

# A deep dive into sourcing and selection of sustainable and circular textile materials

A workshop of the Circular Economy Business Innovation Centre (CEBIC)

Thursday 26 August 2021



# Sourcing and selecting sustainable and circular textile materials for clothing

## Our workshop

We met online on:

9.30am – 11.00am, Thursday 26 August 2021

## Workshop objective

Our purpose was to bring together peak bodies, clothing brands, researchers and government representatives, to:

- develop a shared understanding of what sustainable and circular textile materials are and the current activity in this space
- build on previous conversations to explore the current barriers and opportunities to sourcing and selection of these materials.

This workshop summary is intended to promote ongoing engagement and action by industry, researchers and government.

## Our discussion covered:

Theme	Key prompts for discussion
<b>1. Sharing rapid industry insights</b>	<ul style="list-style-type: none"><li>• Building from a foundation of evidence</li><li>• Confirming our working definition of circular textile materials for this session</li></ul>
<b>2. Exploring current barriers and challenges</b>	<ul style="list-style-type: none"><li>• Reflecting on previous workshop and pre-workshop survey</li><li>• Reflecting on the barriers and challenges already identified</li><li>• Scanning for other barriers and challenges</li></ul>
<b>3. Opportunities for action</b>	<ul style="list-style-type: none"><li>• Playback of previous workshop and pre-workshop survey</li><li>• Identifying opportunities to address the challenges</li><li>• How could industry, researchers or the Victorian Government assist in addressing the barriers and challenges?</li></ul>

# Sharing rapid industry insights

Julie Boulton from the Monash Sustainable Development Institute presented a summary of findings from their research on the adoption of circular economy principles and factors that may be needed to support the textiles, clothing and footwear industry.

The full presentation is included in the appendix.

***Participants' initial reactions to the research were:***

- Open-source life cycle assessment data is a great goal and would be fantastic
- With so many variables impacting the outcome, life cycle assessments can be moot.
- A place to trial and test solutions is needed.
- Small entities need support, as they don't have in-house teams
- Polyester is 75% of the textile market
- While we can influence the production fibres, we need to find solutions for all materials
- Shifting to a circular economy is a huge undertaking and a phased approach is important

***In relation to definitions, participants said:***

- It is unsurprising that there are so many definitions of the circular economy.
- Similar comments have been heard from industry that circular economy needs to be more consistently defined and understood
- Co-designed and agreed definitions and measurements are needed

However,

- We shouldn't let ourselves be hindered by the 'perfect' definition of CE, perfection is the enemy of progress
- Identifying and agreeing clear definitions can be a distraction. A clear methodology for application would be more actionable.
- We get stuck on what sustainability and circular economy is. We need more people doing and trying.

# Building from a foundation of evidence

## ***The following areas were identified as most urgent:***

- Innovation in financial systems and models to enable business success from being circular with reclaiming materials
- Consumer engagement, both to make the link between clothing and climate change/environmental degradation and to tackle consumer behaviours
- Education, consumer education
- Collaboration
  - it's important to have every part of the industry moving towards this today
  - between industry, research and government
- Support for Australian organisations and businesses
- Identifying the type of upcycling and recycling required
- Moving past 'sustainability' to move to a regenerative future
- Finding and scaling commercially viable solutions and support for Australian organisations and businesses to do this.

## ***Other points made were:***

- The technology already exists
- Scaling needs context: trials need to be smaller scale; expecting projects to get straight to large scale becomes a massive challenge. Many policy makers aren't interested in this mid trial / MVP commercial size work
- We need to appreciate the need for transition (10–20 year) solutions – both dealing with the current materials being used and designing products and systems for longer term.
- There are limited places in Australia to dip a toe into the water or to enable recycling of products. There needs to be a facility with the equipment and skills to go from an old garment through to a new one at small scale so ideas can be developed.
- It is hard for individual entities to influence upstream. This is one reason why collective action under the banner of a voluntary agreement can be really powerful

# Confirming our working definition for this session

This working definition was proposed to participants prior to the session and comment invited via the pre-workshop survey:

## **Sustainable and circular textiles materials**

- Free from hazardous substances and don't release harmful microfibres, and
- Made from recycled inputs (preferably post-consumer), or
- Made from renewable feedstocks using regenerative production, and
- Enabling for design for durability, reuse, disassembly, and eventual recycling.

