



UNSW + SSROC Circular Economy Think Tank Series

Think Tank 2: Textiles and clothing

Conversation Tracker

26 November 2019

AUSTRALIA | NEW ZEALAND | SINGAPORE | KENYA | USA



Introduction

About the project

The University of New South Wales Sustainable Materials Research and Technology (SMaRT@UNSW) Centre and Southern Regional Organisation of Councils (SSROC) with the support of NSW Circular are collaborating to run a series of three think tanks aimed to catalyse innovation that will lead to waste avoidance and an increase in reuse and resource recovery within a circular economy. The series bring together stakeholders from SSROC Councils, UNSW, government and the design, manufacturing, resource and charity sectors to establish collaborative ways of working and to progress our understanding of how to transition to a circular economy.

The overall project objectives for SSROC are to partner with a research centre based in the region to investigate which materials could be recovered from the domestic general waste and recycling streams and be returned to the productive economy; and over what timeline?

The second think tank was focused on textiles, it explored:

- 1. Opportunities to recover more textiles from the domestic waste stream**
- 2. Ideas to reduce the amount of textiles entering the waste stream**
- 3. Innovative ways to reclaim and repurpose unwanted textiles.**

We had a variety of experience in the room, including 46 representatives from local councils within the SSROC region, members of NSW Circular and the SMaRT Centre, NSW Government,

the charity sector, Universities, and peak bodies from the textile and product stewardship sectors.

Think Tank participants worked on solutions to the following textile streams as they affect not only local government, but also present challenges and circular economy opportunities for all sectors in the room: Unwanted clothing and manchester, latex mattresses, flock, and carpets.

The 15 great ideas that were presented at the culmination of the think tank incorporated the multi-disciplinary input of all participants. Ideas ranged from finding solutions to the lack of latex recycling, through certification and product stewardship schemes, low tech (and high-tech) collection and sorting systems to improve recoverability, providing essential textile resources for Pacific Nations, and the need for a shared data platform. And a whole lot in between.

Purpose of this document

The purpose of this document is to present a synthesised summary of the conversations, activities and ideas that arose during the textiles think tank held on 26 November 2019. Please note that this document does not capture the conversation verbatim, rather it presents a snapshot of key discussion points and activities.

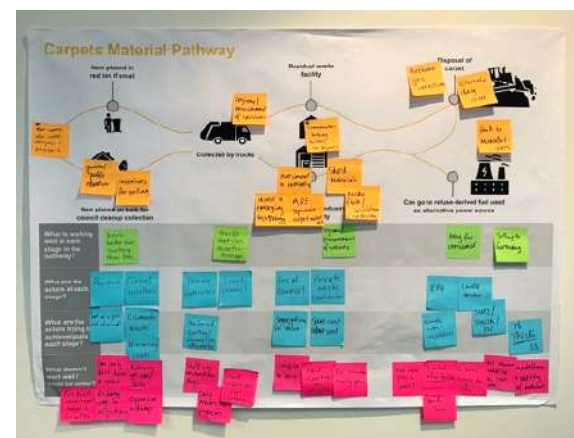
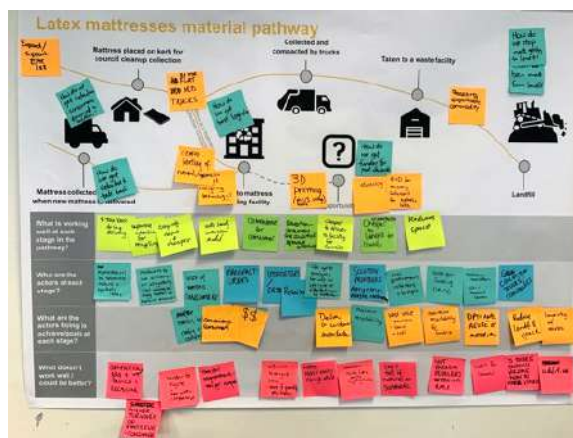
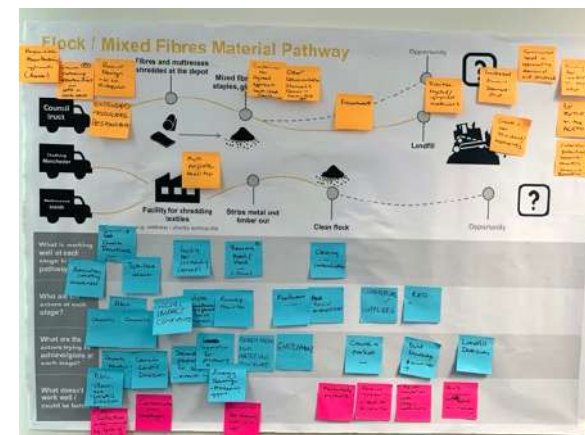
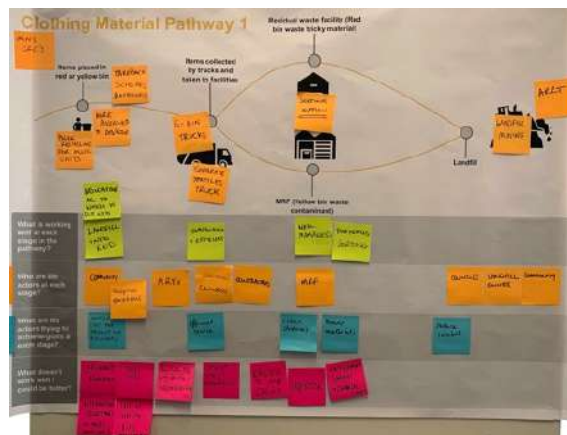
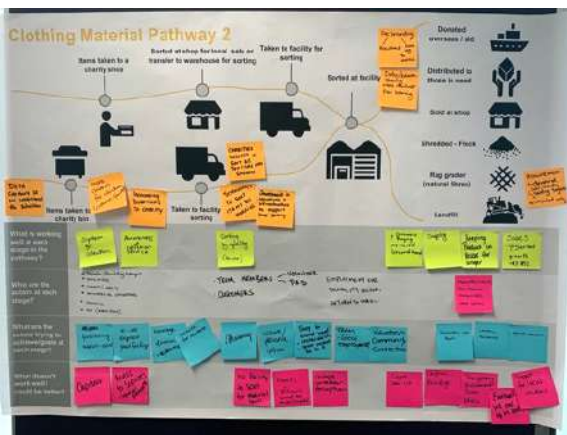


