific next steps to inspire the circular transition, depending on whether you are a business decision maker, an educator or advocator. This section reflects the ACE Hub's first three years of learning and collaborating in the circular economy space. It draws on the recently published work by Moglia *et al* (2023)²⁰ based on Victorian organisations and the commissioned research by Pollinate.



²⁰Moglia, M., Nygaard, C. A., Shittu, O., Halefom, T. H., & Trewick, S. (2023). Roles of virtual intermediaries in the transition to a circular economy. In H. Lehtimäki, L. Aarikka-Stenroos, A. Jokinen, & P. Jokinen (Eds.), *The Routledge Handbook of Catalysts for a Sustainable Circular Economy* Routledge.

2. RESEARCH RESULTS



2.1 AWARENESS AND KNOWLEDGE

2.1.1 HIGH AWARENESS, MODERATE CLAIMED KNOWLEDGE

Whilst awareness and knowledge are inextricably linked, knowledge implies thorough comprehension of a subject, whereas awareness does not.²¹ The 2023 survey showed awareness of the circular economy is high among Australia's business decision makers, with 82 per cent reporting some level of awareness of the circular economy.

More than half (52 per cent) claimed they had some level of knowledge of the circular economy (see Figure 1), significantly down from 81 per cent in 2021. A rationale for this drop in knowledge confidence is explained by the Dunning Kruger effect in Section 2.1.2.

Survey participants who claimed to have some level of knowledge of the circular economy were more likely to be from large businesses and in the Professional, Scientific and Technical Services industry (Figure 2).

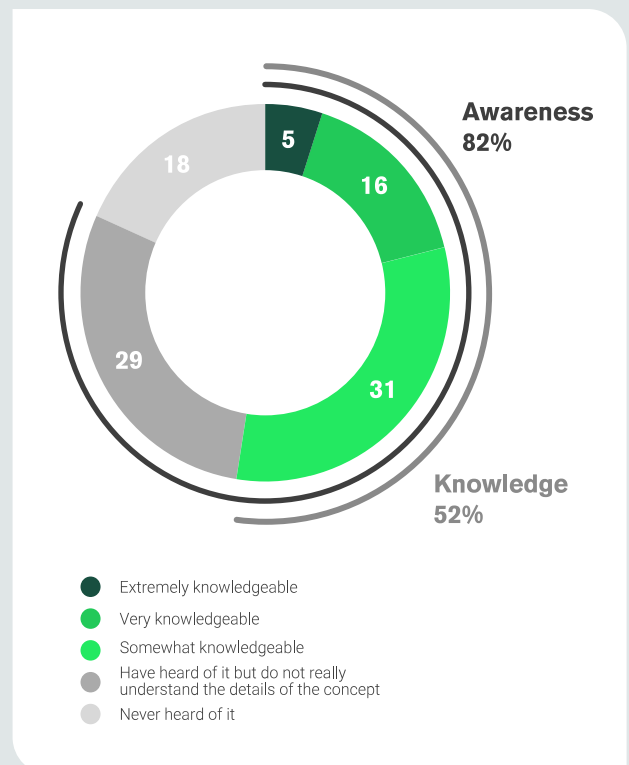


Figure 1: Awareness and claimed knowledge of the circular economy (%) (numbers were rounded up/down as necessary)

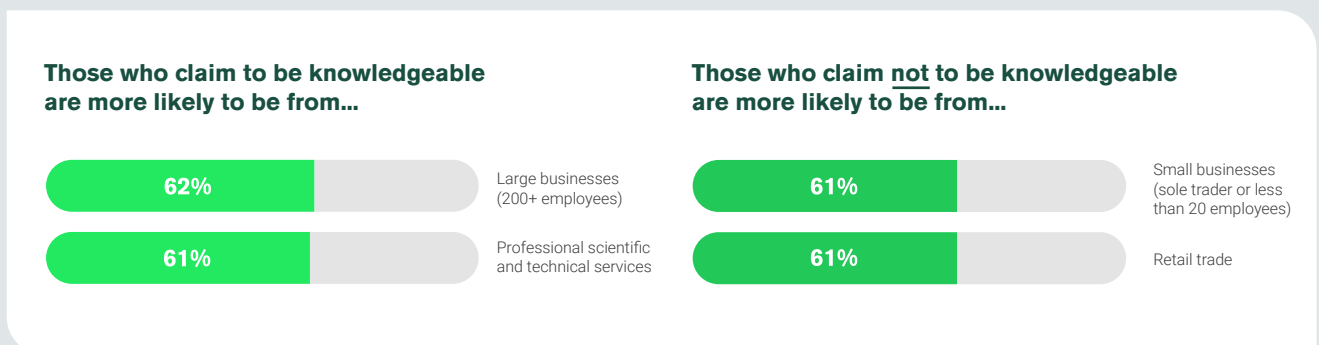


Figure 2: Differences in claimed knowledge of the circular economy

²¹Caroline Ochuko Alordiah, Mercy Afe Osagiede, Florence Chiedu Omumu, Isabella Ezinwa Okokoyo, Helena Tsaninomi Emiko-Agbajor, O. Chenube, John Oji, (2023) 'Awareness, knowledge, and utilisation of online digital tools for literature review in educational research', *Heliyon*, Volume 9, Issue 1

2.1.2 THE CONFIDENCE-KNOWLEDGE GAP IS CLOSING

When asked to select the best description of a circular economy from four options informed by the Ellen MacArthur Foundation circular economy definition,²² 35 per cent of **survey participants** correctly identified that the circular economy 'is designed to ensure regenerative processes and products' (Figure 3). This is a slight but notable increase from the 2021 sample, where 27 per cent of survey participants correctly identified the circular economy as regenerative.

“The circular economy is designed to ensure regenerative processes and products.”

Ellen MacArthur Foundation circular economy definition

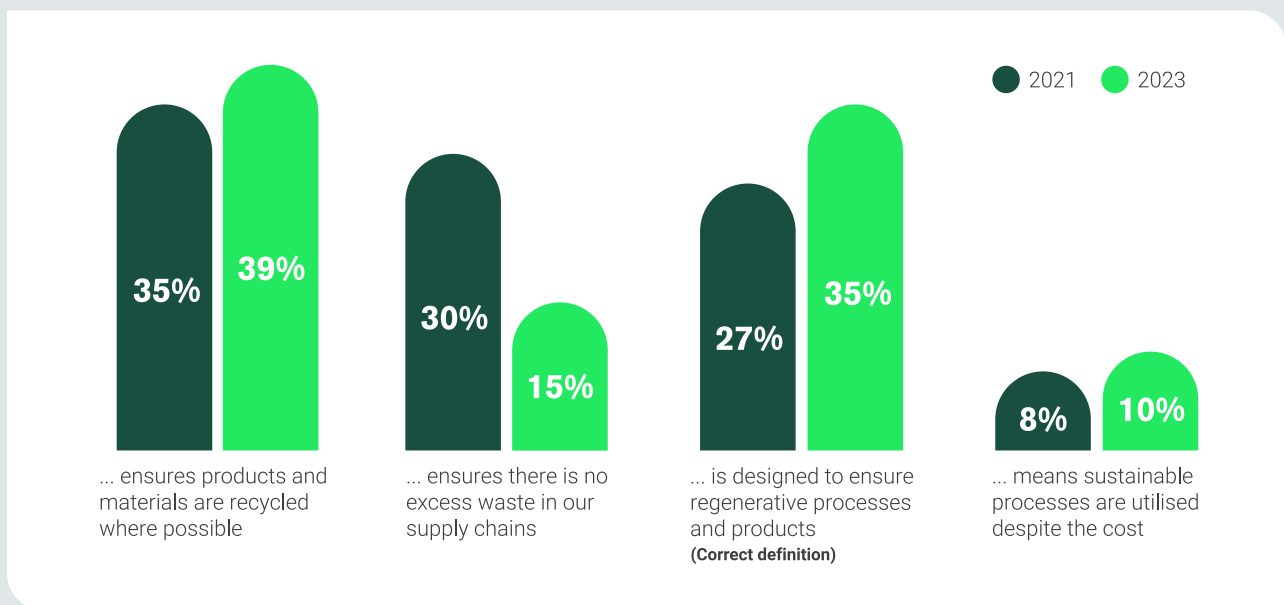


Figure 3: Survey participants' understanding of the circular economy definition (%) (numbers were rounded up/down as necessary)

As discussed in the 2021 report,²³ these results strongly align with the Dunning Kruger effect (Figure 4, next page) where as our knowledge of complex concepts increases, our confidence sharply decreases. Over time, knowledge increases to a tipping point where confidence gradually begins to return.

Note, the differing sample representations referred to in the Methodology (Section 1.3.1) are somewhat allayed here as both C-level and senior management demonstrated similar trends in the numbers from 2021 to 2023.

Encouragingly, the results point to a narrowing confidence-knowledge gap, a positive trend:

2021

81 per cent confidence (claimed knowledge) vs **27 per cent** actual knowledge (correctly defining a circular economy).

2023

52 per cent confidence (claimed knowledge) vs **35 per cent** actual knowledge (correctly defining a circular economy).

²²Ellen MacArthur Foundation, *What is a circular economy?*

²³ACE Hub, *Circularity in Australian Business 2021: Awareness, Knowledge and Perceptions*

THE DUNNING KRUGER EFFECT

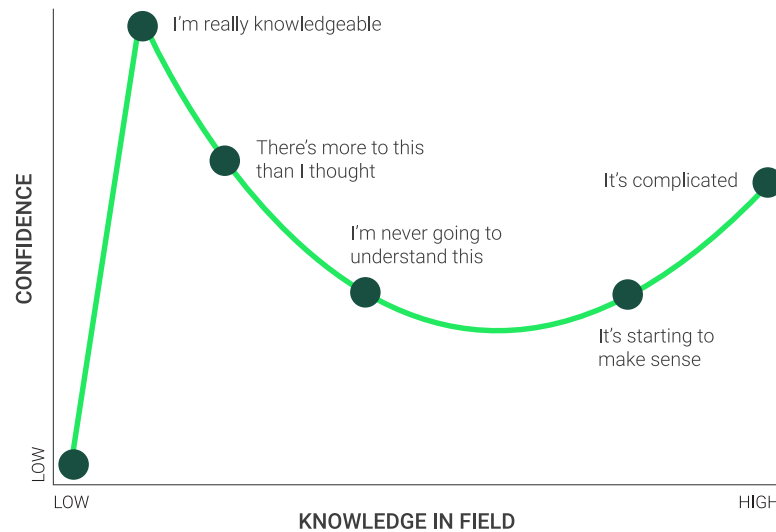


Figure 4: The Dunning Kruger effect of confidence versus knowledge

Another positive change since the 2021 survey is that the correct definition of a circular economy was identified by the second highest number of business decision makers. In the 2021 survey, the correct definition placed third, behind the two recycling and waste focused definitions (see Figure 3, previous page).

Despite these positive trends, this year's survey shows many business decision makers continue to identify a circular economy primarily with recycling. About 39 per cent of **survey participants** thought a circular economy 'ensures products and materials are recycled where possible'. Whilst recycling is part of a circular economy, it is a much lower order option in what is called the 'ladder of circularity', which identifies the hierarchy of R strategies (see Figure 12 in Section 2.3.2). A true circular economy requires action along the full value chain (and particularly at the beginning, via circular material choices and design, for example).

Survey participants who claimed to be 'extremely knowledgeable' about the circular economy were in fact more likely to identify a circular economy as being predominantly concerned with recycling. Conversely, those who claimed to be less knowledgeable of the circular economy were in fact more likely

to understand its complexity and identify the correct definition (Figure 5, next page). This again may be explained by the Dunning Kruger effect.

A true circular economy requires action along the full value chain.