This definition is based on the Ellen MacArthur Foundation's [Vision for a circular economy for fashion](#)

***Prior to the workshop, participants raised these things to consider:***

- Need to be on the same page about terms like 'hazardous' and 'harmful'
- 'Responsible' could be used instead of 'sustainable'
- The type, source and environmental benefit of recycled content was a point of contention
- 'Regenerative' may be difficult to authenticate
- Need to avoid 'hybrids' (e.g. mixing or assembling biological and technical inputs in a way that they cannot be separated at end-of-life)

***They also identified these ways to strengthen the definition:***

- Add transparency in fabric sourcing to the definition
- Add potential to breakdown at end of life into non-hazardous substances
- Stagger dot points to reflect the production process

***During the workshop,*** there were no further substantial refinements suggested, beyond earlier discussion that as long as the definition was reasonably holistic, there was no need to be hindered by finding the 'perfect' shared definition.

## **2. Exploring current barriers and challenges**

**Reflecting on previous discussions**



# Reflecting on previous discussions

A workshop was held in late July 2021 to explore opportunities to reduce waste and the barriers to achieving circularity in the textiles industry. A workshop overview and summary is [available on the CEBIC website](#).

Some of the challenges identified in that workshop that were relevant to sourcing and selection were:

- Can be difficult to access sustainable materials
- Variety of materials, and full life-cycle impact often not well-understood
- Chemicals and dyes used in production are often harmful
- Limited options for onshore textiles recycling and fibre 'spinning'
- Lack of transparency and traceability of source materials
- Complex and mixed materials make recycling difficult

Participants reviewed challenges identified in the previous workshop, considering:

- ***Do these barriers and challenges still resonate?***
- ***How do these barriers and challenges present in your organisation?***





# Reflecting on previous discussions

## ***Participants' reflections on the previous discussions were:***

- We import most materials from offshore, we need to invest in the local supply chain if we're going to be able to manage our own waste onshore and be able to produce textiles onshore
- We need legislation and policy to influence what arrives into the Australian market
- We need the ability to do recycling and manufacture back in Australia.
- A huge challenge is the lack of local infrastructure - it requires a systemic solution to support collections, reprocessing and end markets
- Lack of local capacity is a barrier, but local capability and knowledge is world-leading
- The loss of skills in textile manufacturing and the loss of training capabilities to renew these skills is a barrier
- There is no funding for look-see trials or research and development and no influence on research and development
- Funding is needed to 'play' with manufacturing and research
- Government needs to be active in research and driving collaboration
- Quality and durability very important in slowing it all down.
- Repair is critical and we need a thriving repair economy
- Ability to measure impact of materials in relation to the durability of product not within metrics yet, different between long-term purchases i.e. furniture and fast-fashion. This discourages durability.
- The lack of common standards/reporting and data collection methods which could then inform targets to drive diversion and circularity

## **2. Exploring current barriers and challenges**

**Identifying new ideas and potential  
actions**

# A deep dive into sustainable and circular textile materials

## Barriers and challenges

Participants were split into three groups to brainstorm and discuss other barriers exist to sourcing and selection of sustainable and circular textile materials.

These notes reflect the discussions from these groups, which aimed to capture the full range of ideas rather than coming to consensus.

### Group 1

*Building on discussions to date, consider some other barriers to sourcing and selecting:*

What other <b>barriers</b> to sourcing and selecting exist across the industry segments?	Which industry segments does the barrier apply to?	What <b>action</b> is currently being taken to address these? What could be done?	<b>Who</b> is best placed to address these?
<ul style="list-style-type: none"> <li>Need to send off-shore for processing (spinning)</li> </ul>	<ul style="list-style-type: none"> <li>Across Supply Chain</li> </ul>	<ul style="list-style-type: none"> <li>Funding a feasibility study (look at brands piloting programs)</li> <li>Draw on existing skills within Australia</li> <li>Consider leveraging international technology</li> <li>Partnering with other textiles organisations</li> <li>Consider the impact of the supply chain and how it is integrated</li> </ul>	<ul style="list-style-type: none"> <li>Government</li> <li>All involved in supply chain</li> </ul>
<ul style="list-style-type: none"> <li>Education &amp; definitions ( ensuring a baseline level of knowledge and industry/government agreeing on the same terms, content and needs)</li> <li>Educating the broader supply chain on the value of CE</li> </ul>	<ul style="list-style-type: none"> <li>Across Supply Chain</li> </ul>	<ul style="list-style-type: none"> <li>Internal education</li> <li>Targeted investment ( C suite of education initiatives- target the key leaders)</li> <li>Need to engage with consumers</li> <li>Greater Gov + funding collaboration</li> </ul>	<ul style="list-style-type: none"> <li>Research/Educators</li> <li>Government</li> <li>All involved in supply chain</li> </ul>
<ul style="list-style-type: none"> <li>Accessing materials (sustainable).</li> </ul>	<ul style="list-style-type: none"> <li>Manufacturers</li> <li>Recyclers</li> </ul>	<ul style="list-style-type: none"> <li>Capital shared with SME's to make it more affordable to be sustainable</li> <li>Access to innovation and open sharing of these resources</li> </ul>	<ul style="list-style-type: none"> <li>Peak Bodies</li> <li>Research/Educators</li> <li>Government</li> </ul>
<ul style="list-style-type: none"> <li>Funding is a significant barrier for government</li> </ul>	<ul style="list-style-type: none"> <li>Government</li> </ul>	<ul style="list-style-type: none"> <li>Networking in Government to understand where resources can be deployed</li> <li>Consider what is already working well</li> <li>Decision makers need to priorities decision making etc.</li> </ul>	<ul style="list-style-type: none"> <li>Government</li> <li>Peak Bodies</li> </ul>