Material Pathways

Material Pathways

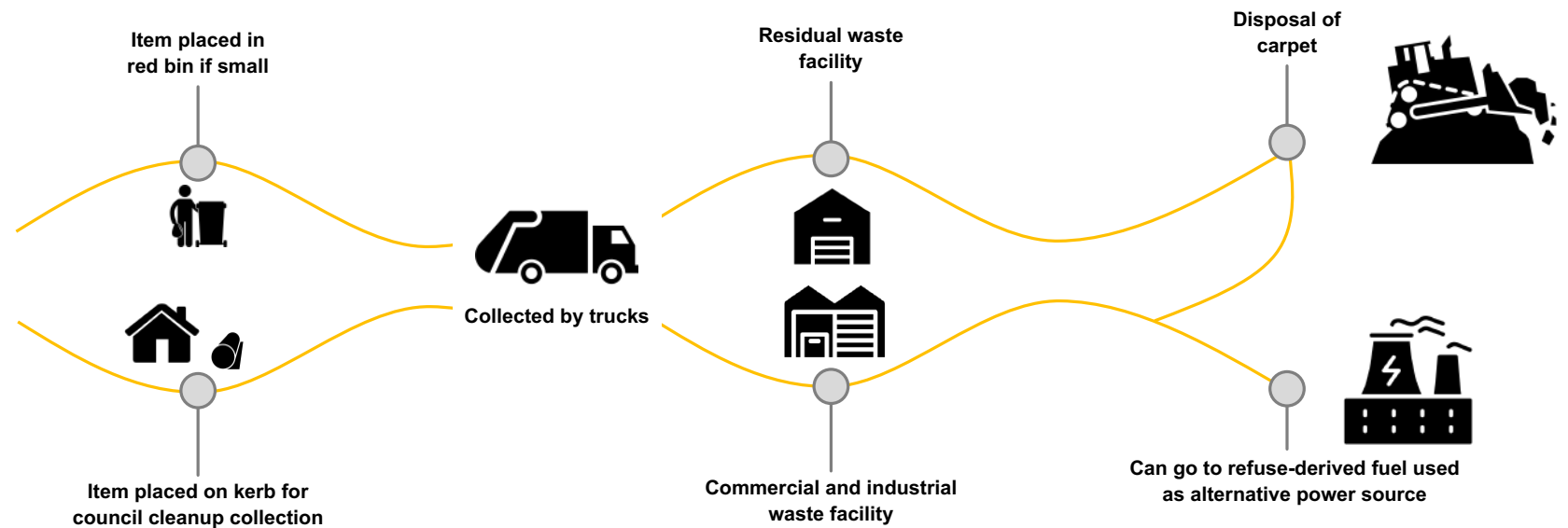
To gain a deep understanding of the current state of each of the materials, Think Tank participants were invited to complete a material pathway outlining things that are working well that we need to keep doing, points of frustration, who is involved in each stage, and what the opportunities for improvement are.

NB. The points in the following tables relate to particular points in the pathway above them, and not necessarily to one another.



Carpets Material Pathway

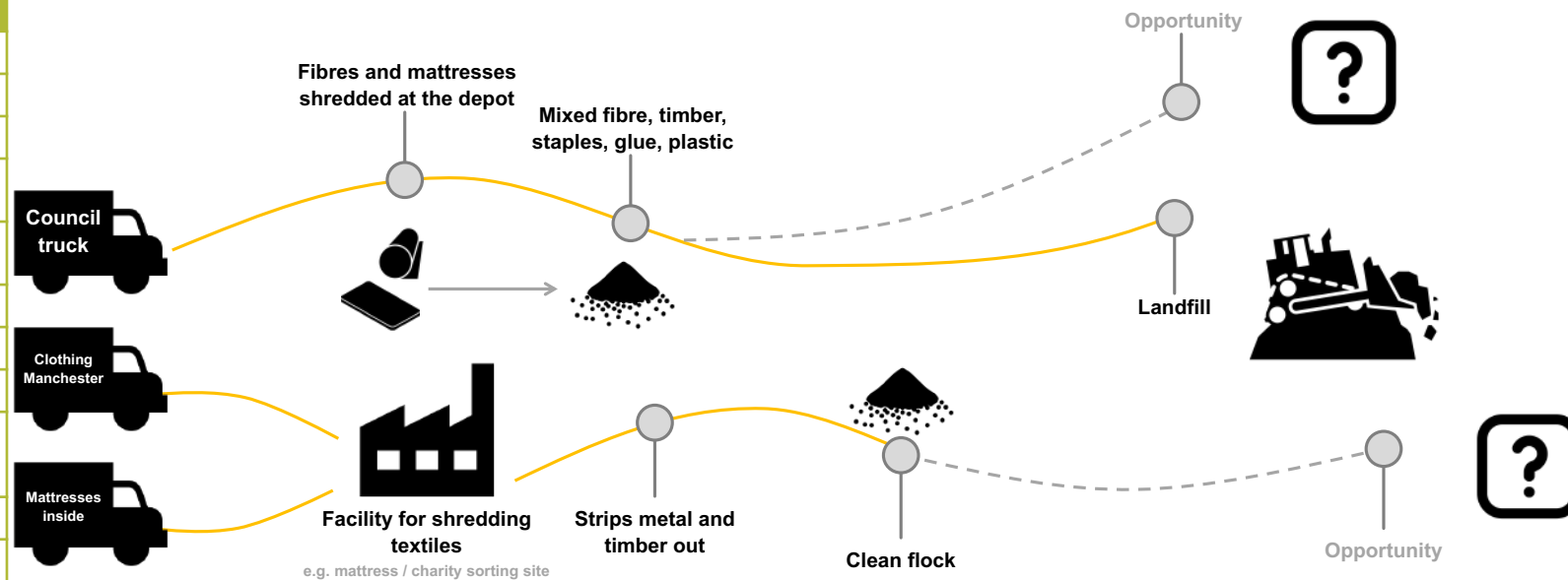
Actors	Their goals
Residents	"Out of sight, out of mind"
Carpet installers	Eliminate waste / minimise cost
Private contractors	Material sorting / separation efficiency
Local council	Segregation for value
Private waste contractor	Save / reduce cost
EPA	Regulation
Landfill operators	Comply with legislation
Suez / Veolia / etc	Value \$\$



	What works?	Kerb: better for sorting than bins	Trucks that can monitor tonnage	Regional procurement of services	Easy for the consumer	Selling to Germany			
What doesn't work?	Can only do it twice a year	No easy way to recycle / reuse	Expensive to dump	Only moves the problem	Most carpet goes to landfill	Limited EFW facilities	Not volume-viable in Australia right now (EFW)	Made from a variety of materials – hard to separate	No social licence to EFW
Opportunities	Residents think / expect there's a solution	Materials get wet / dirty	Stuff sits on the road for days	Poor alternative recycling options	No carpet-specific levies (only general waste levies)	Invest in innovation and emerging technology	MERF separate carpet materials	Methane gas collection Alternate daily cover	Alternate end – materials back to manufacturers
	More communication between carpet designers and disposers	General public education Incentives for sorting	Regional procurement of services	Communication between facilities and circular economy designers	Shred materials to make flock / insulation / underlay				

Flock / Mixed Fibres Material Pathway

Actors	Their goals
General public	Clean-out and landfill diversion
Charities	Revenue
Councils	Landfill diversion
Secondary products for sale	Revenue
Social impact companies	Build knowledge and awareness
Waste Management	None identified
Recovery facilities	Landfill diversion
Manufacturers	Employment
Social enterprises	Innovation for processing energy / energy savings (processing opportunity)
Commercial / suppliers	Bench-mark for materials received
R&D	Create a market
Waste Management Companies	Revenue & landfill diversion



What works?

- Education creating awareness
- Council and charity donations / Take-back schemes
- Facility for shredding (tested)
- Recovery of metal and wood (CTruck)
- Cleaning – no contamination

What doesn't work?

