





# Mapping of the Circular Economy in the ACT

Office of the Commissioner for Sustainability and the Environment

22 September 2023

→ The Power of Commitment



<b>Project name</b>		Circular Economy Ecosystem Mapping of the ACT					
<b>Document title</b>		Mapping of the Circular Economy in the ACT   Office of the Commissioner for Sustainability and the Environment					
<b>Project number</b>		12609186					
<b>File name</b>		12609186 ACT CE Ecosystem.docx					
<b>Status Code</b>	<b>Revision</b>	<b>Author</b>	<b>Reviewer</b>		<b>Approved for issue</b>		
			<b>Name</b>	<b>Signature</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
S4	0	Sarah King Kuo Tian Anna Cicalese	Jason Watson		Jason Watson		22/09/2023

**GHD Pty Ltd | ABN 39 008 488 373**

Contact: Jason Watson, Manager - Water & Environmental Group, Canberra | GHD  
 16 Marcus Clarke Street, Level 7  
 Canberra, Australian Capital Territory 2601, Australia  
**T** +61 2 6113 3200 | **F** +61 2 6113 3299 | **E** cbrmail@ghd.com | **ghd.com**

[Compliance statement]

© GHD 2023

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.



# Executive Summary

This report describes the results of research conducted by GHD to understand and investigate the depth and breadth of action and awareness of the circular economy across the ACT Region for the Office of the Commissioner for Sustainability and the Environment (OCSE). Using a combination of desktop analysis and survey data we map activity against the 9R framework which has been adopted in the ACT Circular Economy Strategy and Action Plan 2023-2030. These include the following categories: Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, and Recycle.

The resulting map (a social network diagram), shown in Figure 1, contains a total of 130 nodes (121 organisations and nine R strategies) and 353 ties (including both selections of R strategies and the affiliations among the organisations). The black lines (ties) indicate survey and desktop results with the affiliation ties represented in green.

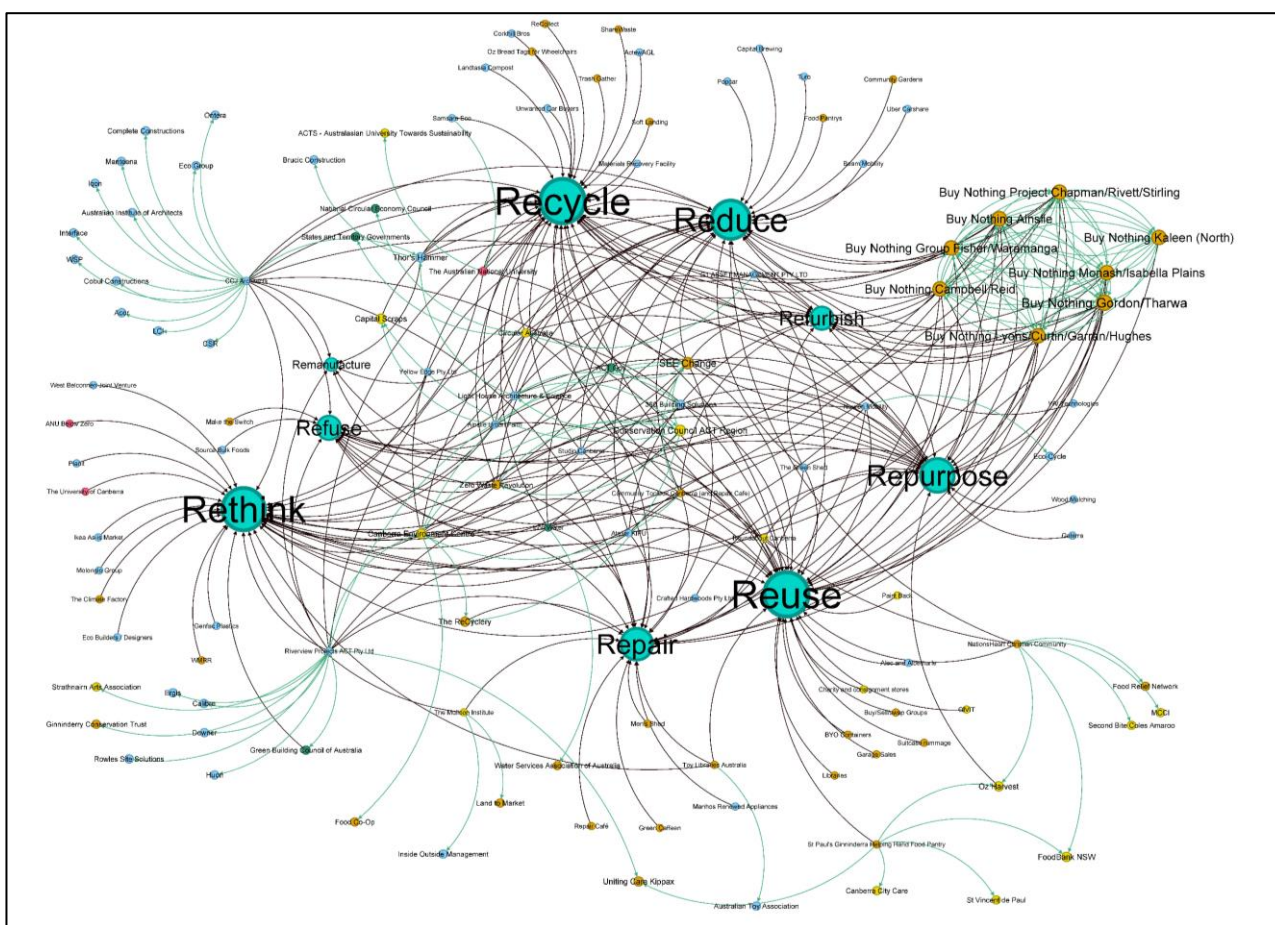


Figure 1 The ACT Circular Economy Ecosystem

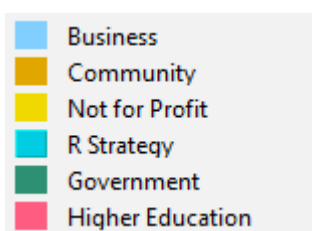


Figure 2 Node colour key

The node colour is based on the types of the organisation, or R strategy, based on the key shown in Figure 2. The ecosystem diagram shows good representation from a variety of organisation types as shown by node colour.

The size of the nodes reflects the number of incoming ties – larger nodes have higher number of incoming ties. For example, based on node size, we can see that Remanufacture, Refurbish and Refuse strategies are the least selected R strategies (with eight, 16 and 17 ties respectively). It can be concluded that these CE strategies require increased engagement and focus within the ACT. Traditional strategies such as Recycle, with 38 incoming ties, are well represented in the ACT. However, higher order strategies such as Rethink (36 incoming ties) and Reuse (38 incoming ties) and Reduce (32 incoming ties), also have good representation, as indicated by the number of incoming ties. This is very promising as sometimes these higher order strategies can be more challenging to implement. Other strategies such as Repair and Repurpose (25 and 27 incoming ties respectively) also show good representation in the ACT.

From the desktop analysis and survey results, we propose the following recommendations to continue to stimulate growth in the ACT CE:

1. Annual ACT CE Awards – to showcase organisations
2. Publish Organisation Case Studies – making CE real for others
3. Education Campaign to Communicate CE Strategies – requested by survey responses
4. Networking Opportunities – increase opportunities for partnerships in the construction and demolition sector and community groups
5. Develop a CE Business/Organisation Directory – building on this report as a starting point
6. Annual Survey to Update Directory – to track growth in representation across each of the 9R's
7. Support and Promote CE strategies at Community Events – building on strong community representation
8. Grant funding to stimulate investment in CE Ecosystem – supported by survey responses and to enable growth in Remanufacture, Refuse and Refurbish

Some of the limitations of this research were the smaller than expected responses to the survey and our inability to map against focus areas identified in the ACT CE Strategy and Action Plan. This is an opportunity for future work, to connect the focus areas of; food and organics, built environment, consumer goods and problematic waste streams with engagement in 9Rs. This will be essential to understand further gaps and challenges to deliver on the ACT CE Strategy and Action Plan to 2030.

These ecosystem results show excellent engagement across all of the 9Rs within the ACT and provide a strong foundation from which to track future efforts aligned with realising the CE Strategy and Action Plan 2023-2030.

# Contents

<b>Executive Summary</b>	<b>i</b>
<b>1. Introduction</b>	<b>1</b>
1.1 The 9Rs Circular Economy Hierarchy	1
<b>2. Limitations</b>	<b>4</b>
<b>3. Scope and methodology</b>	<b>5</b>
3.1 Scope of work	5
3.2 Desktop review	5
3.3 Community Insight Survey	5
3.4 Social network diagram	6
<b>4. Results</b>	<b>7</b>
4.1 Desktop research	7
4.2 Community Insight Online Survey	9
4.2.1 Organisation characteristics	9
4.2.2 Types and sizes of the respondents	10
4.2.3 Definitions of the CE	11
4.2.4 Organisations and the 9R's CE framework	12
4.2.5 Affiliations with other organisations	14
4.2.6 Partnerships	16
4.2.7 Assistance from the ACT Government	18
4.2.8 Ongoing Engagement	19
4.2.9 Social Network diagram for Survey Results	19
<b>5. Mapping the CE ecosystem for the ACT</b>	<b>21</b>
<b>6. Conclusion – limitations and recommendations</b>	<b>23</b>

## Table index

Table 1	Businesses that responded to the survey	9
Table 2	Community Groups that responded to the survey	10
Table 3	Not for profit organisations that responded to the survey	10
Table 4	Government and higher education organisations that responded to the survey	10
Table 5	Key Concepts in CE: Word Frequencies	12
Table 6	The Nine R's of CE ranking based on survey results	13
Table 7	Responses for question 13 per entity type (businesses)	16
Table 8	Responses for question 13 per entity type (community groups)	17
Table 9	Responses for question 13 per entity type (Not for profit organisations)	18
Table 10	Responses for question 13 per entity type (government and higher education organisation)	18
Table 11	Responses for question 14 per entity type	19

## Figure index

Figure 1	The ACT Circular Economy Ecosystem	i
Figure 2	Node colour key	i
Figure 3	The circular economy 9R's framework (Source: Kirchherr et al 2017)	2
Figure 4	The ACT Government CE Strategies	3
Figure 5	SNA Diagram Based on the Desktop Research	8
Figure 6	Survey results - type and size of business	11
Figure 7	The 9R's of CE survey results, per entity type	13
Figure 8	The no. of 9R's selected by respondents	14
Figure 9	Respondent affiliation network diagram	15
Figure 10	Respondents willing to collaborate with other groups/organisations sorted by entity type	16
Figure 11	Breakdown of the assistance that ACT Government can provide to the businesses	18
Figure 12	Social Network Diagram Based on the survey	20
Figure 13	Comprehensive Social Network Diagram of the CE Ecosystem in the ACT, including both Desktop and Survey results	22

## Appendices

Appendix A	CE Ecosystem Mapping Survey
Appendix B	Ongoing Engagement Contact Information
Appendix C	The Nine R's of CE raw results per entity type
Appendix D	Question 6 Survey Responses

# 1. Introduction

The Commissioner's Office undertakes to report on the state of the environment in the ACT and surrounding regions every year through the ACT State of the Environment (SoE) Report. The SoE Report for 2023 will include for the first time a chapter that will deal with the circular economy (CE) as it relates to the ACT. GHD was engaged to assist the development of this chapter, through the creation of a map of the CE ecosystem across the ACT region. This report describes the results of the research conducted by GHD to understand and investigate the depth and breadth of action and awareness across the ACT Region for the Office of the Commissioner for Sustainability and the Environment (OCSE).