# A deep dive into sustainable and circular textile materials

## Barriers and challenges

### Group 2

Building on discussions to date, consider some other barriers to sourcing and selecting:

What other <b>barriers</b> to sourcing and selecting exist across the industry segments?	Which industry segments does the barrier apply to?	What <b>action</b> is currently being taken to address these? What could be done? <b>Who</b> is best placed to address these?
<ul style="list-style-type: none"> <li>Loss of skills – manufacturing (knitting, spinning) Pockets of some skills but capacity is limited</li> <li>Lack of available training to bring these skills back (and ops for apprentices)</li> </ul>	<ul style="list-style-type: none"> <li>Manufacturers /Processing</li> <li>Research and educators</li> </ul>	<ul style="list-style-type: none"> <li>Need more training courses and qualification to build up skilled workforce</li> <li>Need more funding that enables skilled staff to find opportunities and expand</li> <li>Lots of milling currently in Victoria (funding would benefit)</li> <li>Roadmap of 5-10-15 year journey to understand what skills are required</li> </ul>
<ul style="list-style-type: none"> <li>Limited capacity of circular textiles currently</li> <li>Understanding what circular textiles there are to build capabilities of sourcing, education etc to make a difference</li> </ul>	<ul style="list-style-type: none"> <li>Across supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Understand current capability / current state and short term goals</li> <li>Mapping out where we need to head longer term to focus efforts</li> <li>Training further up value chain to understand sustainable materials</li> </ul>
<ul style="list-style-type: none"> <li>Complex certifications – confusing to know what is the right one to follow and how that impacts end of life. Complex to training staff across organisations</li> </ul>	<ul style="list-style-type: none"> <li>Retail</li> <li>Peak bodies</li> <li>Research and educators</li> </ul>	<ul style="list-style-type: none"> <li>Improved certifications and guidelines to inform design (e.g. to compost need to incorporate this in design)</li> <li>Need benchmarks</li> <li>need goal post of where we are heading with CE</li> <li>Australian PREP guidelines</li> </ul>
<ul style="list-style-type: none"> <li>Business models based on sales measurement makes it difficult to incorporate CE scheme</li> </ul>	<ul style="list-style-type: none"> <li>Retail/ wholesale</li> </ul>	<ul style="list-style-type: none"> <li>3 stage business case development (AFC)</li> <li>Product stewardship scheme (Australian Fashion council)</li> </ul>
<ul style="list-style-type: none"> <li>Ability to trial with a centre of excellence/ facility</li> </ul>	<ul style="list-style-type: none"> <li>Research, educators, retail/wholesaler</li> <li>Recyclers</li> <li>Peak bodies</li> </ul>	<ul style="list-style-type: none"> <li>Centre of excellence/ One ‘facility’ that brings together research/ supply chain so that companies can trail different stages in the process. Space to try tech/ make product demonstrations and understand cost / labour</li> <li>CE accelerator RMIT/ Deakin/ CSIRO have some but we need it in one place and fill gaps for research/ equipment. Create research environment. (challenge in pulling this together)</li> <li>Needs funding for this</li> </ul>
<ul style="list-style-type: none"> <li>No aligned vision between business/ government</li> </ul>	<ul style="list-style-type: none"> <li>Across whole supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Align vision</li> </ul>

# A deep dive into sustainable and circular textile materials

## Barriers and challenges

### Group 3

Building on discussions to date, consider some other barriers to sourcing and selecting:

