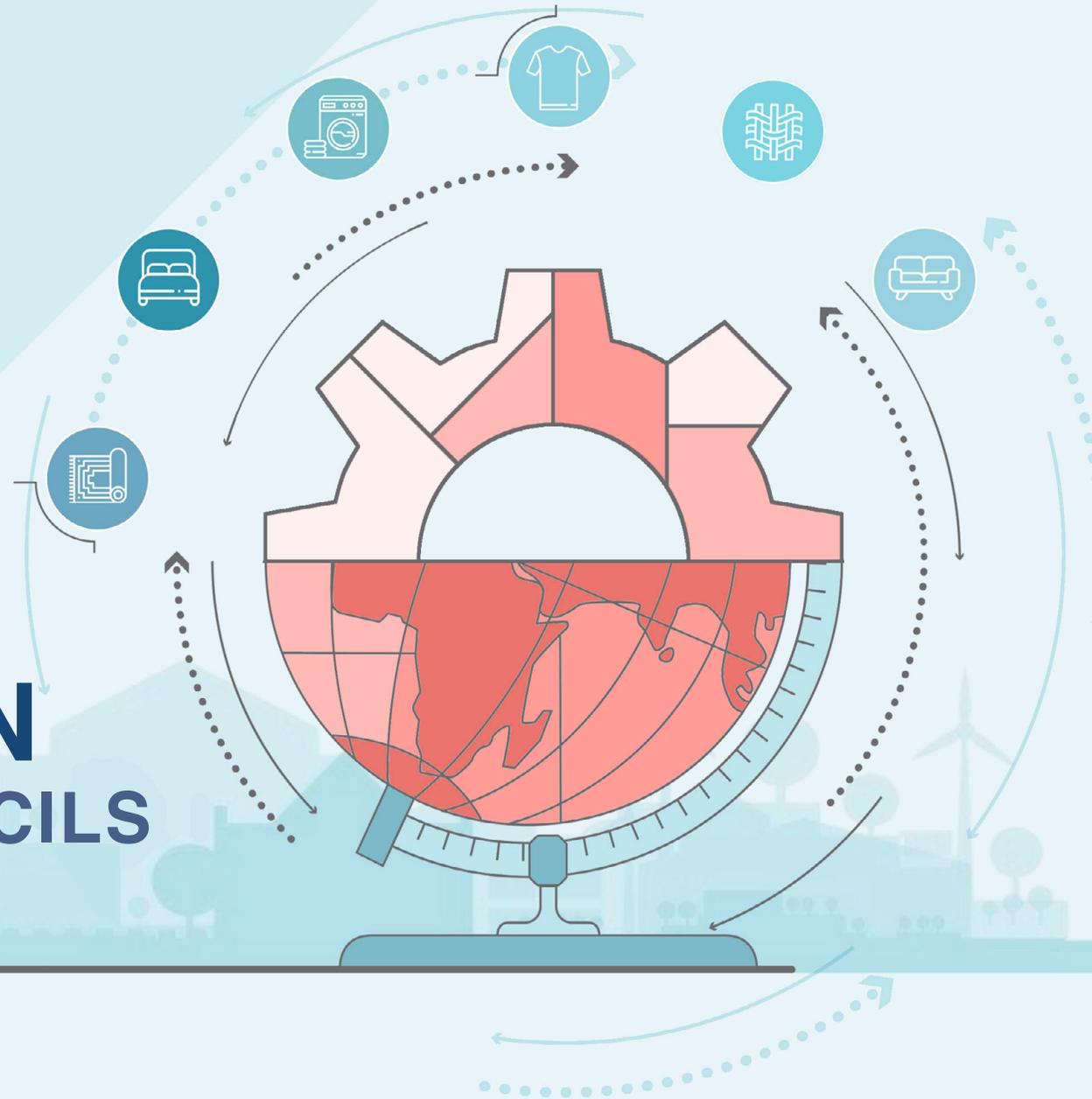


TEXTILE ACTION PLAN FOR SYDNEY COUNCILS

SEPTEMBER 2021



ACKNOWLEDGEMENTS

Many council staff and industry representatives contributed to the Plan in addition to NSROC, WSROC and SSROC staff. We would also like to acknowledge the support and insights of, the NSW Environment Protection Authority, Charitable Recycling Australia, King Cotton, Southern Cross Recycling Group, St Vincent de Paul's Society, Soft Landings, Australian Bedding Stewardship Council, Anne Prince Consulting, Blue Environment, Veolia, Garage Sale Trail, RecycleSmart, WornUp, Circular Centre, Upparel, Rednose and Savers.



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This project is a NSW Environment Protection Authority, Waste Less Recycle More initiative funded from the waste levy. Prepared by the Australasian Circular Textile Association (ACTA) for Southern Sydney Regional Organisation of Councils (SSROC), Western Sydney Regional Organisation of Councils (WSROC) and Northern Sydney Regional Organisation of Councils (NSROC).



EXECUTIVE SUMMARY

Globally, it is estimated that the textiles industry (across production, manufacture, use and disposal) generates around 1.2 billion tonnes of CO₂e emissions every year¹ – or 6.7% of the global total.²

One of the important ways that councils can reduce carbon emissions is by supporting a circular textile economy. This includes taking actions to increase recovery and progress sustainable procurement outcomes by supporting local jobs in social enterprises and the reuse economy.

The Australasian Circular Textiles Association (ACTA) worked with Southern Sydney Regional Organisation of councils (SSROC), Western Sydney Regional Organisation of councils (WSROC) and Northern Sydney Regional Organisation of councils (NSROC) and their member councils to develop this Textile Action Plan (referred to in this document as 'the Plan'). This included a review of available textiles data

relevant to Sydney councils (called Regional Textile Data in Sydney), industry interviews and a series of workshops with Sydney councils on their priorities for the Plan.

The data analysis showed that residents and businesses in the Sydney region generate an estimated 208,906t of unwanted textiles every year, which is approximately two-thirds of textiles discarded in NSW.³ 60,810t of clothing is estimated to be donated annually to charities, of this 17% (10,287t) is reused, whilst 36% and 33% respectively are recycled domestically, and reused offshore (totalling 42,001).⁴

Textiles in Sydney are disposed of primarily via the kerbside collection system, commercial landfill disposal and clothing collection and donation.

The data-driven analysis and feedback from stakeholders was condensed into the following reasons for local councils to make change:

- 1. Better management of textile waste can reduce waste service costs for councils and residents.**
- 2. A dependence on offshore recovery presents a risk to local councils.**
- 3. Government procurement in textiles can be a key driver in transitioning to a circular textiles economy.**
- 4. Textile recovery can contribute to council climate action plans and help create local jobs.**

EXECUTIVE SUMMARY CONT.

This is the first cohesive metropolitan plan to address textile waste in Australia, demonstrating how local governments can stimulate our circular economy for textiles through recovery programs, procurement initiatives, advocacy support and industry collaboration.

The focus areas include addressing current textile data limitations in council waste audits, increasing the collection and recovery of source separated textiles, facilitating community education on responsible donation and disposal of textiles and best-practice internal council operations for purchasing textiles.

The Plan acknowledges that state and federal government agencies, in partnership with industry, are best placed to address the major gaps in onshore textiles recovery infrastructure and product stewardship schemes that are needed to transition to a circular textiles economy.

However, Sydney councils can also play a proactive part in a national approach to transitioning residents and businesses to new circular systems of textile production through:

- o Aligned and informed council advocacy to state and federal governments to support investment in onshore facilities to sort, process, repair and re-manufacture recovered textiles, the establishment of product stewardship schemes and introducing Right to Repair legislation.
- o Working with textile recyclers, charities, and relevant government agencies to expand source separated clothing collection systems and diversify end markets.
- o Aligning with national targets for textiles and collaborating with other sectors on textiles recovery through forums such as the emerging National Textiles Network which the Sydney ROCs helped the NSW EPA and ACTA develop.

Recommendations in the Plan were prioritised according to key areas of textile impact (i.e. where and in what quantity they are discarded), **interests** (i.e. motivations for change) **and councils sphere of influence** (i.e. where councils have an important role in shaping the outcome).

The Plan references the targets of the National Waste Action Plan, and sets out to:

- 1. Reduce textile waste discarded in Sydney.**
- 2. Work toward increasing textile recovery from residents and council operations to 50% by 2026.**
- 3. Significantly increase the use of recycled content in textiles procured by councils.**

An overview of the key actions for Sydney's local councils (to 2026) are described in the diagram below.

IDEATE



Complete and publish the **Sydney Textiles Plan** with councils' endorsements of actions and time lines.

Establish the **Clothing Collection Market Steering Group** to overcome barriers to increase the amount of source separated clothing collection and promote the diversification of recovery markets.

Establish regional composition for textiles discarded by residents through amending existing audit schedules with updated categorisations and **develop reporting indicators for textiles** to measure progress

Explore alternative methods of **textile collection** to establish a cost-effective service mix for re-useable and un-useable textile products.



PLAN

IMPLEMENT



Implement changes to individual council building design guidelines, and/or Development Control Plans to **prefer the use of stewarded carpet products or carpet tiles** in commercial spaces, and council properties; and to allow space in new developments for textiles collection.

Set targets for textiles procured by councils (e.g. minimum recycled content or natural fibres, recyclable at end of life) for uniforms, carpets, signage, bags, shade cloth etc.

Assess progress toward **2026 targets** using updated data collection, and refocus attention in a 2026-2030 plan to achieve National Waste Targets.

Share knowledge and promote uptake of textile initiatives with other councils in NSW and Australia.



REVIEW

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BACKGROUND

In 2020, the ability to describe textiles flows in Australia was redefined by ACTA's Thread Count report commissioned by the NSW Environment Protection Authority (EPA) and Charitable Recycling Australia's Measuring the Impact of the Charitable Reuse and Recycling Sector, which collectively shed new light on the true extent of textiles, what they are comprised of and the opportunity of a circular textile economy in Australia.

This five-year Plan takes the next step.

Against the backdrop of our Climate Emergency⁵ and the targets of the National Waste Policy Action Plan this roadmap will lead Sydney Councils to:

- 1. Support industry activity to reduce total textile waste generation.**
- 2. Increase resource recovery for all textiles to 50% by 2026.**
- 3. Significantly increase the use of recycled content in textiles procured by councils.**

SSROC, NSROC and WSROC and their combined 26 councils will be encouraged to endorse the Plan and include the suggested actions and targets

in their work plans and relevant strategies where feasible. The Plan will help inform the development of SSROC, NSROC and WSROC regional waste avoidance and resource recovery strategies for the 2022-2026 period.

SUPPORTING DOCUMENTS

The Plan is supported by the following documents – available upon request from SSROC, NSROC or WSROC:

- 1. *Regional Textile Data in Sydney*** – A regional summary of textile disposal patterns in each ROC.
- 2. *NSW Council Textile Waste Calculator*** (Excel) – This tool enables any Council in NSW to use existing data to generate a high-level description of textile waste in their local area based on blended and average data, resident population and local GDP.

OUR APPROACH

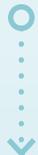
The Plan sets out to establish common objectives and a collaborative approach for local councils to address textile sustainability in the Sydney region.

We reviewed...



All available textile waste data from local, state and federal institutions to inform a detailed explanation of textile waste in Sydney's local councils.

This analysis provided a robust data basis to approach the Plan, identifying key focus areas, and a means of prioritising efforts on textile recovery.