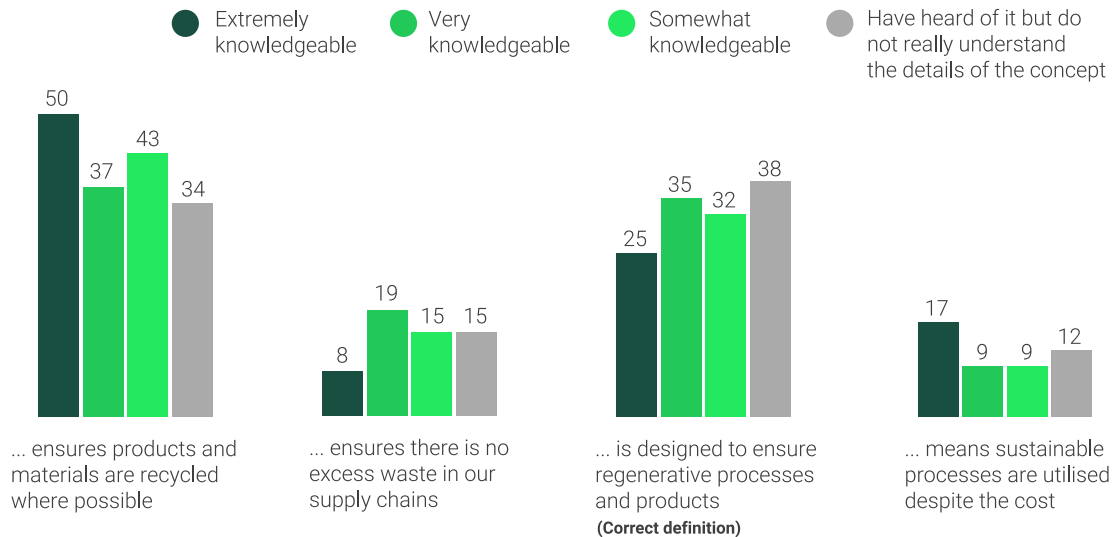


Figure 5: Actual knowledge of the circular economy versus claimed knowledge (%)

Compared to the survey participants, the **interview participants** (senior decision makers with responsibility for sustainability initiatives within their organisation) were more knowledgeable about the circular economy. Interview participants understood its complexity and emphasised the need for

systems level thinking. In some instances, they were frustrated by the misunderstanding by some that a circular economy is focused on recycling. They highlighted that a circular economy is about retaining value in materials, products and services:



Being able to minimise environmental impact by putting resources to the highest value use, and keeping them moving around within the economy.

**Tanya Barden, CEO
Australian Food and Grocery Council**



I know what circular economy is not, [and that it's not just about recycling]. It's really about retaining the value of existing resources as much as possible.

**Filomena Beshara
Sustainability Manager, Built**



A circular economy, or at least from my perspective, is one where there's zero waste. Everything that we create and design can be reused or repurposed in some way.

Anonymous interview participant



It's all about designing things from the start so there is no such thing as waste and designing systems just as much as we design products.

**Teslin Taylor, Head of Sustainability,
Country Road Group**



An approach to resource use that ensures we maximise the utility we get out of all resources.

Anonymous interview participant



...ensuring that products are designed and manufactured in a way which means they're durable...essentially minimising the use of virgin components in products.

Michael Puli, Director of Sustainable Finance, ING Bank

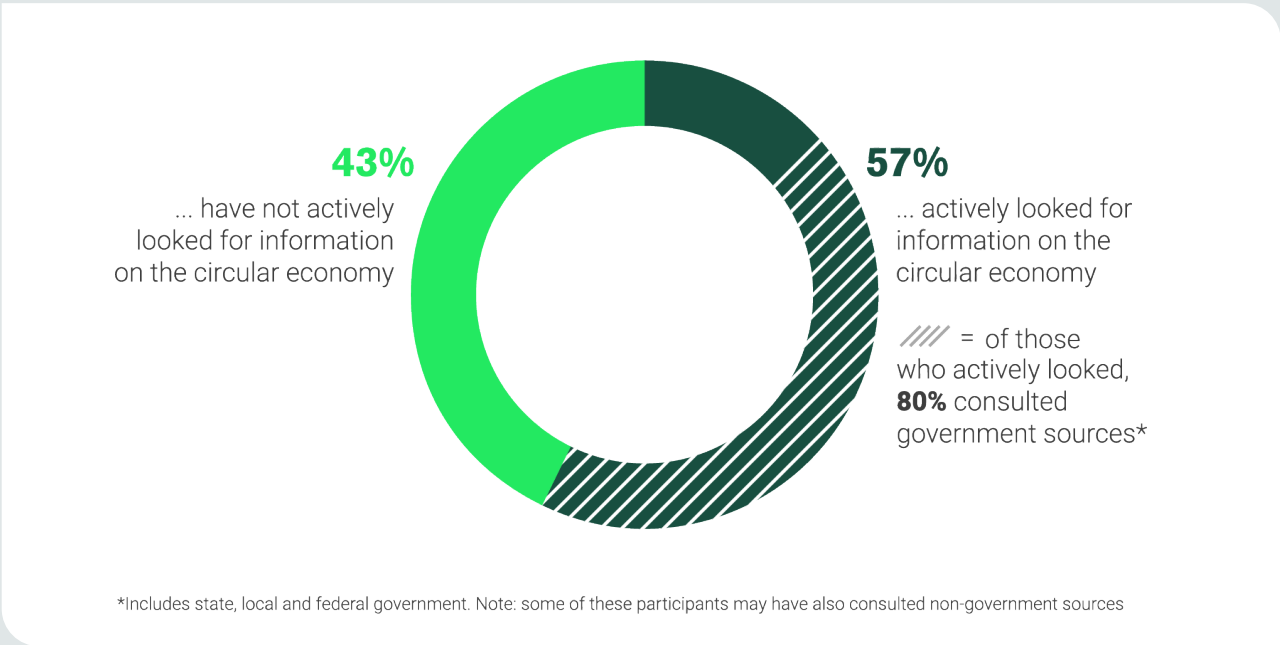
2.1.3 BUSINESSES LOOK TO GOVERNMENT FOR INFORMATION

More than half (57 per cent) of the **survey participants** claimed to have actively looked for information on the circular economy in Australia. Figure 6 shows 80 per cent of those who claimed to have looked for information on the circular economy look to government (local, state and federal) as their primary source. This may suggest Australian business decision makers expect government to lead when it comes to the nation's circular economy transition.

However, given 43 per cent of survey participants claimed they had not actively looked for circular economy information, thus may not be aware of the benefits, it is clear

more work needs to be done. This is where investing in education on the economic, environmental and social benefits, as well as the promotion of platforms providing information and potential actions, such as the ACE Hub, could significantly accelerate Australia's transition to a circular economy.

Go to Section 5 for Your Call to Action



*Includes state, local and federal government. Note: some of these participants may have also consulted non-government sources

Figure 6: Proportion of survey participants who actively sought out information on the circular economy (%)



2.2 BARRIERS AND BENEFITS

2.2.1 THE PERCEIVED LACK OF INFORMATION

The most common barrier identified by Australian business decision makers was lack of information on how to implement practices towards a circular economy. The need for more accessible and practical information was identified by 36 per cent of **survey participants** (Figure 7). This was also the most commonly identified barrier in the 2021 survey, where it was identified by 40 per cent of survey participants. This reinforces the need for further investment and promotion of platforms such as the ACE Hub, which act as knowledge brokers for the business community.

Other barriers commonly identified across both the 2021 and 2023 survey samples include financial issues, lack of executive engagement or business culture, uncertainty of return on investment, lack of research and development resources and no policy or legislation requirement (see Appendix Figure A2 for the 2021 data).

Interview participants recognised a lack of awareness and understanding on how to implement the circular economy as a key barrier preventing Australian businesses from taking action. They also touched on a

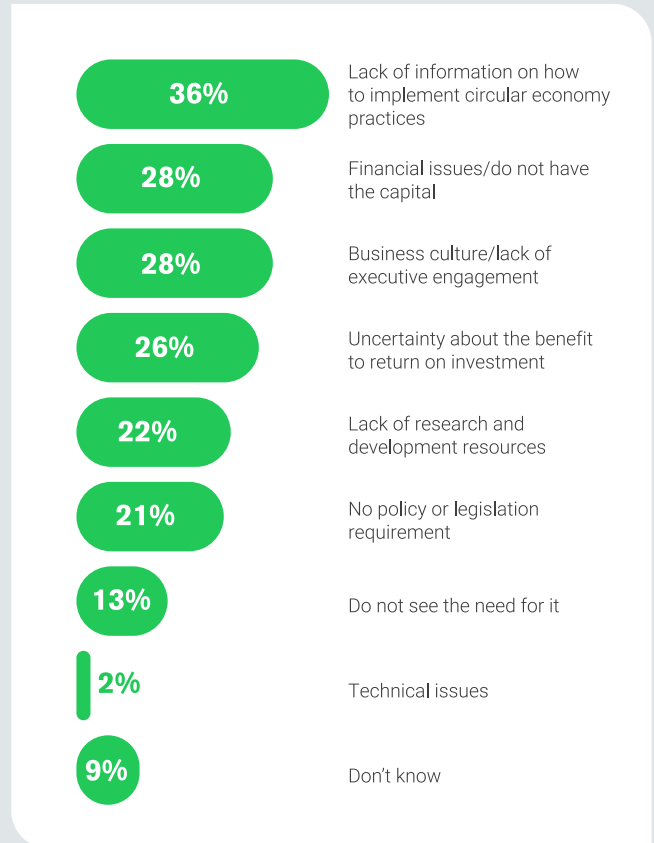


Figure 7: Perceived barriers to implementing circular economy within Australian businesses (%)

lack of executive engagement, and a business culture and legislative framework that is too focused on competition and not conducive to collaboration at the scale required:



I feel like there's a lot of inertia and a lot of business leaders that don't understand it so they're not directing and leading their businesses in that way. They're probably looking left and right and saying that most businesses are not moving in that direction so they're not prioritising it at all.

Emma Lewisham, CEO and Co-Founder, Emma Lewisham



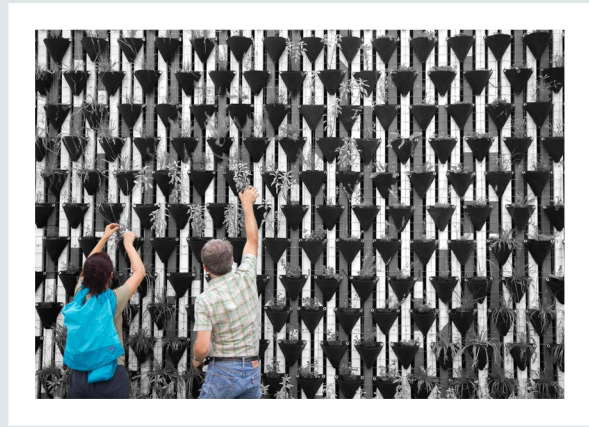
...whenever there are all these events and conferences, it's very easy to say that we are keen to collaborate, and that we need to be working together. But in practice I think that everyone is skeptical, and they're scared of sharing too much.

**Filomena Beshara
Sustainability Manager, Built**



I think you do need a certain level of government regulation, but I come back to it needing to be around the whole system. It's not something that you can just fix through looking at one part of the very complex set of arrangements.

**Tanya Barden, CEO
Australian Food and Grocery Council**



Interview participants stressed that Australian businesses need to move away from a siloed approach to circularity and, instead, collaborate across the whole value chain (and across sectors) to be effective:



...the whole system needs to move in harmony.

**Andrew Hinchliff, Group Executive,
Institutional Banking and Markets,
The Commonwealth Bank of Australia**



We've got a massive portfolio of products that we can influence and drive those products and change them to be better. But if the other parts of the chain aren't really working in our favour, it's kind of all for nought.

**Anonymous interview
participant**



I think one of the barriers we're facing is we're still approaching it within silos... trying to make the fashion industry a circular economy, or the plastics industry a circular economy, as opposed to just working towards a circular economy, where all those silos flow into one another and work symbiotically.

**Teslin Taylor, Head of Sustainability,
Country Road Group**

Finally, the interview participants were clearly well-informed of the scale of systems change required for Australian businesses to transition to a circular economy:



[Circular economy is not] tweaking around the edges with a little bit of recycling, it's being transformative and moving to refillable circular models.

**Emma Lewisham, CEO and
Co-Founder, Emma Lewisham**



[We can't] put a circular economy on to the end of a linear economy, as opposed to having to fundamentally rethink the way the business of fashion or whatever industry we're working in works...we really have to be working on these solutions from the very onset, as opposed to just trying to solve problems at the end.

**Teslin Taylor, Head of Sustainability,
Country Road Group**

2.2.2 COST AND EFFICIENCY BENEFITS

The overwhelming majority of **survey participants** were aware of the potential benefits of transitioning to more circular business models, including internal, external, financial and social benefits (Figure 8).