What other <b>barriers</b> to sourcing and selecting exist across the industry segments?	Which industry segments does the barrier apply to?	What <b>action</b> is currently being taken to address these? What could be done?	Who is best placed to address these?
Difficult for individual businesses (small and large) to have influence across the sector: need to pull together organisations into collaborations that can have scale/influence	Retail/wholesale Manufacturers	Open source LCA	Government Peak bodies
Difficult to source recycled content feedstock, impacted by minimum order quantities, uncertainty of supply for specific materials, limited supply and available supply taken up by large buyers. Affects both cellulose and synthetic materials	Retail/wholesale Manufacturers		Primary production
Encouraging consumers to 'buy less, buy better' is an essential part of the solution, and supporting business models that enable this objective (e.g. product rental, sharing, repairs, re-use)	Retail/wholesale	Financial, logistical and technical support for businesses who want to trial circular solutions/business models (e.g. strong financial incentive for 'occasion wear', but for everyday wear lean in to the sustainability and variety benefits) Consumer education around impact of textiles consumption Targets are important e.g. '50% of clothing sold is in its 2nd/3rd/4th lives'	Government Peak bodies Retail/wholesale
Supply chains are broken due to COVID – particularly challenging for Australia while we are reliant on overseas markets. Limited local production capacity Global supply chains – can be difficult for Australian organisations and governments to influence Fibre-to-fibre recycling is new technology that is not scaled - except mechanical	Recyclers	Need local spinning and recycling infrastructure to reduce reliance on overseas supply chains Will require collaborative effort e.g. public and private in pre-competitive discussions Needs to be addressed in a systemic way (collections, end markets) Leverage off the back of sustainable cities model	Government to provided targeted funding support ALL to collaborate

# A deep dive into sustainable and circular textile materials

## Barriers and challenges

### Group 3 (continued)

Building on discussions to date, consider some other barriers to sourcing and selecting:

What other <b>barriers</b> to sourcing and selecting exist across the industry segments?	Which industry segments does the barrier apply to?	What <b>action</b> is currently being taken to address these? What could be done?	Who is best placed to address these?
Complex materials – difficult to recycle	Recyclers Manufacturers	Incentives for designing and producing garments that are easy to recycled at end-of-life	Manufacturers
Lack of financial incentives for brands to incorporate recycled content Increasing cost of sustainable materials makes it challenging to meet competitive price points	Manufacturers Retail	Work with R&D providers to develop products that can be demonstrated to be profitable Opportunity given increasing demand for sustainable materials	Researchers
Difficulties in collecting clean and usable material streams	Recyclers	Pre-consumer collection of waste in production (clean stream) Sorting and identifying end markets for post-consumer apparel	ALL

### **3. Exploring current opportunities**

**Reflecting what we heard in the previous workshop**



# What we heard previously

The **previous workshop** identified the following relevant opportunities for sourcing and selection of sustainable and circular materials. A workshop overview and summary is [available on the CEBIC website](#).

## Opportunities

- Education and information sharing on sustainable material selection based on full life cycle assessment
- Promote greater collaboration between researchers, designers and manufacturers
- Incentivise brands to provide full traceability of materials, design for end-of-life and labelling for end-of-life
- More effective product/material labelling regulations, and certification standards for industry for a level playing field
- Funding for demonstration projects that manage whole lifecycle outcomes for a product

**In the pre-workshop survey**, participants reported that they are already taking the following actions:

- Sourcing materials which are bio-circular, shifting to responsibly sourced alternatives.
- Prioritising the traceability of materials and exploring available technologies/platforms.
- Using certifications and industry organisations for assurance, best practice and strategy.
- Making each piece with durability, quality, and longevity in mind so it can be worn season after season.
- Designing for 100% biological circularity from fibre sourcing, manufacturing, life extension programs (educational + marketing) and end of life program.
- Providing information and thought leadership to build understanding across the sector.
- Conducting research to understand the environmental impact of processing.





# Exploring current opportunities

Participants were asked to reflect on **what other opportunities** had not been identified previously. Discussion included:

- Education for the consumer is essential and something that government could help with - we all need to consume less regardless of recycling opportunities
- Service business models to reduce production/consumption
- Having clear requirements/specifications to head towards
- We need to get behind pilots and small bulk projects now, so when the Product Stewardship work forms up we have some scoped and trialled options ready to scale
- We need to be looking at system-wide collaboration, from design to recycling end markets - with government (federal and state)
- Opportunity is for system change and to get all partners on the same page
- Support those who are providing information on supply chain improvements
- Investigations are underway on what impact colour in cotton has during break down in soil, compost and water. What comes out, are there good and bad dyes, etc.
- Explore overseas examples - Love Your Clothes from the UK, <https://www.loveyourclothes.org.uk/>
- Fibre-to-fibre recycling is new technology that is not scaled - except mechanical



# Exploring current opportunities

*Participants were then asked to comment, via Sli.do and Zoom:*

***Who will need to play a strong role in supporting these opportunities? What is needed from industry, researchers or the Victorian Government? What other support is needed? The responses were grouped after the session.***

## Collective vision and targets

- Setting targets really helps with articulating the vision
- To spur and scale action we need clarification and unification on what we are working towards and quantifiable targets
- Targets are really crucial - we should be thinking big, like '50% of clothing sold is in its 2nd/3rd/4th lives'
- Also need regulation and accountability to ensure the targets are actually being met
- An agreement that circular economy is not just textile recycling!
- No textiles to landfill!
- We need to address our own waste issues and stop sending everything off-shore
- We need to at least be able to downcycle in Australia - even that is shipped overseas
- A joined-up approach and a clear vision
- Focus on really setting ourselves up to achieve SDG 12
- Important to maintain the longevity of industry and embedding a circular economy is one that will take a series of small wins to achieve. We're looking for long term benefits and systemic change, no band-aid solutions.