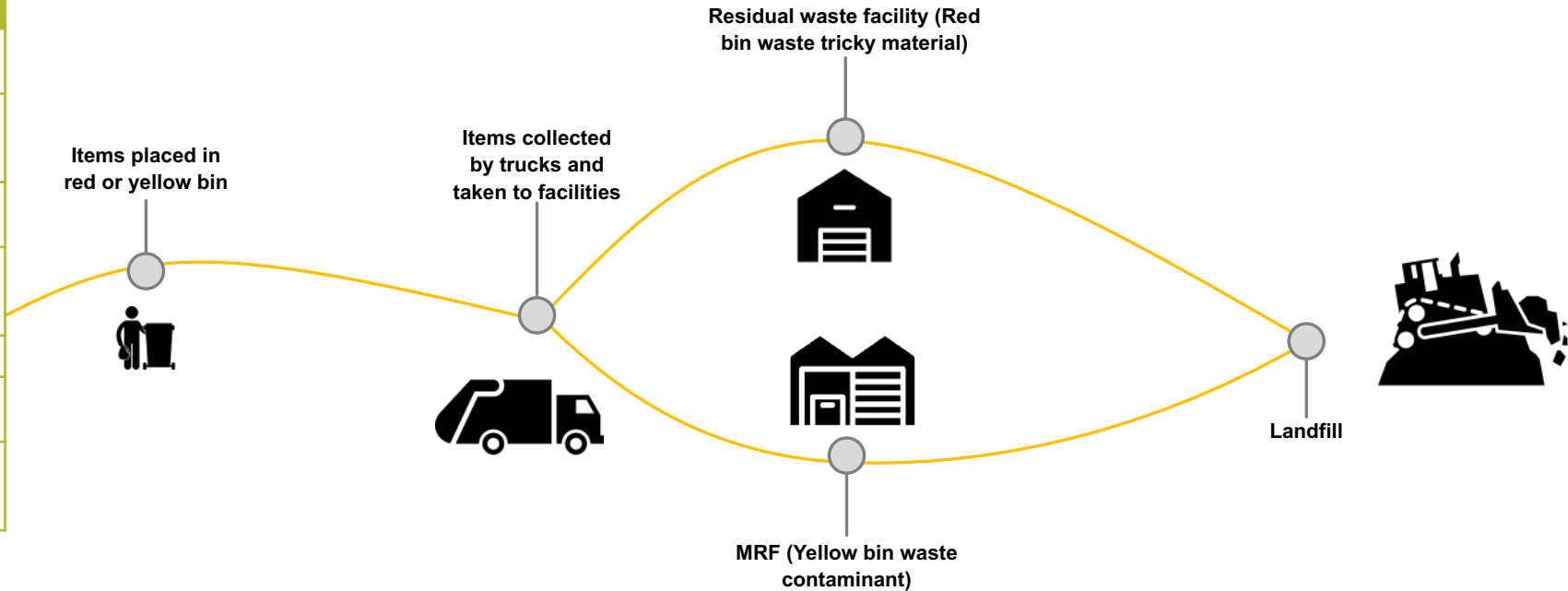
- All collection is impacted by a lack of education and knowledge
- Contamination challenge
- Innovation for recovery not working well
- Marketable products
- Revenue opportunities – need to be created
- Reuse competition with virgin materials
- Customers don't see reuse as value for money

Opportunities

- Responsible manufacturing approach
- Product design – to be re-useable
- Multi-purpose facilities
- Guidelines on agreed approach between State / Federal Government and Council
- Clear communication channels between Council and State / Federal Government
- Procurement
- Create a new standard / technology
- Funding for innovation in recycling technology
- Put textiles on the agenda
- Create matching opportunities (20% on take back)
- Extended producers responsibility
- Government lead in generating demands via purchase
- Understand potential resource recovery streams 'Education'
- Increased product stewardship
- Prioritise recycled / upcycled materials

Clothing 1 Material Pathway – Clothing placed in kerbside bins

Actors	Their goals
Councils	Effective service & reduce landfill
Hospital operations	Affordable linen that could be reused afterwards
Collection Contractors	Efficient services
MRFs	Clean streams Recover materials Efficient services
Councils	Reduce landfill
Landfill owner / waste contractors	Profit and recovery
Community	Convenient service for unwanted clothing



What works?

Education as to which to put into
 Landfill into red
 Compacting and efficient
 Well managed

What doesn't work?

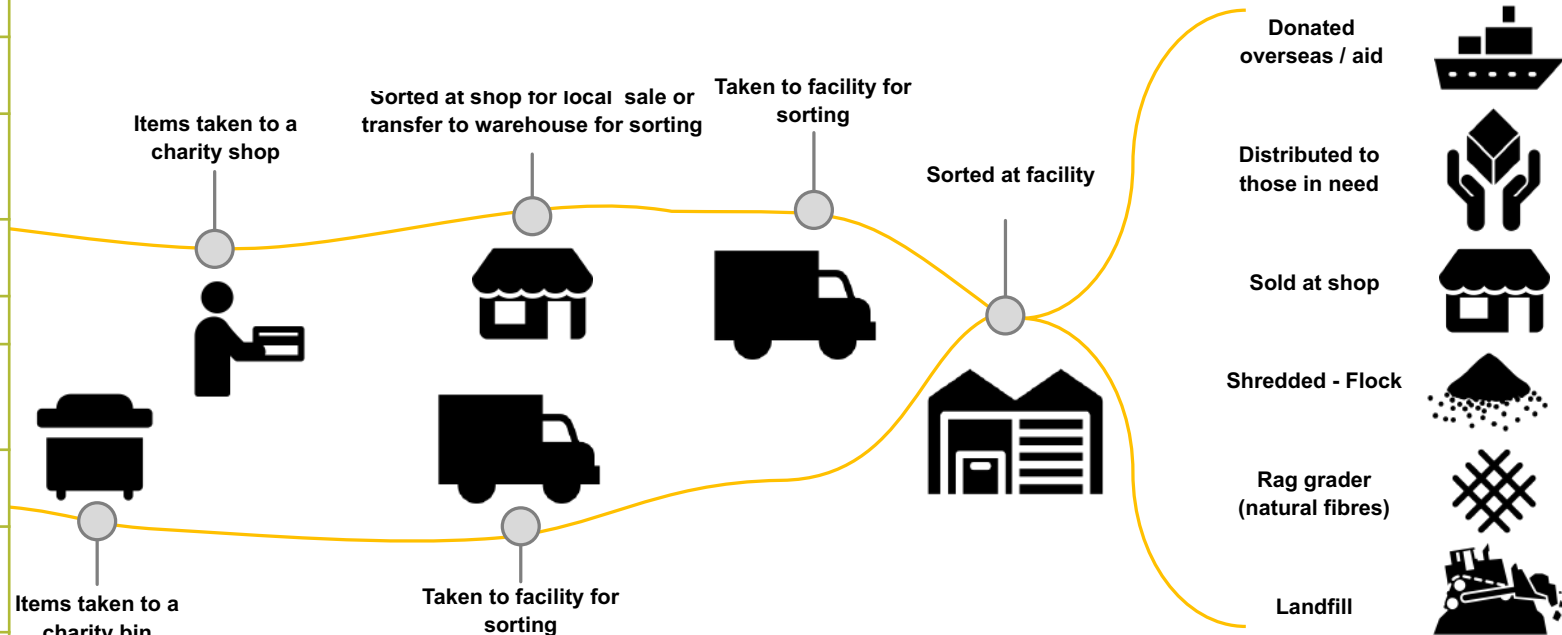
Resident behaviour
 Alternative collections in MUDs (recycling)
 Trust issue
 Lack of charity bins (reuse / recycle)
 Lack of producer responsibility
 Lack of EPA / stewardship
 Easier to just chuck
 Inertia
 Entanglement snakes – mechanical issues