To understand where we are now.

We interviewed...



And surveyed 20 local council staff across Sydney to understand:

Why textiles are a material of concern, and how we can articulate the need for change?

How councils currently manage textile recovery.



To articulate why we need change.

We approached...



Local and international players in the textile supply chain to identify key barriers and opportunities to deliver a circular textile economy.

A focus was on how governments can play a role to affect business-as-usual condition and support innovation.



To understand how we can get there.

We refined...



The targets and strategy with key stakeholders and work shopping with regional council groups to test their ambition, scope and actions.

The Plan provides all Sydney Councils with a roadmap for improving textile management in Sydney, focused on their areas of direct control and influence.



To deliver a plan for action.

01 WHERE ARE WE NOW?

A GLOBAL PERSPECTIVE

Since 2000, the production of apparel has doubled internationally (in product units)⁶ whilst raw fibre production (natural and synthetic) has increased by around 45% in the past decade.⁷ Across production, manufacture, use and disposal, that accounts for 1.2 billion tonnes of CO₂e emissions every year,⁸ or 6.7% of the global total.⁹

At the product level, Figure 1 describes the lifecycle emissions of a pair of jeans, where:

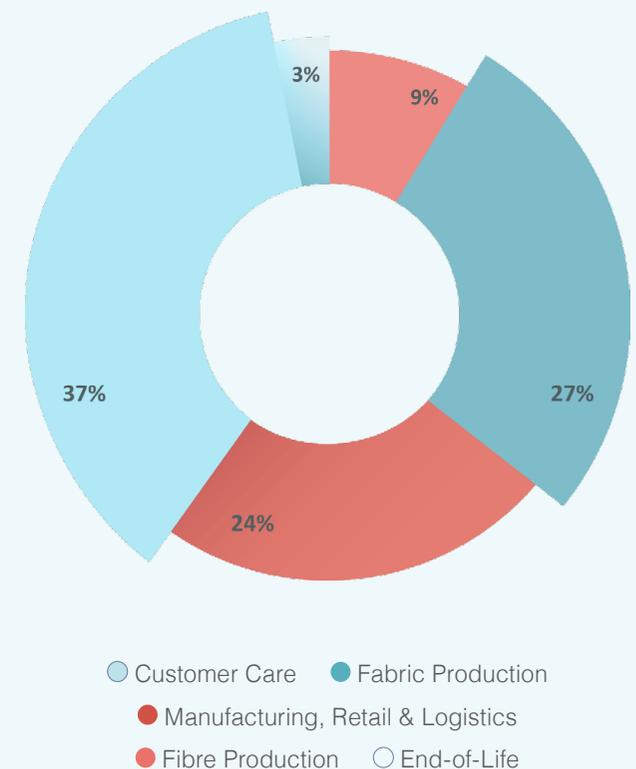
- o **Fibre production**, manufacture and packaging represent the 'embodied energy' of a product (60% of the total) which can be addressed through reuse, introducing recycled content, better growing practices and renewable energies and transport efficiency.
- o **Customer Care** represents the 'active' impacts of washing and drying during use (37% of total) that are often overlooked and can be addressed through improved design, repair, behavioral change and grid decarbonisation.¹⁰

- o **End of life** (3%) represents emissions from the decomposition of cotton (organic material) in landfill and might be reduced through diversion for recycling or where required landfill gas capture/energy recovery.

Emissions profiles are shown to vary between garments, Australian studies indicating that use stage emissions can be as high as 56% of life cycle total for a cotton t-shirt.¹¹

In the case of 'passive' textile products without substantial usage stage emissions (i.e. furnishings, banners, carpets), the focus for emissions reductions should be on avoidance, life cycle extension and addressing embodied energy.

Figure 1 – Carbon impact of Levi's jeans.¹²



AN AUSTRALIAN PERSPECTIVE

Data from the Australian Bureau of Statistics shows annual textile consumption in Australia exceeded 1,000,000t per annum every year since 2015, of which NSW contributes around 350,000t.¹³

Figure 2 gives a simple breakdown of all textiles consumed by product category. Here we can see that clothing makes up the single largest component of imported textiles (37%), followed by furnishings, bedding (17%), raw textiles (17%) and carpets (10%).

These items form the major components of the kerbside and commercial and industrial ('C&I') waste streams.

There is substantial variation in fabric and fibre type across product categories, but Figure 3 provides an indication of fibre composition for the purpose of infrastructure planning. This variation loosely reflects trends in international fibre products, which have trended toward a majority production of synthetic fibres in the past decade.¹⁴

It is noted here that import classifications use '85% or greater' as a common description for items. These were considered 'synthetic' or 'natural' in each case and is a limitation in the data. As a result, we suspect that the quantity of blended textiles has been underestimated.

Figure 2 – Textile imports to Australia by product type.
(2015-2019 aggregated)

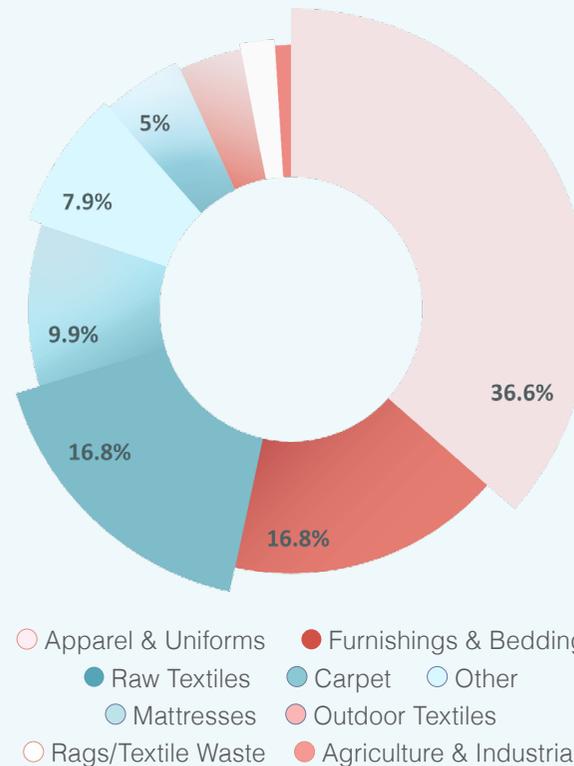
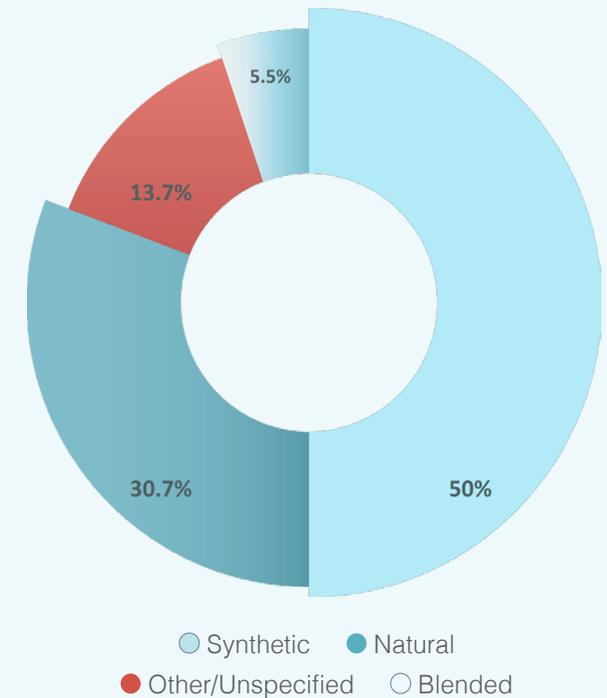


Figure 3 – Textile imports to Australia by fibre type.
(2015-2019 aggregated)



TEXTILE WASTE ACROSS SYDNEY

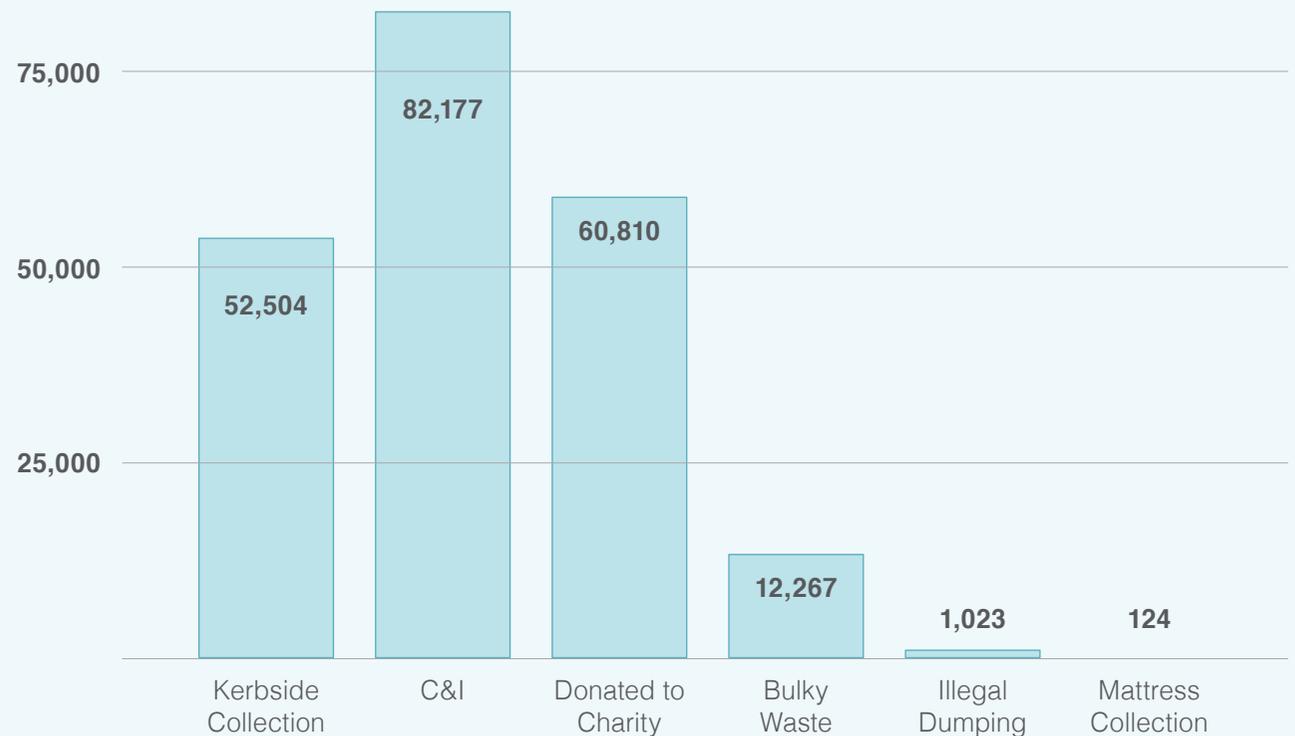
Residents and businesses in the Sydney region discard 208,906t of unwanted textiles every year, this is approximately two-thirds of textiles discarded in NSW.¹⁵

Figure 4 describes (by pathway) the total textiles discarded by all businesses and residents in Sydney.

By regions, there are:

- 102,931t/yr of textile waste discarded annually in SSROC.
- 77,243t/yr of textile waste discarded annually in WSROC.
- 28,732t/yr of textile waste discarded annually in NSROC.