## 1.1 The 9Rs Circular Economy Hierarchy

The aim of the desktop research and the community insight survey is to establish an understanding of the various actors and their levels of involvement in contributing to a CE. The CE has three key principles:

- Designing out waste and economic activities with adverse impact to human health and the environment
- Circulating products and materials at their highest value for the longest duration possible
- Utilising renewable resources and returning valuable nutrients to the soil to support nature regeneration

As a way of conceptualising a CE framework for strategies, this has been popularised within an R framework such as the 4R's, 6R's and 9R's. The 9R CE framework identifies strategies to transition to a circular future depicting a type of hierarchy from most to least circular. The 9R's were initially published in 2017 in peer-review literature (Kirchherr et al 2017), as shown in Figure 3. While referred to as the 9R's, in that figure, there are actually ten, when including 'R0 – Refuse'. This framework broadly divides the strategies into three based on:

- Smarter product use and manufacture
- Extending the lifespan of product and its parts
- Useful application of materials

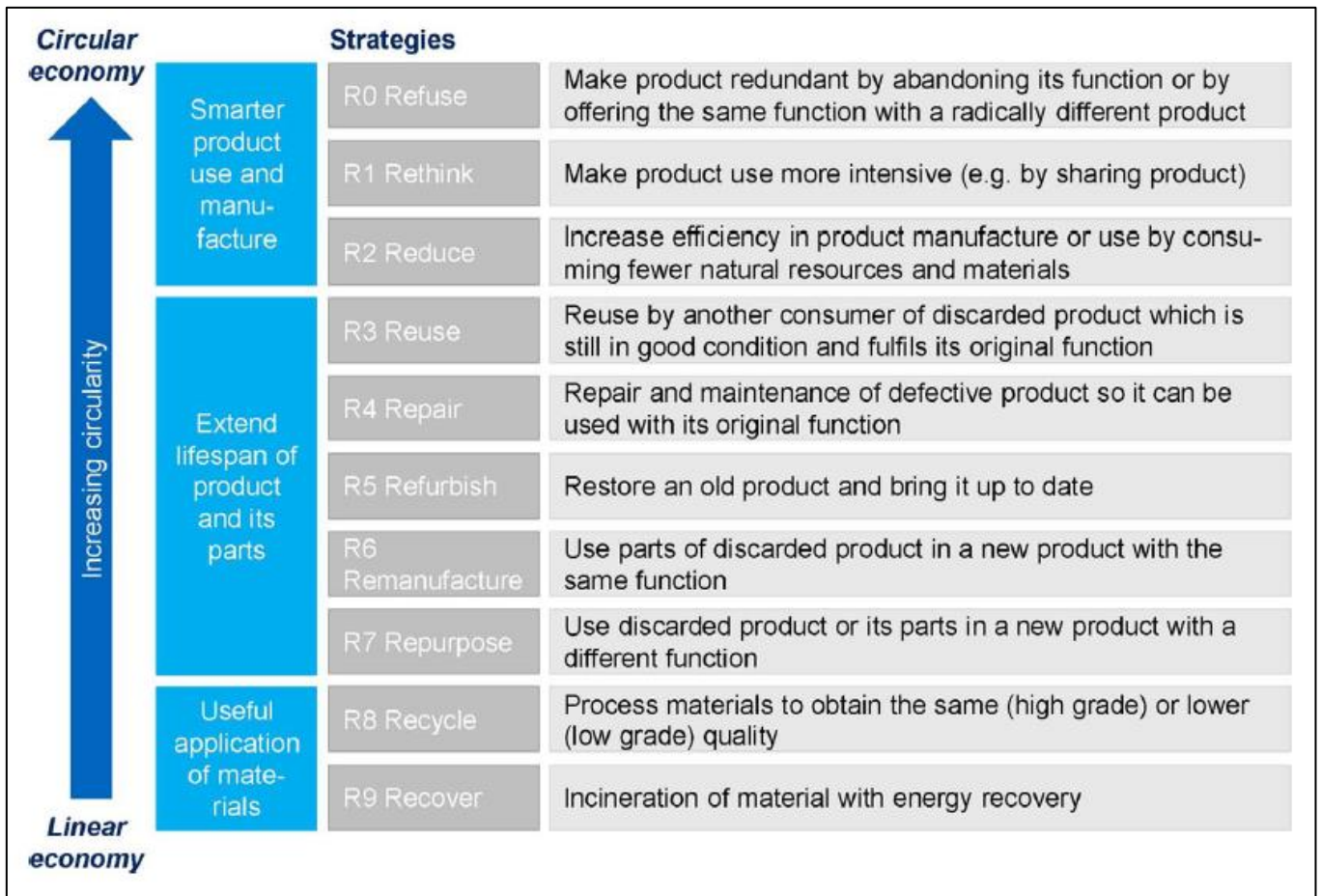


Figure 3 The circular economy 9R's framework (Source: Kirchherr et al 2017)

The 9R framework has been adopted within the strategy and objectives outlined in the ACT Circular Economy Strategy and Action Plan 2023-2030<sup>1</sup>. The ACT government strategy adopts the 9R framework in the following categories: Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, and Recycle. The definitions and hierarchy of actions is further outlined in Figure 4. The ACT CE framework and the associated 9R-strategies have been used as the basis for the data collection.

<sup>1</sup> ACT Government, *Building Canberra's Circular Economy, ACT Circular Economy Strategy and Action Plan 2023-2030*, prepared by ACT Government, 2023.



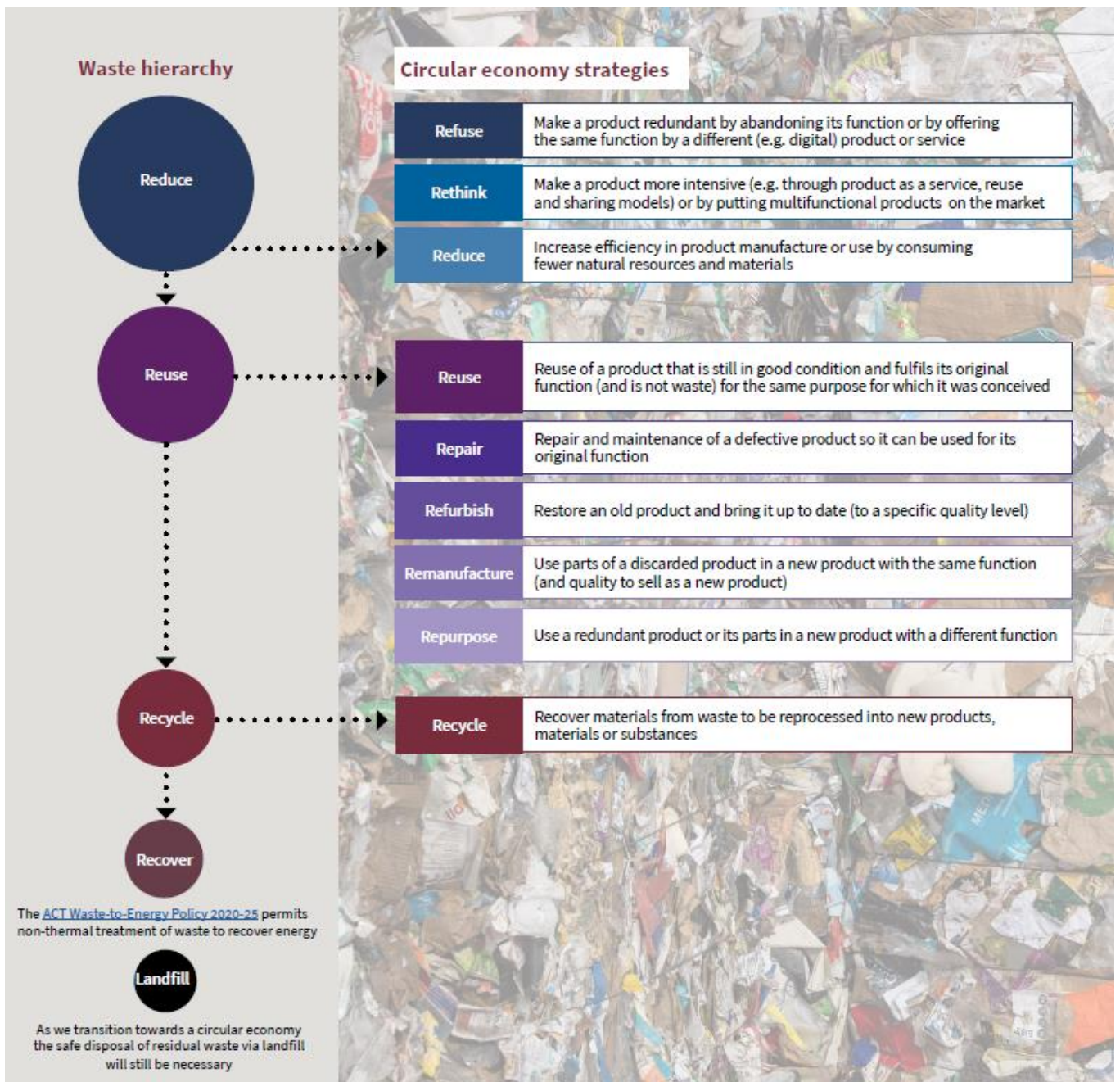


Figure 4 The ACT Government CE Strategies

## 2. Limitations

*This report has been prepared by GHD for Office of the Commissioner for Sustainability and the Environment and may only be used and relied on by Office of the Commissioner for Sustainability and the Environment for the purpose agreed between GHD and Office of the Commissioner for Sustainability and the Environment as set out in section 3 of this report.*

*GHD otherwise disclaims responsibility to any person other than Office of the Commissioner for Sustainability and the Environment arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section 6 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.*

## 3. Scope and methodology

### 3.1 Scope of work

GHD was tasked with collating formal and informal actors, networks and action focused on implementing and embedding CE principles within the ACT region through a desktop review and online survey. A key goal was to understand which actors are contributing to the delivery of each 'R-strategy' (Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle) detailing their interactions and connections. In addition, GHD was asked to design and develop an ecosystem map of the entire ACT Region wide related to formal and informal embedding and implementing of CE principles, based on the data collected through a desktop review and short survey. This CE ecosystem map has been rendered using Social Network Analysis (SNA) software which can visually demonstrate the structure and relationships between organisations.

### 3.2 Desktop review

The first task was to complete a high-level desktop review to understand the depth and breadth of the actors, actions and networks focused on CE across the ACT region. Part of this exercise was to begin compiling a list of actors, locations, and actions happening throughout Canberra, that would highlight the extent and scale of effort towards transitioning to a CE in the absence of wider government policies or decisions.

Our desktop review gathered the following information:

- Formal action/networks/actors - search publicly available web-based information to canvass those involved in formal actions related to a CE including businesses (car sharing and buy-back or take back programs), universities (research or student related action), schools, governments (ABS research), industries (Muldoon Institute and Declare Groups), sectors and Government supported community infrastructure (Men's Sheds or Tool Libraries)
- Informal action/networks/actors between individuals - search publicly available web-based informal sites such as Facebook (Buy Nothing Groups), Instagram, community groups (SEE-Change, Micro-Forests Groups and Repair Cafes)

### 3.3 Community Insight Survey

An online community insight survey was published from 25 July to 14 August 2023. The survey was open and advertised on social media such as Instagram, Facebook and LinkedIn and some organisations were approached separately such as the Institute of Architects, ACT Conservation Council and SEE-Change. The respondents were encouraged to circulate the survey to other organisations they have a partnership with.

The online survey had a total of 20 questions that covered a wide variety of topics for organisations to respond to. The survey questions followed a logical order where the initial questions focussed on understanding of the type, size and sector of each respondent. The next questions were related to defining what CE means to their organisation and selecting which of the R-Strategies from the 9R's Framework they operate in. There were also a number of questions that aimed to understand how long each organisation/group has been operating, if they had affiliations with other groups or businesses to achieve a CE and if so, what the nature of the affiliation is and with who currently and in the future they hope to collaborate with. Lastly the survey closed out with questions related to moving forward in the CE and what assistance the ACT Government can provide to improve the outcomes for these organisations/groups. Prior to its release, the draft survey was provided to the OCSE for feedback and review. Overall, the online community insight survey had a total of eleven close-ended and nine open ended questions. The survey questions are provided in Appendix A.