Opportunities

Mini CRCs
 Bulk recycling for multi-units
 More avenues to dispose
 Takeback schemes (retailers)
 6-bin trucks
 Separate textiles truck
 Sorting option
 Landfill mining
 ARRT

Clothing 2 Material Pathway – Clothing to charity sector

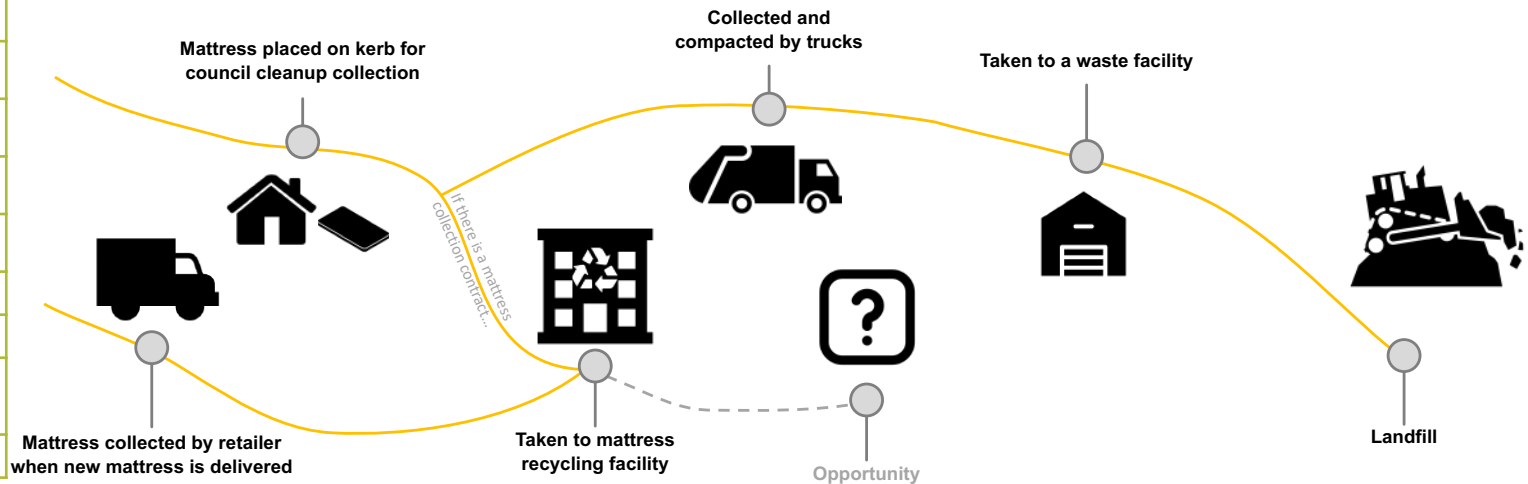
Actors	Their goals
Strata / building managers	Services for residents
Consumers	Re-use disposal / good feeling
Customers	Shop second-hand: sustainability and great product for low cost
Charity organisations	Fundraising support – social
Commercial operators	Recovery with profit
Councils and Government (State / Federal)	Landfill avoidance and social benefit + Tonnage diversion (quality)
Team members (volunteer and paid)	Volunteers community connections
Employment for disability sector, return to work, etc.	Team: local employment
Manufacturing Rag traders consumers waste sector	Efficiency and achieve /preserve value



What works?	System for collection	Awareness of collection service	Sorting by quality (reuse)	Increased consumers buying pre-loved / second-hand	Supply	Keeping product in reuse for longer	Sales – projected (~3.5%)			
What doesn't work?	Capture	Access to services – special awareness	No ability to sort for material tech	Duvets and pillows cannot be reused / recycled	Change consumer perception	Export bans risk	Uniforms branding	Eventually ends up in landfill	Transparency – environmental data ethics	Support for local solutions
Opportunities	Data capture so we understand the situation	More channels for collection (customer-focussed)	Increasing donations to charity	Charities collect and sort all textiles into streams	Technology to sort items by material	Investment in operations and infrastructure to support large sorting	De-branding (procurement and economy to unstitch)	Data / education showing waste result from branding	Procurement (demand / government and industry setting targets)	

Latex Mattresses Material Pathway

Actors	Their goals
Reprocessors	Separating natural and synthetic latex and finding a market for reuse
User of mattress - consumers	Comfort and convenience
Manufacturers	Revenue, may not be driven to use all natural products instead of composite Importers / distributors = Revenue, efficiency
Importers / distributors	<i>None identified</i>
Retailers	Revenue, customer demand and satisfaction
Consumers	Comfort / convenience and life cycle analysis
Life cycle analysts for information on life cycle of different types of mattresses	Deliver on customer expectation
Solution providers – recyclers, waste contractors	Maximum recyclability
Local government collectors and budget	Best value (environmental, social, cost)
State government funding (levy)	Maximum recyclability for funding
Solution providers – universities and research centres	Reduce landfill space Optimal reuse of material
Collection trucks / companies	Longevity of vehicles



	What works?	\$ Take back during delivery	Separate collection for recycling	Drop off at the depot is cheaper	Soft landing collection model	Convenience for consumer	Education – consumers are aware of separate collection	Cheaper to deliver to facility for councils	If compacted, it's cheaper to landfill for councils	Reduces space
What doesn't work?	Compaction is bad for trucks and recycling	Higher turnover of mattresses - consumer	Harder to recycle when compacted	Transient neighbourhood – they get dumped	Difficult to recycle latex – issue if quantity gets higher	Consumers think latex is easily recyclable	Can't tell if natural or synthetic	Is there enough volume now to make viable?	Cost for council	Additives
Opportunities	Expand and support EPR \$\$ <i>Get retailers and consumers engaged in solutions</i>	Clearer labelling of natural / synthetic products <i>Get retailers to take back</i>	Funds for flat bed trucks	Invest in recycling technology <i>Get the best logistics</i>	3D printing (in US using latex)	Advocacy <i>Get funding for product stewardship</i>	R & D recovery solutions for synthetic latex			



Ideas generation



Ideas Iteration 1

After outlining the material pathways, participants were grouped into pairs and selected opportunities from the previous activity to flesh out into developed ideas for improvement in each material pathway. They used the below template to guide their thinking.

Idea sheet Iteration 1

Team member names:	Material:
Give your idea a name: (Your idea in 5 words)	What opportunities does the idea address?
Draw or describe your idea: (What is it? How might it work?)	What barriers might prevent us achieving it?
	Who is responsible? Who else is involved?





Ideas feedback



Ideas Feedback

Think Tank participants put their ideas up around the room before lunch. Then the 'Dolphin Pod', or group of experts, went around the room and placed post-it notes with ideas, advice, and productive criticism on the ideas. After lunch, the rest of the Think Tank participants did the same.

This process was incredibly valuable because it allowed participants to provide their expertise and insights to all ideas, as well as allowing participants to think deeper and in a more detailed way about their idea.

After everyone had the opportunity to give their feedback to the ideas, they were given an **Ideas Iteration 2 template**, allowing participants to think more deeply about their project idea.





