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Textiles waste in Australia

Reducing consumption and investing in circularity

Every year, over 300,000 tonnes of clothing is either sent to landfill or exported from Australia. To respond to the growing textiles waste problem, the Commonwealth has proposed policies intended to create a 'circular economy.' However, a genuinely circular economy depends on drastically reducing the rate at which textiles are produced and consumed, banning the export of textiles waste, and investing in Australia's capacity to manufacture and recycle better alternatives domestically.

Discussion paper

Nina Gbor
Olivia Chollet

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Level 1, Endeavour House, 1 Franklin St
Canberra, ACT 2601
Tel: (02) 61300530
Email: mail@australiainstitute.org.au
Website: www.australiainstitute.org.au
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Summary

This paper discusses how textiles waste is generated and discarded in Australia, and the policies needed to create a 'circular economy' for textiles. Australia's addiction to cheap textiles, many of which are derived from fossil fuels, has global consequences. The rapid production and overconsumption of textiles – particularly 'fast fashion' – creates obstacles to the reuse and repair of textiles, and our inability to reuse or recycle them domestically means we continue to rely on exporting textiles waste to landfills, waterways and beaches far from Australian shores.

According to the most recent *National Waste Report*, in 2020–21, Australia generated an estimated 860kt of textiles, leather and rubber waste. This is the more than 16 times the weight of the Sydney Harbour Bridge. A big part of this – about 300kt – is clothing waste. The average Australian buys 56 new items of clothing each year, which makes Australia the largest consumer of clothing in the world per capita (after the US). Over 1.4 billion units of new clothing come onto the Australian market each year, and over 200,000 tonnes of clothing end up in landfills around Australia every year – this is almost four times the weight of the Sydney Harbour Bridge. A further 105,000 tonnes of used textiles are exported from Australia every year, most of which ends up as waste in developing nations in a practice that has been dubbed "waste colonisation". The carbon footprint of Australia's fashion consumption is the largest of any G20 country.

The phenomenal growth in the rate of textiles waste has been driven largely by the 'fast fashion' phenomenon, in which massive amounts of poorly made, cheaply priced clothes are quickly manufactured and constantly released onto the market. Much of this 'fast fashion' is made from synthetic, petroleum-based fibres. Over half (52%) of clothing sold in Australia is made from polyester (PET, which is derived from petroleum), and a further 10% is made from other synthetic (i.e. plastic) fibres. Global production of textiles has almost doubled since the year 2000, and that the amount of textiles waste generated in Australia has steadily risen since 2006 (when reliable data first became available). There is a clear connection between the increase in cheaply produced, mass manufactured 'fast fashion' and the amount of textiles waste. Legislating a reduction target, which could function in a way similar to the Commonwealth's policy to reduce carbon emissions, would be the most effective way to drastically reduce the production and consumption of textiles in the first place.

Successive Australian Governments have pitched the 'circular economy' as the panacea to all of Australia's waste problems – and textiles have not been an exception. To deal with waste generated by the clothing industry, which is the most visible source of textiles waste, the Commonwealth Government has supported and accredited the *National Product*

Stewardship Scheme, also known as Seamless. This paper analyses the effectiveness of the measures proposed by Seamless and discusses what additional policies are needed to reduce textiles waste in Australia. It also compares Seamless to similar schemes within the European Union which, unlike Seamless, charge a higher levy and make membership compulsory.

Circularity is essential to dealing with Australia's textiles waste domestically. Until Australia is able to repair, reuse and recycle textiles domestically, we will continue to export our waste. However, the simplest way to reduce waste is to not create it in the first place. Without a drastic reduction in the overproduction and overconsumption of textiles Australia's waste problem, and related carbon emissions, will only continue to grow.

Circularity promises substantial benefits not only for the environment, but for the economy. The *National Waste Policy* suggests that "a hypothetical five per cent improvement in efficient use of materials across the Australian economy could benefit Australia's GDP by as much as $24 billion." But a functional circular economy – for textiles or any other kinds of waste – depends on two things: the ability to recycle waste (which in the case of textiles is mostly plastic fibres), and the creation of reliable markets for the recycled material.