Figure 4 – Textiles discarded by pathway in Sydney (tonnes).



KERBSIDE TEXTILE WASTE

52,504t of textiles are discarded via kerbside services (red-lid and yellow-lid) in Sydney annually. Assuming an average disposal cost of \$275/t, the textile component of kerbside waste services costs Sydney councils in excess of \$14 million annually.

Whilst this analysis suggests 5.05% of Sydney's kerbside residual waste stream is textiles, auditing in certain councils has shown textiles to comprise as much as 6% (City of Sydney),¹⁶ and even 11% (Lane Cove Council).¹⁷ Based on NSW data, there are 0.46kg of textiles in every Sydney resident's weekly kerbside red-lid bin.¹⁸

It is also noted that textiles is one of the top four contaminants of kerbside recycling services, comprising between 1.2% (SSROC) and 1.7% (WSROC) of total throughput.

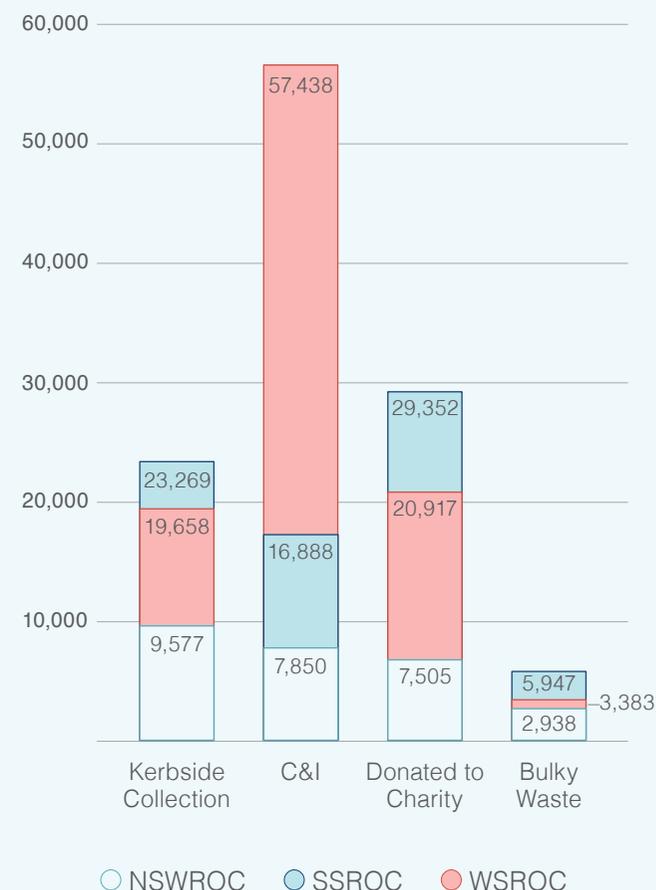
Textiles are primarily tracked under the audit category 'CO²' of the NSW Kerbside Audit Guidelines¹⁹ but may be recorded under as many as six other categories, leading to some uncertainty in kerbside compositional auditing.

There is currently very low confidence in composition data for textiles in the kerbside stream, therefore improving this is an area of focus for Sydney councils.

Based on textile importation data and anecdotal evidence from auditing teams, ACTA suggests that the textile fraction of kerbside services is likely to be comprised of primarily:

- Soiled, worn, or ragged clothing unfit for reuse (~30%).
- Curtains, bedding, and soft furnishings (~30%).
- Clothing and bedding reusable at the time of disposal (up to ~30%).
- An indeterminable residual fraction of carpet, accessories, outdoor textiles etc.

Figure 5 – Textiles discarded by pathway (tonnes).*



*Textiles in illegal dumping and mattress collection are omitted.

CHARITABLE DONATIONS

Clothing donations in Sydney total 60,810t annually, exceeding textiles collected via kerbside services.

Charities and textile recyclers in Sydney receive large volumes of unwanted textiles (either through in-store donations, clothing bins, collection events, or retailers); they play a valuable and critical role in the recovery of textiles as well as providing jobs and social services to vulnerable community members.

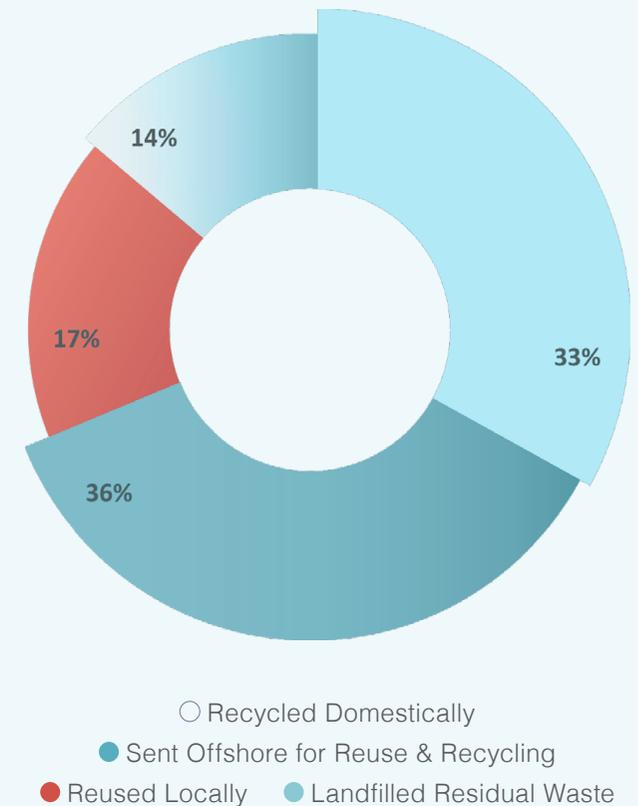
Charitable Recycling Australia estimates that an average of 12.1kg of clothing is donated per person in Australia (not including other textiles donated such as manchester and accessories), which when pro-rated by the populations of SSROC, NSROC and WSROC amounts to 60,810t annually.²⁰

In this system (Figure 6), accepted clothing is either reused locally (17%), recycled domestically (36%), sent offshore for reuse and recycling (33%) and residuals are landfilled (14%). It is understood that the scope of this work considered only the end-fates for clothing donated to charity operators and may not be reflective of end markets utilised by commercial clothing donation services.

The amount reused or resold in Australia varies according to the quality of donations and local capacity to sort through the volumes received, access to retail space and the local operating costs.

Promoting quality in donated items to residents was also identified as a means of improving onshore reuse of textiles.

Figure 6 – Clothing collection recycling pathways.*



*Collection data from commercial textiles recyclers not reflected.

COMMERCIAL & INDUSTRIAL TEXTILE WASTE

Textiles in the Commercial and Industrial (C&I) waste stream totals 82,177t annually (5.81% of Sydney's C&I waste), this slightly more than total textiles discarded through both the kerbside stream and donation to charities.

CARPET comprises more than 50% of textiles in the C&I stream. There is one tonne of carpet for every other tonne of textile in C&I waste in Sydney. However, the composition of carpet does change by region, making up 52% in NSROC, 60% in SSROC, and 41% in WSROC, where perhaps the textile manufacturing and retail sectors contribute a greater proportion of C&I textile waste.

There is little detailed composition information available for the remaining 'textile' fraction of C&I textile waste.

OTHER TEXTILE WASTE CATEGORIES

Construction and demolition (C&D) textiles have not been included in this analysis due to a lack of confidence in this data. The only available composition data (from 2004) indicated textiles comprised 1.3% of the C&D stream in NSW, which

at current rates of C&D waste generation (estimated to be 13 million tonnes p.a. in NSW)²¹ would equate to ~169,000t. There is low confidence in this data.

MATTRESSES contain less than 5% textile by weight (around 1kg per unit) and whilst Sydney councils have high rates of mattress recycling, the small textile component remains difficult to recycle.

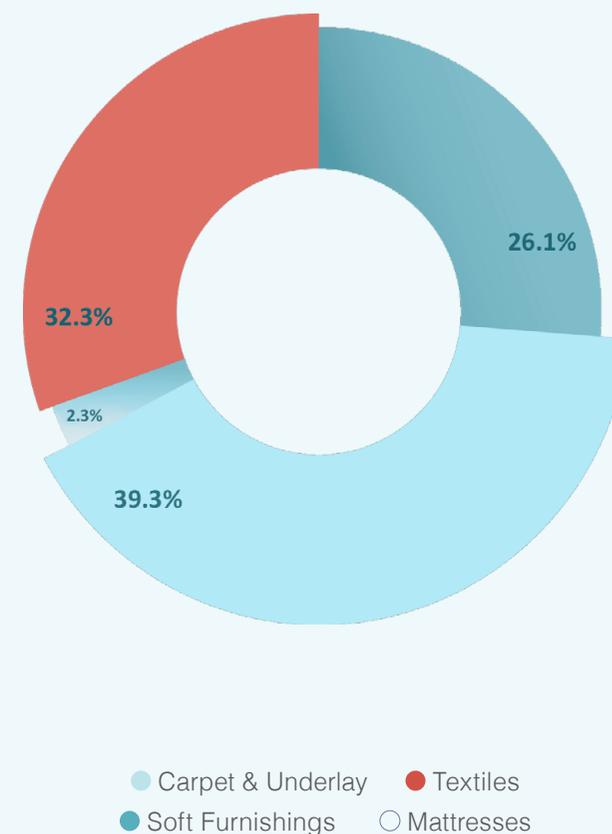
ILLEGAL DUMPING also contains textiles such as mattresses and carpets but there is too little data to assess this category.

DROP-OFF & BULKY WASTE

12,267t of textiles are collected in bulky waste and drop-off facilities across Sydney each year (around 10% of total all bulky waste). Figure 7 gives a breakdown of textiles in Sydney's bulky waste stream by product type. In this, carpet and underlay are the largest components of textiles in bulky waste, ranging between 31% (SSROC), 37.9% (WSROC) and 51.4% (NSROC).

Beyond carpets, soft furnishings (pillows, curtains and upholstery) and a general 'textiles' category contribute to bulky waste collections.

Figure 7 – Product composition breakdown of textiles in Sydney bulky waste.