## 3.4 Social network diagram


Social network (SN) diagrams, also referred to as social network analysis (SNA) diagrams, visually represent the relationships between groups or actors. Each actor, in this case an organisation or R strategy, is termed a node. The connections between actors are directed, as indicated by an arrow, and referred to as ties. We have prepared social network diagrams using the software Gephi to present the results. The SNA diagrams have been prepared to visualise the results of the desktop research and community insight survey. To ensure a comprehensive mapping of the desktop research and survey data, several actions have been undertaken to structure the data for clear visualisation:

- Each node in the diagram represents either an organisation or an R strategy
- Organisations identified in the desktop research which subsequently participated in the survey have not been shown twice, to avoid duplication
- Some organisations with nominated affiliations from the survey have neither completed the survey or included in the desktop research (the desktop research was undertaken prior to the survey), hence they do not have ties to Rs

The following points assist with interpreting the social network diagrams:

- The size of the nodes is associated with the number of their incoming ties. More popular Rs and organisations with more affiliations nominated by others have bigger node sizes
- All ties to Rs and ties of affiliations are directional with the arrows pointing from the source organisation to the target Rs/organisations

The node colour is based on the types of the organisation, or R strategy, based on the following key:

	Business
	Community
	Not for Profit
	R Strategy
	Government
	Higher Education

- Ties to R strategies are displayed in black lines and affiliations are displayed with green lines

# 4. Results

## 4.1 Desktop research

The desktop search identified a total of 60 groups or organisations currently applying CE principals in their work. Buy Nothing was initially included in the desktop research, however, eight local Buy Nothing groups completed the community insight survey. A decision was made to remove Buy Nothing as a single organisation in the desktop research (which reduced the list to 59) so that the survey input from all eight Buy Nothing groups can be better presented in the survey SN diagram and charts. Organisations were then assigned into the 9R's as outlined in Section 1.1 and sorted according to their main action. Research was conducted by gathering available data from the SEE-Change site, attendance records of CE events, government information sites and internet searches using related terms. We collected information including the address and contact information of each group, where available.

While 60 groups were identified, they are spread across a total of 570 locations. This is because some groups had multiple locations or branches. For example, while community gardens are labelled as one organisation in our search, 17 locations were identified. The groups and organisations identified during the desktop research assisted in identifying who should be contacted to complete the survey.

In addition, there are nine organisations (other than Buy Nothing groups) in the desktop research who also participated in the community insight survey and selected multiple R strategies. For consistency with the community insight survey SNA diagram (and so these diagrams can be overlaid in accordance with client request), the additional R strategies selected by these nine organisations are also added to the desktop research SNA diagram. This results in those nine organisations having multiple ties.

Given the nature of the companies and organisations, many fell under multiple 9R's categories. However as part of our desktop process, each organisation was assigned to only one category with the exception of the ACT Government which was assigned to multiple (aligned with the survey method), but not all strategies (for example, the ACT Government does not refurbish or remanufacture) based on its role in leading the CE strategy for the Territory and its broader reach in enabling other organisation to implement the CE. This approach shows some categories being more populated than others which usefully identifies gaps in CE strategies to highlight areas for future work.

The SNA diagram in Figure 5 shows the identified actors from the desktop research assigned to their related R strategy. There is a total of 68 nodes (59 organisations and nine R strategies) and 96 ties to the R strategies. The desktop review identified organisations operating in all the 9R's categories; Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose and Recycle. The most populated R strategy is Rethink (with 15 organisations) and least populated are Refurbish and Remanufacture (both with one organisation). The key to organisation type, by colour, is outlined in Section 3.4, above.



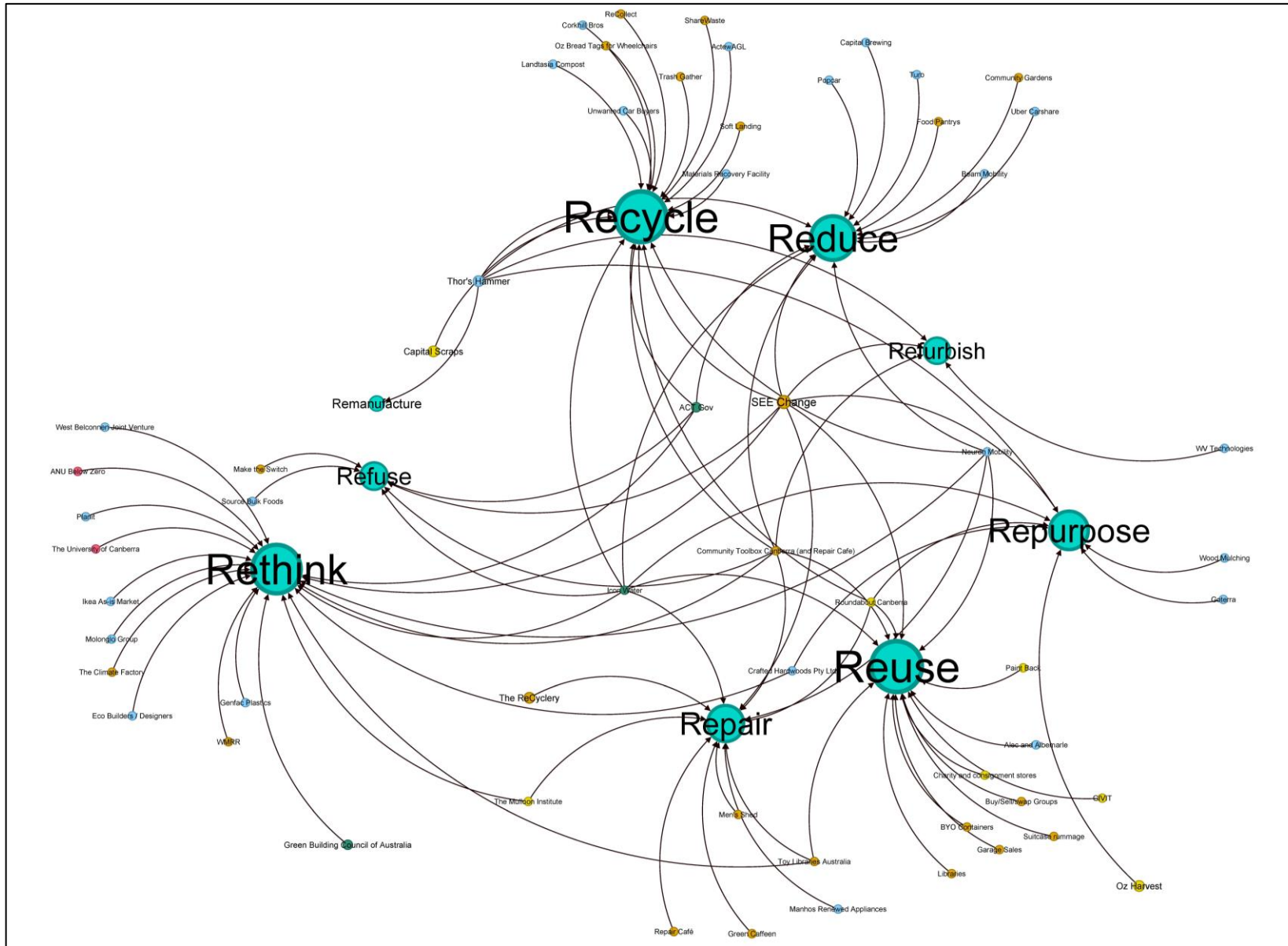


Figure 5 SNA Diagram Based on the Desktop Research

## 4.2 Community Insight Online Survey

All respondents to the community insight survey are located within the ACT region. The original scope of works aimed for an estimated 50 respondents, however, a total of 38 entries were received from 35 different entities. The majority of the comments were provided by respondents from separate organisations. However, there were two respondents from the Australia National University, two respondents from the Community Toolbox Canberra, and two respondents from Buy Nothing ACT Gordon/Tharwa. These responses have been reviewed and merged to maintain one entry per organisation for the purpose of reporting the results of the survey and reflected in the data presentation and social network diagram in this report.

In addition, some respondents defined the sector of their organisations more specifically than others, such as IT and a small urban farm business. These have been reclassified under the business category for the purpose of data presentation.

### 4.2.1 Organisation characteristics

As discussed above a total of 38 entries were received from 35 different entities, a list of entities per entity type are provided in Table 1-Table 4. Question 6 of the community insight survey asked respondents to provide details of what their group does and the raw results for question 6 are presented in Appendix D.

There were a wide variety of business types that responded to the survey with only two out of the 14 businesses not providing an answer to question 6. In general, most businesses that responded fall within the construction industry or focus on recycling processes and reuse strategies.

Seven Not for profit organisations responded to the survey, generally most Not for profit organisations fall within the education and advocacy space and a smaller portion focussed on the reuse and rehoming of goods.

Eight Buy Nothing locations responded to the survey (out of 14 community groups). Majority of the community groups that responded to the survey focus on the collection and distribution of goods and diverting them from landfill by passing on items to a new home within the local community. Two of the community groups also focus on CE education within the community.

Conservation Council ACT Region was the only respondent that fell into the government category and focusses on reuse and upcycling. The Australian National University was the only higher education organisation and focus on CE initiatives and promoting behavioural changes towards good CE practices.

**Table 1** *Businesses that responded to the survey*

<b>Business</b>
Atelier KIPU
Studio Canberra
Crafted Hardwoods Pty Ltd
Light House Architecture & Science
360 Building Solutions
CCJ Architects
Neuron Mobility
Thor's Hammer
Yellow Edge Pty Ltd
The Green Shed
Samsara Eco
Riverview Projects ACT Pty Ltd
G1 ASSET MANAGEMENT PTY LTD
Ainslie Urban Farm

**Table 2** *Community Groups that responded to the survey*

<b>Community Groups</b>
Buy Nothing Ainslie
Buy Nothing Campbell Reid
Buy Nothing Monash/Isabella Plains
Buy Nothing Kaleen (North)
Buy Nothing Lyons/Curtin/Garran/Hughes
Buy Nothing Group Fisher/Waramanga
Buy Nothing Gordon / Tharwa
NationsHeart Christian Community
SEE Change
St Paul's Ginninderra Helping Hand Food Pantry
Zero Waste Revolution
Community Toolbox Canberra (and Repair Cafe)
Toy Libraries Australia

**Table 3** *Not for profit organisations that responded to the survey*

<b>Not for profit organisation</b>
Circular Australia
Canberra Environment Centre
Roundabout Canberra
Conservation Council ACT Region
The Mulloon Institute

**Table 4** *Government and higher education organisations that responded to the survey*

<b>Government and Higher Education Organisation</b>
Icon Water
The Australian National University

## 4.2.2 Types and sizes of the respondents

Overall, the survey aimed to assess the extent to which various organisations have integrated CE principles. Respondents were asked how many employees or members are part of their organisation/group, with five options to choose from. These options align with nano, small, medium and large business/organisation Australian government classifications.

Following this initial question, the respondents selected a sector that best defines their organisation/groups. The survey provided five options; Government, Business, Not for profit, Community group and other. As mentioned earlier, some respondents defined the sector of their organisations more specifically than others therefore for the purpose of data presentation some organisations have been reclassified into the business category. Figure 6 provides an overview of the results displaying the types of organisations/groups and the associated size of the entities.

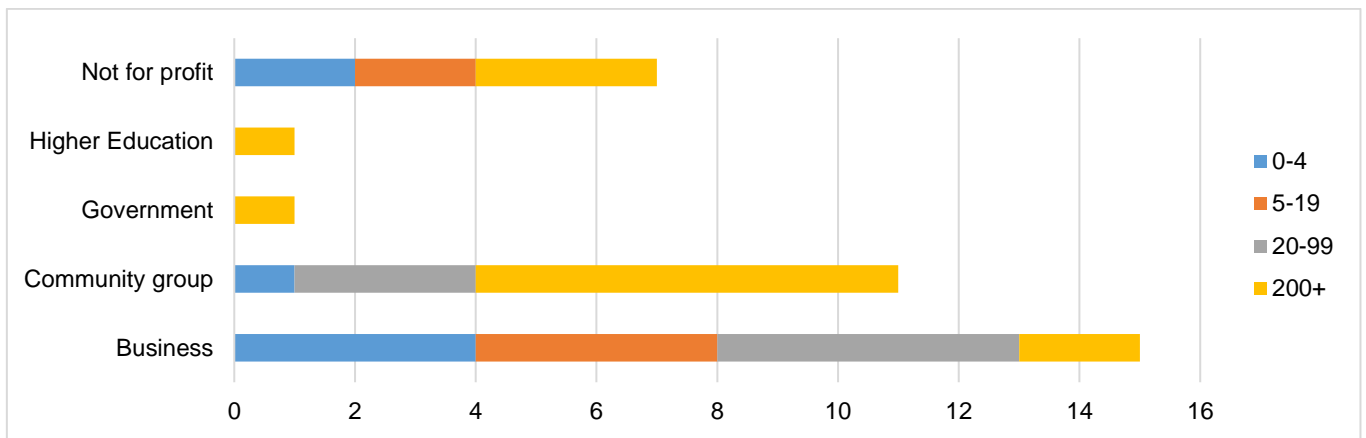


Figure 6 Survey results - type and size of business

As shown in Figure 6 above there was a greater proportion of businesses and community groups compared to Not for profit organisations, government groups and higher education organisations that responded to the survey. Overall, 15 businesses were reported, 11 community groups, one government group (Icon Water), one higher education and seven Not for profit organisations. Just under half of the respondents (15 in total) are larger entities with 200+ employees/members, eight entities reported between 20-99 people employed/members of the organisation group, six entities had 5-19 people and lastly seven entities had 0-4 employees.