# Exploring current opportunities

## Mechanisms to create change

- Opportunity to access resources to build upon collaborative partnerships in business case development, developing systems, new processes etc. which can underpin the gains for industry, community, government
- Producer responsibility regulated to incentivize embedding circular practices
- Government regulations around sustainability claims and labeling
- There needs to be a tax on garments that are more polluting – i.e. not made to last, blends, difficult to process at end of life
- Give tax breaks to companies doing the work to be more environmentally responsible because it costs more and makes brands uncompetitive
- End markets for recycled materials
- Government tools to measure carbon and ways to reduce it for free, incentive to reduce footprint - an online resource
- Government requirements for reporting to incentivize C-Suite beyond emotional drive
- Clear targets and messaging to reward early adopters and discourage and eliminate poor practices by declaring sunset periods before banning
- Brands to commit forward to support facilities that are built in country
- We need clear options for recyclability at end of life to design products for



# Exploring current opportunities

## Collaboration

- Industry need to collaborate
- All industry bodies need to collaborate with this. Much like this session, we need to have government, industry bodies, industry specialists, brands, production, and solution providers. We all need to work this out together. The most collaboration gives us the correct inputs for recycling and further processes
- Researchers need to also collaborate and industry bodies need to make their platforms open to everyone and stop charging for memberships! This only leaves others that can't afford memberships out so they stop collaboration.
- Cross-industry collaboration and cross-value chain collaboration
- Collaborate with charity sector - let people donate all clothing - even poor condition, so they can process. They are already have some infrastructure.

## Mindful practices in production and consumption

- Consumers' attitude
- Industry addressing overproduction/consumption
- Not buying in lots
- Mindful of environment



# Exploring current opportunities

## Financial incentives

- We need long funding on collaboration teams where outcomes are open ended, getting behind a real sandpit of action rather than talking shops
- Funding for a secretariat type role that brings everyone together to set the targets, develop the roadmap, pushes the agenda and vision
- No more reports are needed - get behind those dealing with product, projects and trials
- Funding to scale research and education for impact.
- Funding to support industry to engage with researchers
- Extra equipment to help industry develop new products.
- Funding for continuous R&D
- Funding to provide test bed processing for textile companies
- Financial support to invest in fully traceable and circular textiles, including trims.
- Subsidized access to studio space that is equipped for a responsible fashion design practice
- Funding for infrastructure
- Financial help with the cost of sorting recycling
- Get behind real projects, trialing systems to take back and recycle, it's expensive doing it small to get data for feasibility work for larger scaling and building factories
- Funding for domestic innovation and scaling for solutions to address post-consumer waste

## **4. Next steps and close**



# Where to from here?

- This workshop summary is being provided to participants and will be published on the CEBIC website to promote engagement and action.
- The workshop discussions are also informing CEBIC's planning of textiles-related activities including grant funding, events and website content.
- The Monash Sustainable Development Institute research report is now available on the [textiles page on the CEBIC virtual hub](#) (scroll down to the research section or [access the PDF here](#)).
- To register for the CEBIC monthly e-newsletter, you can [sign up here](#)
- To meet with the CEBIC team and talk about anything further, you can [book a meeting here](#)

# **Appendix 1: Sharing rapid industry insights**

Julie Boulton and Aleasha McCallion,  
Monash Sustainable Development Institute



# BUILDING FROM A FOUNDATION OF EVIDENCE

## MSDI's research project

In 2019, in partnership with the Australian Fashion Council (AFC) and with funding from DELWP, MSDI interviewed large manufacturers, retail organisations and SMEs (all AFC members) to **investigate the appetite to adopt circular economy principles and to identify factors that may be needed to support a transition.**

*“The **aim of this study** was to contribute to a formative understanding for both the Victorian government and the Textile, Clothing and Footwear (TCF) industry in Australia of the interests of Australia’s TCF industry to transition to a circular economy model of textile production.”*



