UNSW + SSROC Circular Economy Thinktank Series

Thinktank 1: Introduction to the series and a deep-dive into yellow bin material flows

Conversation Tracker

29 August 2019

NSW Circular

SMaRT@UNSW
Sustainable Materials Research & Technology

SSROC

ThinkPlace

Introduction

About the project

The University of New South Wales Sustainable Materials Research and Technology (SMaRT@UNSW) Centre and Southern Sydney Regional Organisation of Councils (SSROC) are collaborating to run a series for three workshops aimed to catalyse innovation that will lead to waste avoidance and an increase in reuse and resource recovery. The series will bring together stakeholders from SSROC Councils, UNSW and the design, manufacturing, resource and charity sectors to establish collaborative ways of working, progress understanding and learn from like-minded organisations.

The first workshop held on 29 August 2019 had a strong Local Government focus, aiming to help Councils understand the purpose of the workshop series and the partnership between SMaRT@UNSW and SSROC.

Workshop two will be held in November 2019 and focus on textiles and clothing while the third, to be held in February 2020, is an opportunity for manufacturers and local government to collaborate.

Purpose of this document

The purpose of this document is to capture a synthesised summary of the conversations and activities that took place during the first co-design workshop held on 29 August 2019. Please note, this document does not capture the conversation verbatim, rather it presents a snapshot of key discussion points and activities.

Introduction

Agenda for the day

| Session theme	Presenter
Welcome	Rodger Watson, *ThinkPlace*
Introduction from SSROC	Namoi Dougall, *General Manager SSROC* Annie Walker, *Regional Waste Projects SSROC*
How big is the problem?	Anne Prince, *Director APrince Consulting*
Update from SMaRT Centre	Professor Veena Sahajwalla, *Director SMaRT@UNSW*
Material pathways What are the current pathways of the materials in the yellow bin?	Facilitated group work
Opportunities Considering these products have little value and can cause problems, what else could be done with them?	Facilitated group work
Ideas What ideas can we generate to increase circularity of these materials in NSW?	Facilitated group work
Gallery walk through and voting Walk around the room, when you see an idea you like place a voting dot on it What ideas got the most votes? Why did these ideas get your vote?	Individual activity
What are the next steps?	Rodger Watson, *ThinkPlace* Annie Walker, *SSROC*

Workshop outcomes

Workshop participants left the first session excited, with a new understanding of what could be done with *waste* and how their knowledge will contribute to developing the NSW circular economy.

Participants explored the problem area by developing current state material pathways of the yellow bin. The pathways explored the current actors, goals, pain points and points of satisfaction before shifting into the idea generation phase. Participants were asked to vote for their favourite ideas, the vote tallies drew out four favourite areas for exploration:

1. Ideas with a focus on increasing the amount of recycled material in products (mandate recycled content in products, taxing materials that cannot be recycled)