Pitching ideas



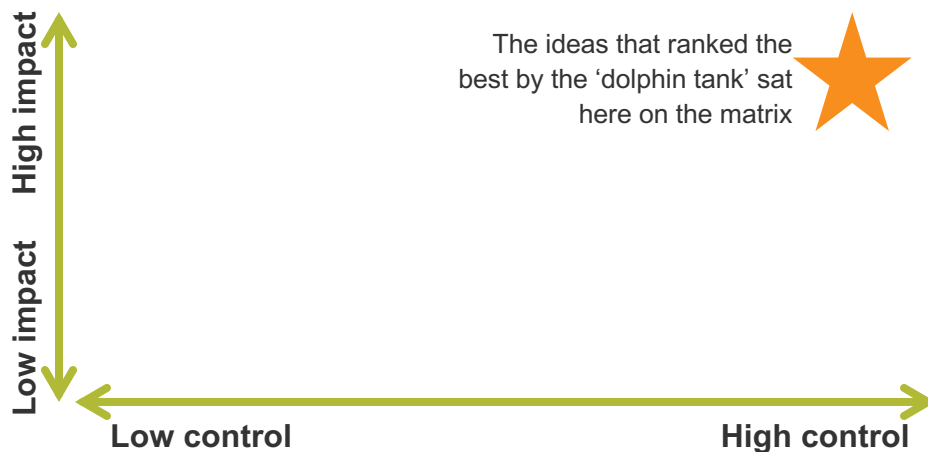
Pitches

After participants had the opportunity to further refine their ideas, they pitched their ideas to a Dolphin Tank (a Shark Tank, but nicer) of experts, who gave them two scores out of ten – one score for level of control Local Council would have, and one score for level of impact the idea would have.

Participants had just 60 seconds for their pitch, so the process was high-energy and rapid. 15 proposals were pitched and the whole room engaged enthusiastically.

Based on the Dolphins' scores, the pitches were placed on a control/impact matrix. All pitches were very well received. Four received 10/10. Four received 9/9 or 9/10.

These eight are written up on the following pages with the rest of this suite of ideas provided in the appendix. The project team (SSROC, UNSW, NSW Circular) will review all the proposals made at the session for potential development.



Idea 1: Expanded collection networks – bins and online

Material	Clothing
What is the problem you're solving?	4% of all waste to landfill is textiles or 800 KT per year. We need a structural solution to move the dial. Bins and online collection services offer a step change.
How do you plan to solve it?	1,000 clothing bins in NSW. Expand it to 5,000 and online innovation. Coalition of industry, charity, brands, and councils.
Why is this a great idea?	<ul style="list-style-type: none"> Scalable Simple The economies work <u>today</u> Export markets exist <u>today</u> Domestic markets exist <u>today</u>
How can we make it happen?	Alliance partners meet and agree Trial in SSROC

Pitch template

ThinkPlace

Your names: Material:

Score: Control Impact

Give your pitch a name:
(Your idea in 5 words)

EXPANDED COLLECTION NETWORKS - BINS + ONLINE

What is the problem you're solving?
(What is it? Where does it occur?)

4% of all waste to LF is textiles or 800KT/yr.
We need a structural solution to move the dial.
Bins + Online collection services offer a step change.

How do you plan to solve it?

1000 clothing bins NSW. Expand it to 5000 + on-line innovation.
Coalition of industry, charity, brands + councils.
Scalable
Simple
The economies work today
Export markets exist today
Domestic markets exist today.
Alliance partners meet + agree.
Trial in SSROC

Idea 2: What we measure, how we measure

Material	Clothing and Commercial and Industrial textiles
What is the problem you're solving?	Policy, brands and emergent technologies are hamstrung by a lack of data, when it comes to enabling action. Textiles (charity, red bin and bulky waste, C+I disposal) have no common metrics.
How do you plan to solve it?	Establish a framework to amend existing audit schedules (kerbside, C+I, retailer disclosures) to standardise data and allow preservation of value at end of life.
Why is this a great idea?	<ul style="list-style-type: none"> • Open-sourced data <i>amplifies</i> sector responses • Attracts investment from private sector • Clarifies areas of focus
How can we make it happen?	ACTA – joint stakeholder association progressing this agenda. Funding or partnership to deliver and aggregate

Pitch template

ThinkPlace

Your names: **Babe L** Material: **Clothing + C+I textiles** Score: **10** Control **10** Impact

Give your pitch a name: (Your idea in 5 words)
WHAT WE MEASURE
HOW WE MEASURE

What is the problem you're solving? (What is it? Where does it occur?)
 Policy, brands and emergent technologies are hamstrung by a lack of data, when it comes to enabling action.

Textiles → Charity }
 → Red bin + bulky waste } **No common METRICS**
 → C+I disposal }

How do you plan to solve it?
 Establish a framework to amend existing audit schedules (kerbside, C+I, retailer disclosures) to standardise data and allow preservation of value @ end of life.

Why is this a great idea?
 → open sourced data **AMPLIFIES** sector responses
 → attracts investment from private sector
 → clarifies areas of focus.

How can we make it happen?
 ACTA → joint stakeholder association progressing this agenda.
 Funding or partnership (to deliver; and aggregate.

Idea 3: Intelligent material sorting technology

Material	Clothing and Manchester (Clothing / textiles to Charity Sector)
Draw or describe your idea	<ol style="list-style-type: none"> Sort by quality; then Sort by material type <p>(QUT) Uni robotic sorting machine = intelligent optical sensors. Uphold the highest value at every stage.</p>
What opportunities does the idea address?	<ul style="list-style-type: none"> Maximum use of products / resources / technology Local Government procurement of minimum recycled content <ul style="list-style-type: none"> Consistent labelling of materials policy Increased efficiency with technology Recyclability regardless of textile quality Investment → greater capture of textiles especially high quality and increased upheld value Return → increased education for consumers and staff Facilitates behaviour change
What barriers might prevent us achieving it?	<ul style="list-style-type: none"> New / technology trial / logistics Security in investment / investment in technology Resistance for global retailers charity to use new labels
Who is responsible? Who else is involved?	<ul style="list-style-type: none"> Governments Brands Retailers Consumers Charities Recyclers

Idea sheet Iteration 2

CONTR:10 IMPACT:10

ThinkPlace

Team member names:
Mei Li + Tomal

Material: Clothing + Manchester (Fabrics)

Give your idea a name:
(Your idea in 5 words)
Intelligent material sorting technology

Draw or describe your idea:
(What is it? How might it work?)

What opportunities does the idea address?

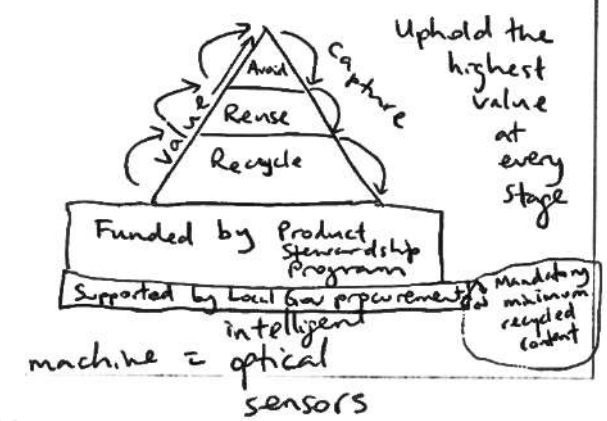
- Local Gov procurement = minimum recycled content → Efficiently sorted → Upheld value
- Recyclability regardless of textile quality
- Investment → greater capture of textiles esp. high quality
- Return → Education for consumers & staff
- Facilitates behaviour change

What barriers might prevent us achieving it?