DATA LIMITATIONS & IMPROVEMENTS

Table 1 – Textile Waste data sources & recommendations

| COMPONENT | CONFIDENCE | DATA SOURCES IN THIS ANALYSIS | AREAS FOR DATA IMPROVEMENT |
|----------------------------------|------------|--|--|
| Kerbside Collection | Mid | <p>NSW EPA WARR reporting and regional composition data:</p> <ul style="list-style-type: none"> • NSROC – Willoughby Council Kerbside Audit (2019). • WSROC – Western Sydney Regional Waste Data Assessment Report (2018). • SSROC – SSROC Kerbside Regional Waste Audit (2019). | Updating audit scope to identifying textile composition by; wearable clothing, unwearable clothing, carpets and rags or soiled textiles. Consideration may also be given to fibre types (natural/synthetic/blended). |
| Charitable Donation | High | <p>Textile donations have been estimated by applying national rates of clothing donation (12.1kg/pp/yr)²² to the Sydney population. Collected items have the following fates, reused locally (17%), recycled domestically (36%), sent offshore for reuse and recycling (33%) and residuals are landfilled (14%). <i>This breakdown is representative of charity organisations only and may not be reflective of commercial clothing donation services.</i></p> | With a vision for increasing the throughput of the clothing collection network, the fibre type and quality of donated items should be assessed to build the business case for recycling technologies. |
| C&I Waste | Low | <p>The NSW EPA Disposal Based Audit (2015) provides regional compositions used in this analysis and identifies total C&I Waste in the Sydney Metropolitan Area (SMA).</p> <p>Regional GDP was used to apportion total textile waste between areas. This apportionment is considered crude as it fails to distinguish between the types of industry across the regions. SSROC's large professional services sector is likely skewing the allocation across regions.</p> | <p>Given the scale of C&I waste, identifying composition by:</p> <ul style="list-style-type: none"> • Major product categories (which may typically be available in large, homogeneous quantities). • Fibre types (natural/synthetic/blended) is required. <p>ACTA understands this will be addressed in state-led C&I disposal auditing to be delivered by the NSW EPA.</p> |
| C&D Waste | Low | Not included in this analysis. | Textiles such as geo-textiles, shade cloth and fencing mesh may also occur in C&D waste. C&D remains an area of interest. |
| Bulky Waste & Dropoff | High | NSW EPA WARR reporting, with composition provided by Kuring-gai, North Sydney, The Hills, Parramatta Council and the SSROC Regional Bulky Waste Audit (2014). | Updating audit scope to identifying textile composition by; wearable clothing, unwearable clothing, carpets and rags or soiled textiles. |
| Illegal Dumping | Low | NSW EPA RID Online data (for 2019). Reporting is based on local council participation in the regions. | Low priority. |
| Mattress Collection | High | Mattress collection data aggregated by region from the Bedding Stewardship Council. | Low priority. |

02 WHY WE NEED CHANGE

Better management of textile waste can reduce waste service costs for councils and residents.

Textiles comprise an average of 5.05% of kerbside residual waste in Sydney. At an estimated disposal price of \$275/t, textiles are a significant part of kerbside residual waste costs for councils – (an estimated \$14 million).

For councils utilising Mechanical Biological Treatment (MBT) of residual waste, some textiles are known to contain Polybrominated Diphenyl Ethers (PBDEs) that require constant monitoring following the NSW EPA's revision of MBT outputs in 2019. At high concentrations PBDEs will affect the end-use case for the recovered organics fraction.

Further, textiles pose a persistent issue in recycling streams and MBT streams, often binding together into 'snakes' which require heavy machinery to be removed (see Figure 8). Removing these snakes poses safety risks, affects operating capacity and increases plant down-time.

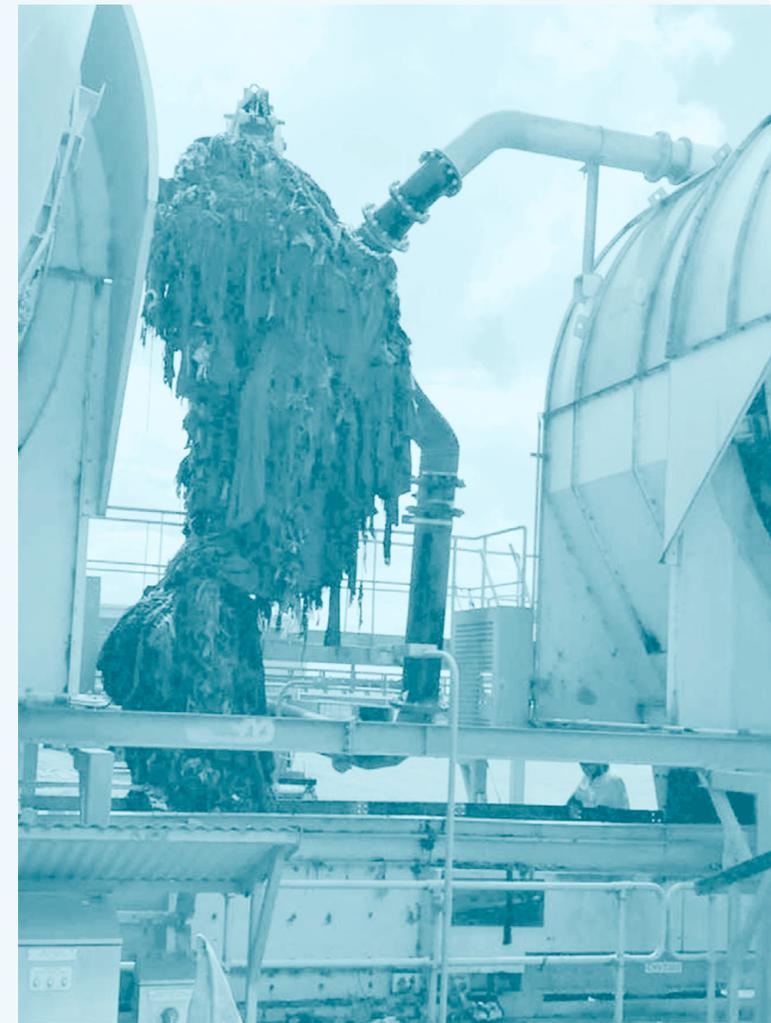
Government procurement can be a key driver in the circular economy.

Uniforms, banners, flags, fencing mesh and carpets were all identified by councils as commonly procured items.

Collectively, councils can jointly effect change in the market by leveraging their combined purchasing power. This includes changing behaviours to avoid textile consumption entirely (i.e. transitioning to projected or digital signage for events (rather than banners), as well as procuring recycled content, products subject to stewardship schemes, or those suitable for repair or reuse.

As large local consumers of textiles, Sydney's councils should preference recycled content and recyclable fibres, and demonstrate how textiles can be avoided, repaired, or reused in regular operations.

Figure 8 – A textile 'snake' being removed from processing equipment by an excavator at Woodlawn Mechanical and Biological Treatment (MBT) plant.



Supporting the diversification of end-markets for used clothing can reduce the risk of offshore recovery to local councils.

Offshore reuse/recycling is common for donated clothing. This export market “grew from very little in 2010-11 to about 90kt by 2013-14 and fell back to 47kt in 2019-2020”²³ and over this time has experienced price fluctuations between AUD\$850/t and \$350/t.²⁴

Further, eleven categories of textiles were banned in the China’s National Sword policy (2018) which set precedent for international trade restrictions on textiles.²⁵ Similarly, recurring disturbances in major African end markets²⁶ make exposure to price volatility and regulatory change a risk to local councils for the following reasons:

FINANCIAL RISKS: As a major end-market for donated clothing, if offshore markets falter (and clothing donation services are reduced/withheld), the kerbside stream would see substantial increases in textile volumes and its associated cost

of waste processing. This would exacerbate the impacts of waste processors outlined previously.

RECOVERY AND SUPPLY CHAIN RISKS:

It is currently challenging for councils to verify recovery data for exported textiles and meet internal sustainable procurement objectives (such as fair work conditions).

Regardless, European research indicates that clothing exported to developing countries is beneficial, supporting the creation of nine full-time jobs per 100t clothing received in developing countries and reducing carbon emissions by 193t for every 100t of clothing exported.²⁷

Sydney councils interviewed reaffirmed their obligation to ensure that any services provided to residents are not supporting unfair working conditions or perverse outcomes for materials.



Figure 9 – Donated clothing awaiting sorting.

Textiles are an opportunity for local economic growth, carbon reduction and community building.

Clothing donation services are valued in the community, with decades of goodwill and awareness raising supporting them. It is intrinsically understood that clothing can be re-worn, and that consumers willingly make considerable effort to get clothing to donation services for no monetary reward.

Although convenience and access to collection points is critical with residents (surveyed in SSROC) willingness to transport items to a drop off point reducing dramatically once it is further than 5km from their home/work.²⁸

It is estimated that clothing reuse in Australia reduces emissions across the supply chain by 66% and generates \$1,700 per tonne of clothing of revenue in local economies.²⁹

There is opportunity to build on this base; provide residents with greater access to drop-off facilities, educate to improve quality donations, and innovate on the delivery for clothing collection infrastructure to support these triple bottom line benefits.

Furthermore, collection and handling also employs 5,300 people nationally, a large portion of those facing barriers to employment. Supporting these organisations to scale-up reuse, repair and recycling operations can provide greater employment opportunities with accompanying social services to vulnerable groups – a known priority for councils.



Figure 10 – Clothing made available for resale.

03 HOW WE GET THERE

SIGNAGE & BANNERS

Some Sydney councils are pro-actively addressing waste from outdoor textiles generated by Council activities. This includes a suite of recycling, reuse and avoidance activities detailed below:

RECYCLING – Hornsby Council and City of Canada Bay Council process unwanted Council banners through community upcycling groups such as [Boomerang Bags](#).

REUSE – The City of Sydney's [Sustainable Event Guidelines](#) provide guidance on signage design; advising against the use of dates on signage to enable multi-year reuse. The creation of more general branded signage promotes reusability across more events, reducing long term expense and consumption.

AVOIDANCE – The need for signage can be avoided entirely in certain applications. Following a trend in the professional events industry, Inner West Council has opted to stop printing and using signage where possible, avoiding the storage and handling costs. Instead, event spaces are setup with easily customisable digital or projected signage.

Where councils continue to procure outdoor textiles, they should preference suppliers involved with the national stewardship program [Texback](#) (led by the Vinyl Council of Australia) which is establishing a national stewardship scheme for PVC coated polyesters.



Figure 11 – Boomerang bags turning event banners into bags.

NEW RETAIL MODELS

The high embodied impact of textiles makes managing consumption the most effective way to reduce the overall environmental impact of textiles. To address this, many brands are supporting the emerging clothing lease and rental market – this is expected to eclipse the growth of fast fashion in the coming decade.³⁰

Clothing rental and subscription models allow consumers to rent and use garments temporarily (ideal for infrequently used items) or subscribe to a curated pool of rotating items that can be re-assigned to users with an effective take-back system in place for end of life. Examples of these services that can be promoted to residents are, [Glam Corner](#) (AU), and [The Rotation](#) (US).

Similarly, there are a range of peer-to-peer platforms for lending clothing, applying the principles of the sharing economy to clothing.