2. Creating a collaborative environment to innovate

3. Incentivising consumer recuse and recycling (cashing in on recyclables, household weight watchers)

4. Getting materials back to manufacturers

NSW Yellow bin material pathway

To gain a deep understanding of the current state of the materials in the yellow bins, workshop participants were invited to complete a material pathway outlining the key actors in the system, the goals the actors are working to achieve at each step, things that are working well that we need to keep doing and points of frustration. The following page outlines a synthesised version of the material pathway generated by the six groups.
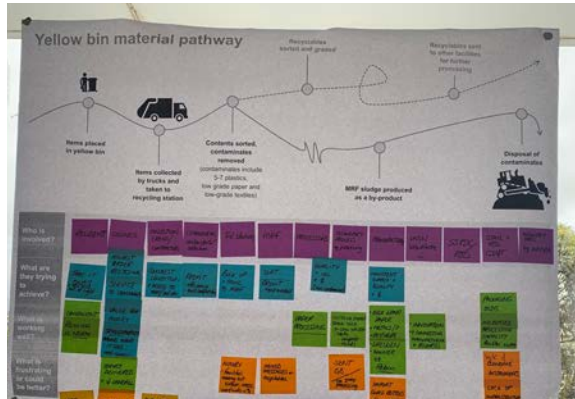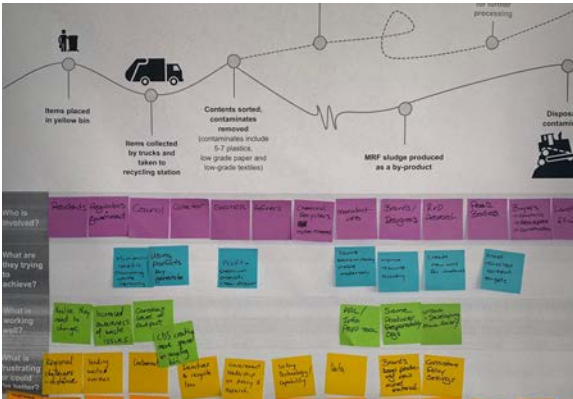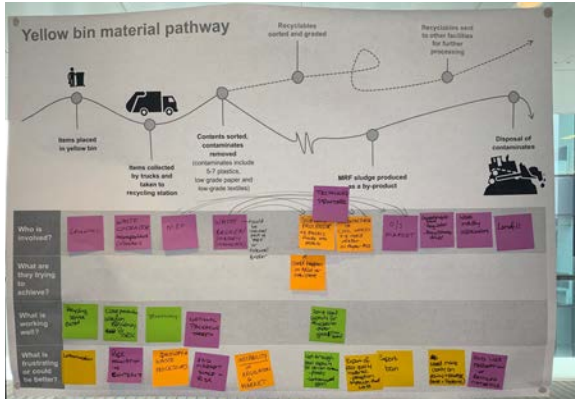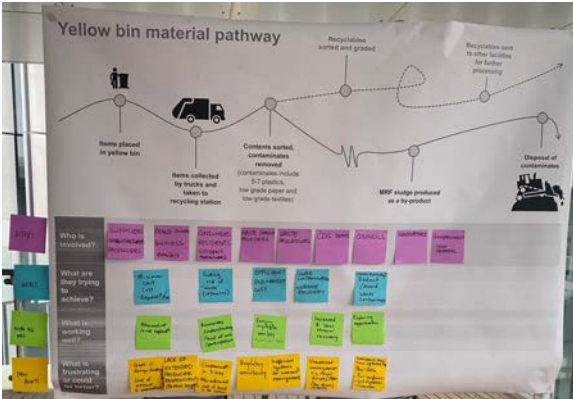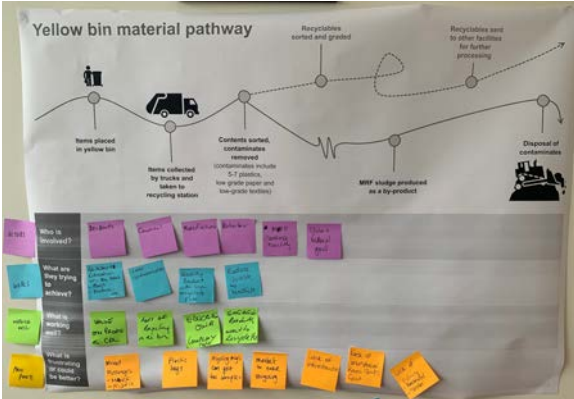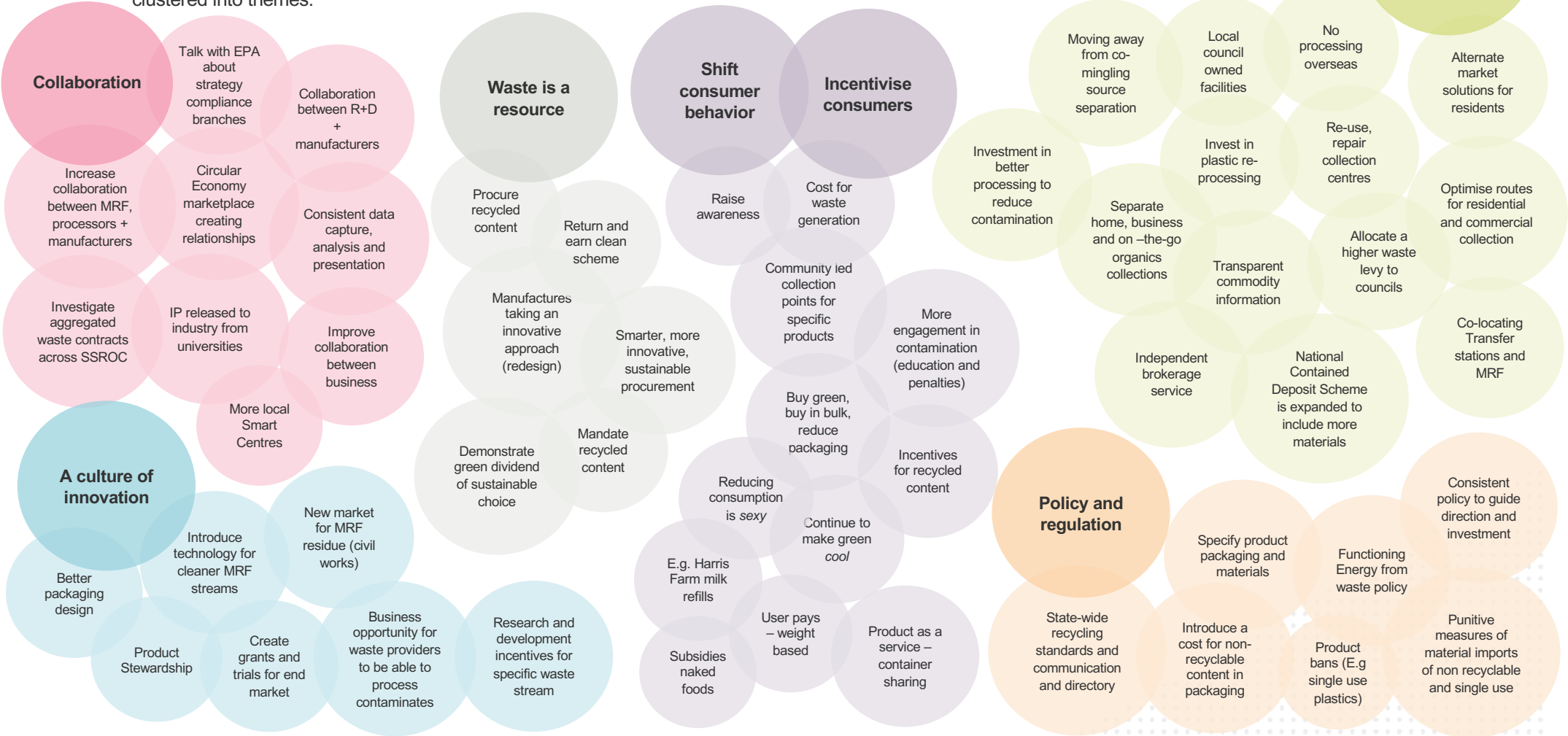
NSW Yellow bin material pathway