The most popular benefit of a circular economy transition for Australian businesses identified by survey participants was reducing costs (58 per cent), followed by increasing efficiency (47 per cent). These were also the top benefits identified in the

2021 survey with 42 per cent and 39 per cent respectively (see Appendix Figure A3 for the 2021 data). This points to an increasing understanding of the potential positive impact of implementing circular principles on a business' bottom line. When only looking at the results of those survey participants who had identified the correct definition of the circular economy (actual knowledge), the top two benefits remained the same - reducing costs (60 per cent), followed by increasing efficiency (49 per cent).

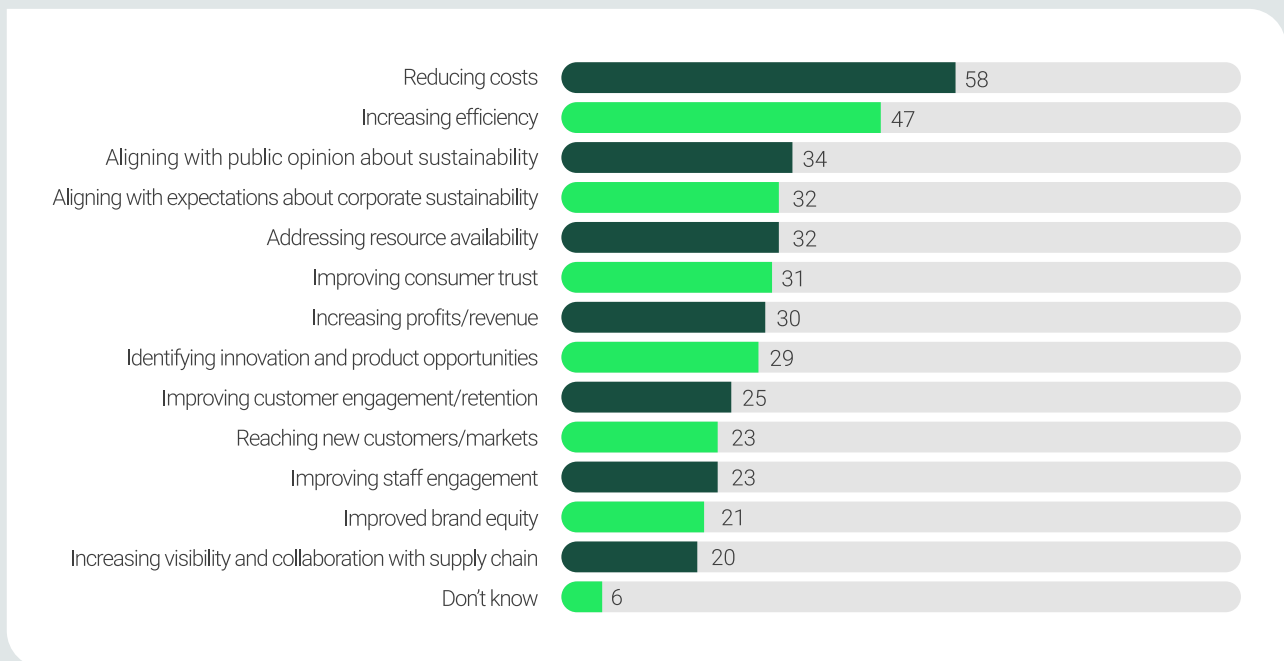


Figure 8: Perceived benefits from implementing circular economy within Australian businesses (%)

Like the survey participants, the **interview participants** were also aware of a wide range of potential benefits for Australian businesses. In particular, they emphasised that a circular economy increases commercial viability and can help businesses retain the value (energy, labour, raw materials and natural resources) embedded within their materials and products.

“The most popular benefit of a circular economy transition for Australian businesses identified by survey participants was reducing costs.”

The following are some of the potential benefits of the circular economy transition for Australian businesses identified by **interview participants:**

IMPROVED COMMERCIAL VIABILITY



I think that there's this mistake that you can't be sustainable and commercial. I think we've proven that you can be both. Taking that [reused and recycled] material saves us money from buying new material, so it's actually a positive for our bottom line.

Emma Lewisham, CEO and Co-Founder, Emma Lewisham



...from a business perspective, the efficiency around materials, diversifying product offerings, being able to decouple production and profitability from producing product.

Teslin Taylor, Head of Sustainability, Country Road Group



Yes, we're out lowering the carbon footprint but we're also performing better financially. So, we've got a very strong, both ethical and commercial, interest in seeing a proper circular economy develop in this country.

Chris Jeffrey, CEO, BINGO Industries

ALIGNING WITH CONSUMER EXPECTATIONS



I think that if anyone is going to change the way that businesses do things, it will be consumers more than anyone. They will push brands and businesses, through their purchasing power, to change the way that they operate.

Emma Lewisham, CEO and Co-Founder, Emma Lewisham



...community expectations become the loudest noise in every company's ears.

Anonymous interview participant

RETAINING VALUE WITHIN PRODUCTS AND MATERIALS



Everything is a resource. I think the opportunity is to create higher quality, longer lasting product. If businesses are inevitably responsible for their product and taking it back, they will see it more as an investment because they're the ones expected to deal with it at the end of life.

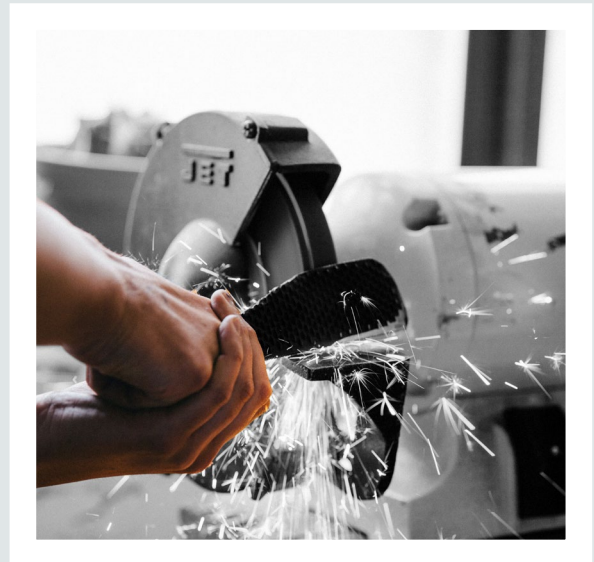
Teslin Taylor, Head of Sustainability, Country Road Group



2.3 PROGRESS TOWARDS A CIRCULAR ECONOMY

This year, the ACE Hub team also investigated how Australian businesses are implementing the circular economy and adopting more circular business models.

Whilst there has been some great progress, it is clear Australia remains in the early phase of transitioning and has a lot to learn from many other nations.



We still have a way to go. It's good that the Australian Government is taking steps (and working with the ACE Hub, for example). I think the tricky thing is that a lot of the solutions don't necessarily even exist yet, and there's still a lot of groundwork to be done in terms of what is going to be a long-term sustainable solution that's going to drive value for people.

Anonymous interview participant



... Australia is way behind the rest of the world.

Samantha Johnson, Managing Director, Polestar Australia



...we really are just at that point of education right now, making sure we're all aligned on what we mean by circular economy, what the definition of that is, and ensuring that there are resources and professional development to then support that alignment.

Teslin Taylor, Head of Sustainability, Country Road Group



I think we can do a lot more.

Andrew Hinchliff, Group Executive, Institutional Banking and Markets, The Commonwealth Bank of Australia



I am pleased to see an increasing consciousness from government right through the industry and the community around the need at the [national] level to be more environmentally sensitive. But I think we're playing catch up.

Nicole Sparshott, Chief of Transformation, Unilever

... it is clear that Australia remains in the early phase of transitioning and has a lot to learn from many other nations.

2.3.1 THE CIRCULAR ECONOMY IS IMPORTANT FOR BUSINESS

Australian business decision makers understand transitioning to a circular economy is important for the future of their business. As one interview participant put it:



It's the way of the future.

Emma Lewisham, CEO and Co-Founder, Emma Lewisham

“... big businesses may be more likely to lead the circular economy transition with small businesses following their example.”

82 per cent of **survey participants** said making the transition was either extremely, very or somewhat important to the future of their business (Figure 9). This is consistent with the 2021 results (88 per cent), despite the differing sample representations.

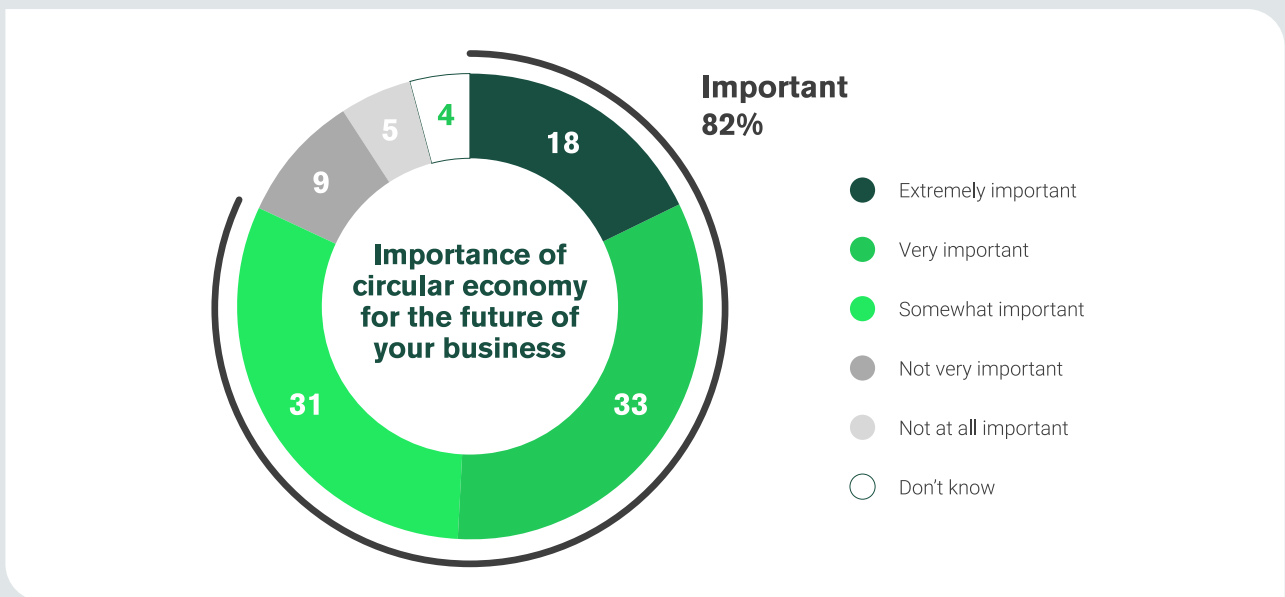


Figure 9: Importance of a circular economy for the future of Australian business (%)

Interestingly, those from the construction industry are more likely to understand the importance of a circular economy to their business than decision makers from other industries (Figure 10). The higher recovery rates in Australia of construction and demolition waste (78 per cent) compared to municipal (51 per cent) and commercial waste (58 per cent) might help explain this result and demonstrate the importance placed on material circularity in construction.²⁴

Large businesses are also more likely to understand the importance of a circular economy to their business, which potentially points to their greater ability to devote resources to environmental, social and governance (ESG) initiatives.²⁵ With small businesses more likely to think the circular economy is not important, there is an implication that big businesses may be more likely to lead the circular economy transition with small businesses following their example.

²⁴Pickin, J. et al (2022) *National Waste Report 2022*. Blue Environment, p112

²⁵Environment, social and governance (ESG) refers to the three main topic areas that companies are expected to report on, capturing all non-financial risks and opportunities.

Those who understand the importance are more likely to be from...



Those who don't think it's important/don't know are more likely to be from...



Figure 10: Differences in understanding of the importance of the circular economy for the future of their business

Further highlighting the importance of the circular economy to the future of Australian businesses, two-thirds (67 per cent) of **survey participants** said they were likely to attend a circular economy event, such as a workshop or webinar, in the next 12 months. This indicates Australian business decision makers are willing and eager to learn more about the circular economy and incorporate these learnings into their own business practices.

2.3.2 BUSINESSES HAVE INCORPORATED SOME CIRCULAR STRATEGIES

Survey participants were provided with the adjacent definition before being asked what stage they think they are at in terms of incorporating the circular economy into their business models.