When assessing the responses from question 2 and 9 presented in Appendix A, there is a wide spread of businesses ranging from small to large in size, in particular four businesses reported having 0-4 employees, four reported having 5-19 employees, five businesses had 20-99 employees and two reported having over 200 employees (Neuron Mobility & The Buy Nothing Project).

The community groups that responded to the survey are more likely to have greater than 200 employees/members with a total of seven community groups reporting 200+, these entities included six Buy Nothing groups throughout different suburbs and Community Toolbox Canberra (Repair Cafe). Three community groups reported having between 20-99 employees/members and one community group reported having 0-4 employees/members.

### 4.2.3 Definitions of the CE

Respondent were asked “How would you define the circular economy?” and a total of 32 organisations (out of a total of 38 responses) provided a response to this question.

The open text responses generally displayed a very good understanding of the CE. For example;

***“An effort to reduce waste by making sure that as much as possible is reused and recycled as well as considerations to reduce resource use in the first place. This includes improving how things are manufactured to minimise the production of things that cannot be reused and recycled in an ongoing basis.” (Community Group)***

The most prominent words, based on their frequency and the quantity of responses, include product, resource, recycling, waste, material, reuse, original resource, economy, good, end. Table 5 highlights the following prominent words and their corresponding frequencies derived from the survey responses about the concept of CE within organisation.

**Table 5** Key Concepts in CE: Word Frequencies

Key words	Count
product	15
resource	12
recycling	10
waste	9
material	8
reuse	8
original resource	6
economy	7
end	7
good	7

These words collectively capture the essence of how these organisations perceive the concept of CE, highlighting the emphasis on sustainable resource management, recycling, reuse, and minimising waste within the broader context of the economy and product lifecycles. The prevalence of words like “product”, “resource”, and “material” suggest a focus on optimising the use of resources and materials throughout the lifecycle. Furthermore, the presence of terms like “recycling”, “reuse” and “waste” indicates a commitment to circular practices that aim to extend the lifespan of products and materials.

The term “original resource” appearing multiple times reflects an awareness of the importance of preserving the integrity of resources from their initial state. The repeated mention of “economy” suggests a recognition of the economic benefits associated with circular practices. Additionally, the term “end” underscores the idea of considering the entire lifecycle of products from creation to disposal.

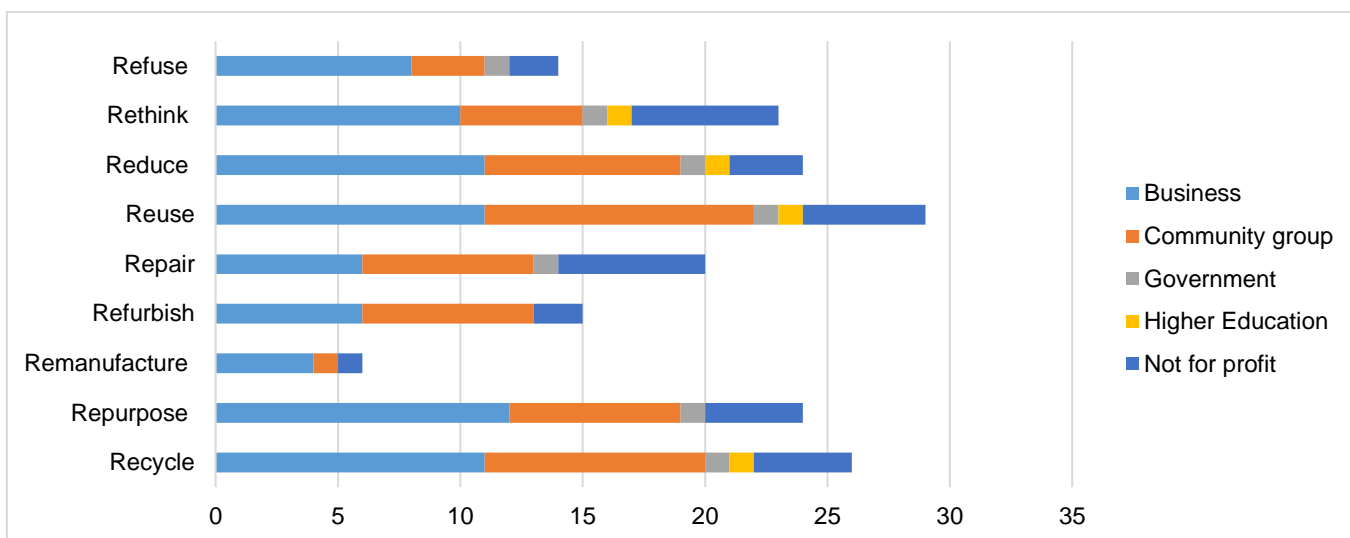
In conclusion, the keyword analysis provides insights into collective perception of CE from participants. The prevalence of specific terms highlights their shared commitment to sustainable practices, resource optimisation and waste reduction (management). These findings suggest a growing awareness and adoption of circular principles, emphasising the importance of creating a more environmentally conscious and economically viable approach to resource management within their respective industries.

#### 4.2.4 Organisations and the 9R’s CE framework

In response to question 7 of the online community insight survey, respondents were asked to select which R-Strategy their organisation contributes to, and were able to select more than one response from the 9R’s Framework. Respondents provided an array of different answers to this particular question with many combinations of the 9Rs selected.

When assessing the results at a high-level approach generally at least one of the organisation types selected at least one of the respective 9R’s with the exception of Remanufacture and Refurbish not selected by a government or higher education organisation. As shown in Figure 7 Reuse was the most frequent R-Strategy category closely followed by Recycle and Repurpose.





**Figure 7** The 9R's of CE survey results, per entity type

In terms of the 9R's of the CE framework as shown in Figure 7, results from this particular question are quite important to evaluate in order to gain a better understanding of representation for the current CE ecosystem. From the 35 respondents it is clear that Remanufacture, Refuse and Refurbish were selected the least. This provides useful insight that the first strategy, Refuse, is not as prevalent in organisations within the ACT. This result suggests that smarter product use and manufacturing should be of focus in terms of increasing circularity in addition to prevention of resource use through a Refuse strategy.

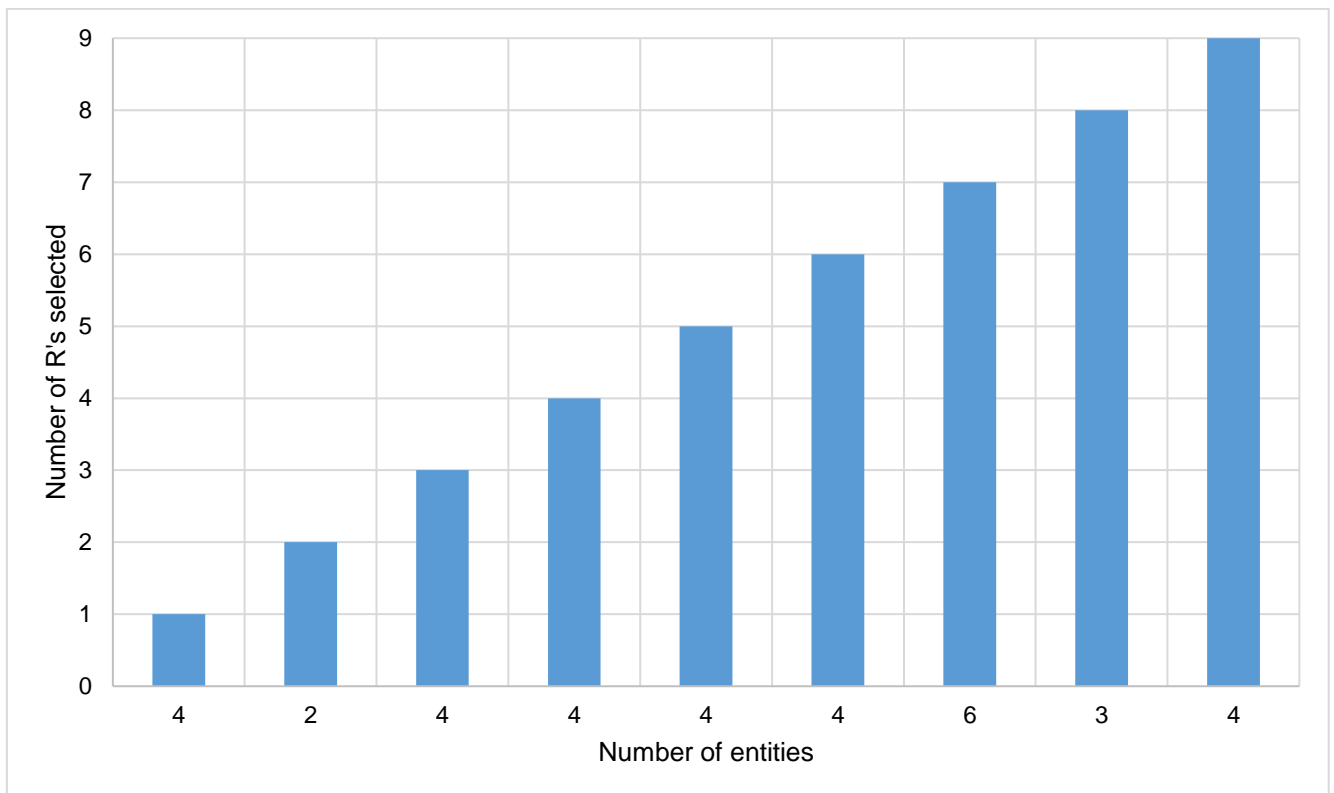
Table 6 below displays the number of 9R's that were selected by all 35 entities and then ranks them accordingly to the number times that particular R-Strategy was selected. Note that a single organisation was able to select more than one R strategy.

**Table 6** The Nine R's of CE ranking based on survey results

Ranking	9 R's Framework	Number of times selected
1st	R4- Reuse	29
2nd	R9- Recycle	26
3rd	R8- Repurpose	24
4th	R3- Reduce	24
5th	R2- Rethink	23
6th	R5- Repair	20
7th	R6- Refurbish	15
8th	R1- Refuse	14
9th	R7- Remanufacture	6

R4 Reuse was selected the most times by entities (11 times by businesses, nine times by community groups, once from government, once from higher education and four times by Not for profit). As shown in Table 6 above R1-R3 did not fall within the top 3 rankings, with R8 Repurpose and R9 Recycle selected the third and second rank, respectively. This shows that out of the organisations that responded to the survey there is a need to move up the CE framework as most organisations currently sit at either the middle or bottom end of the 9R's within extending the lifespan of products and its parts and the useful application of materials stages.

However, there is a limitation associated with the above observations as most of the entities did in fact select multiple R's therefore to gain an even greater understanding of where the respondents consider themselves in the 9R's Framework. Appendix C has been developed to display the raw results selected and sorted by organisation type. Figure 8 shows a high-level summary of the number of entities compared to the corresponding number of R's they selected.