ACTORS Who is involved?	Residents Businesses	Local councils	Collectors Transporters	MRF Landfill	Technology providers	Local and international re-processors	Container Deposit Scheme Depots	Manufacturers Civil works	Wholesalers Retailers	R+D SMaRT @UNSW	The media Advertising industry	State and Federal Government
GOALS What are they trying to achieve?	Take it away, recycle out of sight - out of mind	Reduce litter and associated costs Service the community and provide value for money Increase efficacy and reduce contaminants Find a use for generated products Be transparent about where the waste goes	Efficient collection Maximise profit Deliver resources to MRF and transfer stations Reduction in competition	Maximise resources Maximise profit Find an end market Lower contamination	Create new use for materials	Maximise resources (quality, volume and recovery) Maximise profit Lower contamination	Lower contamination Increase recovery	Maximise profit Improve resource recovery Produce quality products with high recycling rates Maintain a consistent supply Reputation maintenance	Maximise profit - source economically viable materials Source the best quality Reduce waste to landfill	Find new use for materials Reduce waste to landfill	High ratings Attract advertisers to bring in revenue	Re-election Policy Strategy Targets Levies
POINT OF SATISFRACTION What is working well?	High level of participation and care taken Collection system is convenient Recycling is seen as *normal*	Opportunity exploration Collection system is convenient Regional thinking and proximity of collection	Employment opportunities	Material and resource collection	Technology capability	Emerging recyclables markets Auditing and data collection Local capacity for recyclables (paper + glass)	Increase and clean stream recovery Create more space in recycling bins	Volume Alternative reuse exploration Recycled content being used in civil construction	Contained Deposit Scheme	Innovation Connecting manufacturers and resources	War on Waste	Revenue Packaging 2025 Increased processing capacity of facilities
PAIN POINTS What is frustrating or could be better?	Plenty of confusion and misinformation – the recycling message can be complex Contamination is common Lack of trust in the recycling system	Lack of guidelines Lack of data input and transparency Poor compliance Inconsistencies across NSW Long contracts - risk allocation in contracts	Lack of infrastructure and policy Lack of economic instruments More flexibility needed due to uncertainty Long fixed contracts	Instability in regulation and market Inefficient systems for contamination management Poor quality materials Reduction in markets Duopoly of processors End market scale and risk		Procurement process needs improving Not enough local capacity for certain streams (plastics and contaminated glass) Lack of infrastructure Lack of investment from State Government	Unexpected consequences (illegal dumping, litter, bin diving)	Gaps in design understanding Lack of pressure from stakeholders Lack of extended producer responsibility Poor quality Increase cost Impact on developing countries	Complexity if recyclability of materials is reduced Brand continue to produce new mixed materials		Irresponsible reporting Existing systems being undermined	More clarity needed on vision, strategy and policy Lack of foresight and incentivization