The establishment of a circular economy for textiles waste therefore depends on big government interventions including taxation, bans on the import and export of problematic waste, investment in new industry, procurement policies, and other legislation that requires manufactures to use recycled materials. The policy leadership this will take is set against the grain of decades of small-government, free-market neoliberalism that has created the waste problem.

RECOMMENDATIONS

This paper argues that investment in domestic manufacturing and recycling infrastructure, and ensuring a market for recycled textile products is essential to the establishment of a circular economy. If the policies aimed at creating a circular economy are to be more than greenwash, the meaningful regulation and taxation of problematic textiles is needed, as is substantial investment in more environmentally and socially responsible alternatives.

To create a robust domestic circular economy for textiles in Australia, this paper recommends that:

- The Commonwealth Government establish targets for a drastic reduction in the consumption of textiles.
- The 'per garment rate' that members pay to Seamless be increased.
- The Commonwealth Government introduce a tax on 'fast fashion' items put on the Australian market. This could follow the example of the lower house of the French

parliament, which has passed a bill that would see a tax of EUR5 (about AUD10) charged on items of clothing deemed to be 'fast fashion'.

- The Commonwealth Government pass policies to increase supply chain transparency in the textiles industry. New York State's *Fashion and Social Accountability Act* (Fashion Act), which will require footwear and apparel retailers to map and monitor particular environmental metrics, could be used as a model.
- The Commonwealth Government regulate or ban the advertisement of fast fashion. A proposed French regulation would require fast fashion sellers to display awareness-raising messages on their websites that draw attention to the environmental impact of their products. The proposed legislation would prohibit fast fashion products, brands and companies from advertising – including via the use of social media influencers – beginning in January 2025.
- The Commonwealth Government establish labelling standards that inform consumers about the social and ecological footprint of the textiles they buy. This would be similar to the mandatory standards for care labelling that already exist in Australia. This could work in conjunction with the 'ReMade in Australia' brand and include information about the amount of recycled textiles (rTEX) and recycled PET (rPET) in a product.
- The Commonwealth Government subsidise the cost of textile repairs for consumers. This could be similar to policies in the EU, where about a third of countries have reduced the VAT rate (ranging from 5% to 13.5%) on repair services for several types of consumer products, including clothing and household linen. Another option would be to follow the French policy and introduce a government-funded rebate scheme for textile repairs.
- The Commonwealth Government ban the export of textiles waste from Australia within five years. The proposed amendments to the Basel Convention are one way in which this could be done, but Australia does not need to wait for international action. A target of the *National Waste Policy Action Plan* is to ban the export of waste plastics, glass, paper, and tyres. Waste textiles should also be added to the planned ban, especially given that over 60% of textiles are made from plastics. A legal definition of what constitutes 'unwearable' would also help determine exactly what textiles waste cannot be exported. The charity sector would also benefit from support to manage the textiles waste that would accumulate after a ban is introduced.
- Investment in Australia's domestic recycling capacity be substantially increased. This could be through direct funding, grants, or tax incentives such as those proposed in the *Americas Trade and Investment Act*, which would include a 15% tax discount for textile companies engaged in the circular economy through collection, repairing or recycling. Investment should also include providing support for education, training and apprenticeships in textiles recycling.

- Governments at the state, territory and Commonwealth level introduce or expand procurement policies for the purchasing of products made from textiles recycled in Australia. The Commonwealth Government's recently-introduced *Environmentally Sustainable Procurement Policy* is a step in the right direction.
- The Commonwealth Government provide tax incentives for businesses that purchase materials made from textile waste recycled in Australia.

PUBLIC OPINION ON TEXTILES WASTE

This paper also presents the results of original polling conducted by The Australia Institute – a full break-down of our polling is available in the Appendix. In March 2024, The Australia Institute surveyed a nationally representative sample of 1,008 Australians about their attitudes and knowledge of textiles waste. The results show that most Australians are concerned about textiles waste, but most do not know just how many textiles are made from polyester, or that polyester is derived from petroleum. The polling results show that:

- 63% are either somewhat concerned or very concerned about the environmental impact of textiles (which the polling question defined as clothes, shoes and bags).
- 71% think that the businesses that make or sell textiles should be responsible for eliminating textiles waste, 46% said government should be responsible, and 43% said consumers.
- Donating clothing to an op-shop is by far the most popular way to dispose of used clothing, with 64% saying this is what they did with the last item of clothing they no longer wanted. This was despite having four other options including "threw it away" (13%), "took it to a dedicated textiles recycling facility" (4%), "got it repaired or 'upcycled'" (6%), "sold it or gave it to someone else" (11%), and "don't know/not sure" (2%).
- 66% would get at least some of their clothes, shoes or bags repaired if the repair was eligible for a government-funded discount. This would be a significant increase on the 39% of people who said they currently do so.
- 54% could not identify petroleum as the source of polyester fibres. This is concerning because polyester, which is derived from petroleum, accounts for more than half of the clothing sold in Australia. Just 27% know that more than 50% of clothes sold in Australia are made of plastic.

Introduction

Australia is in the midst of a major wardrobe malfunction. According to the Australian Fashion Council, over 1.4 billion units of new clothing come onto the Australian market each year, and over 200,000 tonnes of clothing end up in landfills around Australia every year[1] – this is almost four times the weight of the Sydney Harbour Bridge.[2] A further 105,000 tonnes of used textiles is exported from Australia every year,[3] most of which ends up as waste in developing nations in a practice that has been dubbed "waste colonisation". The average garment is now worn as little as seven times before it is thrown away.[4] Globally, the equivalent of a rubbish truck load of clothes is incinerated or buried in landfill somewhere in the world every second.[5] According to one study, fashion consumption in Australia has the largest carbon footprint of any G20 country.[6]

THE SIZE OF THE PROBLEM

According to the Australian Fashion Council, Australia is the second largest consumer of clothing in the world per capita (after the United States).[7] As Figure 1 shows, and as the Australian Fashion Council states,[8] the average Australian now consumes 56 items of new clothing every year. Our analysis of the best available comparative data shows that this is more than the USA (53 new items of clothing a year), and more than the UK (33 new items of clothing a year). This means that Australians are in fact *the* largest consumers of new clothing, on a per capita basis, in the world.

[1] Australian Fashion Council (2023) *Roadmap to clothing circularity*, p 5, https://ausfashioncouncil.com/program/seamless/

[2] The Sydney Harbour Bridge weighs 52,000 tonnes (total weight of the steelwork including arch and steel approach spans); Bridgeclimb Sydney (2024) *5 Reasons to love the Sydney Harbour Bridge,* https://www.bridgeclimb.com/news/5-reasons-to-love-the-sydney-harbour-bridge

[3] Australian Fashion Council (2022) *National clothing product stewardship scheme, milestone 1.4 clothing data report*, p 24, https://ausfashioncouncil.com/program/seamless/

[4] Australian Fashion Council (2022) *National clothing product stewardship scheme, milestone 1.4 clothing data report*, p 4.

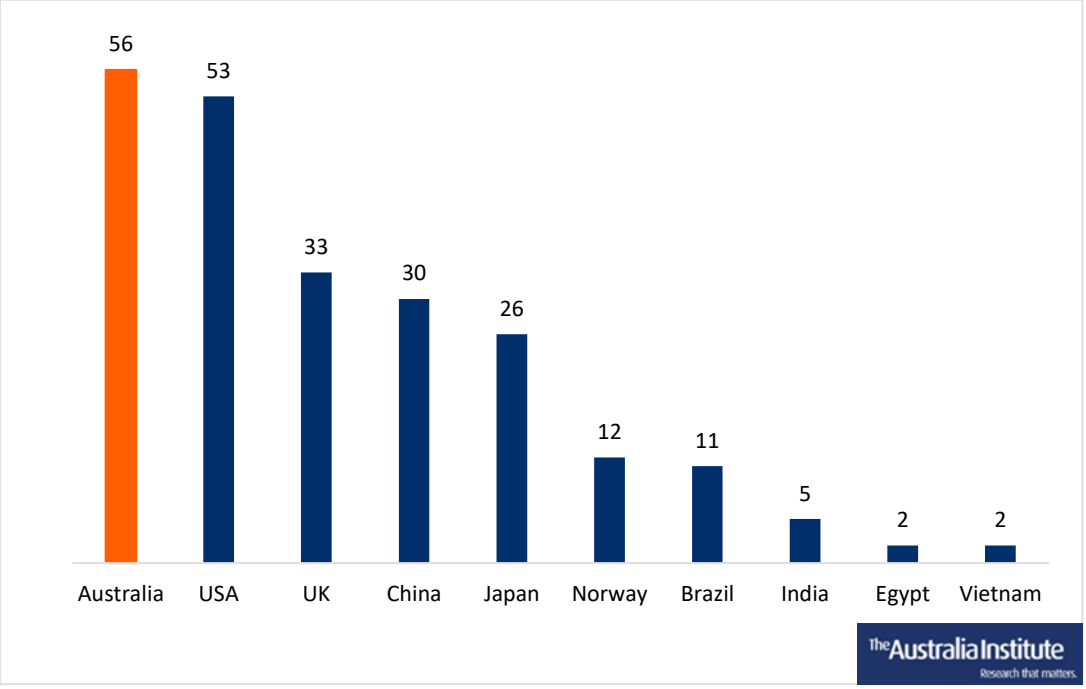
[5] Ellen Macarthur Foundation (n.d.) *Redesigning the future of fashion*, https://www.ellenmacarthurfoundation.org/topics/fashion/overview