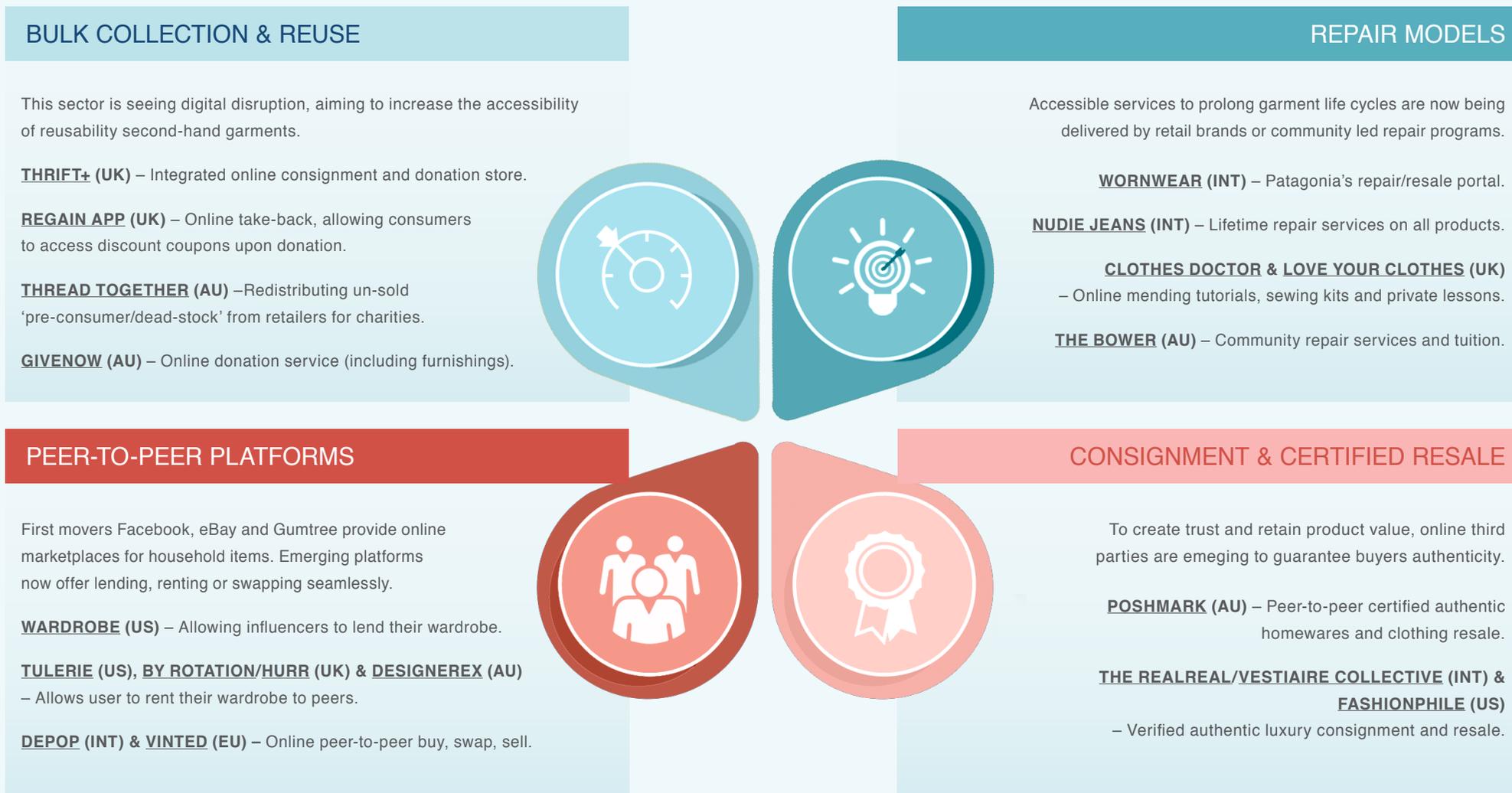
By allowing owners to extract value through renting their garments, it is possible to avoid the consumption of additional garments, promote the purchase of quality and desired items, and increase the use of existing clothing stock. One Australian example of this is [Designorex](#) (AU).

Figure 13 (following page) outlines several other emerging or demonstrated alternatives to traditional product retail approaches.



Figure 12 – Glam Corner rental pop-up store.

Figure 13 – Projects and platforms to assist in extending the lifecycles of clothing and homeware.



CONSUMER EDUCATION & GARMENT CARE

Figure 1 (page 9) demonstrated that 37% of life cycle emissions from a pair of jeans (indicative of most clothing made from cotton) are generated during their use. Further, WRAP UK estimates that by extending the active life of garments by nine months would result in an overall reduction of 16% carbon, 10% water and 8% waste per tonne of clothing³¹ (by avoiding additional consumption).

Since 2012, WRAP UK via the [Sustainable Clothing Action Plan](#) (SCAP) has deployed customer surveying across UK residents to track consumer behaviours on clothing purchase and care. This has provided continued insight to the benefits of reuse, focus areas for education and the progress tracking.

The WRAP UK approach has been replicated in the [EU clothing survey](#) and the creation of the [European Clothing Action Plan](#) (ECAP).

Establishing a robust data base through recurring surveying was critical in creating a call to action for UK industry and aligning governmental support, and to inform focus areas for garment care and textile education. The research established the areas of focus for:

- o **LOVE YOUR CLOTHES PROGRAM** (funded by WRAP UK and SCAP) – Provides engaging education content on buying better clothing, garment care, repair tutorials and donation.
- o **#LOVENOTLANDFILL** – Focused on youth reuse of secondhand clothing (funded by the London Waste and Recycling Board).

ECAP, for example, has been able to track second-hand clothing purchases, clothing longevity, and laundering behaviours across Europe since 2012 to deliver effective consumer education in partnership with local authorities.³²

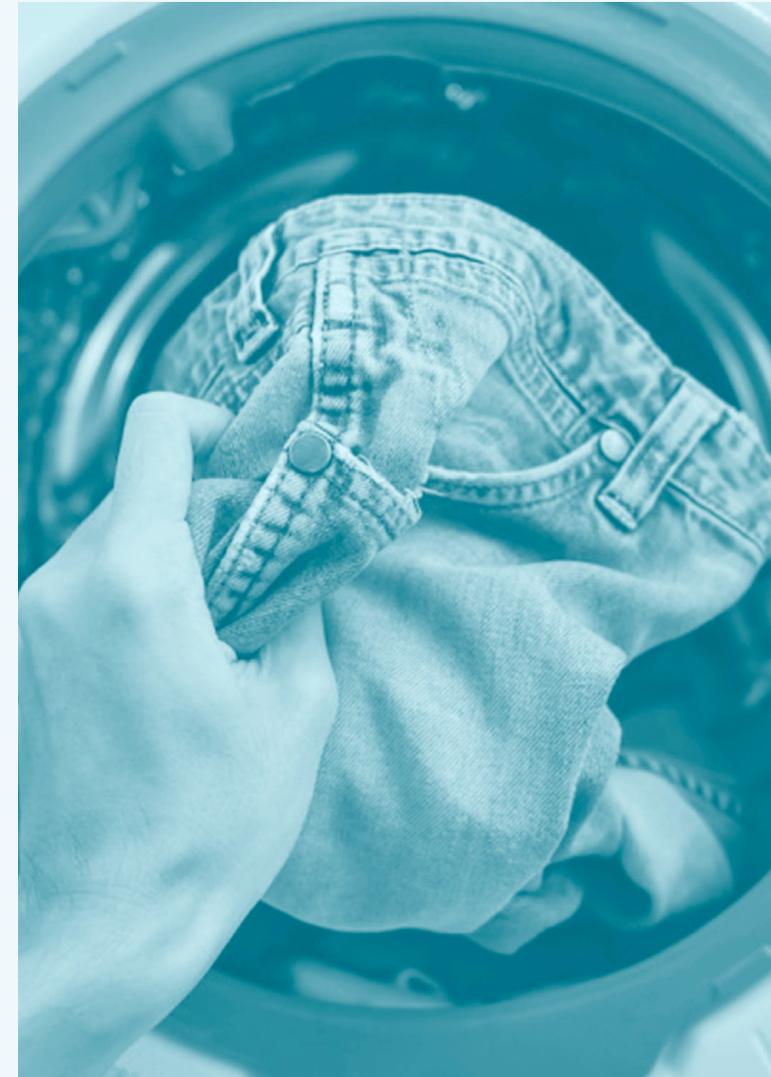


Figure 14 – Home care, washing and drying your garments.

UNIFORM RECYCLING

Several Sydney councils have undertaken uniform recycling with:

TEXTILE RECYCLERS AUSTRALIA – operating at scale and specialised in providing collection and aggregation of clothing (uniforms) to access onshore and offshore mechanical ragging and re-manufacturing services for textiles.

WORNUP – a national program focused on school uniform recycling and operating throughout Sydney. WornUp also delivers corporate uniform recycling. Garments are shredded and re-manufactured into a range of internal tiling products using UNSW’s Smart Centre technology and can be reinstalled in council sites.

CIRCULAR CENTRE – offering a solution delivering 100% recovery of uniforms and the employment of trained disability enterprise teams to dismantle garments for recycling. More information is available in this [Virgin Australia case study](#).

UPPAREL – offering uniform collection and recycling (and collection service).

Councils should also seek to work with those suppliers voluntarily supporting the Circular Threads initiative – a national stewardship program delivering a secure circular economy for uniforms in Australia. Launching in 2023 the industry-led program is currently working with major uniform suppliers to establish low impact fibre and construction methods and scaled systems for value recovery at end of life.



Figure 15 – ALDI partners with Textile Recyclers Australia to re-purpose the old uniforms into new items.

EVOLVING CLOTHING COLLECTION MODELS

Charitable donation and clothing reuse are trusted established services in Sydney.

These services offer an immediate and accessible means to promote reuse; keeping textiles out of the kerbside waste stream. Collection methods include:

HOUSEHOLD COLLECTIONS – Arranged and funded by councils (e.g. [Mosman Council's case study](#)), or, requested by residents directly from providers such as Southern Cross Recycling Group ([Thread:collect](#)) King Cotton ([Clothing Cleanup](#)) or [Upparel](#). In South Australia, [Rednose](#) distribute coloured bags freely or by order to letterboxes ahead of dedicated collection times – allowing residents the opportunity to donate unwanted clothing from their front door. Importantly, this service is an industry run program operating with the permission of councils (*without direct funding*).

COLLECTION IN MULTI UNIT DWELLINGS (MUDs) – Waverley and Canterbury-Bankstown Council's have demonstrated textile collection can be effectively delivered in larger MUDs. In Waverley, sites with 20 units or greater saw an average of 8t collected annually, whilst textile collection from 16 MUDs in Canterbury-Bankstown yielded 4,210t of textiles over 21 months. Both programs reported low contamination and illegal dumping, providing a relatively lower cost of delivery to councils.

COMMUNITY RECYCLING CENTRES (CRCS) – Hornsby Shire Council's program with King Cotton has collected 2t/month from their CRC since March 2020 at no cost to the Council. Whilst the NSW EPA is unlikely to add textiles to the list of household wastes funded for collection through the CRC network, lower costs encourages councils to include these services voluntarily.