Based on the definition provided, one-third (32 per cent) of survey participants claimed to have implemented some elements of a circular economy (Figure 11). This appears to support the assertion that Australian businesses are generally only at the start of their circularity journey.

DEFINITION

The circular economy moves away from our current 'take-make-dispose' model of production to one which is underpinned by the transition to renewable energy. It follows the below principles:

- 1 DESIGN OUT WASTE AND POLLUTION**
- 2 KEEP PRODUCTS AND MATERIALS IN USE**
- 3 REGENERATE NATURAL SYSTEMS**

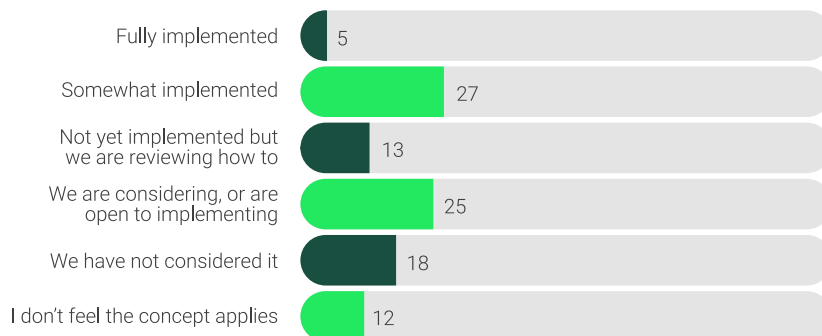


Figure 11: Stages Australian businesses claim to be at regarding incorporating the circular economy into their business models (%)

Of the 12 per cent of survey participants who felt the circular economy was not applicable to their business, a common reason provided (on top of a lack of understanding of the circular economy) was that their business operations do not produce any waste:

- “ We are just a retail store we have no waste.**
- “ As I provide a service, I do not really generate waste.**
- “ We don't have much waste at all.**

Another reason listed by survey participants was that they felt they were not able to adopt more circular business models:

- “ We are a trade business that mainly does maintenance work, so we replace and do not reuse old parts.**
- “ I believe this concerns manufacturers more so than retailers/wholesalers.**
- “ We are in a business that provides services, we can't partake in the circular economy.**
- “ We provide services (financial) and do not create any physical products. That means our company doesn't create any waste (besides stationery, paper, etc.) that we can reuse.**
- “ We only sell new products, so this is not applicable to our sales model.**
- “ Overseas manufacturing of products.**
- “ We don't have direct control throughout our supply chains.**
- “ It is not quite practical to our industry.**

The responses indicate there is a great opportunity to increase understanding of the need for a system-wide, full value chain approach to circularity. For example, financial service providers can play a role in providing education to customers around approaches to product development that are attractive to the growing number of investors who want to support a circular economy.

This example represents how important it is to increase knowledge of the diverse roles needed across a variety of industries to make the transition to a circular economy. For a circular economy to become a reality in Australia, all industries and each stakeholder in supply chains must be on board.



LADDER OF CIRCULARITY: 10 R'S

The circular economy is a complex concept which may affect how readily Australian businesses adopt more circular practices. However, at the core of a circular economy is the desire to keep materials in circulation, and retain the value embedded within them at the highest level for as long as possible. The ladder of circularity, representing the ten R's, provides a good visualisation of this (Figure 12).

“... R strategies higher up on the ladder are more circular than those lower on the ladder.”

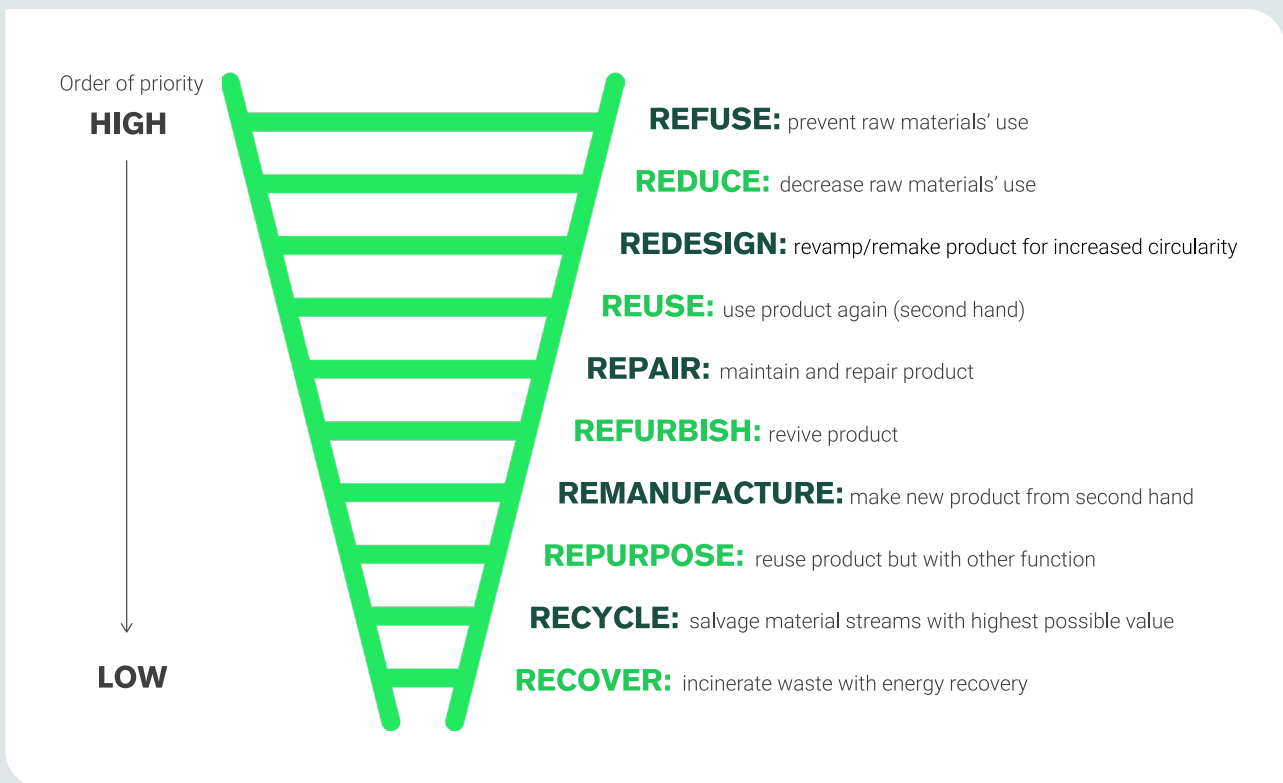


Figure 12: The ladder of material circularity and 10 R's adapted from Cramer 2017

The R strategies that sit higher up the ladder, such as Refuse and Reduce, occur at the beginning of a product's life cycle, consume fewer natural resources and raw materials, and retain more of the embedded value within existing products and materials (think Repair and Redesign, for example). The R strategies lower on the ladder, such as Recycle and Recover, are also part of a circular economy, however they occur at the end of a product's life cycle closer to the disposal phase and result in some of the embedded value of the product or material being lost from the system. To simplify, R strategies higher up the ladder are more circular than those lower on the ladder.



To provide a more detailed picture of implementation, we asked the **survey participants** whether they had incorporated any R strategies into their business practices (Figure 13). Note, the ACE Hub team added two additional R strategies in the survey: Regeneration (actively use products or services that regenerate nature), for which outcomes may sit outside of material circularity; and Rethink (make product use more intensive by sharing products), which covers the growing sharing economy or product-as-a-service offering. Please see Appendix Table A2 for the complete list of R strategy descriptions we provided to survey participants.

The top three R strategies claimed to be implemented by survey participants were

Recycle (25 per cent), Repair (22 per cent) and Reuse (21 per cent). The apparent low adoption of Recycle as a strategy contrasts with previous research commissioned by Planet Ark, which found 72 per cent of those surveyed said their workplaces recycle paper.²⁶

One theory to explain this disconnect is that some current survey participants interpreted 'Recycle' to mean their business did the recycling or transforming of products into new products themselves rather than relying on service providers. Another possible explanation is that the survey participants were reluctant to identify their workplace as implementing Recycle strategies if their business did not offer recycling collections for all recyclable materials in their workplace.

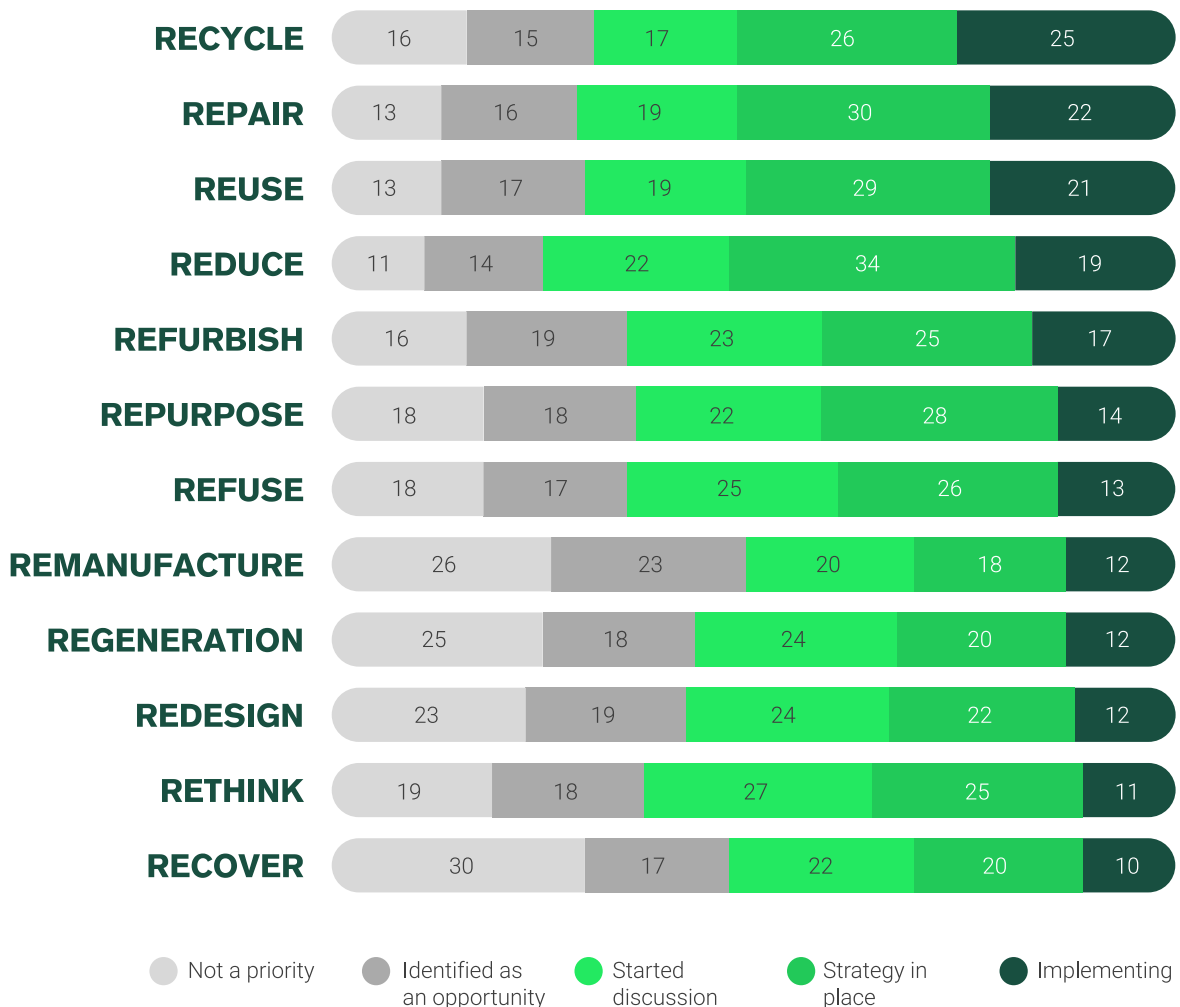


Figure 13: R strategies implemented by survey participants (%)

²⁶Planet Ark commissioned research by Pollinate's The Pulse survey, September 2016.