[6] Coscieme et al. (2022) *Unfit, unfair, unfashionable: resizing fashion for a fair consumption space*, p 21, https://hotorcool.org/resources/unfit-unfair-unfashionable-resizing-fashion-for-a-fair-consumption-space-2/

[7] Australian Fashion Council (2023) *Seamless scheme design, summary report*, p 4, https://ausfashioncouncil.com/program/seamless/

[8] Australian Fashion Council (2023) *Seamless scheme design, summary report*, p 4, https://ausfashioncouncil.com/program/seamless/

Figure 1: Per capita consumption of textiles



Source: Australia Institute Calculations based on data from Fashion United[9] and Common Objective.[10]

The most recent *National Waste Report* shows that an estimated 860kt of textiles waste was generated in Australia in 2020-21 (Figure 2).[11] This includes clothing (about 30%) and other types of textiles such as carpets, soft furnishing, bedding, leather and rubber (excluding tyres).[12] Just 5% was recycled – and most of this was carpet recycled at one facility in Melbourne.[13] The majority of Australia's textile's waste is exported.[14] One study has shown that 95% of textiles that end up in Australian landfills are potentially recyclable,[15] which means there is huge potential to increase rates of recycling, if adequate investments are made.

[9] Fashion United (2024) *Global Fashion Industry statistics,* https://fashionunited.com/global-fashion-industry-statistics

[10] Common Objective (n.d.) Volume and Consumption: How much does the world buy? https://www.commonobjective.co/article/volume-and-consumption-how-much-does-the-world-buy

[11] Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2022) *National waste report 2022*, p 53, https://www.dcceew.gov.au/environment/protection/waste/national-waste-reports/2022

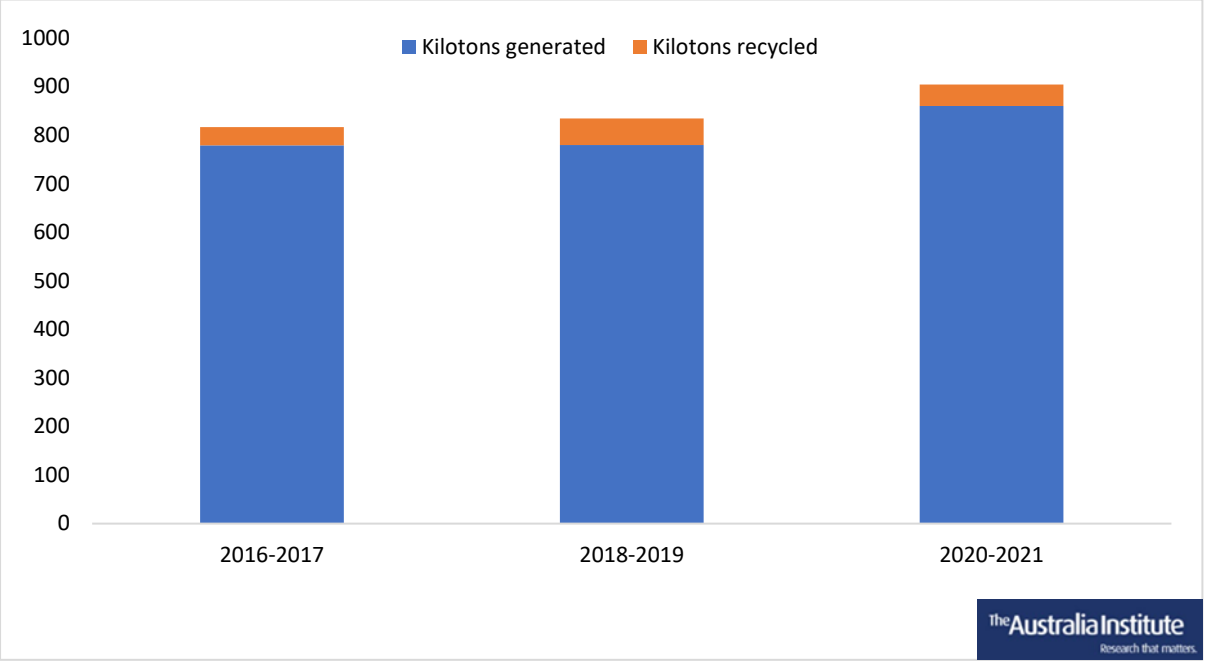
[12] DCCEEW (2022) *National waste report 2022*, p 53.