Opportunity areas

Workshop participants were asked to take into consideration the points of satisfaction and pain points collected in the previous activity and use these to identify opportunity areas to increase the circularity of contaminates that end up in the yellow bin in NSW. These opportunity areas have been clustered into themes.

Get the materials back to manufacturers

Collaboration

- Talk with EPA about strategy compliance branches
- Collaboration between R+D + manufacturers
- Increase collaboration between MRF, processors + manufacturers
- Circular Economy marketplace creating relationships
- Consistent data capture, analysis and presentation
- Investigate aggregated waste contracts across SSROC
- IP released to industry from universities
- Improve collaboration between business
- More local Smart Centres

A culture of innovation

- Better packaging design
- Introduce technology for cleaner MRF streams
- New market for MRF residue (civil works)
- Product Stewardship
- Create grants and trials for end market
- Business opportunity for waste providers to be able to process contaminates
- Research and development incentives for specific waste stream

Waste is a resource

- Procure recycled content
- Return and earn clean scheme
- Manufactures taking an innovative approach (redesign)
- Smarter, more innovative, sustainable procurement
- Demonstrate green dividend of sustainable choice
- Mandate recycled content

Shift consumer behavior

- Raise awareness

Incentivise consumers

- Cost for waste generation
- Community led collection points for specific products
- More engagement in contamination (education and penalties)
- Buy green, buy in bulk, reduce packaging
- Incentives for recycled content
- Reducing consumption is *sexy*
- Continue to make green *cool*
- E.g. Harris Farm milk refills
- User pays – weight based
- Product as a service – container sharing
- Subsidies naked foods

- Moving away from co-mingling source separation
- Local council owned facilities
- No processing overseas
- Alternate market solutions for residents
- Investment in better processing to reduce contamination
- Invest in plastic re-processing
- Re-use, repair collection centres
- Optimise routes for residential and commercial collection
- Separate home, business and on –the-go organics collections
- Transparent commodity information
- Allocate a higher waste levy to councils
- Independent brokerage service
- National Contained Deposit Scheme is expanded to include more materials
- Co-locating Transfer stations and MRF

Policy and regulation

- State-wide recycling standards and communication and directory
- Specify product packaging and materials
- Functioning Energy from waste policy
- Consistent policy to guide direction and investment
- Introduce a cost for non-recyclable content in packaging
- Product bans (E.g single use plastics)
- Punitive measures of material imports of non recyclable and single use

Ideas for improvement

Following lunch, participants worked in pairs to built in some detail into the opportunity areas. Worksheets prompted participants to name their idea, describe it, consider the opportunity it addressed, the barriers and the stakeholders involved. Participants were asked to vote for their favourite idea, each participant was given three votes. Details of the ideas that received the most votes can be seen on the following pages.
Scans of the full set of the idea cards can be viewed and downloaded here.