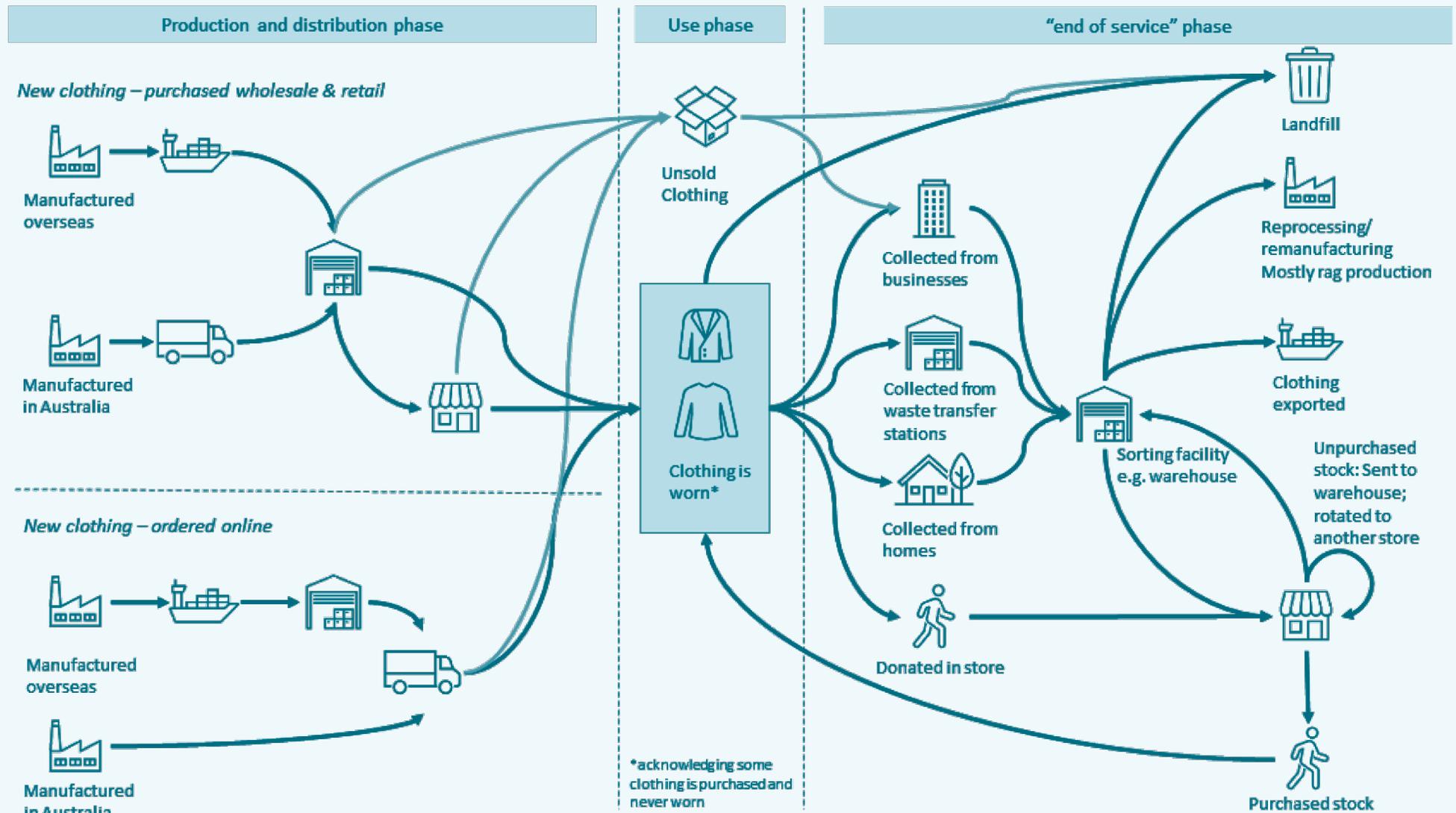
COMMUNITY COLLECTION – It is estimated that clothing collection points (in-store, donation sites and clothing bins) account for 80% or more of all collected clothing.³³ However, these services have faced issues with '[rogue operators](#)', illegal dumping and an unwillingness from some councils to locate clothing bins on public land (often due to the illegal dumping issues).

Some of these issues have been addressed by service providers working pro-actively with property owners (e.g. in shopping centres, libraries, aquatic centres, etc.) to locate donation points in attended areas without 24/7 public access, and by creating engaging educational experiences for users including the [Feel Good Hub](#), which aims to integrate education to promote quality donation and shifts away from the traditional metal clothing bins.

Whilst a cost benefit analysis of different clothing collections services for councils was not part of the project, the information gathered from Sydney councils indicates that the cost of delivering clothing collection services in order of most expensive to least expensive (\$/t) is likely to be household door to door collections > collection through dedicated clothing bins in (MUDs) > community collection points and CRC, the last of which can be implemented at no cost to councils.

Improved textile collection systems will increase the viability of domestic sorting, reuse or recycling infrastructure – which may also increase the value of any exported component. To assist in understanding clothing flows, Figure 16 (following page) provides a conceptual overview of the clothing life cycle, in which nationally it is estimated that; 16.5% is sold at a charity shop, 0.4% is provided as welfare, 36% is recycled domestically, 33% is exported and 14% is sent to landfill.³²

Figure 16 – Conceptual view of the clothing supply chain and downstream end-of-life. (Replicated from *Measuring the Impact of the Charitable Reuse and Recycling Sector*)



04 A STRATEGY FOR ACTION

ALIGNING GOVERNMENT TARGETS

Acknowledging the current gaps in domestic infrastructure for recovering textiles and end markets, these interim targets focus on areas within councils' area of influence of control and allows space for adjustment ahead of 2030.

In line with the NSW net-zero ambitions, each of the actions in the Plan will reduce carbon emissions across the textiles supply chain by avoiding unnecessary consumption, keeping products in use for longer, and reducing disposal to landfill. The focus areas for emissions reduction are:

INCREASING RECYCLED CONTENT –

The use of recycled PET textiles reduces emissions by 66% and builds high-value markets for kerbside recycling.³⁴

SUPPORTING SUPPLY CHAIN IMPROVEMENT –

Textiles have a high embodied impact, production and manufacturing emissions are typically greater than both use and disposal.³⁵

CLOTHING REUSE – Reusing one tonne of clothing uses only 1.8%-2.6% of the energy required to produce a tonne of virgin polyester/cotton clothing respectively.³⁶

Economic, carbon and social impacts of the proposed actions are beyond the scope of this study but are informed by literature and international research.

The Plan acknowledges the ambition of the National Waste Action Plan and the NSW Waste and Materials Strategy 2041 and proposes interim 2026 targets for Sydney Councils.

1 Reduce textile consumption in Sydney's communities & councils

Reduce textile use in council procurement and support industry initiatives to prolong product life, improve garment care, repair and promote peer-to-peer resale.

2 Increase recovery from residents & council operations to 50% by 2026

Councils have a critical role in service provision for residents and collection systems. Facilitating the economical collection of a clean textile stream will unlock reuse, repair and recycling opportunities.

3 Increase use of recycled content in council procurement

Governments can help create end markets for recycled textiles by avoiding virgin synthetic fibres and specifying recycled content where feasible.

SUPPORTING STATE & FEDERAL INTERVENTIONS

There is an emerging focus on textiles nationally, with textiles identified as a priority or problem material stream in the [South Australia's Waste Strategy \(2020\)](#), [Recycling Victoria \(2020\)](#)³⁷ and included within [NSW Net Zero's](#) ambition of 'zero organic waste to landfill'. The Plan remains specific to local government but has been designed to be complementary to, and enabling of, broader systemic change across the country.

Support for emerging textile recycling infrastructure is being delivered by state and federal governments, locally through the [NSW EPA's Circulate program](#) (e.g. recipients include Circular Centre and Textile Recyclers Australia) and the [Commonwealth's Accelerated Commercialisation grants](#) (e.g recipients include Blocktexas).

Following the [Federal Government's Clothing Textiles Waste round table](#) (May 2021), textiles are now listed as a priority material for recovery with a further \$1 million provided under the [National Product Stewardship Innovation Fund](#) to support an industry-led stewardship scheme for clothing nationally.

The National Product Stewardship Innovation Fund has already funded the following programs:

TEXBACK – Led by the Vinyl Council of Australia for PVC coated polyester used in shade cloth, fencing mesh and banner.

CIRCULAR THREADS – Led by ACTA, establishing a national program for secure uniform recovery

NATIONAL MATTRESS AND BEDDING

STEWARDSHIP – Led by Australian Bedding Stewardship Council, establishing a national collection and processing program for mattresses and bedding.

NATIONAL COMMERCIAL FURNITURE PRODUCT STEWARDSHIP SCHEME

– Led by Edge Environment, establishing recovery systems and design guidelines for all office furniture and fittings.

Sydney councils and ROCs should support the following circular economy ‘enablers’ at the state and national level:

**Establishing
‘Right to Repair’
in Australia**



Legislative change in this space could pave the way for new subsidies or tax concessions for reuse and repair, address product labelling (to assist sorting) and establish new product design standards.

**Support
National Textiles
Reuse Policy**



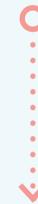
Including making the repair and resale of repaired or up-cycled products GST exempt and establishing funding for data collection on clothing reuse nationally.

Improved data & consistency for textiles reporting



Specifically C&I, C&D, kerbside and bulky waste; by continuing alignment to current state and emerging national standards for describing composition currently in consideration by the Department of Agriculture, Water and Environment.

Support land use & planning for a Circular Economy



The NSW Employment Zones Reform consultation sets out to simplify land use frameworks under Business and Industrial categories to reduce planning barriers for reuse and repair enterprises for household goods in the circular economy.

Garment care to be considered in National Plastics Plan



The Plastics Plan proposes micro-fibre filters to be mandated in washing machines by 2030. Further consideration of the impacts of garment care in this process presents the chance to address detergent and energy/water use over clothing lifetimes.

Creating Focus

In the context of the broader response to textiles, we use the following definitions (described in Table 2) to articulate the control and influence of councils and ROCs; by classifying:

- o **DIRECT CONTROL** – internal functions or voluntary decisions made by councils.
- o **DIRECT INFLUENCE** – actions ultimately made by another entity but able to be influenced by councils.
- o **INDIRECT INFLUENCE** – actions taken by another entity, with limited or no influence from councils.

Creating a circular economy requires aligned action with stakeholders focusing on key areas of intervention. The Plan focuses on the elements of a circular textile economy within the direct control or influence of local councils as a priority.

Councils assessed proposed actions with these classifications in mind, it was identified their core responsibilities to be council procurement, data gathering and resident access to clothing collection services.

Table 2 – Councils’ ability to influence stakeholder behaviours across product lifecycles.

| PRODUCT LIFE CYCLE STAGES | RESIDENT CONSUMPTION | BUSINESS CONSUMPTION | COUNCIL PROCUREMENT |
|--|----------------------|----------------------|---------------------|
| Raw material extraction <i>(oil extraction, farming processes)</i> | Indirect influence | Indirect influence | Indirect influence |
| Textile production <i>(spinning, weaving, dying)</i> | Indirect influence | Indirect influence | Indirect influence |
| Design <i>(repairability, durability, packaging)</i> | Indirect influence | Indirect influence | Direct influence |
| Manufacturing <i>(cut, sew, trim)</i> | Indirect influence | Indirect influence | Direct influence |
| Purchase decision | Indirect influence | Indirect influence | Direct control |
| Use <i>(washing drying, repair, maintain)</i> | Direct influence | Indirect influence | Direct control |
| Access to collection | Direct control | Direct influence | Direct control |
| Access to refurbishment services | Direct influence | Direct influence | Direct influence |
| Access to recycling infrastructure | Indirect influence | Indirect influence | Direct influence |