**Figure 8** The no. of 9R's selected by respondents

As shown in Figure 8 there was a wide spread of entities that selected multiple R's. The average number of R-strategies selected per entity type was calculated, on average 6 R-strategies were selected by all entity types. Out of 15 businesses on average 6 R-strategies were selected, out of 11 community groups that responded an average of 6 R-strategies were selected, only one Government organisation responded by selecting seven R-strategies, one Higher Education organisation selected 4 R-strategies and lastly on average out of seven Not for profit organisations an average of 5 R-strategies were selected. This demonstrates that on average Government, Businesses and Community Groups that responded typically fall within a larger number of R-Strategies compared to Not for profit organisations.

### 4.2.5 Affiliations with other organisations

A total of 32 respondents provided comments on their affiliations with other organisations (see question 11 contained within Appendix A). Respondents were able to identify any organisation which further grows the representation of the CE Ecosystem. A social network diagram demonstrating the connections between the respondents and other organisations they are affiliated with has been included as Figure 9 below. This diagram is directed, where the direction of the arrow indicates the direction of the affiliation. For example, in right side of the graph, Neuron Mobility has indicated they are affiliated with Eco Cycle. But Eco Cycle has not indicated they are associated with Neuron Mobility. The best example of reciprocity (where organisations select each other) is the Buy Nothing network. This is displayed showing a dense network of ties and due to the high number of incoming ties, the nodes are slightly larger.

Respondents such as CCJ Architects, Riverview Projects ACT Pty Ltd, and St Paul's Ginninderra Helping Hand Food Pantry mentioned the highest number of organisations they affiliate with. The Buy Nothing groups across different communities closely collaborate with each other. Respondents such as SEE-Change, Canberra Environment Centre, Conservation Council ACT Region, and Thor's Hammer have been mentioned multiple times by other respondents with affiliation. Additionally, other organisations which did not participate in the survey including Capital Scraps, Foodbank NSW, Uniting Care Kippax and Oz Harvest have also been mentioned by respondents in relation to their affiliations. In summary, there are 69 nodes with 116 ties represented in the affiliation network. The key to organisation type, by colour, is outlined in Section 3.4, above. All affiliation ties are shown in green.

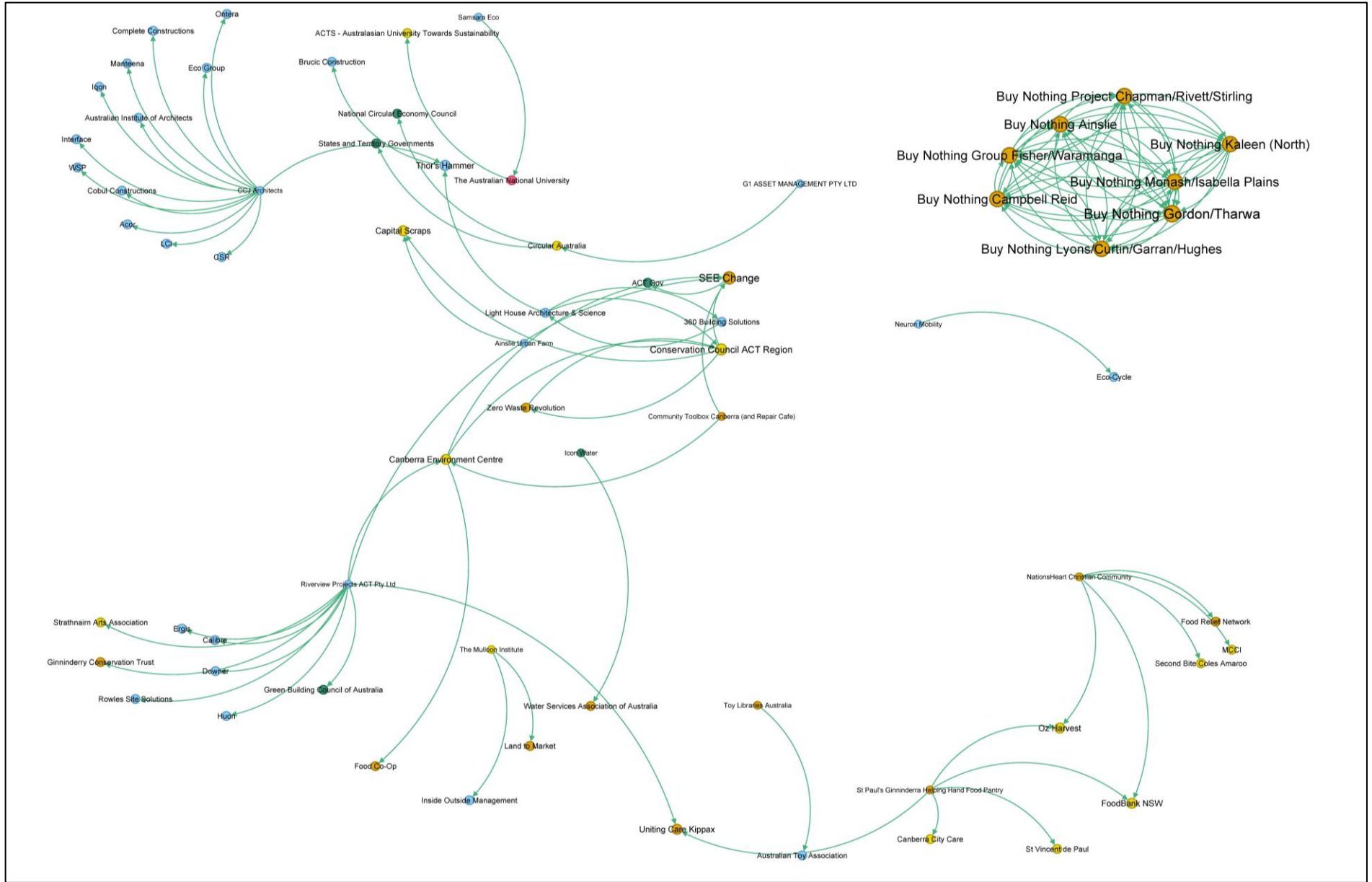
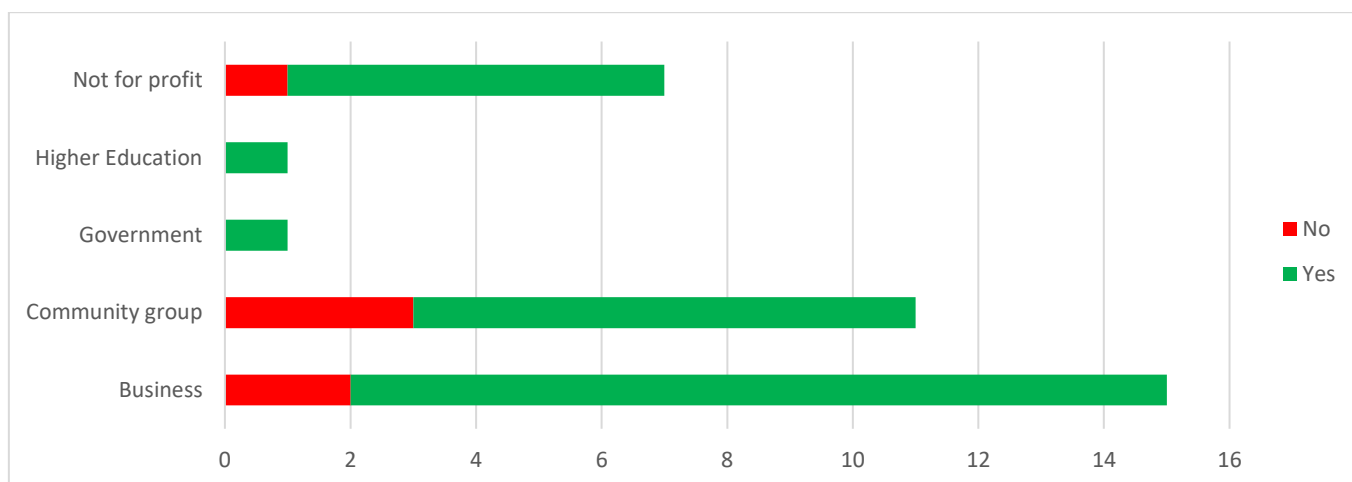


Figure 9 Respondent affiliation network diagram

## 4.2.6 Partnerships

Question twelve asked entities if they would like to be able to partner with other groups in the local area to advance their group's circular economy goals. 83% of respondents (29 out of 35) selected 'Yes'. Figure 11 below displays the number of respondents that are willing to collaborate and partner with other organisations/groups.



**Figure 10** Respondents willing to collaborate with other groups/organisations sorted by entity type

As displayed in Figure 10, a total of six Not for profit organisations responded yes, eight community groups, thirteen businesses and finally both the government agency and higher education organisation responded yes.

Question 13 was an open-ended question that asked if a yes response was provided then who and for what purpose would the respondent like to partner with.

Results from question 13 were quite broad regarding the level of detail provided, with some responses general in their comments and others more specific, including listing key stakeholders that they would like to partner with in future.

Thirteen businesses provided a range of responses to question 13 as shown in Table 7.

**Table 7** Responses for question 13 per entity type (businesses)

Business	Comment provided
Atelier KIPU	We would like to see higher demand for retention of existing buildings as a sustainability solution. We would like to see more trades with the capacity to refurbish and retrofit rather than just rip out /knock down and replace. And we would like to see more local collectors, storers, resellers and suppliers of recycled materials for refurbishment. We would like to see restrictions around the retention of materials within the community because right now the 'cheapest' thing to do is to bulldoze a building and send it to landfill (!!).
Studio Canberra	Builders, manufacturers and suppliers
Crafted Hardwoods Pty Ltd	Developers, Architects, Government and any other innovation organisations. For the purpose of sharing our collective wisdom and gaining more traction in our communities.
Light House Architecture & Science	Better management of construction waste
360 Building Solutions	Other Builders to help reduce construction waste
CCJ Architects	Other suppliers, demolition companies and building companies to source and reuse materials and products
Neuron Mobility	We would be happy to partner with any businesses to reduce their car usage for short trips.
Thor's Hammer	We would like to supply more of our products to government
Yellow Edge Pty Ltd	Office furniture, IT equipment, white goods etc.

Business	Comment provided
The Green Shed	Anyone local that wants to access reusable goods to further social and environmental benefit
Riverview Projects ACT Pty Ltd	Anyone with an interest/opportunity to test and trial approaches to reduce waste and linear thinking
G1 ASSET MANAGEMENT PTY LTD	TO KEEP IT AWAY FROM LANDFILL
Ainslie Urban Farm	It depends. I'm open.

As shown in Table 7 most of the answers provided do not list specific companies however there is an overarching theme that these businesses would like to focus on working with other builders, suppliers, trades and manufacturers to help reduce construction and demolition related waste streams. Atelier KIPU also makes an important comment that they would like to see more local collectors, storers, resellers and suppliers of recycled materials for refurbishment. From these comments there is a clear gap identified within multiple businesses (Atelier KIPU, Studio Canberra, Light House Architecture & Science, 360 Building Solutions and CCJ Architects) that the future for collaboration is highly related to construction materials source, use and ultimately end life being diverted from landfill.

Eight community groups provided responses to question 13 as shown in Table 8 below.

**Table 8** Responses for question 13 per entity type (community groups)

Community Groups	Comment provided
Buy Nothing Ainslie	Working with Vinnies to address the high volumes of items that could be diverted from landfill to local groups, community organisations, Buy Nothing groups, Street Libraries etc. Strengthening relationships with local organisations that need clothing or to request items through the Buy Nothing group - we have started to support Doris Women & Children's refuge and Blue Door.
Buy Nothing Campbell Reid	We are connected to other buy Nothing groups and we can gift to other groups if members in our immediate group do not need or want the gift.
Buy Nothing Monash/Isabella Plains, ACT	So long as the other groups are hyperlocal, we cross promote the repair cafe in our local area
NationsHeart Christian Community	More networking, sharing and connection with the community and like-minded organisations
Buy Nothing Gordon / Tharwa ACT	Promote awareness though the BNP has strict guidelines on what is permissible in a group - we are primarily a GIFT economy from members own abundance and advertising in any form is prohibited. Admins can deviate from the rules as they see fit.
Zero Waste Revolution	Other like-minded groups.
St Paul's Ginninderra Helping Hand Food Pantry	To provide the sustainable low cost or no cost food to those in need
Community Toolbox Canberra (and Repair Cafe)	Extending our reach to help more people to reduce their carbon footprint Hold workshops on topics such as repair and diy for our members and the general public Possible accommodation options We'd like to launch a mobile toolbox. For this to happen, we mostly need money to fund the purchase & fitout of a second hand van (preferably EV, but not if it's a new EV).