[13] DCCEEW (2022) *National waste report 2022*, p 53.

[14] DCCEEW (2020) *National waste report 2020*, https://www.dcceew.gov.au/environment/protection/waste/national-waste-reports/2020

[15] Khan, Wang and Padhye (2023) 'Textile waste management in Australia: A review', *Resources, Conservation and Recycling Advances,* https://doi.org/10.1016/j.rcradv.2023.200154

Figure 2: Textiles Waste Generated vs Textiles Waste Recycled[16]



Source: DCCEEW (2022) *National Waste Report 2022*; DCCWEW (2020) *National Waste Report 2020.*

Clothing accounts for about 300kt of Australia's textile waste. Of this, about 100kt is sent to landfill and about 200kt is given to clothing donation or collection services.[17]

Figure 3 shows that a total of 171kt of textiles waste was exported from Australia in 2019–20.[18] Of this, 47 kt (27%) was textile scraps and 124kt (73%) was used clothing donations exported by charities and commercial resellers. It is estimated that 62% of all donated clothing is exported for "reuse", but the reality is that much of this ends up in landfill overseas.[19]

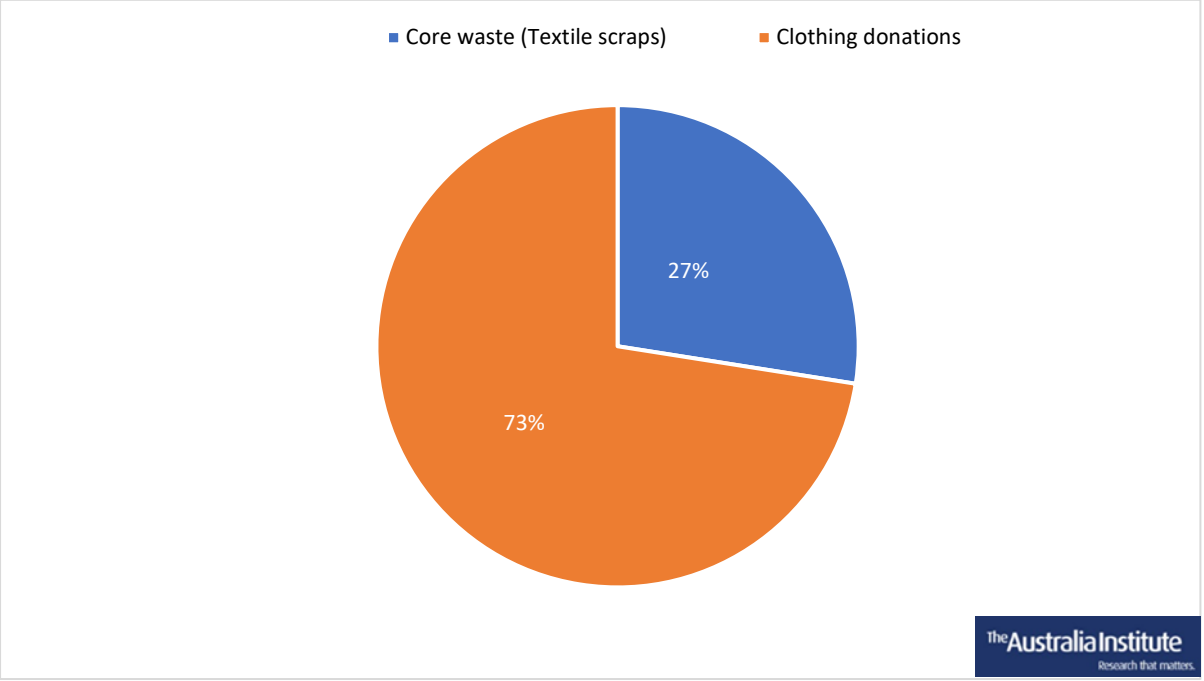
[16] DCCEEW (2020) *National waste report 2020*; DCCEEW (2022) *National waste report 2022*, p 53.