There were positive signs when looking at the higher value R strategies, with a majority of **survey participants** reportedly taking action (starting discussions, having a strategy in place or implementing) on:

- Rethink strategies (63 per cent)
- Redesign strategies (58 per cent)
- Regeneration strategies (56 per cent)

On average, survey participants said they had implemented two R strategies in their workplace. However, 43 per cent of survey participants said they had not yet

implemented any R strategies (Figure 14). This points to an opportunity to educate businesses about the benefits of different R strategies.

Some survey participants who claimed to have not yet considered the circular economy, or felt it does not apply to their business, said they had already implemented R strategies (Figure 15). The most implemented R strategies by this group were Repair strategies (17 per cent), Reduce strategies (14 per cent) and Recycle strategies (11 per cent).

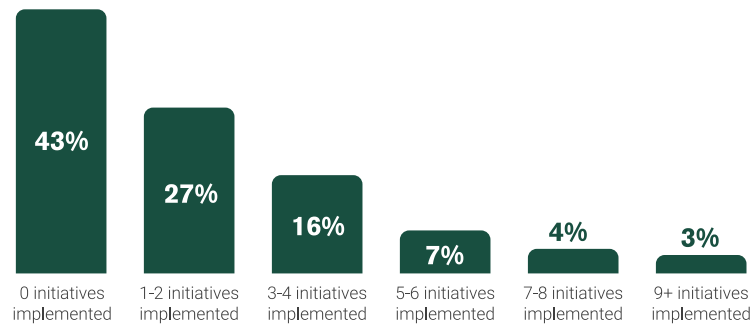


Figure 14: Number of R strategies implemented by survey participants (%)

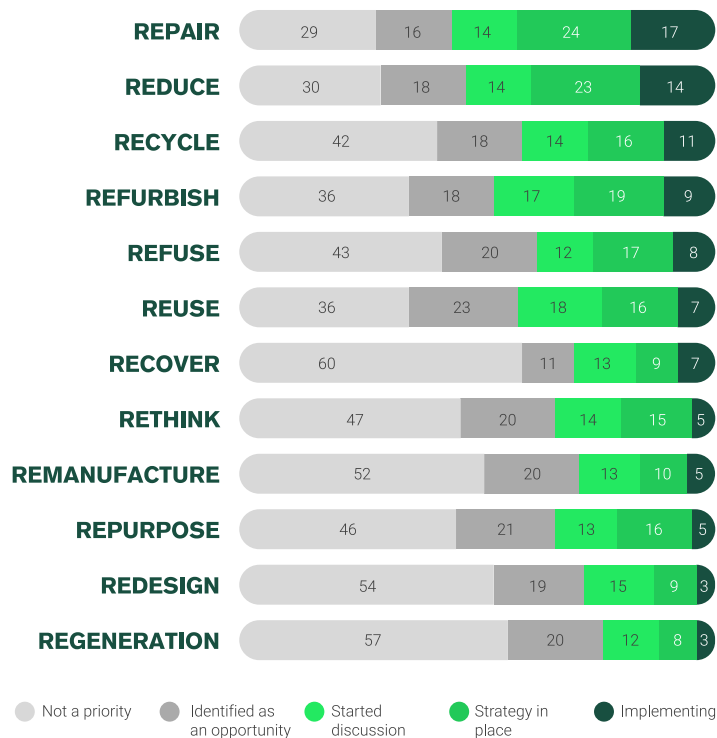


Figure 15: R strategies implemented by survey participants who claimed they've not yet considered the circular economy, or they don't think it applies to their business (%)

This suggests some Australian business decision makers may be confused about what a circular economy is, and are therefore less likely to think it applies to them. However, breaking the complex concept down into some workable components – via R strategies, for example – may help start a conversation with less engaged or less informed businesses. This also suggests that even those business leaders who may feel the circular economy does not apply to them are already finding value from incorporating more circular practices into their activities, even if they are unaware they are doing so and have only adopted lower order R strategies to date.

Future research could delve more deeply into businesses' understanding of R strategies by requesting examples from participants of what they are implementing. This would enable an in-depth evaluation of the scope and effort of circularity implementation.

The **interview participants** were pragmatic in their approach to implementation as they realised that even Australia's early circular economy adopters, like themselves, are only at the very start of their journeys:



We're not quite at the start, but we're at the beginning of the journey... We've got some amazing examples where we have invested ahead of the curve in circularity.

Anonymous interview participant



I think we have a lot more to be done in this space... but we need progress over perfection.

**Nicole Sparshott,
Chief of Transformation, Unilever**



... even those business leaders who may feel the circular economy does not apply to them are already finding value from incorporating more circular practices into their activities, even if they are unaware they are doing so.



2.3.3 THE MAJORITY LEARN FROM FIRST MOVERS

The 'Diffusion of Innovations' theory²⁷ is a useful approach for explaining how, why and at what rate "new" ideas, like the circular economy, spread. As shown by Figure 16, Australian businesses fall into different segments of the adoption curve depending on their attitudes, knowledge and implementation of circular economy strategies. Each segment or archetype can be described as follows:

Australian businesses fall into different sections of the adoption curve depending on their attitudes, knowledge and implementation of circular economy strategies.

INNOVATORS

- Willing to take risks and embrace change
- Experts in the subject area



EARLY ADOPTERS

- Follow the innovators
- Receptive to new ideas and eager to implement them



EARLY MAJORITY

- Pragmatic and adopt new ideas after they have been proven and tested (by Innovators and Early adopters)
- The key group to mass transition

LATE MAJORITY

- Skeptics who adopt new ideas reluctantly
- Adoption of ideas often occurs due to external pressures on market demands



LAGGARDS

- Resistant to change and are the last to adopt new ideas
- Often hold traditional beliefs or have limited resources

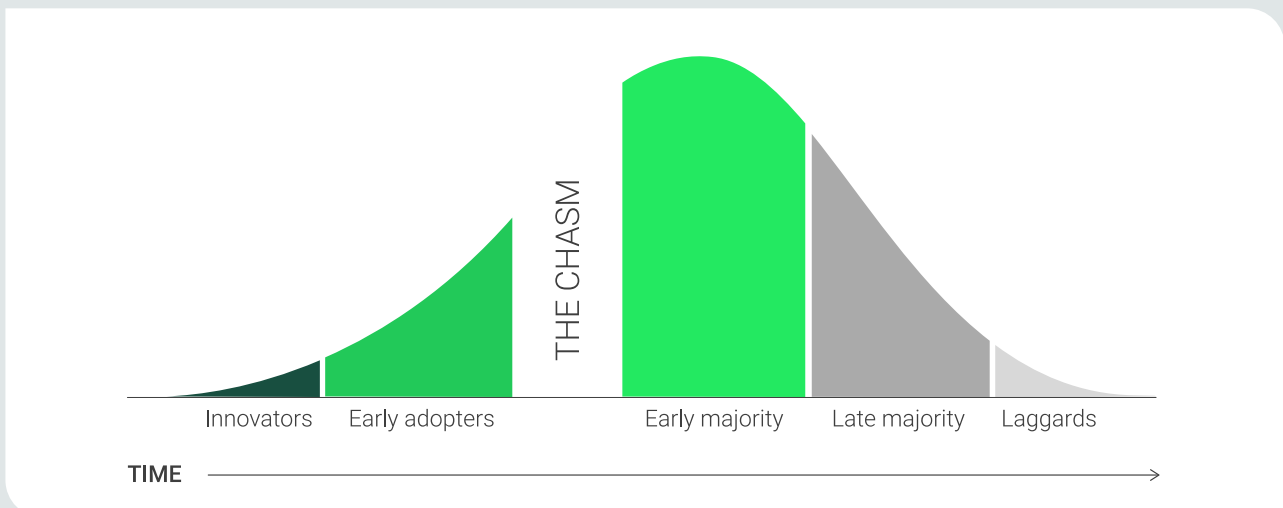


Figure 16: The adoption curve using the 'Diffusion of Innovations' model with adoption gap (or 'the chasm').

²⁷This theory was popularised by [Everett Rogers](#) in his book *Diffusion of Innovations*, first published in 1962.

The challenge is how to encourage the majority of Australian businesses who are yet to adopt circular economy practices to do so sooner. 'The chasm'²⁸ occurs due to differences between early adopters and the early majority, which means the former does not necessarily make a good reference point for the latter. Early adopters are change agents whereas the early majority are productivity improvers.

The adoption curve can help identify how to encourage different business segments or archetypes to join the discussion and start their circular economy journeys. Page 43 in **Section 5, *Your Call to Action***, offers targeted engagement strategies.

This year's survey shows that whilst many of Australia's business decision makers are aware of the circular economy, far fewer have transformed their awareness into a more complete understanding of its complexities or moved on to the implementation stage. Clearly, more effort is needed to bridge the gap between Australia's circular economy first movers (Innovators and Early adopters) and the rest (Early majority and Late majority).

The research also shows that businesses are aware they cannot achieve circularity alone. As one interview participant remarked:



We're still operating in a linear economy at this point and it's hard to create circularity by yourself.

Teslin Taylor, Head of Sustainability, Country Road Group

Indeed, for Australia to transition to a circular economy, every industry must play their part. Within those sectors, innovators and

early adopters play a crucial role in leading Australia's transition. They can educate and motivate others by representing practical case studies that showcase benefits and real-world learnings.

The **interview participants**, who may be viewed as circular economy innovators or early adopters, recognised their important role:



Brands can help [raise awareness] by showing a different way of doing business. We have a powerful voice.

Emma Lewisham, CEO and Co-Founder, Emma Lewisham



...we are also having an impact on other industries and other auto manufacturers in our industry. We're saying, this is what we're doing, and we're calling on you to do more because we can't do this alone, we need your help.

Samantha Johnson, Managing Director, Polestar Australia



I think sometimes there's a good understanding of where we want to get to, but not necessarily a deep enough appreciation of the complexities and the challenges in being able to change whole systems.

Tanya Barden, CEO, Australian Food and Grocery Council

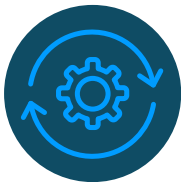
The next section showcases several Australian businesses that are already incorporating circular principles into their business practices or developing more circular products. They highlight the benefits and opportunities of the circular transition and share valuable learnings for other businesses looking to get started.

²⁸The 'chasm' was added to the original 'Diffusion of Innovation' curve by Geoffrey A. Moore in his book *Crossing the Chasm*, first published in 1991.

3. CIRCULAR ECONOMY IN ACTION

In this section, you will find eight inspiring stories of innovators and early adopters already taking action towards a circular economy in Australia. These case studies highlight how each business has gone circular, the environmental, financial and social benefits of doing so and lessons learned that may enable other businesses to take action.

Each case study is framed as a circular economy business model, of which there are five:



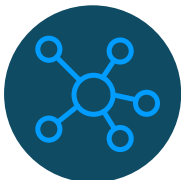
CIRCULAR SUPPLY

Inputs in design and production are either recovered, renewable or biodegradable



LIFE EXTENSION

Prolonging the lifespan and value of a product through repair, remanufacture or resale



SHARING

Usage of products or services is shared by several users



PRODUCT AS A SERVICE

Purchasing a service that a product offers rather than the product or asset itself



RESOURCE RECOVERY

Recycling waste materials, diverting them from landfill and reducing the extraction of virgin natural resources

This collection is only a small sample and those interested in reading more examples of Australian circular economy innovation can find an ever-growing list of more in-depth case studies on the [ACE Hub website](#).



HUSKEE

Huskee eliminates single-use coffee cup waste by using one of the coffee industry's waste streams. Their reusable products, HuskeeCups, are designed from coffee husk waste, and they also offer specialised programs to help venues swap and buy back old HuskeeCups to turn them into new products.

BUSINESS MODELS:



PRODUCT AS A SERVICE



SHARING

LADDER OF CIRCULARITY:



REFUSE



RETHINK

HOW IS HUSKEE GOING CIRCULAR?

Designing out waste:

By using the otherwise wasted coffee husk to make HuskeeCups, Huskee avoids the need to extract virgin raw materials. The simple designs of their cups make them easy to recycle at low cost at their end-of-life through the HuskeeLoop buyback program.

Keeping products in use:

Their HuskeeSwap system, supported by an app, enables both venues and customers to exchange HuskeeCups and easily move away from single-use takeaway cups.