TARGET 1. REDUCE TEXTILE WASTE DISCARDED IN SYDNEY

| | ... from residents | ... from C&I | ... from council operations |
|-------------------------------------|---|---|---|
| 2021 Scenario | 126,728t/yr textiles are discarded in kerbside collections, charitable donations, illegal dumping, bulky waste and mattress collections, (as described in Figure 4). | 82,177t/yr is discarded the C&I stream. | Textile disposal in council operations is not tracked. |
| Influence & Rationale | INDIRECT INFLUENCE – Councils are generally unable to effect rates of consumption, or consumption decisions by residents. However, by improving access to repair facilities, supporting peer-to-peer resale/lending product lifetimes can be extended. | INDIRECT INFLUENCE – Estimated 50% of C&I textile waste stream is comprised of carpet, which councils can influence through building design through their guidelines for new buildings and/or Development Control Plans (DCPs). Further, Councils can influence textiles from events held in Council venues. | DIRECT CONTROL – Key textile procurement categories for councils are uniforms, banners and signage, carpet, shade cloth and fencing mesh. Whilst demand for uniforms is unlikely to change – other products can. |
| Focus Areas | Councils have a responsibility to track and audit resident waste, and an ongoing obligation to encourage community-led repair and education initiatives. | Councils cannot use domestic waste charges to fund C&I waste initiatives, actions here must be internally resourced. | Better managing council procurement in carpet and signage to avoid waste. |
| Key Actions & Milestones | 1.1 Establish regional composition for textiles discarded by residents through amending existing audit schedules (where financially possible) with updated categorisations and deliver these on a recurring basis to track improvement. Generally, councils supported the intent to reduce resident waste and will continue to support reuse/ repair programs. Councils will also advocate at the federal and state level to support tax exceptions, repair subsidies and other mechanisms that make these services economically viable in the long run. Councils should also promote online international resources mentioned in Figure 13 at little cost. | 1.2 Consult with council development staff to align development requirements with published industry best practice and promote the use of carpet tiles where possible (designing out problematic broadloom carpets). Digital signage and improved design can reduce event waste from private events in Sydney, but councils influence is limited. Following the delivery of Action 1.3, guidelines for private event organisers should be made available by councils. | 1.3 Consult with events teams in councils to systemise better signage practices in council event guidelines (building from the City of Sydney’s Sustainable Event Guidelines). 1.4 Consult with relevant council teams to preference the use of replaceable carpet tiles rather than broadloom carpet at council owned properties. |

TARGET 2. INCREASE TEXTILE RECOVERY FROM RESIDENTS & COUNCIL OPERATIONS TO 60% BY 2026

| | ... from residents | ... from C&I | ... from council operations |
|-------------------------------------|---|--|--|
| 2021 Scenario | Of the 126,728t t/yr textiles discarded by residents (as described in Figure 4), charities currently recover 52,288t through resale/recycling/export (refer to Figure 6). This is 41% of all textiles discarded by residents. | ~0% (assumes negligible recovery of textiles of the 82,177t/yr C&I textiles disposed of by businesses). | Textile disposal in council operations is not tracked. |
| 2026 Target | 76,036t/yr (60%) diversion of textile waste from residents. This is an additional 23,749t/yr. | N/A | 60% recovery of textiles in council operations. |
| Influence & Rationale | DIRECT INFLUENCE – Councils influence the collection of residential waste and can reduce costs to residents by encouraging source-separation for dedicated textile collection services. | INDIRECT INFLUENCE – Councils generally do not provide commercial waste collection and cannot use domestic waste charges to fund C&I waste initiatives. | DIRECT CONTROL – Councils manage textile waste from operations and have the opportunity to recycle. |
| Focus Areas | Councils have critical role in supporting source-separated collection systems for residents from kerbside and bulky waste streams. Primary components are clothing and soft furnishings. | C&I waste collection is not managed by councils, but councils can support businesses to recycle more through grant and trial programs. | Address textiles reaching end-of-life through existing recycling services and by supporting emergent stewardship schemes. |
| Key Actions & Milestones | <p>2.1 Establish a Market Steering Group to address barriers to innovation and expansion of clothing donation services in Sydney. Focusing on; supply chain transparency, standard reporting requirements, illegal dumping protocols for clothing donation services.</p> <p>2.2 Pilot collection systems for the ‘unwearable’ clothing or ‘un-useable’ furnishings component of textiles to increase the quality of donated items, and establish a best ‘service mix’ for textile recovery.</p> | <p><i>No direct action.</i> Councils offering grant programs or business partnerships might focus on:</p> <ul style="list-style-type: none"> Linens and towels in the accommodation sector – a recurring cost to businesses and a homogeneous (more simply) recycled textile. Reduce the use of difficult to recover broadloom carpets in commercial buildings through design guidelines or green leases. Supporting clothing retailers to access services processing excess stock (see Figure 10). | <p>No further action here. The Plan provides case studies of textiles recycling and different models of textile collection applicable to councils (<i>see page 23</i>).</p> <p>Individual councils need to consider which collection services are applicable for their communities.</p> |

TARGET 3. SIGNIFICANTLY INCREASE THE USE OF RECYCLED CONTENT IN TEXTILES PROCURED BY COUNCILS

... from council operations

2021 Scenario

Use of recycled content is currently unknown.

Influence & Rationale

DIRECT CONTROL – Councils control the purchase of textile products and can specify recycled content and avoid textiles with virgin plastic where feasible. Many textile products especially those that are synthetic (carpets, banners, fencing mesh and some uniforms) can already be affordably sourced with recycled content.

Focus Areas

The use of recycled content (currently from rigid plastics) is common in synthetic fibre manufacture, especially in carpets and uniforms.

However, utilising recycled content in natural fibres is technically more difficult and not widely done.

Key Actions & Milestones

3.1 Engage Local Government and council procurement teams to establish methodologies to baseline and track the use of recycled content in textiles.

05 APPENDIX – DETAILED ACTIONS

1.1 Data gathering on resident’s textile waste

Establish regional composition for textiles (refer to Table 1) discarded by residents through amending existing audit schedules (where financially possible) with updated categorisations.

| | |
|---------------------|---|
| PURPOSE | Councils deliver primary waste data collection for decision making at the local, state and federal level. Delivering improved and replicable audit data is critical to a circular textile economy. |
| TIMELINE | Commence Q3 2021 and integrate into ongoing council/regional audits from 2022. |
| APPROACH | <p>The proposed national waste characterisation for ‘textiles’ are:</p> <ul style="list-style-type: none"> • Wearable clothing (suitable for reuse/resale at time of disposal). • Soiled, torn or otherwise unwearable clothing. • Carpets and rugs of natural and synthetic fibres. • Other textiles (curtains, linens, bedding, furnishings, banners). <p>Councils should adopt these categories where possible when delivering waste characterisation studies or support periodic regional studies to determine textile composition.</p> <p>Recurring data will track progress on Targets 1 (reduce) and 2 (recover) for the Sydney region. It is the council’s responsibility to audit residual kerbside waste, bulky and drop-off waste streams.</p> <p>Data collected on textiles should fit within existing processes for state and federal waste reporting and be used to inform the evolution of the Plan and future points of intervention.</p> |
| RESOURCES | N/A |
| STAKEHOLDERS | Department of Agriculture, Water and Environment, NSW EPA. |

1.2 Addressing C&I carpet

Consult with council planning teams to align development requirements with industry best practices documented by the Green Building Council of Australia, (GBCA) and the Good Environmental Choice Australia (GECA) Carpet Standard. This should promote the use of modular carpet tile flooring where possible to design out problematic broadloom carpets.

| | |
|---------------------|---|
| PURPOSE | Align council design guidelines for new buildings and/or DCPs to existing best practice guidelines for sustainable floor coverings to promote the use of recoverable carpet products. |
| TIMELINE | Commence Q1 2022, and systemise design guidelines from 2023 |
| APPROACH | <p>Carpet comprises 50% of C&I textile waste (~40,000t p.a), and broadloom carpet is generally non-recyclable – but it can be easily avoided.</p> <p>To do so, Councils should establish guidelines (as a minimum but ideally DCPs) to preference stewarded products, or carpet tiles (which have established second-hand markets) and offer modular solutions and extend the product lifetime of ‘low-wear’ areas. The resources section lists existing industry guidelines that can be referenced.</p> <p>This action can be delivered jointly – led by a Working Group of council planners and relevant industry bodies (listed below) to adapt, replicate or reference existing standards for flooring covers most effectively.</p> |
| RESOURCES | GECA Carpet Standard , Global GreenTag , Greenstar Interiors , Responsible Products Framework , Carpet Recyclers . |
| STAKEHOLDERS | Council planning teams, GECA, GBCA, Carpet Institute Australia. |

05 DETAILED ACTIONS CONT.

1.3 Reducing banner waste from council events

Consult with events teams in councils to systemise better signage practices in council event guidelines.

| | |
|---------------------|---|
| PURPOSE | To reduce signage and banner waste from Council events by focusing on reuse and avoidance. |
| TIMELINE | Commence 2022, and work toward implementation of standardised guidelines for event signage and banners by early 2023. |
| APPROACH | <p>Much of this knowledge already exists within councils and needs only documenting in a consistent form. As many councils have their own Sustainable Events Policies, any guidance should be simple and designed to be integrated with existing policies.</p> <p>This action should be led by the events teams of councils (a good example is the City of Sydney's Sustainable Event Guidelines). Regarding textiles specifically, guidelines should promote:</p> <ul style="list-style-type: none"> • Removing all dates from council banners and signage to promote reuse. • Opting for digital signage to avoid procuring waste where possible. • Reinforcing products with eyelets to allow reuse. • Alternative attachment systems to avoid cable ties. <p>Verifying the actual emissions or life cycle improvement of digital vs physical signage may also be explored by the group, to validate the approach.</p> |
| RESOURCES | City of Sydney's Sustainable Event Guidelines , Sustainable Event Alliance . |
| STAKEHOLDERS | Council event teams. |

1.4 Reducing carpet waste from council properties

Consult with council procurement teams to preference the use of replaceable carpet tiles rather than broadloom carpet at council owned properties.

| | |
|---------------------|--|
| PURPOSE | To preference modular carpet systems in council properties to avoid carpet waste. |
| TIMELINE | Run in parallel to Action 1.2, commencing Q1 2022, and systemise design guidelines from 2023. |
| APPROACH | <p>Carpet comprises 50% of C&I textile waste (~40,000t p.a), and broadloom carpet is generally non-recyclable – but it can be easily avoided. Council facilities should adopt flooring systems that provide longer usable lifetimes and modularity to manage highly trafficked areas. This should include:</p> <ul style="list-style-type: none"> • Products served by established product stewardship schemes. • Carpet tiles. • Second-hand carpet tiles. <p>The resources below include existing standards for flooring products and can be replicated or referenced in Council procurement.</p> <p>This action should be led by the procurement and property teams of councils with involvement of Local Government Procurement to systemise new standards.</p> |
| RESOURCES | GECA Carpet Standard , Global GreenTag , Greenstar Interiors , Responsible Products Framework , Carpet Recyclers . |
| STAKEHOLDERS | Local Government Procurement, council property maintenance and procurement services. |

05 DETAILED ACTIONS CONT.

2.1 Market Steering Group: Clothing Donation

Establish a Market Steering Group to address barriers to innovation and expansion of clothing donation services in Sydney. Focusing on; supply chain transparency, standard reporting requirements and illegal dumping protocols for clothing donation services.