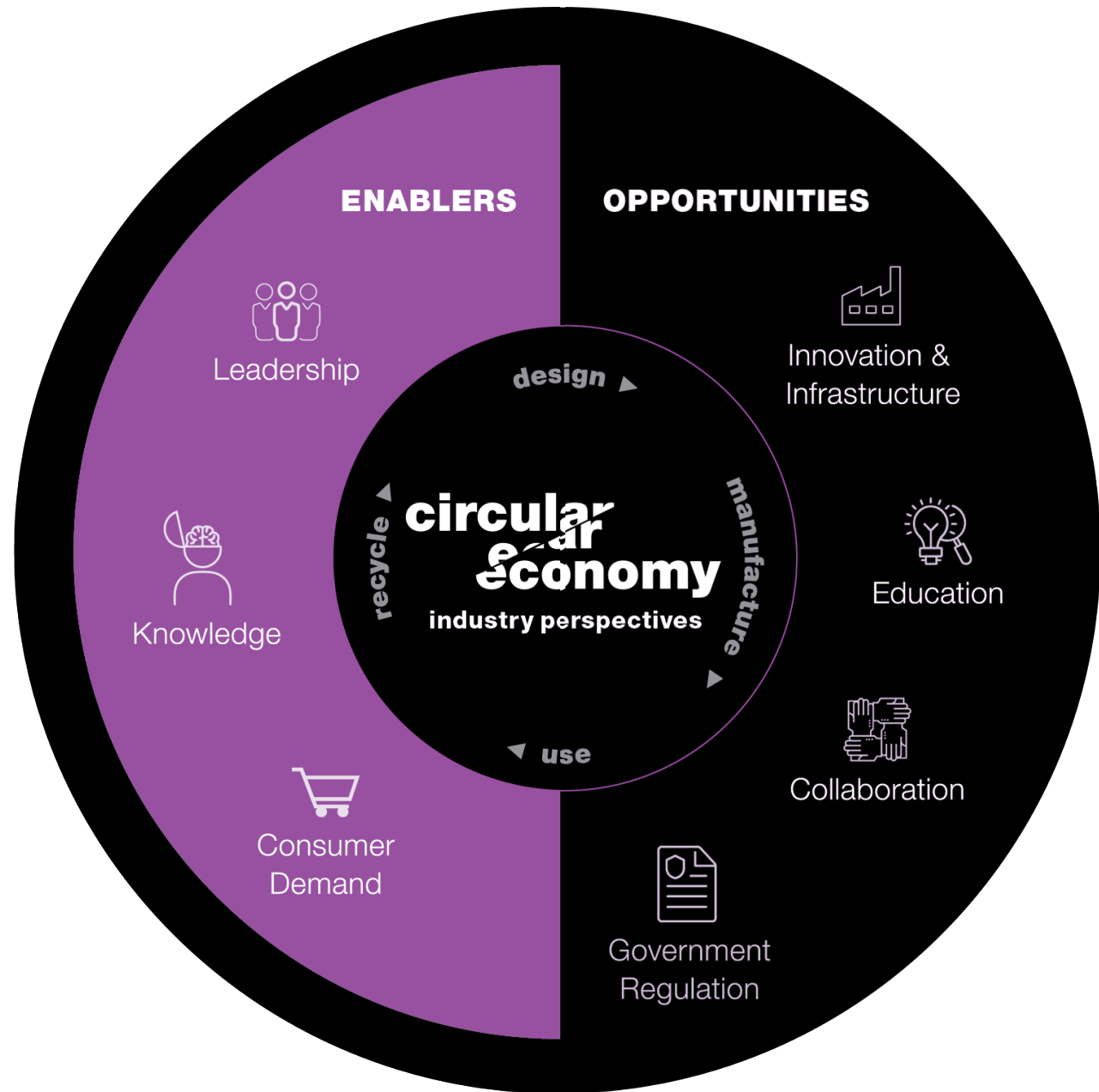
# BUILDING FROM A FOUNDATION OF EVIDENCE

**Three questions we asked in the research are relevant to discuss today...**

1. What did businesses include in their definition of sustainability and circular economy?
2. What were the priority sustainable and/or circular economy initiatives taking place in each business?
3. Whether the businesses saw any potential opportunities (that may or may not already exist) that could assist or facilitate a transition to a circular economy model?



# What does the evidence tell us?





Question 1: What the businesses included in their definition of sustainability and circular economy?

Answer: Lots of things! There is no universal definition of circular.

Circular could be:

1. the whole lifecycle of the product, including inputs, manufacturing process, use behaviors and waste; or
2. only the waste stream; or
3. only recycling.



Question 2: What are the current priority sustainable and/or circular economy initiatives in each business?

Answer: Input, input, input is where it is at

The most common approach to sustainability was at the input stage.

Input covers:

- material selection;
- design;
- certification;
- product sourcing;
- manufacturer selection; and
- supply chain management.





# quote

In terms of sustainable **changes to production**, focus areas included improved material selection at the design stage, including sourcing and investing in recycled, recyclable or sustainable materials.