Idea #	Idea theme	Idea name	Votes
01	**Collaboration**	**Collaborate to innovate**	**12**
02	Collaboration	Consistent and available data	3
03	A culture of innovation	Product as a service revolution	3
04	A culture of innovation	Embed product stewardship in all levels of the product and process	2
05	A culture of innovation	Product stewardship	1
06	A culture of innovation	Research and development innovation incentive	1
07	**Waste as a resource**	**Smart, innovative, sustainable procurement**	**6**
08	Waste as a resource	Commodity pricing hot desk – create an online resource to help decide where materials can go and the commodity price of each	3
09	Waste as a resource	Incentivise recycled content in manufacturing	2
10	Waste as a resource	Trash cash – create a currency out of resources/waste	1
11	**Policy and regulation**	**Mandate recycled content in products**	**10**
12	**Policy and regulation**	**Product bans**	**6**

Idea #	Idea theme	Idea name	Votes
14	**Shift consumer behavior**	**Cash in on your recyclables**	**6**
15	Shift consumer behavior	Household weight watchers, weight-based charging	1
16	Shift consumer behavior	BYO bottle grog shop and restaurant	1
17	Shift consumer behavior	Community recycling hub	0
18	Shift consumer behavior	Free the fruit BYO container	0
19	Shift consumer behavior	Transform the perception of the recycling and resource industry – celebrate recycling champions	0
20	Shift consumer behavior	Higher level waste and resource messaging	0
21	Get the materials back to manufacturers	Unlock processing capacity and end of market opportunities	3
22	Get the materials back to manufacturers	Source separation – move away from co-mingled separation bins for key streams	1
23	Get the materials back to manufacturers	Recycled content hub - link MRF materials including rejects with markets	1
24	Get the materials back to manufacturers	Rethink what else could be included in the yellow bin	0
25	Get the materials back to manufacturers	Revolutionise the way we collect to ensure the product delivered can be recovered at a molecular level	0
26	Get the materials back to manufacturers	Reduce the amount of colors in glass – brown only	0

Most popular ideas for improvement
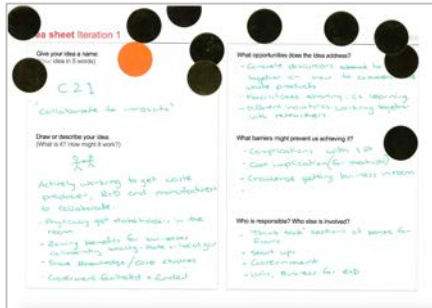
Collaborate to Innovate (12 votes)

Actively working to get waste producers, research and development and manufacturers to collaborate. Physically getting stakeholders in the room. Zoning benefits for businesses to collaborate locally. Sharing knowledge. Creating case studies. Government facilitated and funded.
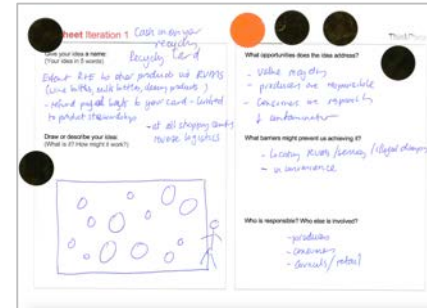
What opportunities does the idea address?

Concrete discussions together on how to commercialise waste products. Facilitates shared learnings. Different industries working together with researchers.

What barriers might prevent us achieving it?

Complications with IP. Cost implications for startups. A challenge to get business in the room.

Who is responsible? Who else in involved?

- ThinkTank sections of banks for finance
- Start-ups
- Government
- Universities
- Business for research and development

Cash in on your recyclables (6 votes)

Extend Return and Earn scheme to other products (wine bottles, milk bottles, cleaning products). Refund paybacks to consumers cards. Provide at all shopping centers.

What opportunities does the idea address?