[17] Australian Fashion Council (2023) *Roadmap to clothing circularity*, p 5, 24.

[18] DCCEEW (2020) *National waste report 2020, p 18*; DCCEEW (2022) *National waste report 2022*.

[19] Australian Fashion Council (2023) *Seamless scheme design report,* p 42, https://ausfashioncouncil.com/program/seamless/

Figure 3: Textiles waste exported from Australia in 2019–2020, kilotons[20]



Source: DCCEEW (2022) *National Waste Report 2022*; DCCWEW (2020) *National Waste Report 2020.*

FAST FASHION

The phenomenal growth in the rate of textiles waste has been driven largely by the 'fast fashion' phenomenon, in which large amounts of poorly made, cheaply priced clothes are quickly manufactured and constantly released into the market. Since the early 2000s, global production of textile fibre has almost doubled, from 58 million tonnes in 2000 to 116 million tonnes in 2022. If nothing changes, it is expected to keep increasing to 147 million tonnes in 2030.[21] All this while approximately 30% of garments are never sold.[22]

Originally heralded as a model that would grant equal access to the latest trends, fast fashion has shifted the way people purchase, consume and dispose of clothing. For most of the 20th Century, the fashion industry released four distinct collections a year (one for each season). But, in the early 21st Century, brands like Zara and H&M began releasing two or three collections a week. The pace of fast fashion has only sped up since. Zara releases 35,000 new styles per year, but this pales in comparison to newer, ultra-fast fashion brands

[20] DCCEEW (2020) *National waste report 2020*; DCCEEW (2022) *National waste report 2022*.

[21] Textile Exchange (2023) *Materials market report*, p 3, https://textileexchange.org/knowledge-center/documents/materials-market-report-2023/

[22] European Parliament (2022) *Textiles and the environment*, https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2022)729405

like Shein and Temu. Shein launches up to 7,200 new items per day,[23] and is reportedly able to produce a clothing item, from design to packaging, within a week.[24] This fast fashion 'trendmill' means that overproduction and overconsumption have become longstanding fashion trends, and a massive feature of our clothing culture.[25] Unless producers reduce the rate of production, and consumers get off the trendmill, our textiles waste problem will continue to grow.

There are serious environmental consequences to this linear, 'take-make-waste' model of production, in which raw materials are extracted from the environment to manufacture textiles which are soon thrown away.[26] The overproduction of the fast fashion model means that billions of garments are never sold or worn. Many go straight to landfill or are incinerated.[27]

TEXTILES: THE NEW SINGLE-USE PLASTICS?