- New / tech trial / logistics
- Security in investment / investment in technology
- Resistance for global retailers charity to use new labels

Who is responsible? Who else is involved?

Gov's Charities
Brands Recyclers
Retailers
Consumers




Idea 4: Certified recyclable latex scheme

Material	Latex
What is the problem you're solving?	<ul style="list-style-type: none"> • Reusability and recyclability of latex in mattresses • Limited use for latex but increasing latex mattresses in the market
How do you plan to solve it?	<p>Certification scheme / legislation to look at latex mattress components to increase reuse and recyclability</p> <p>Research into composition options to binders and 'coatings' and the re-use of latex</p>
Why is this a great idea?	<p>Reduce waste to landfill</p> <p>Expand / create markets for end products</p> <p>Certification for consumers</p>
How can we make it happen?	<p>\$150,000 to SMaRT Centre for 1 year of research</p> <p>SSROC Advocacy for government certification scheme to follow research outcomes</p>

Pitch template

ThinkPlace

Your names: Gabriella + Norelle	Material: Latex	Score: 10	Control: 10	Impact:
<p>Give your pitch a name: (Your idea in 5 words)</p>  <p>Certified recyclable latex scheme</p>		<p>How do you plan to solve it? Certification scheme / legislation to look at latex mattress components to increase reuse + recyclability</p> <p>Research into composition options for binders and coatings and the re-use of latex</p>		
<p>What is the problem you're solving? (What is it? Where does it occur?)</p> <ul style="list-style-type: none"> • Reusability + recyclability of latex in mattresses • limited use for latex but increasing latex mattresses in the market. 		<p>Why is this a great idea? In fact Reduce waste to landfill Expand/create markets for end products Certification for consumers</p>		
		<p>How can we make it happen? \$150,000 to smart centre for 1 year research</p> <p>SSROC Advocacy for gov certification scheme to follow research outcomes.</p>		

Idea 5: Extended Producer responsibility

Material	Latex mattresses
What is the problem you're solving?	<p>You know how... Producers and consumers aren't playing a significant role and taking responsibility for recycling of mattresses?</p> <p>Consumers don't know how their mattress are recycled and producers aren't held to account.</p> <p>By introducing labelling (e.g. Acor) and take-back schemes (which could be industry or Government led)</p> <p>People can make informed decisions.</p>
How do you plan to solve it?	<ul style="list-style-type: none"> • Advocating • Work with organisations like Acor • State education • \$200,000 matched by industry
Why is this a great idea?	<ul style="list-style-type: none"> • Cost passed onto consumers instead of rate payers • Closes loop • Empowers people to make informed decisions
How can we make it happen?	<ul style="list-style-type: none"> • Education • Labelling scheme • PEPR or PS scheme • Appeal to sustainable consumers

Pitch template

ThinkPlace

Your names: **TRISH + LISA + FARSHID + PETER** Material: **LATEX MATTRESSES** Score: **9** Control: **10** Impact

Give your pitch a name:
(Your idea in 5 words)

**EXTENDED PRODUCER RESP.
'LATEX MATTRESS EPR.'**

What is the problem you're solving?
(What is it? Where does it occur?)

**YOU KNOW HOW...
PRODUCERS AND CONSUMERS
AREN'T PLAYING A SIGNIFICANT
ROLE + TAKING RESPONSIBILITY
FOR REC. OF MATTRESSES.
CONSUMERS DON'T KNOW HOW
THEIR MATTRESS ARE RECYCLED
AND PRODUCERS AREN'T HELD TO ACCT.
BY INTROD'G LABELLING (EG
ACOR) + TAKE BACK SCHEMES
(WHICH COULD BE INDUSTRY OR GOV LED)**

How do you plan to solve it?

**ADVOCATING.
WORK WITH ORG LIKE ACOR
STATE EDUCATION. \$200,000
matched by industry**

Why is this a great idea?

**COST PASSED ONTO CONSUMERS
INSTEAD OF RATE PAYERS
CLOSERS LOOP.
EMPOWERS PEOPLE TO MAKE
INFORMED DECISIONS.**

How can we make it happen?

**EDUCATION
LABELLING SCHEME
PEPR OR PS SCHEME.
APPEAL TO SUSTAINABLE
CONSUMERS**

PEOP PEOPLE CAN MAKE INFORMED DEC

Idea 6: Community Recycling Stations throughout LGA

Material	Clothing
What is the problem you're solving?	<p>The diversion of clothing from landfill.</p> <p>This occurs through the behaviour of kerbside disposal and collection. We are expanding on the traditional charity bin locating historically in council carparks, which attracts the dumping of other materials, such as e-waste, soft plastics, etc.</p> <p>Hundreds of thousands of tonnes</p>
How do you plan to solve it?	Centralised community recycling stations throughout communities, offering recycling options for clothing, e-waste, toner / cartridges, soft plastics, etc.
Why is this a great idea?	<p>Easily accessible, provides multiple and immediate recycling solution for numerous materials.</p> <p>Solar CCTV surveillance will assist with waste behaviour management</p> <p>Circular economy:</p> <ul style="list-style-type: none"> • Greater landfill diversion • Lower landfill costs • Decreased contamination / dumping
How can we make it happen?	Local council buy-in. Involves partnership with multiple recyclers and custom infrastructure suppliers.

Pitch template

Your names: *Joe Lagraco, Camille Reid* Material: *Clothing* Score: *9* Control *9* Impact

Give your pitch a name:
(Your idea in 5 words)

Community Recycling Stations throughout LGA.

What is the problem you're solving?
(What is it? Where does it occur?)

The diversion of clothing from landfill. This occurs through the behaviour of kerbside disposal and collection. We see ~~expanding~~ expanding on the traditional charity bin locating historically in council carparks, which attracts the dumping of other material such as e-waste, ^{soft} plastics, etc.

← Hundreds of thousands of tonnes

How do you plan to solve it?

Centralised community recycling stations throughout communities, offering recycling options for clothing, e-waste, toner/cartridges, soft plastics, etc.

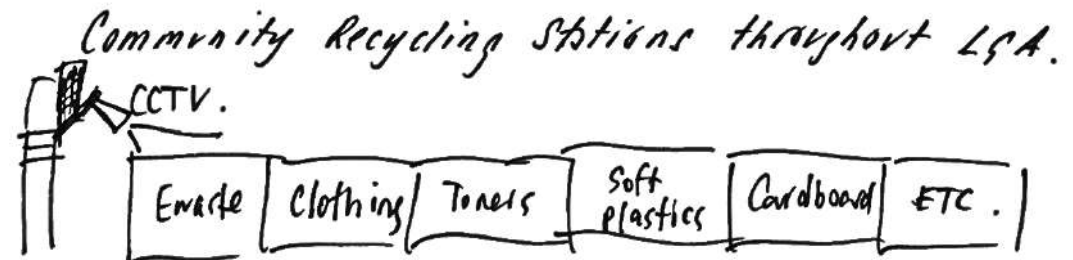
Why is this a great idea?