*“... from the sourcing point of view, we are looking to source all of our fibres and materials for more environmentally sustainable options and recycled is a component of that...”*

*“We just look through [our product matrix with all the materials], identify the biggest impact areas, and more often than not, it’s always fibre production which is the biggest impact and then we focus on lower down in the supply chain for alternatives or improvements. And it’s different for each fibre.”*





## quote

Three of the interviewees described a commitment to conducting Life Cycle Assessments (LCAs) for all product units for sale.

*“So over the last 18 months, we've completed life cycle analysis of all of our product SKU's [stock keeping unit], so over 200,000 SKU's, to complete prioritisation, metrics, environmental impacts, the number of units sold, the value of those units, and then public perception around issues. To be able to say, at the end of the day there's 3 things that matter as priorities to focus on; cotton, polyester, and plastic”*

*“No more virgin plastic being used by TCF manufacturers but does this solve the problem of micro-plastic - we need to get rid of plastics in our clothing altogether.”*





Question 3: Any potential opportunities (that may or may not already exist) that could assist or facilitate a transition to a circular economy model?

Answer: Yes!

- **Innovation and infrastructure:** at both the input and output stage.
- **Education:** for consumers, future industry professionals, and designers and knowledge sharing between industry, universities and research institutions.
- **Government regulation:** covering input, labelling and licensing.
- **Collaboration:** between the TCF industry, and cross-industry.





# quote

Opportunities for **government regulation** mentioned by interviewees included:

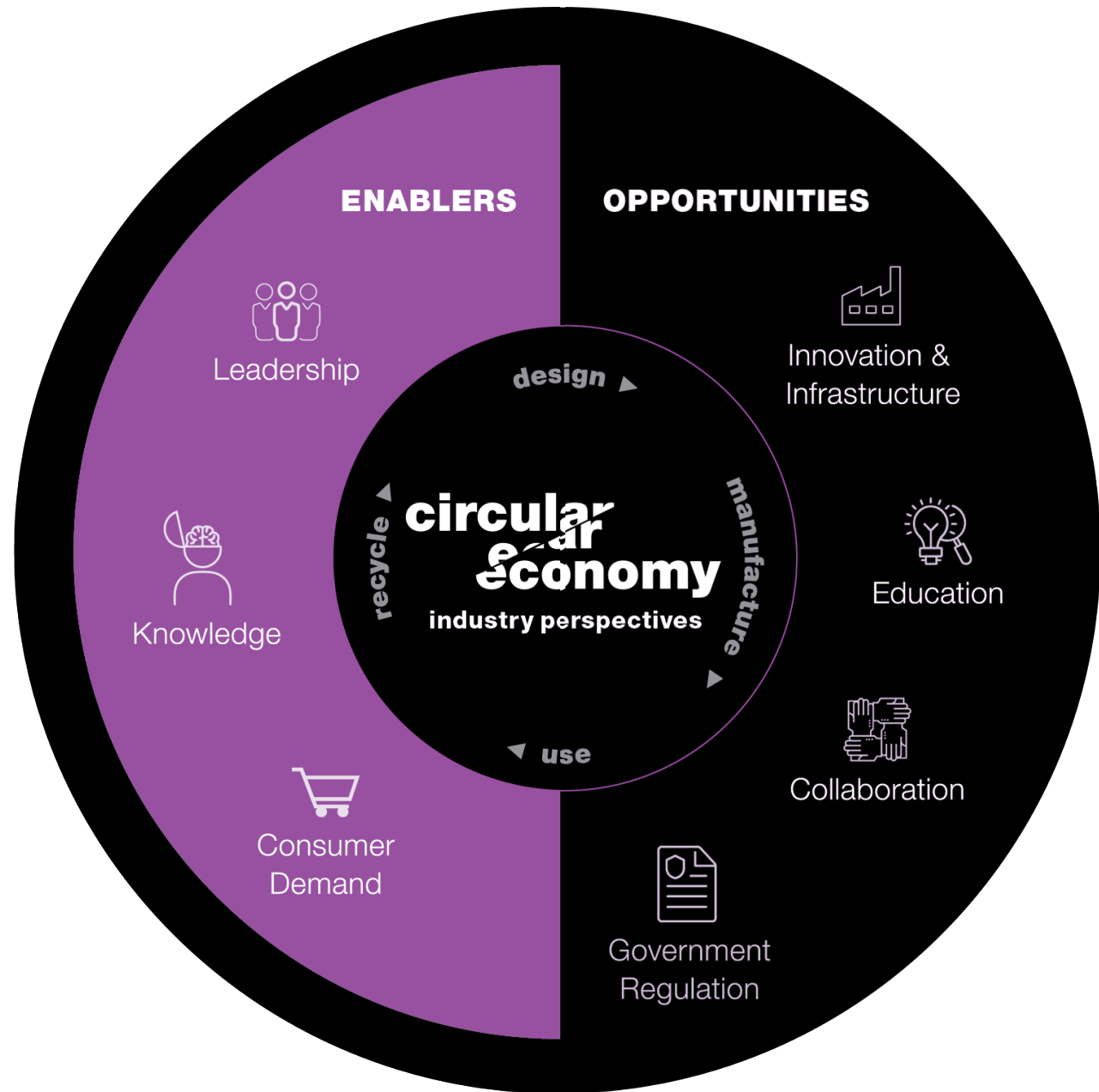
- **Input regulation:** “the current system does not go far enough in terms of banning certain substances in the system; if we had regulation change it would then force other businesses to import only quality inputs”;
- **Standardised labelling:** “covering, for example, ingredients used, including consistency of terms, instructions on use (ie washing), and instructions on end of life”; and,
- **Licences for developing products:** “I think there has to be [sustainability] governance over [products] rather than just a retailer saying we want to go to market with these [products] because we think it’s strong and customers will resonate with them. Well, I think there’s got to be some mandates and laws behind what we’re all doing.”