As displayed in Table 8 community groups responses were quite general with a focus more on collaboration with 'like-minded organisation', 'strengthening relationships with local organisations' 'networking, sharing' and to 'promote awareness'. In comparison to the responses from businesses there is a different theme that community groups are looking to work collaboratively with other local organisations.



**Table 9 Responses for question 13 per entity type (Not for profit organisations)**

Not for profit organisation	Comment provided
Circular Australia	To join our taskforces and to deliver circular projects such as new curriculum and education and circular supply chains.
Canberra Environment Centre	We are always accepting donations of bikes for the Recyclery, partnering with individuals and community groups. We are open to new partnering opportunities.
Toy Libraries Australia	Government for support to grow toy libraries.
Roundabout Canberra	The recycling and repurposing of goods we can't rehome. In particular we'd like to see a solution for the recycling of car seats.
Conservation Council ACT Region	Develop a more visible network of Canberra's businesses sharing materials
The Mulloon Institute	We are always keen to support other groups who are working in this space. Support to source materials for our work would be great (rock and logs esp.) as well as support with the construction training process for operators.

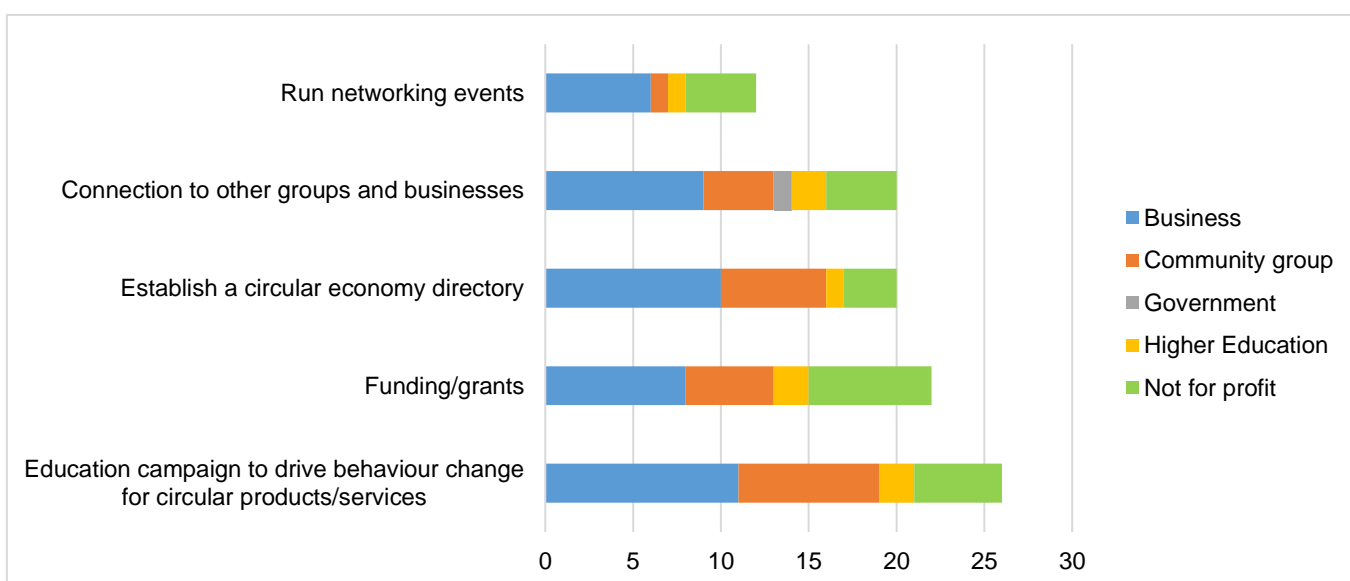
**Table 10 Responses for question 13 per entity type (government and higher education organisation)**

Government and Higher Education Organisation	Comment provided
Icon Water	Develop new markets for our existing water treatment solids material and our future biosolids-derived biochar material
The Australian National University	We are open to partnering with local and regional groups both community and academic/research, and industries associations.

As shown in Table 9 and Table 10 the comments from Not for profits, government and higher education organisations are still quite general however it does appear that all of the respondents are looking into the future with a more collaborative lens.

### 4.2.7 Assistance from the ACT Government

Figure 11 represents the results of responses to the survey question: "What assistance can the ACT Government provide you to improve the outcomes for your group?" Respondents were able to select more than one option from the five options listed.



**Figure 11 Breakdown of the assistance that ACT Government can provide to the businesses**

There was an even spread of responses by organisation type (Business, Community, Not for profits and Higher education). The greatest number of responses was assigned to education campaigns to drive behaviour change for circular products or services. A call for funding and grants was the second highest response selected by business, community, higher education and Not for profit organisations. This option highlights the financial support required to drive CE initiatives forward.

The recommendation to establish a circular directory was third highest and would facilitate connections and collaboration among stakeholders. Several respondents, spanning Business, Community and Not-for-profit sectors, emphasising the value of connecting with other groups and business to strengthen collaborative effort. Of all the options, running network events were the least selected option. Events might be envisioned as platforms for knowledge exchange, partnerships and collective problem-solving. Therefore, this result is surprising given the results of the “Partnerships” question where 80% of respondents would like to partner with groups in their area.

This question also allowed an open text option where “other” was selected. Table 11 provides a selection of the ‘other’ responses from the survey results across the different sectors, in order to gain a general understanding of the “other” ways the ACT Government can provide better outcomes for particular sectors. The suggestion to adopt a retro-first approach, restrict demolition /movement of materials and procure high-quality recycled/reused materials underline the need for sustainable management practices within different sectors.

**Table 11** Responses for question 14 per entity type

<b>Business Type (Sector)</b>	<b>Other responses</b>
Business	Unsure
Business	Put your money where your mouth is and take a retrofit first approach for ACT Government projects
Business	Restrictions on demolition and the movement of materials to landfill
Business	Purchase high quality recycled / reused products
Community group	No assistance that I'm aware of
Community group	ACT government should let the community sector lead more community engagement
Community group	Rent reductions or waivers in ACT properties
Not for profit	Providing insurance or backing as insurance for tool libraries
Not for profit	Policy and regulation, stewardship schemes, incentives for circular behaviours in business and public
Not for profit	Assist us with doing more in-the-creek (or river) repair
Not for profit	Create new supply chains
Government	Publicly share market sounding and waste facility data
University	Make it a legal obligation for large organisations

Overall, these diverse insights collectively emphasise the multifaceted nature of building a CE framework. The responses provided underscore the importance of collective action, education, financial backing, and sustainable material management in propelling the transition toward a more circular and sustainable future.

## 4.2.8 Ongoing Engagement

Question 17 of the survey asked respondents if they were happy for further contact to be made following the completion of the survey to discuss their answers to the survey. One community groups selected ‘No’ (Buy Nothing Campbell Reid), all other 34 out of 35 entities responded ‘Yes’. Following question 17, questions 18-20 asked for the respondent to provide their full name, contact number and email address. These responses have been tabulated based on organisation type and is provided in Appendix B.

## 4.2.9 Social Network diagram for Survey Results

The survey only diagram is shown in Figure 12. There are 44 nodes (35 organisations and nine R strategies) and 254 ties (selections of R strategies from each organisation and the affiliations among the organisations).

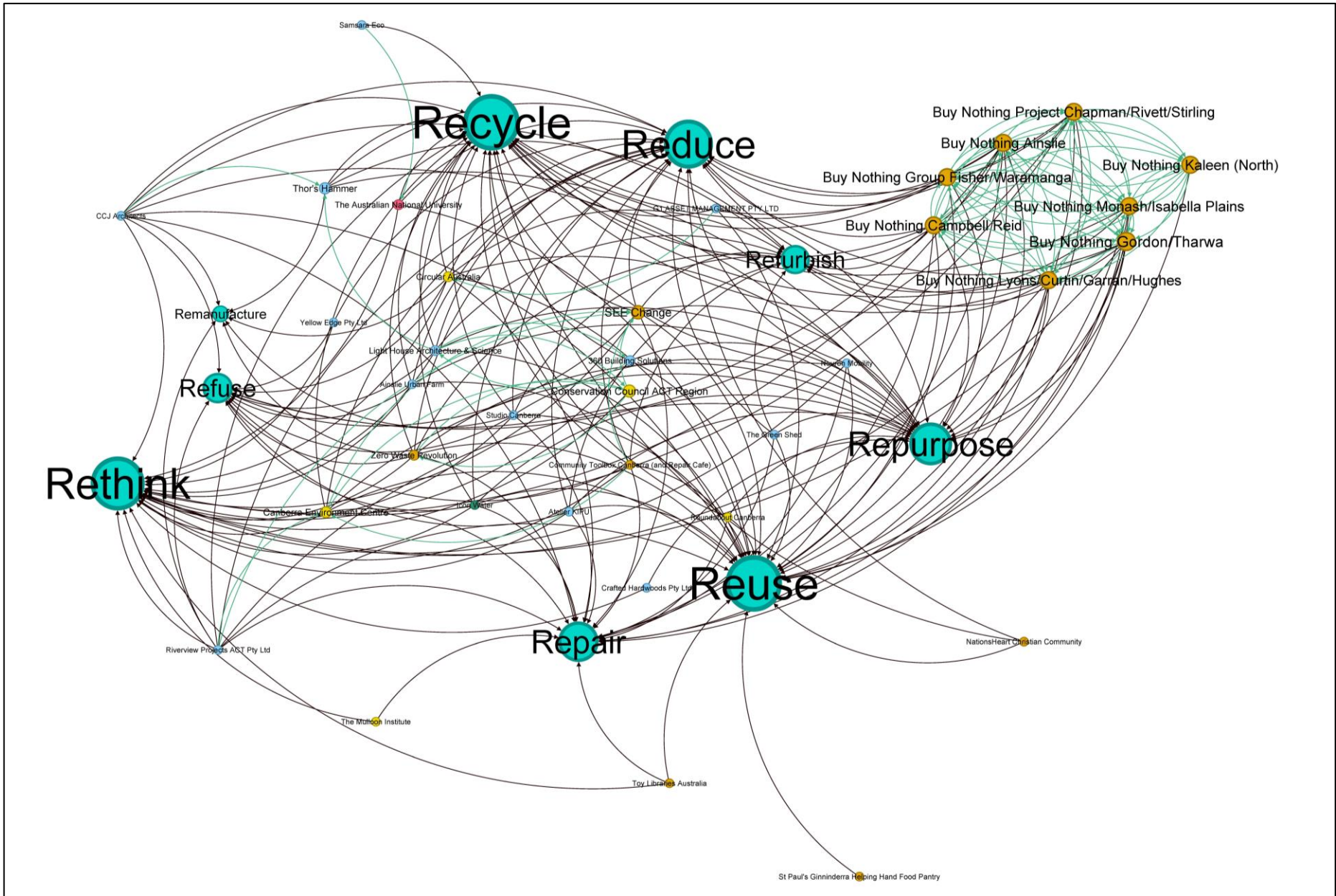


Figure 12 Social Network Diagram Based on the survey

## 5. Mapping the CE ecosystem for the ACT

The culmination of desktop and survey results been combined for the mapping of the CE ecosystem in the ACT region, as shown in Figure 13. The data from both datasets complement each other as there are a greater number of organisations included in the desktop research whereas the respondents in the community insight survey selected multiple R-strategies involved in their operations. In addition, the capture and identification of the affiliation network was an effective approach to further expand the ecosystem.

The ecosystem contains a total of 130 nodes (121 organisations and nine R strategies) and 353 ties (including both selections of R strategies and the affiliations among the organisations). The black lines (ties) indicate survey and desktop results with the affiliation ties represented in green. The size of the nodes reflects the number of incoming ties – larger nodes have higher number of incoming ties. For example, based on node size, we can see that Remanufacture, Refurbish and Refuse strategies are the least selected R strategies (with eight, 16 and 17 ties respectively) while Recycle and Reuse are highly selected and well represented in the CE ecosystem. The ecosystem does show that all nine strategies are represented in the ACT. These results show where greater effort is required to further build the ACT ecosystem and contributions to the 9R strategies.