Easily accessible, provides multiple & immediate recycling solution for numerous materials. Solar CCTV surveillance will assist with waste behaviour management.

↑ landfill diversion
↓ landfill costs
↓ Contamination/dumping

How can we make it happen?

Local council buy in. Involves partnership with multiple recyclers and custom infrastructure suppliers.



Idea 7: Regional Carpet Product Stewardship Program

Material	Carpet
What is the problem you're solving?	Majority of household carpet waste is disposed to landfill, with limited recycling technology and infrastructure. At the same time, there are limited supplies of clean, usable, recycled materials for remanufacturing.
How do you plan to solve it?	Incentivise and aggregate collection of clean-stream, high-volume carpet to ensure landfill diversion, and create market for these materials.
Why is this a great idea?	Creates a clean, affordable resource from waste material that is able to be reprocessed.
How can we make it happen?	Federal PS program funds regional implementation of collection through ROCs and Jos thereby stimulating investment in reprocessing infrastructure.

Pitch template

ThinkPlace

Your names: Justin & Jonathan Material: carpet Score: 9 Control 9 Impact

Give your pitch a name:
(Your idea in 5 words)
Regional Carpet Product Stewardship Program

What is the problem you're solving?
(What is it? Where does it occur?)
Majority of household carpet waste is disposed to landfill, with limited recycling ^{tech} infrastructure.
At the same time, there are limited supplies of clean usable ~~waste~~ recycled materials for remanufacturing.

How do you plan to solve it?
Incentivise and aggregate collection of ~~carpet~~ clean-stream, high-volume carpet to ensure landfill diversion, and create market for these materials.
Why is this a great idea?
Creates a clean, affordable resource from waste material that is able to be reprocessed.

How can we make it happen?
Federal PS program funds regional implementation of collection through ROCs + JOs thereby stimulating investment in reprocessing infrastructure.

Idea 8: Latex Brains Trust

Material	Latex
What is the problem you're solving?	Latex is sold as an environmentally friendly product, but doesn't have an environmentally friendly solution. While a small, heavy part of the mattress stream, now it is growing steadily and used in other products, such as gloves, swim caps, catheters, and condoms.
How do you plan to solve it?	Collaborate with supply chain and other users of latex to identify barriers and find product solutions to keep latex in material chain.
Why is this a great idea?	Brings together a range of stakeholders, including different industries, globally. Raises awareness / engagement.
How can we make it happen?	(a kick-ass facilitator!) We need someone (industry / government) to take clear leadership. Shared funding is needed by action-oriented stakeholders.

Pitch template

ThinkPlace

Your names: **Nat + Janelle** Material: **Latex** Score: **9** Control **9** Impact

Give your pitch a name:
(Your idea in 5 words)
Latex brains trust

What is the problem you're solving?
(What is it? Where does it occur?)
Latex is sold as an environmentally friendly product, but doesn't have a solution.
environmentally friendly.

While a small part of the mattress stream, now it's growing steadily + used in other products
heavy
Such as gloves, swim caps, catheters + condoms

How do you plan to solve it?
collaborate with supply chain + other users of latex to identify barriers + find product solutions to keep latex in material chain.
Why is this a great idea?
Brings together a range of stakeholders, incl. diff industries globally.
Raises awareness/engagement.
How can we make it happen? a kick-ass facilitator
We need someone (industry / gov) to take clear leadership.
Shared funding is needed.
By Action-oriented stakeholders
stakeholders + teams

scalable

Appendix



Attendees

Organisation	First Name	Surname	Organisation	First Name	Surname
Australasian Circular Textile Association	Camille	Reed	Randwick Council	Talebul	Islam
Australasian Circular Textile Association & Edge Environment	Blake	Lindley	Salvation Army	Aife	O'Loughlin
Bayside Council	Joe	Logiacco	SMaRT	Smitirupa	Biswal
Bayside Council	Patricia	Chamberlain	SMaRT	Md. Shahruk	Nur-A-Tomal
Better Business Partnership	Amanda	Choy	SMaRT	Uttam	Mittal
Blocktexx	Graham	Ross	SMaRT Centre	Mark	Sterbic
Canterbury Bankstown	Narelle	Bowly	SMaRT Centre	Rumana	Hossain
Canterbury Bankstown	Brad	Gray	SMaRT Centre / NSW Circular	Keith	Monaghan
City of Canada Bay	Sharon	Faulkner	SMaRT Centre / NSW Circular	Farshid	Pahlevani
City of Sydney	Tanya	Henley	SMaRT Centre / NSW Circular	Veena	Sahajwalla
City of Sydney	Gemma	Dawson	SSROC	Louie	Leung
DPIE	Jonathan	Wood	SSROC	Mei Li	Quah
Georges River Council	Fiona	Stock	SSROC	Justin	Bonsey
HealthShare NSW	Fergal	Barry	SSROC	Helen	Sloan
HealthShare NSW	Kevin	Prasad	SSROC	Hazel	Storey
Inner West Council	Helen	Bradley	SSROC	Annie	Walker
Inner West Council	Flavia	Evans	SSROC	Namoi	Dougall
MRA Consulting	Mike	Ritchie	Sustainable Schoolwear	Annie	Thompson
NACRO	Omer	Soker	Sutherland Council	Tegan	Yasserie
NSW Circular	Anuj	Dhawan	Sydney Uni	Lisa	Heinze
NSW Circular	Tony	Wragg	The Smith Family	Peter	Lombardo
NSW Circular	Anders	Hallgren	ThinkPlace	Dane	Galpin
NSW Circular	Max	Klemmer	ThinkPlace	Lucinda	Vitek
NSW EPA	Natalie	Alves	University of Wollongong PhD student	Makrita	Solitei
Product Stewardship – recycle my mattress	Janelle	Wallace	Waverley Council	Beth	Kasumovic
				Clara	Vuletich

Agenda

Time	Session theme	Key questions	Who
10:00	Welcome	Acknowledgement of country Who is in the room?	Hazel Storey, SSROC
10:10	Update from NSW Circular	Key insights to date from work across NSW Circular	Anders Hallgren, COO NSW Circular
10:15	How big is the problem?	What is the scale of the problem from LG and waste industry perspective?	Hazel Storey, SSROC
10:20	SMART Centre update	What has SMART centre done on textiles so far and what is happening now?	Farshid Pahlevani, UNSW SMART Centre
10:30	Charities' experiences	What are the ethical considerations that councils and consumers should keep top of mind?	Omer Soker, CEO, NACRO incorporating Zero Waste
10:40	Australian Circular Textile Association	How does circular economy apply to the clothing industry?	Camille Reed, CEO, Australian Circular Textile Association
10:50	Blocktexp	Separating textiles to base components within AU for use as input materials / feedstock is already commercially possible	Graham Ross, Co-Founder Blocktexp
11:00	ThinkPlace	Introduction and plan for the rest of the day	Dane Galpin, ThinkPlace
11:05	Material pathways	What are the current pathways for clothing and textiles?	Group activity
11:25	Opportunities	Considering these products have little value and can cause problems, what else can be done?	Working in pairs
11:35	Ideas: Iteration 1	What ideas can we generate to increase the circularity of these materials in NSW?	Working in pairs
12:00	Lunch		
12:20	Gallery walk through	What can we build on? Add? Modify?	Individual walk through
12:35	Ideas: Iteration 2	Based on the feedback during the gallery walk through, refine your idea to improve it, or pivot in a different direction.	Working in pairs
12:50	Pitching	In preparation for the next activity, we will learn the basics of how to present a good one-minute pitch.	Dane Galpin, ThinkPlace
1:00	Quick pitch "The Dolphin Tank"	Each pair has one minute to present their refined idea. The panel score the idea along the matrix of impact vs. level of control.	Individual Presentations
1:40	Share-back	What are the most promising projects?	Facilitated conversation
1:50	Evaluation	Feedback time	Individual activity
1:55	Next steps	What have we achieved today? What are the next steps?	Dane Galpin, ThinkPlace
2.00	Close		