HUSKEE'S ACHIEVEMENTS

Environmental: Over 600 tonnes of coffee husk waste has been diverted from landfill to manufacture HuskeeCups and the need for around 1.6 million single-use cups has been eliminated through the HuskeeSwap program.

Financial: As of September 2022, Huskee have sold around 2.67 million HuskeeCups in 57 countries, demonstrating profitability through their circular business model.

LEARNINGS FOR OTHER BUSINESSES

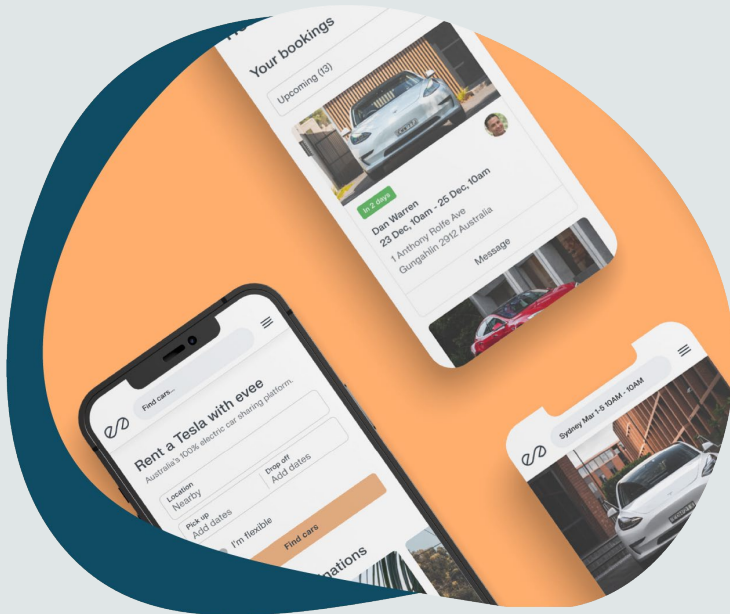
- Circular behaviour change among customers requires ongoing education and targeted communication for each specific type of stakeholder (in this case, cafés, corporates, universities and individuals).
- Circularity cannot be achieved in silos and requires thinking and working all along the value chain.



With the circular economy, it is imperative for us to think about the bigger picture. We can't just think about singular systems. We must live with a certain level of comfort around managing complexity to solve problems that are bigger than ourselves to achieve something different and better.

Saxon Wright
CEO and co-founder of Huskee

Read the full study on the [ACE Hub](#)



EVEE

Evee is a 100 per cent electric car-sharing platform enabling Australians to rent and borrow electric vehicles (EVs) from existing owners to accelerate the adoption of EVs nationwide and support a clean energy future.

BUSINESS MODELS:



PRODUCT AS A SERVICE



SHARING

LADDER OF CIRCULARITY:



REDUCE



REUSE

HOW IS EVEE GOING CIRCULAR?

Keeping products in use:

Evee is all about circulating products and materials (in this case, keeping electric cars in use), while using them to their highest value and making this option accessible to the wider public. Their product-as-a-service model reduces the need to purchase new cars and consequently reduces raw materials extraction, as existing EV owners share their cars with interested renters.

EVEE'S ACHIEVEMENTS

Environmental: As of August 2023, evee have completed over 18,000 rental days, preventing over 200 tonnes of carbon dioxide from entering the atmosphere.

Financial: Evee have succeeded in raising 1.6 million dollars through an equity crowdfunding campaign. Furthermore, through the company's sharing model EV owners are incentivised through rental earnings and can earn up to \$2,000 AUD per month by sharing their cars with others.

LEARNINGS FOR OTHER BUSINESSES

- Free from the constraints of brick-and-mortar operations, a product-as-a-service peer-to-peer model is very scalable and can be established swiftly in new locations.
- Ideally, circular economy models should be incorporated into the business from the get-go. Already established operations can start by reconsidering material sourcing, enhancing the value of products and looking at the end-of-use process.



When resources are limited, it is paramount that the idea itself must possess greater significance to withstand the challenging periods of uncertainty and financial constraints. Building strong relationships is a critical part of this, and although time-consuming, I have come to appreciate its value.

Slava Kozlovskii
CEO and founder of evee

Read the full study on the [ACE Hub](#)



CHEP

CHEP is a global leader in sustainably moving goods, applying a 'share and reuse' model for pallets and containers and serving customers across various industrial and retail supply chains.

BUSINESS MODELS:



PRODUCT AS A SERVICE

LADDER OF CIRCULARITY:



REDUCE



REUSE



RETHINK

HOW IS CHEP GOING CIRCULAR?

Designing out waste:

Their high-quality pallets and containers are designed to be reused, repaired and recycled at their end-of-life. Their sharing model supports industrial, packaging and fast-moving consumer goods supply chains in preventing wastage of pallets and containers. They offer collaborative transport solutions that help avoid empty transport miles and thus reduce carbon emissions.

Keeping products in use:

CHEP's pallet and container sharing model has created an extensive network of suppliers, manufacturers and retailers who hire equipment and send it back to CHEP after use. These pallets are repaired and maintained where necessary, reused over time and recycled at their end-of-life by CHEP.

CHEP'S ACHIEVEMENTS

Environmental: CHEP Australia has achieved Gold Status recognition by EcoVadis in recognition of their policies and actions relating to the environment, ethics and sustainable procurement practices, as well as being designated as a leader in carbon management for being carbon neutral across its operations.

LEARNINGS FOR OTHER BUSINESSES

- In a sharing and reuse model, it is imperative to work collaboratively with customers to help them identify and eliminate areas of physical and operational waste.
- It is important to seek partnerships with those suppliers and customers who share your visions, goals and purpose to drive circular outcomes.



We are working towards supporting a world where goods move in a circular and regenerative way.

Dean Parsons
Sustainability Programmes Manager at CHEP

Read the full study on the [ACE Hub](#)



SIGNIFY

Lighting company Signify, formerly Philips lighting, is a world-leader in sustainable lighting innovation, reflected by being carbon neutral, implementing circularity through a 'Lighting as a Service' (LaaS) program and employing modular lighting designs.

BUSINESS MODELS:



PRODUCT AS A SERVICE



LIFE EXTENSION

LADDER OF CIRCULARITY:



REDESIGN



REUSE



REPAIR

HOW IS SIGNIFY GOING CIRCULAR?

Designing out waste:

Signify use 100 per cent renewable electricity across their operations and the modular design of their lighting allows for disassembly and reassembly as required by the customer.

Keeping products in use:

Through a combination of modular lighting design and the LaaS program, Signify maintain lighting units over time by swapping out broken parts of lights rather than replacing them entirely. Instead of throwing away the whole light fixture, individual elements can be repaired and the design shape or style can be adjusted to suit a customer's emerging needs.

SIGNIFY'S ACHIEVEMENTS

Environmental: Signify is carbon neutral and uses 100 per cent renewable electricity across its operations. Their LaaS program also helps customers reduce energy and virgin material consumption.

Financial: Approximately 29 per cent of Signify's revenue comes from circular products, systems or services. This includes products that are designed to ensure parts can be serviced, reused, refurbished and recycled.

Social: By moving from selling box sets to the LaaS concept, Signify were able to employ local workers to provide maintenance and repair services to customers.

LEARNINGS FOR OTHER BUSINESSES

- There are four key drivers that help facilitate a company's transition to circularity: design, collaboration, logistics and business models.
- Going circular isn't just about changing product design or processes, it is also about changing mindsets.



The linear economy is so hardwired and it's such an efficient economic model, to change that is a hurdle in itself. And it's not a simple change where you only change one or two elements, it's a systemic change.

Anton Brummelhuis
Senior Director of Sustainability at Signify

Read the full study on the [ACE Hub](#)

eWATER SYSTEMS

eWater Systems create wall-mounted units with sensor-activated taps that produce chemical-free hygiene products on site, offering a refillable solution for disinfectants, sanitisers and cleaning products.

BUSINESS MODELS:



CIRCULAR SUPPLY

LADDER OF CIRCULARITY:



REDESIGN



HOW IS eWATER SYSTEMS GOING CIRCULAR?

Designing out waste:

Their compact wall-mounted units with taps can be installed on any site, avoiding issues with traditional chemical hygiene products such as carbon-intensive manufacturing, packaging, shipping, materials handling, single-use plastic and disposal of contaminated water. The system applies an electrical charge to tap water and salt to generate a stream of organic, commercial-grade hygiene products that naturally biodegrade leaving no chemical residue.

eWATER SYSTEM'S ACHIEVEMENTS

Environmental: To date, eWater Systems have replaced over 500 million litres of packaged chemicals and avoided the need for almost 110 million plastic containers.

LEARNINGS FOR OTHER BUSINESSES

- Immense effort is needed to raise awareness and build confidence in new technology in the hygiene industry due to the conservative nature of facilities management, food production and cleaning industries, competitors, skepticism of science, resistance to change, debilitating regulatory environments and the capital constraints of scaling.
- Loyal customers can often be your biggest advocates and supporters to help drive you to continue the disruptive journey.



The high levels of customer satisfaction leading to repeat business and referrals is a result of loyalists combined with dogged determination and persistence.

Phil Gregory
Founder of eWater Systems

Read the full study on the [ACE Hub](#)



REVOLVE RECYCLING

Revolve ReCYCLING is a platform addressing increasing quantities of Personal Transport Vehicle (PTV) waste by redeploing and recycling bikes, e-bikes, scooters and other PTVs from households, worksites, councils and other locations.

BUSINESS MODELS:



LIFE EXTENSION



RESOURCE RECOVERY

LADDER OF CIRCULARITY:



REUSE



REPAIR

HOW IS REVOLVE RECYCLING GOING CIRCULAR?

Keeping products in use:

By repairing and redeploing 100 per cent of the bikes they collect, as well as recycling them at their end-of-life, Revolve ReCYCLING prevents PTVs from entering landfill. A PTV's positive environmental impact continues to grow as its usage increases.

REVOLVE RECYCLING'S ACHIEVEMENTS

Environmental: Between 2021 and 2022, Revolve ReCYCLING diverted around 40 tonnes of materials from landfill, including metals like steel and aluminium, rubber and plastic. About 3,000 bicycles were recycled or redeploed, saving around 40,000 kg of greenhouse gases.

Social: The organisation's operations created employment opportunities for people from disadvantaged backgrounds.

LEARNINGS FOR OTHER BUSINESSES

- When establishing a new circular startup, it is important to conduct in-depth market research to understand consumer attitudes towards circular products and their behavioural drivers, identify supply chain partners and understand the logistical and financial models for recovery of target products.



The fact that so many people are increasingly choosing sustainable modes of transportation is a positive change for the good. However, like every built machine, bikes and PTVs have their own environmental footprint when looked at across their entire lifecycle from raw materials to end-of-life. We want to make sure that there is a 'sustainability solution' for those PTVs at the end of their first life.

Guido Verbist
General Manager of Revolve ReCYCLING

Read the full study on the [ACE Hub](#)



YARRABILBA

Yarrabilba is a master planned community by Lendlease located approximately 40 km southeast of Brisbane, with a 30-year strategy that aims to make it Australia's first circular economy community. The project aims to integrate social, economic and environmental values to provide a dynamic and empowered community.

BUSINESS MODELS:



CIRCULAR SUPPLY



RESOURCE RECOVERY

LADDER OF CIRCULARITY:



REDESIGN



REGENERATE

HOW IS YARRABILBA GOING CIRCULAR?

A critical part of this strategy is involving the community and empowering them in building their future city through:

Designing out waste

- Understanding opportunities for resource efficiency
- Identifying opportunities to reduce the embodied carbon in the materials used to build the community infrastructure

Keeping products and materials in use

- Undertaking a food waste collection and composting trial with the Yarrabilba State Secondary College
- Trial of a Builders Waste separation and collection scheme in the construction of the current Display Village

Regenerating natural systems

- Propagating and replanting native trees such as *Melaleuca irbyana*, a threatened species

YARRABILBA'S ACHIEVEMENTS

Environmental: The Yarrabilba plan is in the infancy of its circular journey but is working with a local ecologist to rebuild the ecology of the land, has undertaken a waste audit with the help of local social enterprises and is developing a range of initiatives for households, schools and the construction of the community.

LEARNINGS FOR OTHER BUSINESSES

- Being a first mover, it is beneficial to work with partners who are innovative and forward thinking and see the opportunities.
- It is essential to engage the community and stakeholders from the start for local or city level projects. Empowering people provides a sense of opportunity and control.