The node colour is based on the types of the organisation, or R strategy, based on the following key:



Interpretation from this ecosystem is that traditional strategies such as Recycle, with 38 incoming ties, are well represented in the ACT. However, higher order strategies such as Rethink (36 incoming ties), Reuse (38 incoming ties) and Reduce (32 incoming ties), also have good representation, as indicated by the number of incoming ties. This is very promising as sometimes these higher order strategies can be more challenging to implement. Other strategies such as Repair and Repurpose (25 and 27 incoming ties respectively) also show good representation in the ACT. The ecosystem diagram also shows good representation from a variety of organisation types as shown by node colour.



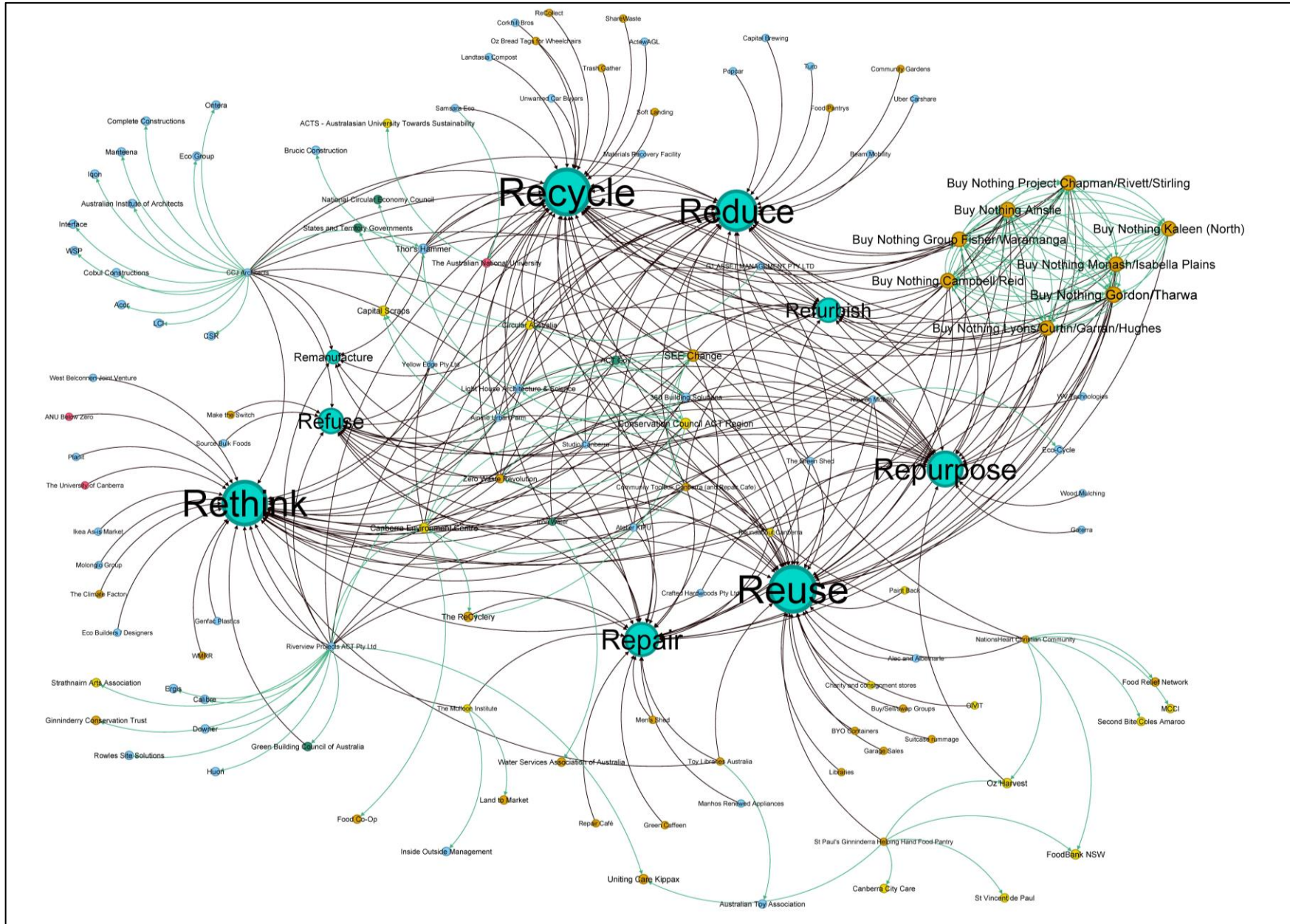


Figure 13 Comprehensive Social Network Diagram of the CE Ecosystem in the ACT, including both Desktop and Survey results

## 6. Conclusion – limitations and recommendations

This project mapped organisations from across the ACT using both desktop and online survey methods. The results show there are organisations actively engaging with the CE and applying strategies from each of the 9R's framework. While the results reflect a small sample size it shows there is good activity across the 9R framework within the ACT ecosystem.

Some of the limitations of this report and research are:

- The desktop research assigned organisations into one category of the 9R's based on a best assessment of the most likely fit. Organisations were not contacted to confirm the 9R's category they were best aligned with.
- The online survey allowed organisations to select multiple CE categories. Similar to the earlier point, survey responses were not evaluated regarding accuracy for selecting the correct R strategy or strategies.
- We received lower than expected number of responses to the community online survey.
- Our focus was the mapping of organisations to show the CE ecosystem. One gap is the connection between companies and the focus areas identified in the ACT CE Strategy. For example, we are unable to comment on the intersection of organisations with food and organics compared to the built environment.
- The online survey allowed organisations to select more than one R. This resulted in participants selecting multiple and various combinations of R's. The outcome was an ecosystem network diagram with high density (many ties) which made mapping (graphing) challenging. This suggests that most respondents understand their activity as being across multiple R's which may or may not be the case. It is possible participants were confused over which category to select, resulting in most respondents selecting more than one option when one would suffice. Future work might simplify the communication of the 9R's into either the three or four areas for the purpose of future mapping exercises or alternatively, request participants select the single R strategy they are most aligned with.

There are a several recommendations arising from this project:

### 9. Annual ACT CE Awards

It is important that organisations have an opportunity to showcase their business activities and to be recognised by their peers and community as best practice examples for the CE in the ACT region. Annual awards are a successful mechanism for profiling organisations and encouraging engagement in the CE within the business, research, community and not for profit sectors. Given the range of organisations present in the region, a range of categories may need to be considered, for example, by organisation type (Community group, small business, large business) or by R-strategy. The winners of these awards could be profiled with a case study, as described in recommendation two.

### 10. Publish Organisation Case Studies

Case studies are an effective method for profiling organisations and making CE 'real' for other individuals and organisations. They showcase engagement in R-strategies, how changes might have been made to engage in new business models or strategies that enable a circular economy. The ACT government currently has a number of existing CE organisation case studies and it is recommended that this portfolio is expanded with the publication of new case studies from organisation identified in the CE ecosystem.

### 11. Education Campaign to Communicate CE Strategies

This recommendation had the highest level of support from survey responses. While the definition of CE was well understood by survey respondents, this was a small sample size. The concept of the CE is often confused with recycling, therefore ongoing education for organisations across industry, not for profit and community groups is highly beneficial at both communicating what the CE is and how it can be realized. Education also supports the vision for Canberra to become a circular city.

One target might be education to consumers regarding the impact of Refuse strategies for single use packaging, takeaway containers and how this might be achieved. Education targeted at businesses might include the quantification of benefits achieved by engaging in new business models, and the impacts of rethink, reducing resource consumption or increased adoption of recycling.

An education campaign might also assist in making the connection between net zero goals and the embodied carbon stored in products and materials. A net zero emissions goal cannot be achieved with a focus on energy alone as it also requires engaging in the circular economy.

## **12. Networking Opportunities**

Networks are an essential ingredient for developing a CE ecosystem. They support knowledge transfer, skills sharing and open up opportunities for collaboration. A total of 83% of survey respondents identified partnerships as important (see section 4.2.6).

The network of Buy Nothing community groups is closely connected as shown by the affiliation results. These groups indicated a desire for greater connection with local businesses. These groups are also very active in the higher order CE strategies of Refuse, Rethink and Reduce and support action that reduced resource consumption and the generation of waste.

Moreover, online survey responses strongly suggested improved partnerships between businesses in the construction and demolition sector (builders, suppliers, trades and manufacturers) would be beneficial to reducing waste. There is a list of five organisations that noted this opportunity (Atelier KIPU, Studio Canberra, Light House Architecture & Science, 360 Building Solutions and CCJ Architects).

## **13. Develop a CE Business/Organisation Directory**

The results of this report are a starting point for an CE organisation directory. This could be searchable by R, so the list of companies engaging in, for example, refurbish or repair, can be identified. The publication of a directory may support future collaboration between organisations.

While out of scope for this report, future work might connect organisation engagement in CE strategies with the ACT Strategy focus areas of; food and organics, built environment, consumer goods and problematic waste streams. This is essential to understand gaps and challenges in material focus areas to deliver on the ACT CE strategy and action plan to 2030.

## **14. Annual Survey to Update Directory**

With the publication of a business organisation directory, it is recommended that this is updated each year through a survey. This overcomes one of the limitations of this research which was the lower than expected responses to the survey. Annually updating the CE ecosystem will be useful to demonstrate growth or decline in representation across each of the 9R's. This will provide evidence to support future initiatives that may target a single R strategy.

## **15. Support and Promote CE strategies at Community Events**

The strong representation by the community groups 'Buy Nothing' has good alignment with the higher order strategies, Refuse, Rethink and Reduce. Engaging and supporting these groups provides a direct link to households and consumers to activate these higher order strategies.

## **16. Grant funding to stimulate investment in CE Ecosystem**

Grants are a useful initiative to support engagement and investment in new products, market development, new business models or community efforts in the circular economy. Grant funding was the second highest response identified in the online survey which demonstrates strong support for this initiative from the ACT Government. Grants may come in many forms, for example, grants may require research-industry collaboration, a 50% matching contribution or a minimum project value or term. They can target community groups, charities, research institutions or businesses. Grants might be offered for developing a feasibility study, product design or pilot of circular economy business models that encourage smarter product use.

The results from the 35 online survey respondents showed Remanufacture, Refuse and Refurbish were selected the least. This suggests smarter product use and manufacturing would be a valuable focus for grant funding efforts to increase engagement in circularity and extend the life of products in the economy. In addition, the specific focus of C&D CE and waste reduction strategies, as noted in recommendation four, could be an ideal opportunity for a grant round to stimulate projects addressing this focus area.



# Appendices

# **Appendix A**

**CE Ecosystem Mapping Survey**



# Circular Economy Ecosystem Mapping

This survey is aimed at better understanding the circular economy landscape of the ACT region. The information collected will contribute to the 2023 ACT State of Environment Report released by the Office of the Commissioner for Sustainability and the Environment. This will be displayed in an ecosystem map highlighting the depth and breadth of action and awareness related to the circular economy within ACT. Information collected from this survey will contribute to this project.

If you have any questions regarding this survey, please contact [envcomm@act.gov.au](mailto:envcomm@act.gov.au).

\* Required

1. What is the name of your organisation/group? \*

2. How many employees/members does your organisation/group currently have? \*

0-4

5-19

20-99

100-200

200+

3. Does your organisation operate within the ACT? \*

Yes

No

4. Does your group contribute to a circular economy? \*

Yes

No

5. How would you define the circular economy? \*

6. What does your group do? \*



7. One way to consider the circular economy is in terms of the 9R Framework. Which R strategy does your organisation operate in? (Tick all responses that apply).