- Value recycling
- Producers are responsible
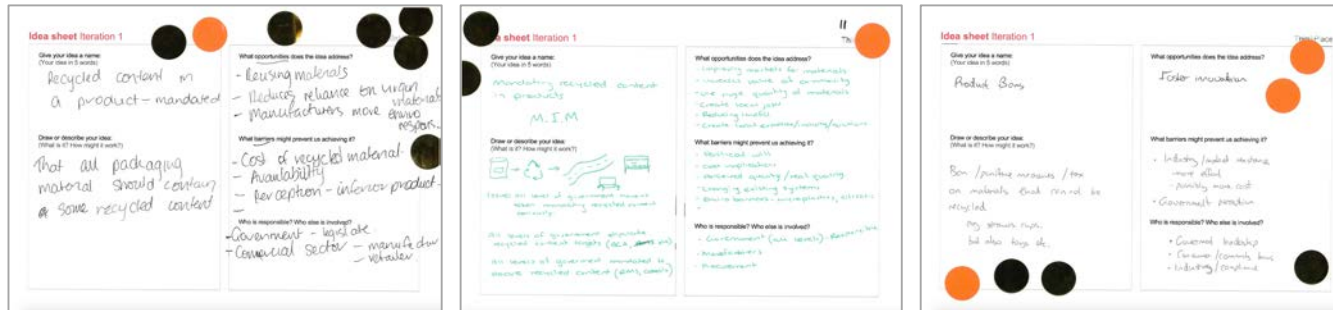- Consumers are responsible
- Reduce contamination

What barriers might prevent us achieving it?

- Locating RUMs/services
- Illegal dumping
- Inconvenience

Who is responsible? Who else is involved?

- Producers
- Consumers
- Councils
- Retail

Most popular ideas for improvement

Mandate recycled content in a product (10 votes)

All packaging material should contain some recycled content. Government stipulates recycled content targets. Governments mandate to procure recycled content.

What opportunities does the idea address?

- Reuse materials, reduce landfill and reducing reliance on virgin materials
- Improve markets for materials
- Increase value in commodities
- Create local jobs, create local expertise

What barriers might prevent us achieving it?

- Cost implications
- Availability
- Perception that recycled products are inferior
- Political will
- Environmental barriers

Who is responsible? Who else in involved?

- Government (legislators)
- Commercial sector (manufacturers and retailers)

Product bans (6 votes)

Tax, punitive measures, ban on materials that cannot be recycled (e.g. straws, cups and toys).

What opportunities does the idea address?

Foster innovation

What barriers might prevent us achieving it?

- Industry and market resistance (increased effort, could be increased costs involved)
- Government perception

Who is responsible? Who else is involved?

- Government leadership
- Consumer. Community
- Industry
- Compliance

Most popular ideas for improvement

Smart, innovative, sustainable procurement (6 votes)

All Governments to embed sustainability into their procurement process. ISO20400 provides clear adaptable framework to do this. Grow the market for recycled content while also reducing waste, promoting and rewarding innovation in manufacturing. Drive chain-of-custody for certification of recycled materials.

What opportunities does the idea address?