Everybody can make a difference. Everyone can enact change themselves to achieve a circular economy. Every individual decision you make every day will have an impact on how you achieve circularity.

Karen Greaves
Sustainability Manager for Yarrabilba at Lendlease

Read the full study on the [ACE Hub](#)



PROJECT CATALYST

Project Catalyst is a network of sugarcane growers who together develop innovative approaches to farming that improve productivity and reduce the impact of sugarcane farming on the Great Barrier Reef (GBR).

BUSINESS MODELS:



CIRCULAR SUPPLY

LADDER OF CIRCULARITY:



REGENERATE



REDUCE

HOW IS PROJECT CATALYST GOING CIRCULAR?

Regenerating natural systems:

Instead of leaving fallow ground bare prior to replanting sugarcane for the next season, Project Catalyst trialled the planting of legumes and mixed species crops. This reduced erosion, broke up compacted soils, improved water infiltration and drainage, suppressed weeds and allowed natural biota such as beneficial nematodes to build up naturally, thus reducing the amount of nutrients, pesticides and fine sediment leaving the farm and entering waterways that can impact the GBR.

PROJECT CIRCULAR'S ACHIEVEMENTS

Environmental: The program began in 2008 with 19 growers and had reached 155 active growers by March 2021. In that period, growers farming 42,000 hectares of land improved the water quality in waterways leading to the GBR by:

- Reducing the amount of Dissolved Inorganic Nitrogen leaving farms by 39 tonnes
- Reducing fine sediment by 6,751 tonnes
- Reducing pesticides by 7,628 grams

Financial: From 2008 to 2020, reduced nitrogen application produced savings in fertiliser costs of \$34 per hectare or over 1 million dollars per year for project growers.

LEARNINGS FOR OTHER BUSINESSES

- The main barriers to change in the agriculture sector are limited access to knowledge, experienced guidance, peer-to-peer learning, support for innovation, funding and incentives to make positive change. Project Catalyst addressed this by connecting growers to resources, support networks and each other
- The most effective strategy for getting people onboard is leading by example and trading on the project's reputation and track record.



Innovation that creates improved farming methods can deliver environmental and financial benefits. Farming practices that balance inputs with productivity help us move away from the 'take-make-waste' model and towards regenerative, circular approaches.

Ross Neivandt
Project Coordinator for WWF Australia

Read the full study on the [ACE Hub](#)

4. CONCLUSIONS

This year's research, highlighted in Section 2, shows Australian business decision makers consider transitioning to a circular economy to be important for the future of their business. Despite this, the consensus from the interviews conducted with the 11 business leaders is that Australia continues to lag well behind other countries, particularly European nations, when it comes to making the transition.

In terms of barriers impacting upon this hesitancy to act, **interview participants** pointed to a business culture in Australia that currently focuses too much on competition over collaboration. The broader sample of **survey participants** also perceived a lack of information on circular practices and financial issues as significant barriers.

Encouragingly, this year's survey shows that a lack of understanding has not prevented action towards a circular economy altogether. When we broke the concept down into its component R strategies, using the ladder of circularity, a majority of **survey participants** (including those who claimed to have not yet considered the circular economy or felt it does not apply to their business) reported having started activities related to higher value R strategies such as Rethink and Redesign. This suggests breaking the complex concept down into some workable components (via R strategies, for example) may help start the conversation with less engaged or less informed businesses.

The survey results also show positive movement towards closing the circular economy knowledge gap among Australia's business decision makers. This year, participants' confidence in their knowledge decreased but their actual knowledge increased compared to the previous survey in 2021. Therefore, the point at which the concept of the circular economy starts to be authentically understood by a broad audience (when confidence in knowledge and actual knowledge both increase) is an area that

... innovators and early adopters implementing circular strategies in Australia have already achieved both environmental and financial success.

requires additional focus and effort to bridge the gap.

Many more business decision makers understood reduced costs and increased efficiency as key benefits of a circular economy, compared to the previous survey in 2021. This also indicates an increased understanding of the concept.

In addition to the positive developments highlighted in this year's research, the business case studies in Section 3 demonstrate how innovators and early adopters implementing circular strategies in Australia have already achieved both environmental and financial success, while also often generating social benefits.

It is clear that Australian businesses require more education on the circular economy. However, to enable this mass transition, there is a need to adopt more targeted approaches that appeal to the motivators and drivers of various business archetypes. The ACE Hub can help drive the system change required with more focused, and ultimately, greater impact through education and collaboration platforms such as the Knowledge Hub, ACE Hub Portal, annual Circularity conference and other targeted educational tools.

Section 5, Your Call to Action, offers some targeted next steps for businesses looking to embark on their circular economy journey.

5. YOUR CALL TO ACTION

Like all [Planet Ark programs](#), the work of the ACE Hub is centered on behaviour change. Our hope is that reading this report has inspired you to think about the next step in your circular economy journey or to begin taking action. In the flowcharts and tables below we offer some steps for business owners, decision makers, educators and advocates.

Read on for tips to help you start the journey towards circularity. More information is available on the [ACE Hub Knowledge Hub](#).

IF YOU ARE A BUSINESS DECISION MAKER

I AM...

Choose the option below that best describes you

MY ACTION

Consider the below recommendations



A decision maker/business **just starting** my/our circular economy journey.



Improve understanding by:

- Exploring the [ACE Hub Knowledge Hub](#)
- Subscribing to the [ACE Hub Newsletter](#)
- Attending a [circular economy event](#)



A decision maker/business who has **made some progress** on my/our circular economy journey.

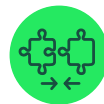


Start a conversation or have specific questions answered by:

- Joining the [ACE Hub Portal](#)
- Collaborating with your supply chain
- Reading relevant [research](#)



A decision maker/business who is **well on the way but needs help** with my/our circular economy journey.



Tap into expert knowledge by:

- Taking a [circular economy course](#)
- Connecting with the [ACE Hub's Technical Supporters](#)
- Contacting the [ACE Hub](#)

If you'd like to showcase your circular economy story in an ACE Hub case study to inspire others, please [get in touch with the team](#).

The below is for those seeking to advance circular economy thinking and action within Australian businesses. The adoption model of business archetypes is a useful behaviour change tool that helps identify the right engagement strategy to encourage businesses or others in your organisation to join the discussion and start their circular economy journeys. Here, reference is made to the recently published work by Moglia *et al* (2023)²⁹ based on Victorian organisations and the commissioned research by Pollinate.

IF YOU ARE AN EDUCATOR OR ADVOCATOR OF THE CIRCULAR ECONOMY



WHO IS YOUR AUDIENCE?

Your Audience



INNOVATORS (or Pioneers)

Characteristics

- Business has circular economy (CE) products to sell to a market and has aligned values and processes with CE.
- Business stretches and transforms non-CE technical structures and institutions towards CE.³⁰

Motivations and Drivers

- Driven by the opportunity to be at the forefront of innovation and challenge the traditionalists to gain a competitive advantage.

Engagement Strategy

- ✓ Encourage their involvement and provide them with access to resources and expertise.
- ✓ Elevate these businesses to become industry champions by sharing the work they have done and benefits reaped.



EARLY ADOPTERS (or Reformists)

- Business values and internal processes are aligned with CE.
- Work is underway to develop CE products guided by organisational CE strategy.
- Technical knowledge and product capability gaps exist.³⁰
- Business fits to non-CE technically but transforms non-CE institutionally towards CE.³⁰

- Driven by the opportunity to stay ahead of the curve and be recognized as leaders that transform business values and processes.

- ✓ Use testimonials and case studies of Innovators.
- ✓ Provide them with tools, training and support that focus on building the case for new business values and processes.
- ✓ Leverage their influence to create buzz and generate interest in others.

Continues next page →

²⁹Moglia, M., Nygaard, C. A., Shittu, O., Halefom, T. H., & Trewick, S. (2023). Roles of virtual intermediaries in the transition to a circular economy. In H. Lehtimäki, L. Aarikka-Stenroos, A. Jokinen, & P. Jokinen (Eds.), *The Routledge Handbook of Catalysts for a Sustainable Circular Economy* Routledge.

³⁰Technical structures or capabilities impact the ability of a business to develop circular products or services. Institutional structures, which include business values, competencies and decision-making processes, impact how receptive businesses may be towards implementing circularity.

Your Audience



EARLY MAJORITY (or Opportunists)

Characteristics

- They are pragmatic and adopt new CE products and ideas after they have been proven and tested.
- The key group to mass transition.
- Business stretches non-CE technically towards CE but conforms to non-CE institutionally.³¹
- Managerial knowledge and organisational capability gaps still exist.

Motivations and Drivers

- Driven by practical considerations such as cost-effectiveness, reliability and compatibility with existing systems or products.

Engagement Strategy

- ✓ Address barriers.
- ✓ Provide clear evidence of effectiveness, cost savings and long-term benefits of new or transitioned CE products.
- ✓ Simplify implementation processes and offer support throughout the transition.



LATE MAJORITY (or Traditionalists)

- Have neither reformed to embrace a CE nor do they have CE products to sell.
- Want to preserve the current market environment.
- Business fits and conforms to non-CE technically and institutionally.³¹

- Driven by fear of being left behind, market competitiveness and conformity to industry standards.

- ✓ Use comprehensive success stories and industry endorsements.
- ✓ Provide clear guidance, step-by-step implementation plans and assistance in overcoming barriers.



LAGGARDS

- The last to adopt new ideas.
- Want to preserve the current market environment.
- Hold traditional beliefs or have limited resources.

- Driven by skepticism, fear of change, a preference for the status quo and government regulation.

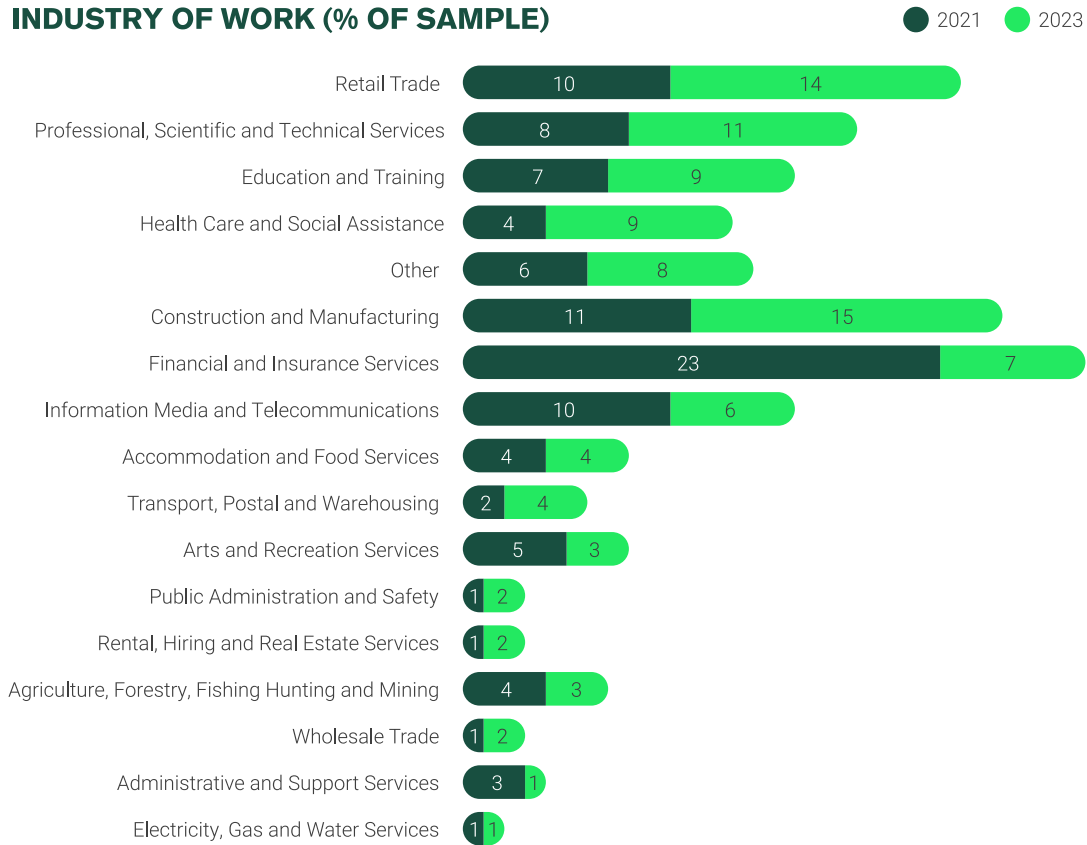
- ✓ The last group to engage (if at all).
- ✓ Provide tailored approaches that emphasise the risks of not transitioning.
- ✓ Seek endorsements from trusted sources within their community.