| | |
|---------------------|--|
| PURPOSE | To overcome barriers to source separated clothing collection to increase the quality and quantity of donated items. |
| TIMELINE | Commence Q4 2021 with a regional approach published mid 2022. |
| APPROACH | <p>Clothing donations is a long-standing and trusted community service, expanding its accessibility and promoting domestic reuse of collected clothing is an immediate way for Sydney councils to reduce textile waste to landfill.</p> <p>Where councils are seeking additional information and reporting, current licensing fees to place clothing bins effect the viability of this service. Resolving the following challenges of both parties is the focus of the Market Steering Group (councils and clothing collection services initially):</p> <ol style="list-style-type: none"> 1. Improving supply chain transparency: <ul style="list-style-type: none"> • Downstream supply chain mapping (including clothing export). • Minimum requirements for suppliers on modern slavery and certainty in end markets of donated clothing. 2. Establishing responsive systems for reporting and tidying illegal dumping at clothing donation sites. 3. Developing simple and accurate methods for tracking donated textiles and their end fate. 4. Managing, tracking or licensing clothing donation points on public and private land: <ul style="list-style-type: none"> • Establishing powers for local government to penalise or fine non-compliant operators. <ul style="list-style-type: none"> • Work toward a donation point database to support resident use and education (see interactive map for France here). • Reviewing current licensing and fees charged by Councils for clothing donation services. • Safety requirements for clothing donation services. <p>The outputs of this process should include standardised reporting requirements, supply chain transparency requirements, expectations and clear responsibility for handling illegal dumping and clean-up, as well as a standardised tender process for councils.</p> <p>To encourage progressive improvement, the group should also consider:</p> <ol style="list-style-type: none"> 5. Articulating a considered regional stance on clothing export – consider Exports of Nordic Used Textiles as reference material. 6. Setting targets for increased domestic reuse or recycling in collaboration with the charity sector. 7. How joint procurement of clothing collection services can assist with economies of scale in sorting and handling of clothing. |
| RESOURCES | On clothing export markets, Exports of Nordic Used Textiles , Developments in global markets for used textiles and implications for reuse and recycling / On Illegal dumping, Managing Litter and Illegal Dumping at Charity Bins (SV) , Reducing Illegal Dumping on Charitable Recyclers (NSW EPA) , Illegal Dumping signage for donation points (NSW EPA) / Current clothing drop-off points in Sydney is estimated to be 823. ³⁸ |
| STAKEHOLDERS | Council waste staff, clothing donation services, Charitable Recycling Australia and the NSW EPA. |

05 DETAILED ACTIONS CONT.

2.2 Optimising the service mix for textile collection

Pilot collection systems for the 'unwearable' clothing or 'un-useable' furnishings component of textiles to increase the quality of donated items and establish a best 'service mix' for textile recovery.

| | |
|---------------------|---|
| PURPOSE | Maximising textile diversion requires a mix of services for different textile wastes. Delivering this cost-effectively and accessibly for residents is key to recovery. |
| TIMELINE | Some overlap with Action 2.1 and could be run in parallel. |
| APPROACH | <p>Several alternative options for collection were identified during the Plan's development but require further research to validate. These include:</p> <ul style="list-style-type: none"> Integrating textiles (the Australian Bedding Stewardship Council has indicated interest in exploring this). Replicating the recurring kerbside clothing collection systems deployed in South Australia by Rednose. Integrating textile collection with bulky waste collections or as a separate collection (via a coloured bag). Housing textile drop-off points at Community Recycling Centres and community drop-off events. <p>Any of these pilots may focus on wearable/unwearable textiles and other household textile products (linens, soft furnishings etc.).</p> <p>By better mapping communities' access to textile recycling/reuse services and documenting the cost of delivery (\$/t) for councils, councils can optimise service delivery</p> |
| RESOURCES | Used Textile Collection in European Cities , French donation services map . |
| STAKEHOLDERS | Council facilities, waste managers, clothing donation services, Charitable Recycling Australia and the NSW EPA. |

3.1 Promote recycled content in council procurement

Engage Local Government and council procurement teams to establish methodologies to baseline and track the use of recycled content in textiles.

| | |
|---------------------|--|
| PURPOSE | Recycled materials are readily available for textile products. Councils can support the circular economy by establishing a procurement panel for services. |
| TIMELINE | Commencing Q1 2022 and move to standard procurement guidelines from 2023. |
| APPROACH | <p>Recycled materials are available and affordable in most carpets and uniforms. Requirements for recycled content should be integrated into any existing product category guidance provided to councils. These actions should explore:</p> <ul style="list-style-type: none"> The creation of procurement guidelines for individual councils (as a minimum). The creation of registered supplier panels for carpets and uniforms (based on criteria for recycled content and stewardship). Joint procurement models. Setting targets for recycled content by product category. <p>Whilst recycled synthetic fibres are readily available – recycled natural alternatives are difficult to locate. The potential risks of using synthetic fibres (i.e. any work, health/safety and release of micro-fibres) should also be considered:</p> <ul style="list-style-type: none"> Texback for shade cloth, fencing mesh and banners. Circular Threads for uniforms. National Commercial Furniture Product Stewardship Scheme for all office furniture and fittings. |
| RESOURCES | SSROC Guide to Sustainability Criteria Clauses Metrics in Procurement. |
| STAKEHOLDERS | Local Government Procurement, council procurement staff. |

ORGANISATIONS INVOLVED IN TEXTILE RECYCLING & REUSE

This list is not exhaustive and is provided to assist councils to search for organisations involved in textiles collection, sorting and recycling in Sydney.

Wearable Clothing:

(suitable for further use)

- [Lifeline](#) (donation by region)
- [Save the Children](#)
- [Anglicare](#)
- [St Vincent de Paul's Society](#)
- [Salvation Army](#)
- [Australian Red Cross](#)
- [King Cotton Australia](#)
- [Southern Cross Recycling Group](#)
- [Dress for Success](#)
- Industry-led retail take-back services – H&M, Uniqlo (Uniqlo clothing only)

Mixed or unwearable clothing, uniforms and raw textile:

(unsuitable for further use)

- [Textile Recyclers Australia](#)
- [Circular Centre](#)
- [Upparel](#)
- [Wornup](#)
- [Blocktexx](#) (currently no capacity)
- [ResourceCo](#) (energy recovery)

Signage reuse and recycling:

- [Boomerang Bags](#)
- [The Bower](#)
- [Reverse Garbage](#)
- [Bannerloop](#)

Carpets:

- Secondhand resale – [Carpet Recyclers](#)
- Producer-led take-back programs – Milliken-Ontera, Interface ReEntry, Modyluss, Nolan Carpets, Tarkett.

Home furnishings:

(also accepted by some charitable recyclers):

- [Generous and Grateful](#)
- [The Bower](#)
- [Reverse Garbage](#)

REFERENCES

- 1 Ellen MacArthur Foundation, 2017, [A New Textiles Economy](#) (p.20).
- 2 Quantis, 2018, [Measuring Fashion: Environmental Impact of the Global Apparel and Footwear Industries Sector](#) (p.18).
- 3 ACTA, 2020, [Thread Count. NSW Textile Data Report](#) (p.14).
- 4 Mike Ritchie Associates, 2021, [Measuring the Impact of the Charitable Reuse and Recycling Sector](#).
- 5 Wikipedia, [Climate Emergency Declarations in Australia](#), in Sydney this includes: Blacktown City Council, Blue Mountains Council, City of Canada Bay, City of Sydney, City of Canterbury-Bankstown, Municipality of Hunters Hill, Inner West Council, Lane Cove Council, Mosman Municipal Council, North Sydney Council, Northern Beaches Council, City of Randwick, City of Ryde, Waverley Council and the City of Willoughby.
- 6 Ellen MacArthur Foundation, 2017, [A New Textiles Economy](#) (Figure 1).
- 7 Textile Network, 2019, [Forecast World Fibre Production](#).
- 8 Ellen MacArthur Foundation, 2017, [A New Textiles Economy](#).
- 9 Quantis, 2018, [Measuring Fashion: Environmental Impact of the Global Apparel and Footwear Industries Sector](#).
- 10 51% of emissions in NSW are from energy generation assets. Transitioning to a renewably powered grid, will reduce the 'use' phase impacts of many products – including textiles ([Adapt NSW, 2018](#))
- 11 Mozzem, S., (2021) [Assessing environmental impact reduction opportunities through life cycle assessment of apparel products](#).
- 12 Levi Strauss, 2015, [The lifecycle of a jean](#) (p.22)
- 13 ACTA, 2021, Textile Import Analysis (currently unpublished).
- 14 Textile Network, 2019, [World Fibre Production](#).
- 15 ACTA, 2020, [Thread Count. NSW Textile Data Report](#).
- 16 City of Sydney, 2017, [Leave Nothing to Waste](#).
- 17 Lane Cove and Willoughby Council Kerbside Waste Audit, 2020, Anne Prince Consulting.
- 18 NSW Department of Environment and Climate Change, 2008, [Guidelines for Conducting Household Kerbside Residual Waste, Recycling and Garden Organics Audits in NSW Local Government Areas](#) (Attachment 6, p.41).
- 19
- 20 Mike Ritchie Associates, 2021, [Measuring the Impact of the Charitable Reuse and Recycling Sector](#). Total textile donations is established using the national clothing donation average (12.1kp/pp/yr by the Sydney population).
- 21 NSW Environment Protection Authority, 2005, Report into the Construction and Demolition Waste Stream <<https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/warrlocal/070320-constr-demol-waste1.pdf>>
- 22 Mike Ritchie Associates, 2021, [Measuring the Impact of the Charitable Reuse and Recycling Sector](#).
- 23 Department of Agriculture, Waste and Environment, 2020, [National Waste Report 2020](#) (p.18)
- 24 Waste Management World, 2021, [The Devil in our Closet](#) (p.10)
- 25 Mike Ritchie Associates, 2018, [China National Sword: the role of Federal Government](#).
- 26 BBC, 2018, [How the US and Rwanda have fallen out over second-hand clothes](#); The Conversation, 2018, [America's petty policy on second-hand clothes for Africa](#); The Guardian Australia, 2015, [The hidden trade in our second-hand clothes given to charity](#).
- 27 Nordic Council of Ministers, 2016, [Policy Brief: Exports of Nordic Used Textiles. Fate, benefits and impact](#).
- 28 Taverner, 2015, Attitudes Towards Unwanted Household Items & Problem Wastes: Community Research (commissioned by SSROC).
- 29 Mike Ritchie Associates, 2021, [Measuring the Impact of the Charitable Reuse and Recycling Sector](#).
- 30 BBC, 2018, [How the US and Rwanda have fallen out over second-hand clothes](#); The Conversation, 2018, [America's petty policy on second-hand clothes for Africa](#); The Guardian Australia, 2015, [The hidden trade in our second-hand clothes given to charity](#).
- 31 WRAP UK, 2017, [Valuing our clothes: The cost of UK fashion](#).
- 32 ECAP, 2019, [Driving Circular Fashion and Textiles](#); ECAP, 2019, [Consumer Research for ECAP 2016-2019](#).
- 33 Mike Ritchie Associates, 2021, [Measuring the Impact of the Charitable Reuse and Recycling Sector](#).
- 34 Reduces emissions by 66% from a virgin PET equivalent. UNCC, 2021, [Identifying Low Carbon Sources of Cotton and Polyester Fibres](#) (p.16).
- 35 Levi Strauss, 2015, [The lifecycle of a jean](#).
- 36 Moazzem, S. et. al., 2021, [Environmental Impact of discarded apparel landfilling and recycling](#). However, we do note that some studies have cautioned that induced customer transport in clothing reuse, may cause environmental impact that exceeds the benefit of avoided production where the use phase is not sufficiently extended (Sandin, G., Peters, G. (2018), [Environmental Impact of textile reuse and recycling – a review](#)). New research from Europe has also issued a caution over fashion rental services – which can increase the total emissions of some items of clothing ([Levanen, J. \(2021\). Innovative recycling or extended use? Comparing the global warming potential of different ownership and end-of-life scenarios for textiles. Environmental Research](#)).
- 37 https://lgnsw.org.au/common/Uploaded%20files/PDF/Canterbury-Bankstown_problem_waste_in_MUDs.pdf
- 38 [Charity bins in Sydney](#).