- Increase the demand for recycled content leading to it becoming a preferred choice of material.
- Reducing waste
- Reducing cost
- Creating sustainable markets
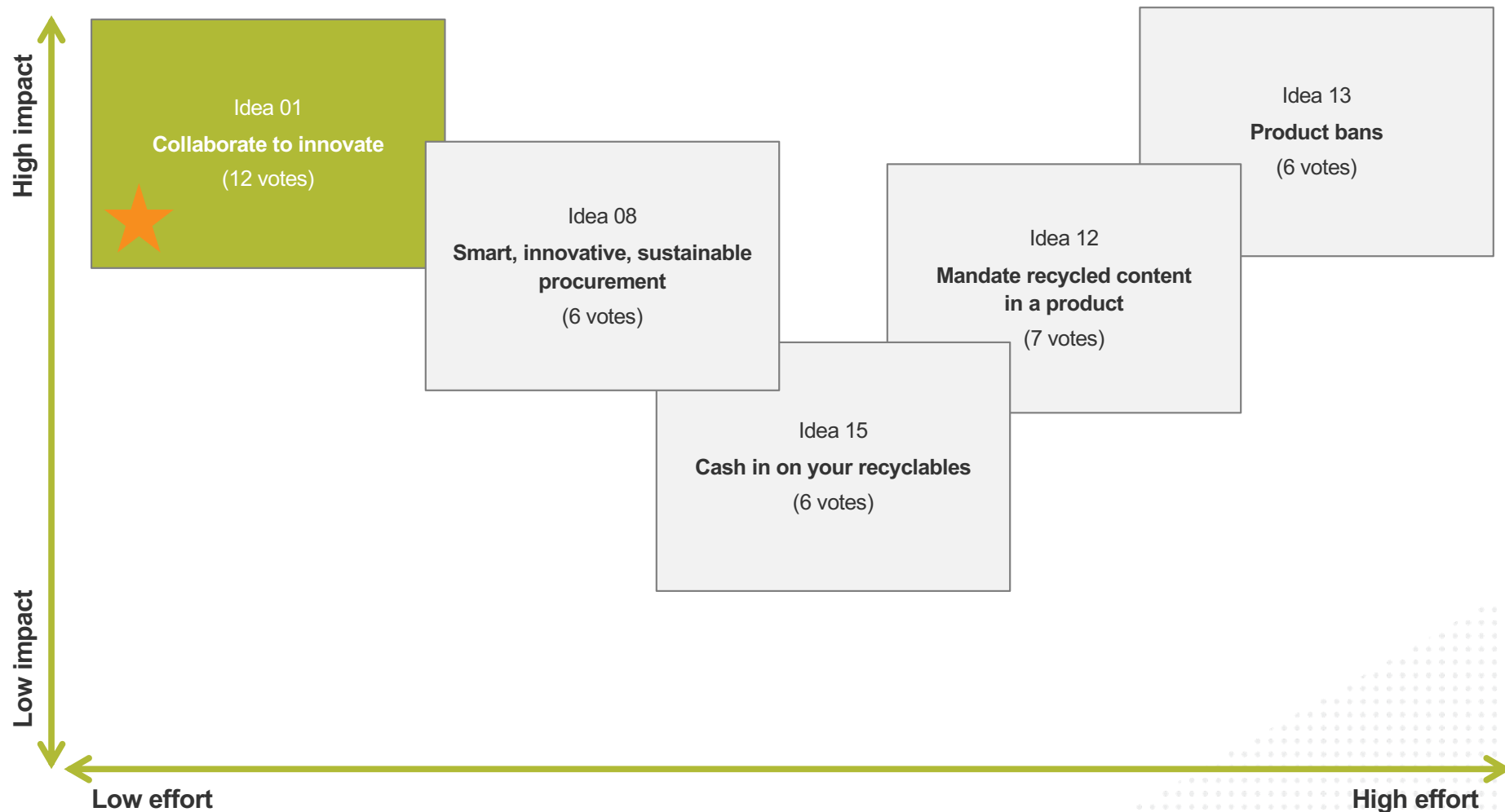
What barriers might prevent us achieving it?

- Lag between demand increasing supply and reducing cost
- Needs to be a long-term plan
- Bipartisan

Who is responsible? Who else in involved?

- All levels of government
- APCO
- Supply chain

What is the estimated impact and effort required?

After the workshop, the project team considered the most popular ideas and estimated the effort required and the expected impact, benefit or reward in order to identify the **quick win that could be delivered in 2020**.

High impact

Idea 01
Collaborate to innovate
(12 votes)

Idea 08
Smart, innovative, sustainable procurement
(6 votes)

Idea 15
Cash in on your recyclables
(6 votes)

Idea 12
Mandate recycled content in a product
(7 votes)

Idea 13
Product bans
(6 votes)

Low impact

Low effort

High effort

ThinkPlace

thinkplaceglobal.com

From ThinkPlace Pty Ltd | ACN 116 993 170 | ABN 52 116 993 170
Level 4, 50 Blackall Street, Barton ACT 2600 | PO Box 5249 Kingston ACT 2604 | Phone +61 2 6282 8852