Other Pitches

Pitch template

ThinkPlace

Your names: **Annic Mark** Material: ~~CO-TEX~~ **FLOCK** Score: **7** Control **8** Impact

Give your pitch a name: (Your idea in 5 words) **CO-TEX → QRG**
CONCORDANCE
 Policy Deliver Mechanism → **Team App to match / list guidelines**

What is the problem you're solving? (What is it? Where does it occur?)
Quick / easy reference.
 - solution online reference
 - supplier share into
 - contact points for procurement
 - value & procurement transparency
 - supplier standards req.

How do you plan to solve it?

Why is this a great idea?
Development investment \$100k.

How can we make it happen?

Pitch template

ThinkPlace

Your names: **MAKRITA, Uttam, Graham** Material: **Flock & mixed Fibres** Score: **8** Control **9** Impact

Give your pitch a name: (Your idea in 5 words)
THE MIXED FLOCK.
Product stewardship of used and new mattresses

What is the problem you're solving? (What is it? Where does it occur?)

How do you plan to solve it?
Providing a service that promotes product stewardship.

Why is this a great idea?
 - Diverts waste from landfill
 - Promotes resource recovery
 - Creates business opportunities.
 - Generates a Circular Economy

How can we make it happen?
 - By providing incentives for responsible disposal of mattresses/flock & fibres, through service.

we provide a service so that don't have to... (unclear)

Other Pitches

Pitch template

Your names: **FERRAL-HEALTH SHARE** Material: **CLOTHING / MATERIAL** Score: **7** Control **9** Impact

ThinkPlace

Give your pitch a name:
(Your idea in 5 words)

Medi-Share

What is the problem you're solving?
(What is it? Where does it occur?)

Tumor Health System
 ⇒ \$80 per per year
 Sheet & linen set cost 650
 we can donate it for free
 ⇒ Patients sleeping on their own sheets or not having sheets is an infection control / Health & Dignity issue

How do you plan to solve it?

NSH Health throws away enough linen a year to supply every hospital & clinic for every Nation in the Pacific

Why is this a great idea?

- 1 - Health outcome because of clean linen
- 2 - Dignity - clean sheets versus dirty
- 3 - ~~and full~~ becomes a social health & environment and benefit

How can we make it happen?

- 4 - Increase health & better health care. - Increase health for staff
 - 5 - mothers sick patients can have dignity & clean hospital beds at home
- ⇒ partner with Rotary - funding for transport.

Pitch template

Your names: **TANVA AIFE** Material: **Clothing & Manchester** Score: **7** Control **8** Impact

ThinkPlace

Give your pitch a name:
(Your idea in 5 words)

Uber for clothing Donations / Recycling

What is the problem you're solving?
(What is it? Where does it occur?)

Tackling the challenge of Convenience & busy lifestyles (urban)

- Easy for people to use & engage
- Collections from home, where & when you need
- Check box for quality, material type
- Options for "add on" collections
- use already established logistics (Australia post / Charities / uber etc)

How do you plan to solve it?

- An app to allow for collections anytime, anywhere
 - Check boxes for materials
 - Profiles, ability to reward & recognise environmental contribution
- feedback loop (both customers + collect)

Why is this a great idea?

- Changes perception on goods once we've no longer need them
- Helps reduce textiles in household bins
- Enables data collections - Scalable (other options)
- Targets a new demographic / audience

How can we make it happen?

- Council trials / grants
- Pitch to already established solutions for partnerships to leverage their infrastructure + reverse logistics
- Consider looking at development grants for App
- Collection "SATCHEL" THAT IS REUSED

Other Pitches

Pitch template

ThinkPlace

Your names: KEITH + AMANDA.

Material: CARPET

Score: 8 Control 8 Impact

Give your pitch a name: (Your idea in 5 words)
SHREDTEXX

How do you plan to solve it?
by building facilities to reprocess unwanted carpet into useable materials

Why is this a great idea?
 ① It will reduce carpet in landfill
 ② It will create new industry and new jobs especially in regional areas
 ③ Repurpose raw materials

How can we make it happen?
 ① Develop appropriate technology (which is coming)
 ② Funding - from waste levy + research grants
 ③ collaboration across a complex web of parties - state + local govt waste mgmt companies + researchers

What is the problem you're solving? (What is it? Where does it occur?)
Thousands of tonnes of carpet ending up in landfill every year.

A very senior champion. ← influential

Idea sheet Iteration 2

CONTROL: 8 IMPACT: 7

ThinkPlace

Team member names: Kevin + Flavia

Material: CLOTHING + ACCESSORIES

Give your idea a name: (Your idea in 5 words)
Texxchange Clothing CoC

Draw or describe your idea: (What is it? How might it work?)
Clothing hire and recycling van (Repair HUBS)
Hire requires:
- photographer
- app map/GIS enabled
- users in local area
Hirer downloads app and starts sharing → photographer service + cleaning part of operational fee

What opportunities does the idea address?
Reuse - untapped opportunity for making money from your wardrobe
Recycle unuseable items - link with council clean up collection

What barriers might prevent us achieving it?
 • Financial → investment in app start ups
 • Uncool → is it ok to wear neighbour's clothes? NEED AMBASSADORS
 • Logistics → clothes washing / dry cleaning COSTS
 • making it appealing

Who is responsible? Who else is involved?
 • Community group
 • Start up / small business
 • Local government
 • State / Federal \$\$\$ → Recycling component

Other Pitches

Pitch template

ThinkPlace

Your names: TALEBUL / Louie ^④	Material: FLOCK	Score: <input type="text" value="7"/> Control <input type="text" value="7"/> Impact
<p>Give your pitch a name: (Your idea in 5 words)</p> <p>"KARMIC SHEET"</p> <p>What is the problem you're solving? (What is it? Where does it occur?)</p> <p>UPTAKE OF FLOCK + FIBRE</p>	<p>How do you plan to solve it?</p> <ul style="list-style-type: none"> • MAKE FLEXIBLE SHEET MATERIAL • HIGHLY TAILORABLE <p>Why is this a great idea?</p> <p>WIDE APPLICATION FOR MANY PRODUCTS</p> <p>BOOST LOCAL PRODUCTION w/ MANY BUSINESS APPLICATION</p> <p>How can we make it happen?</p> <ul style="list-style-type: none"> • REQUIRES FED. GOV TO STIPULATE MIN % LOCAL MADE + REUSE ORIGINAL MATERIAL • PROOF OF CONCEPT 	

ThinkPlace

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