\*More information on the 9R Framework can be found here on page 11 -

[https://www.climatechoices.act.gov.au/\\_data/assets/pdf\\_file/0005/2095844/Draft-ACT-Circular-Economy-Strategy.pdf](https://www.climatechoices.act.gov.au/_data/assets/pdf_file/0005/2095844/Draft-ACT-Circular-Economy-Strategy.pdf) – open in new page)

\*

Refuse

Rethink

Reduce

Reuse

Repair

Refurbish

Remanufacture

Repurpose

Recycle

8. What sector best defines your group? \*

- Government
- Business
- Not for profit
- Community group
- Other

9. How many years has your organisation / group been operating? \*

- Less than 1 (one) year
- 1 – 5 years
- More than 5 (five) years

10. Do you have affiliations with other groups or businesses to achieve circular economy goals? \*

- Yes
- No

11. If yes, list who and describe the nature of this affiliation (e.g., do you share material resources; promote each other's activities; collaborate on projects/initiatives etc) for each. \*

12. Would you like to be able to partner with other groups in the local area to advance your group's circular economy goals? \*

Yes

No

13. If yes, then who and for what purpose? \*



14. What assistance can the ACT Government provide you to improve the outcomes for your group? \*

- Connection to other groups and businesses
- Establish a circular economy directory
- Funding/grants
- Education campaign to drive behaviour change for circular products/services
- Run networking events
- Other

15. If you know other organisations that are engaging in the circular economy in the ACT, please forward the survey link to them so they can be included in the ACT circular economy ecosystem.

Please confirm if you intend to forward the link. \*

- Yes
- No

16. If yes, how many organisations will you forward it to? \*

17. We may be in contact to talk to you about your answers. Are you happy for us to contact you? \*

Yes

No

18. Full name \*

19. Best contact number \*

20. Email address \*

---

This content is neither created nor endorsed by Microsoft. The data you submit will be sent to the form owner.

# **Appendix B**

## **Ongoing Engagement Contact Information**

Organisation/Group	Contact Name	Best contact number	Email address
<b>Businesses</b>			
Atelier KIPU	Alanna King	0405565662	Alanna@atelierkipu.com.au
Studio Canberra	Savita Gaonkar	0410655883	Savita@fluxionconsulting.com
Crafted Hardwoods Pty Ltd	Geoffrey Swinbourne	0411220671	geoff@craftedhardwoods.com
Light House Architecture & Science	Jenny Edwards	0424 635 082	jenny@lighthouseam.com.au
360 Building Solutions	Dean Struys	0415493912	dean@360building.com.au
CCJ Architects	Kevin Miller	61703304	kevin@ccj.com.au
Neuron Mobility	Tessa Fraumano	0435820396	tessa@neuron.sg
Thor's Hammer	Thor Diesendorf	0415 487 178	thor.d@thors.com.au
Yellow Edge Pty Ltd	Brooke Anderson	0433909108	brooke.anderson@yellowedge.com.au
The Green Shed	Sandie Parkes	0467830004	sandiegreshed@gmail.com
Buy Nothing Project (chapman rivett stirling)	Robyn McCormack	Not provided	Robynmccormack2016@gmail.com
Samsara Eco	Ellen Burtenshaw-Davies	0479156222	ellen.davies@samsaraeco.com
Riverview Projects ACT Pty Ltd	Jessica Stewart	0421874033	jessica@ginninderry.com
G1 ASSET MANAGEMENT PTY LTD	PAUL PROKIC	0421990575	paul.prokic@g1.com.au
Ainslie Urban Farm	Fiona Buining	0262572582	Info@ainslieurbanfarm.com.au
<b>Community Groups</b>			
Buy Nothing Ainslie	Amy Blain	0432946642	amy.l.blain@gmail.com
Buy Nothing Monash/Isabella Plains, ACT	Tania Shaw	0408296892	taninaus@gmail.com
Buy Nothing Kaleen (North), ACT	Christine Keogh	0410404680	christine@keogh.net.au
Nations Heart Christian Community	Linda Giles	0262531672	office@nationsheart.com.au
Buy Nothing Group Fisher/Waramanga	Shannon	0400550891	Sh@outlook.com. au

Organisation/Group	Contact Name	Best contact number	Email address
Buy Nothing Gordon / Tharwa ACT	Alyssa McIntosh	0402012357	ajmemail66@gmail.com
Zero Waste Revolution	Mia Swainson	0430203668	mia@miaswainson.com.au
Buy Nothing Lyons/Curtin/Garran/Hughes, ACT	Mari Kondo	0415213425	tellurium_mk@yahoo.com.au
St Paul's Ginninderra Helping Hand Food Pantry	Robyn Wall	0438018197	randrwall@bigpond.com
Community Toolbox Canberra (and Repair Cafe)	Rebecca Tregurtha	0411 035 820	rebecca@communitytoolboxcbr.org
<b>Not for profits</b>			
Circular Australia	Lisa McLean	0488068777	lisa@circularaustralia.com.au
Canberra Environment Centre	Zoe McMahon	0477967120	zoe.mcmahon@canberraenvironment.org
Toy Libraries Australia	Debbie Williams	0411037941	debbie@toylibraries.org.au
Roundabout Canberra	Hannah Andrevski	0408968065	Hannah@roundaboutcanberra.org
SEE Change	Paula Mance	0434704222	paulamance@seechange.org.au
Conservation Council ACT Region	Kirsten Duncan	62293200	kirsten.duncan@conservationcouncil.org.au
The Mulloon Institute	Nolani McColl	0492 911 394	nolani@themullooninstitute.org
<b>Government</b>			
Icon Water	Benjamin Bryant	0420 536 556	benjamin.bryant@iconwater.com.au
<b>Higher Education</b>			
The Australian National University	Chalaka Fernando	0444564012	chalaka.fernando@anu.edu.au

# **Appendix C**

**The Nine R's of CE raw results per entity type**



Appendix C The Nine R's of CE raw results per entity type



# Appendix D

## Question 6 Survey Responses

Table D1 *Businesses that responded to the survey*

<b>Business</b>	<b>Comment provided to 'What does your group do?'</b>
Atelier KIPU	We are architects with a focus on retrofit, adaptive reuse, heritage, sustainability, and building community connected to place. We practice sufficiency and prioritise outcomes in which there is no new build at all.
Studio Canberra	Not provided
Crafted Hardwoods Pty Ltd	We utilise innovation to take low-value timber resources and turn them into high-grade hardwood products for the construction industry and provide a solution to reduce logging in old growth and native forests.
Light House Architecture & Science	We reuse entire homes as much as possible. For decades now, the Aus housing industry has been strongly pitched the idea that bigger is better and that old houses are a lost cause in terms of efficiency and comfort. Thats not true and we are determined to keep demonstrating that and to shift people's (and hopefully the broader industry's) thinking.
360 Building Solutions	We are a construction company that builds sustainable and energy-efficient homes.
CCJ Architects	Architecture (not sure if this is what the question means) If not - we look into ways we can instigate circular strategies in buildings
Neuron Mobility	Provide rideshare e-scooters services
Thor's Hammer	Timber recycling and making joinery, furniture and building products
Yellow Edge Pty Ltd	Not provided
The Green Shed	We are contracted by the Territory Government to accept and on-sell donated domestic goods at the Resource Management Centres
Buy Nothing Project (chapman rivett stirling)	Gifts items, time, knowledge, reduce landfill and waste especially food
Samsara Eco	Samsara Eco uses enzymes that can attack complex plastics (polymers), reverting them back to their original chemical building blocks (monomers).  This is what makes our technology infinite. By reverting complex polymers into simple monomers, we can make new, virgin-grade plastics without ever needing fossil fuels again. A truly circular process.
Riverview Projects ACT Pty Ltd	Gifts items, time, knowledge, reduce landfill and waste especially food
G1 ASSET MANAGEMENT PTY LTD	DECOMMISSIONING OF IT EQUIPMENT
Ainslie Urban Farm	Grow soil grown microgreens in recycled plastic trays that are collected, washed and re used. The soil is composted at my property then used to grow vegetables.

Table D2 Community groups that responded to the survey

Community Groups	Comment provided to 'What does your group do?'
Buy Nothing Ainslie	We are a hyperlocal gifting community group that encourages members to ask for items they need or want over buying new. Our Buy Nothing group also has a Lending Library of items that members loan out - often with occasional use item. We shall have Travelling Suitcases of adult and children's clothes that visit community members and clothing that get passed onto families in need and organisations working with disadvantaged people.
Buy Nothing Campbell Reid	Only provided link: <a href="https://buynothingproject.org/the-fine-print-2/">https://buynothingproject.org/the-fine-print-2/</a>
Buy Nothing Monash/Isabella Plains, ACT	We provide a hyperlocal gifting economy where members can offer up surplus items for their neighbours to rehome and reuse. The focus is on staying within a very close community to form connections, possibly friendships and keep items out of landfill.
Buy Nothing Kaleen (North), ACT	Our group is a local community group that helps keep products out of landfill, by helping people pass on items that they no longer need, or find an item that they need without needing to buy a new one.
NationsHeart Christian Community	We are a community of people of all ages, backgrounds, and experiences based in Belconnen ACT, who are seeking to follow the teachings and examples of Jesus. We run a FoodHut (Food Pantry) where people can purchase food and other goods at an affordable price or for free. We provide a community meal every week made from food donated by Oz Harvest and Second Bite. We give away second hand items. Setting up a community garden
Buy Nothing Group Fisher/Waramanga	Regift items and also make requests for items from others, as opposed to buying new.
Buy Nothing Gordon / Tharwa ACT	Our group fosters the BNP ethos of encouraging the giving and sharing of goods and services among neighbours. We encourage the reuse, repurposing and repair of goods in our local households to reduce waste and to create relationships between neighbours. We are a cashless group (everything is free) and encourage finding a new purpose for an item before it goes to waste.
Zero Waste Revolution	We educate the community and promote zero waste policies with government.
Buy Nothing Lyons/Curtin/Garran/Hughes, ACT	We are a buy nothing group that helps people to give and receive items (including food), services, and knowledge to build our local community.
St Paul's Ginninderra Helping Hand Food Pantry	Run entirely by volunteers we provide low cost and no cost food to people in our local community who are finding it difficult to make ends meet. Typically, we provide food into 50 households in a single 3.5-hour session each week.
Buy Nothing ACT Gordon/Tharwa	Recycle and goodwill
Community Toolbox Canberra (and Repair Cafe)	We are a library of things, collecting unwanted items from the community and putting them into a resource for everyone to use, so that they can reduce their consumption of new items and increase the intensity of use of existing resources. We also run a monthly repair cafe and some workshops. Library of things (90% of inventory sourced from households)

**Table D3** *Not for profit organisations that responded to the survey*

<b>Not for profit organisation</b>	<b>Comment provided to 'What does your group do?'</b>
Circular Australia	Peak body for CE- NFP
Canberra Environment Centre	The Canberra Environment Centre runs educational workshops on sustainability, rethinking our everyday needs to incorporate a more eco-friendly approach and running regular repair cafes to reduce waste. As well as an operational Bicycle repair shop called the ReCyclery.
Toy Libraries Australia	Lending of toys, accepting toy donations, supporting purchasing from quality toy manufacturers, repairing toys
Roundabout Canberra	Roundabout Canberra rehomes pre-loved baby and children's goods by providing them to local families in need. In addition to rehoming, we recycle, repurpose and redistribute goods to prevent them from ending up in landfill, where we can't rehome them.
SEE-Change	We are a grassroots environmental charity with a mission for a faire and more sustainable Canberra. We work through volunteer coordinators to encourage individuals, families and communities to change their behaviour to reduce their impact on the environment. We do this through community education, events and advocacy, which includes repair cafes, the community toolbox, community stalls, social media campaigns and the Canberra Electric Bike Library.
Conservation Council ACT Region	Environmental advocacy and public engagement
The Mulloon Institute	Our Institute is a Not for profit science-based regenerative agriculture organisation. We also work commercially with clients both large and small to assist them repair damaged creeks, rivers and landscapes with a focus on how water moves through the landscape.

**Table D4** *Government and higher education organisations that responded to the survey*

<b>Government and Higher Education Organisation</b>	<b>Comment provided to 'What does your group do?'</b>
Icon Water	Reuse and upcycle at scale
The Australian National University	The Environmental Management Unit in the Facilities & Services Division is responsible for coordinating the CE initiatives, initiating behavioural changes towards good circularity practices, student engagement and coordinating with the in-house divisions. The Env Mgt unit is also responsible for data collection and monitoring The University operational Unit is responsible for on-campus waste management and CE initiatives via the Uni Waste Management contractor.



[ghd.com](http://ghd.com)

→ **The Power of Commitment**