# As a result of the research findings, we made a number of recommendations

- Define circular economy for the TCF industry
- Access to open source information, including life cycle assessment of different materials and procurement providers
- Consumer education, creatively and co-designed with industry, that covers all aspects of the circular economic cycle
- Research community attitudes on sustainability
- Collaboration between industry, research and government organisations with the explicit aim of research and development in renewable materials and end of life recycling opportunities.
- Support for Australian organisations and businesses finding commercially viable and scalable solutions

Thank you. A  
summary report  
of our research  
will be circulated.



## **Appendix 2: Workshop survey results**

# Current activity in the circular economy

An important part of CEBIC is reviewing and refining our impact. Our opening poll asked:

What is your organisation doing in the circular economy? (choose all that apply)



# Current barriers for action

An important part of CEBIC is reviewing and refining our impact. Our opening poll asked:

What is the greatest barrier you face to creating and innovating to eliminate waste?  
(choose one)

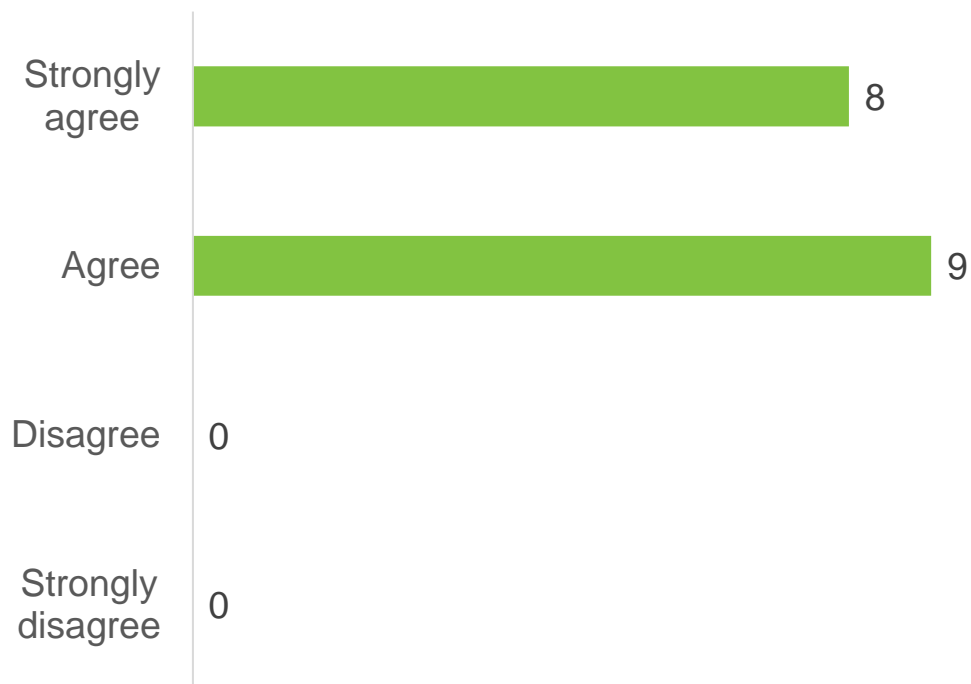




# Workshop evaluation

An important part of CEBIC is reviewing and refining our impact. Our closing poll asked:

**I'm inspired to be more creative** in how I approach reducing textiles waste after this event. Do you agree?



**The event improved my knowledge** of opportunities to apply circular economy practices to my area of work, organisation or industry. Do you agree?