³¹Technical structures or capabilities impact the ability of a business to develop circular products or services. Institutional structures, which include business values, competencies and decision-making processes, impact how receptive businesses may be towards implementing circularity.

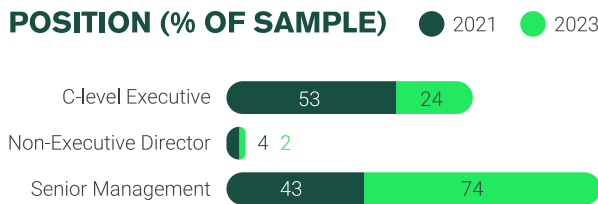
6. APPENDIX



INDUSTRY OF WORK (% OF SAMPLE)



POSITION (% OF SAMPLE)



NUMBER OF EMPLOYEES (% OF SAMPLE)

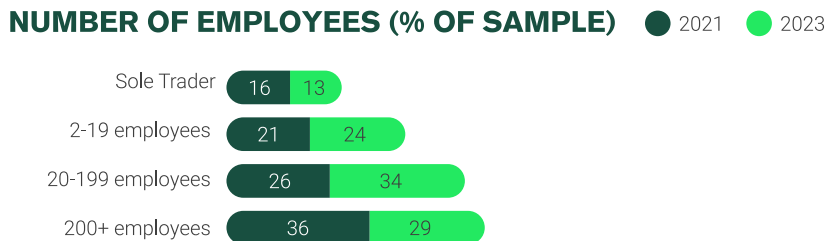


Figure A1: Key sample representation for 2021 and 2023 survey participants

BARRIERS (2021)

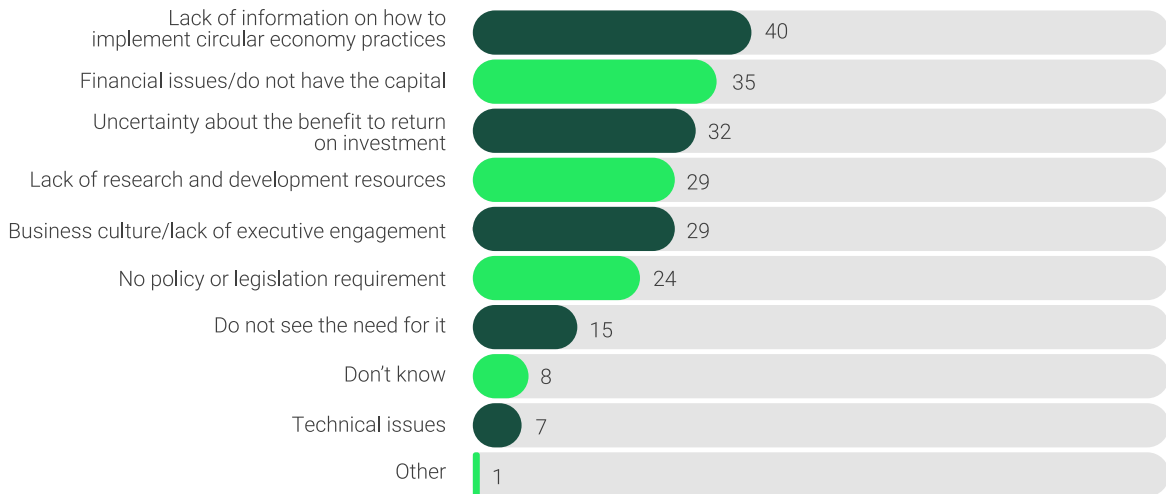


Figure A2: Perceived barriers to implementing circular economy within Australian businesses, based on 2021 survey (%)

BENEFITS (2021)

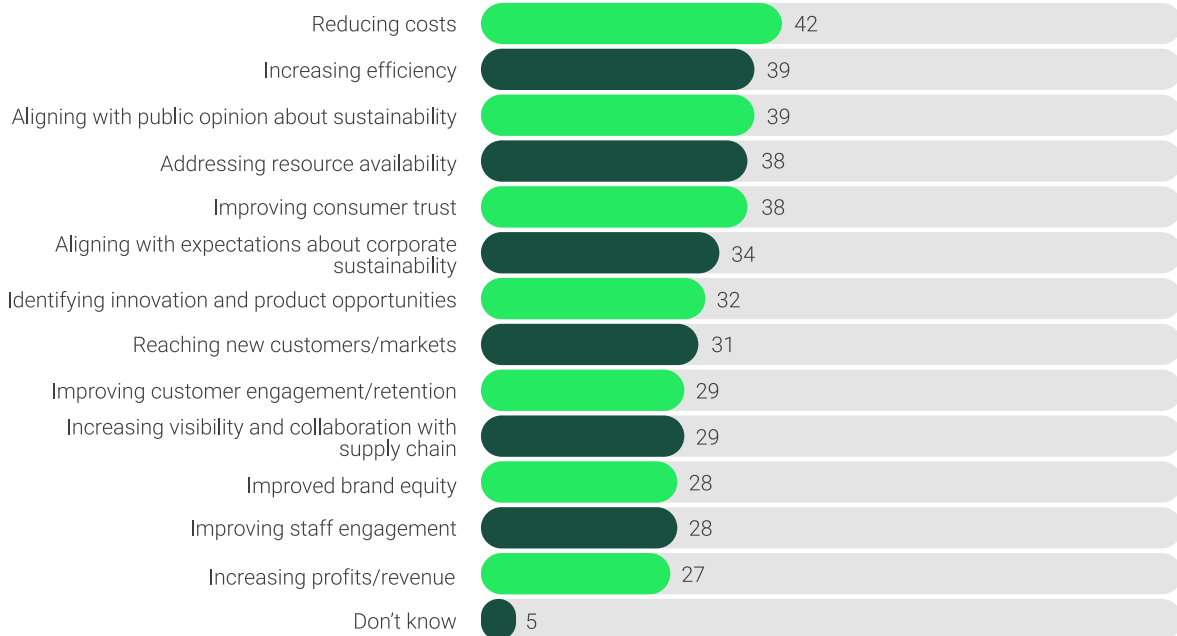


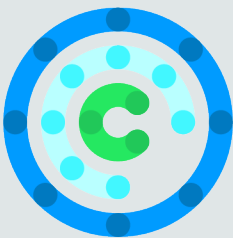
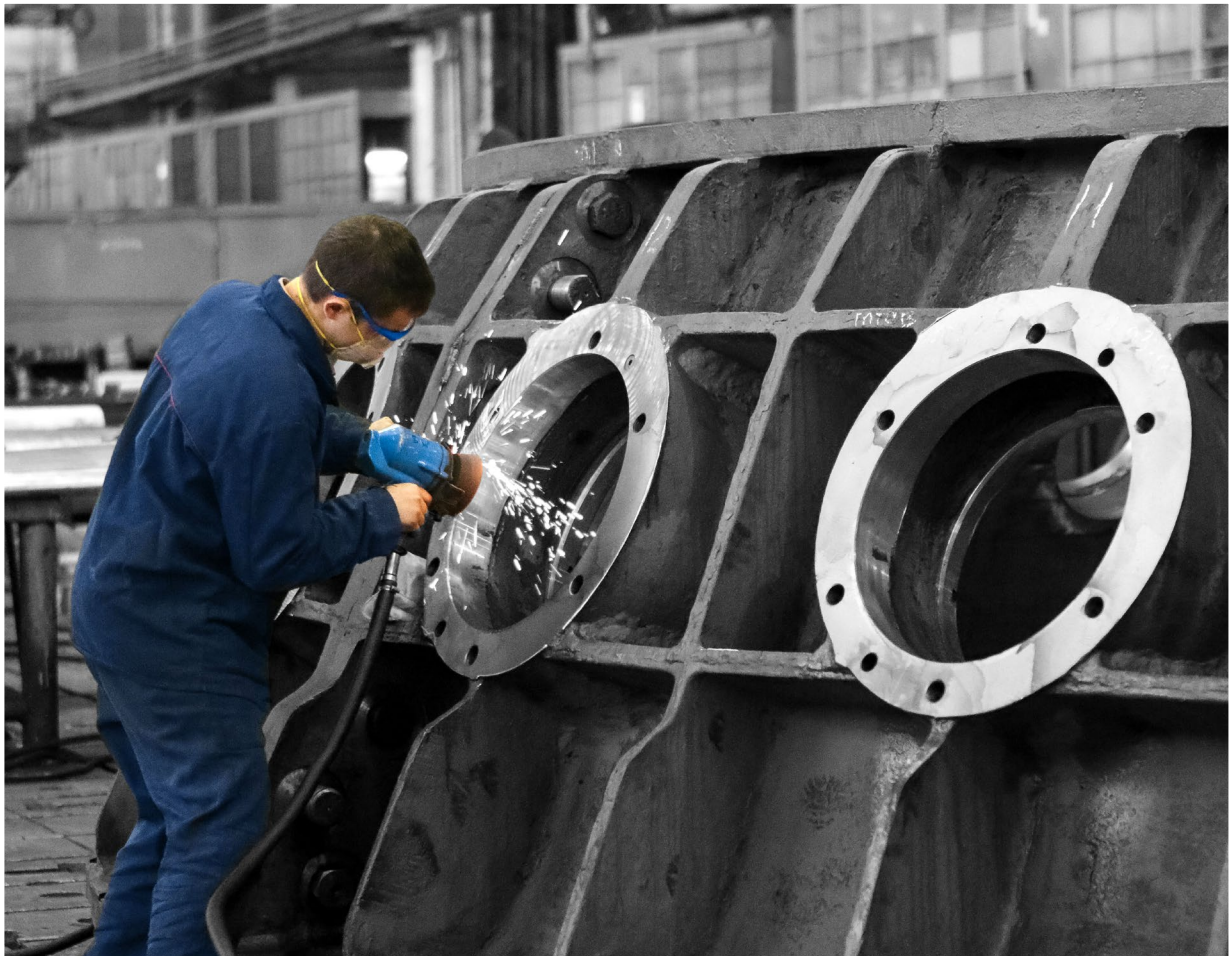
Figure A3: Perceived benefits from implementing circular economy within Australian businesses, based on 2021 survey (%)

Table A1: Summary of interview participants

| NAME | ROLE | COMPANY | INDUSTRY |
|------------------|--|-------------------------------------|-----------------------------------|
| Andrew Hinchliff | Group Executive, Institutional Banking and Markets | The Commonwealth Bank of Australia | Financial and Insurance Services |
| Chris Jeffrey | CEO | BINGO Industries | Waste Management |
| Emma Lewisham | CEO and Co-Founder | Emma Lewisham | Beauty and Skincare |
| Filomena Beshara | Sustainability Manager | Built | Construction |
| Michael Puli | Director of Sustainable Finance | ING Bank | Financial and Insurance Services |
| Nicole Sparshott | Chief of Transformation | Unilever | Fast-moving consumer goods (FMCG) |
| Samantha Johnson | Managing Director | Polestar Australia | Automotive |
| Tanya Barden | CEO | Australian Food and Grocery Council | Food and Grocery |
| Teslin Taylor | Head of Sustainability | Country Road Group | Textiles |

Table A2: R strategy descriptions provided to survey participants

| | |
|---------------|---|
| REFUSE | Avoiding the need to obtain materials/resources |
| REDUCE | Consuming fewer materials/resources |
| RETHINK | Making product use more intensive eg by sharing product |
| REDESIGN | Designing products and processes for increased circularity |
| REUSE | Reusing products and materials/resources in their current form |
| REPAIR | Repairing and maintaining defective products |
| REFURBISH | Restoring or upgrading products |
| REMANUFACTURE | Using parts of discarded products in new products with same function |
| REPURPOSE | Using parts of discarded products in new products with a different function |
| RECYCLE | Transforming products and materials into new products |
| RECOVER | Recovering low-grade material value via incineration/waste to energy |
| REGENERATION | Actively using products or services that regenerate nature |



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