The problems with the breakneck rate of production are compounded by the fact that majority of textiles are now made from synthetic fibres derived from petroleum. Over half (52%) of clothing sold in Australia is made from polyester (PET, which is derived from petroleum), and a further 10% is made from other synthetic (i.e. plastic) fibres.[28] This means that 62% of textiles sold in Australia are made from plastic. Globally, 67 million tonnes of fossil-fuel based synthetics were produced in 2022, and polyester accounted for 54% of total global fibre production.[29] The fashion industry now consumes an estimated 70 million barrels of oil per year,[30] and emits 1.2 billion tonnes of greenhouse gases annually.[31]

Because of brands like Shein and Temu, between 2018 and 2023, the production of synthetic fibres in China increased by 21 million tonnes – this is enough to make more than

[23] République Française (2024) *Proposition de loi visant à réduire l'impact environnemental de l'industrie textile,* https://www.vie-publique.fr/loi/293332-proposition-de-loi-fast-fashion-impact-environnemental-mode-jetable

[24] Kollbrunner (2021) *Toiling away for Shein: Looking behind the shiny façade of the Chinese "ultra-fast fashion" giant*', https://stories.publiceye.ch/en/shein/

[25] Gbor (2024) *The fashion TRENDmill explained,* https://www.ecostyles.com.au/blogs/the-fashion-trendmill-explained

[26] Gbor (2024) *The fashion TRENDmill explained*.

[27] Zero Waste Europe (2023) *A zero waste vision for fashion – Chapter 1: all we need is less,* p 12, https://zerowasteeurope.eu/library/a-zero-waste-vision-for-fashion-all-we-need-is-less/

[28] Australian Fashion Council (2022) *National clothing product stewardship scheme, milestone 1.4 clothing data report*, p 2.

[29] Textile Exchange (2023) *Materials market report*, p 3.

[30] Pucker (2023) 'A circle that isn't easily squared', *Stanford Social Innovation Review,* https://ssir.org/articles/entry/a_circle_that_isnt_easily_squared

[31] République Française (2024) *Proposition de loi visant à réduire l'impact environnemental de l'industrie textile.*

100 billion t-shirts in a year, which would be enough to give everyone in the world more than 12 t-shirts a year. Ultra-fast fashion brands such as Shein and Temu have been accused of contributing to the persistence of China's oil demand.[32]

Given how readily these plastic clothes are disposed, textiles are at risk of becoming the new single-use plastic. Every hour, textile waste contributes the equivalent of 18,000 litres of oil to landfills around Australia.[33] Waste from synthetic textiles, which ultimately breaks down into microplastics, presents a persistent environmental and health hazard. When washed, a polyester garment sheds up to 1,900 non-biodegradable microfibres, which enter wastewater systems and eventually end up in rivers and oceans. Our report *Plastics Waste in Australia* outlines the negative effectives of microplastics in greater detail.[34]

Plastics have been linked to diseases ranging from cancer to lung disease, birth defects and endocrine toxicity.[35] Research into the impacts of the use of plastics in textiles is showing concerning results. Some polyester material – including certain stain resistant clothing and firefighter uniforms – contain PFAS (Perfluoroalkyl and Polyfluoroalkyl Substances), which have been linked to several kinds of cancer, reproductive disorders, obesity and reduced immune system function.[36] Some kinds of 'active wear' – athletic shirts, socks, sports bras – contain BPA (Bisphenol A), a hormone-disrupting chemical that can cause developmental and reproductive harm.[37] Chromium, which is sometimes used as a pigment to bind dyes, is a known carcinogen that has also been linked to skin irritations such as dermatitis and eczema.[38] Fast fashion manufacturers appear to be a particular culprit, with an investigation by the Canadian Broadcasting Corporation finding that one in five items of children's clothing sold by Shien had elevated levels of toxic chemicals such as lead, PFAS, and phthalates.[39]

[32] Fickling (2024) *China's Shein and Temu are driving oil, not Toyota and GM*, https://www.japantimes.co.jp/commentary/2024/04/01/world/china-oil-demand/

[33] ABC (2023) *War on waste (episode 3)*, https://iview.abc.net.au/show/war-on-waste

[34] The Australia Institute (2024) *Plastic waste in Australia*, https://australiainstitute.org.au/report/plastic-waste-in-australia/

[35] Landrigan et al. (2023) 'The Minderoo-Monaco Commission on Plastics and Human Health', *Annals of Global Health*, p 3, https://annalsofglobalhealth.org/articles/10.5334/aogh.4056/

[36] National Institute of Environmental Health Sciences (2024) *Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)*, https://www.niehs.nih.gov/health/topics/agents/pfc

[37] Carnevale (2023) *What you need to know about BPA in clothing,* https://ceh.org/what-you-need-to-know-about-bpa-in-clothing/

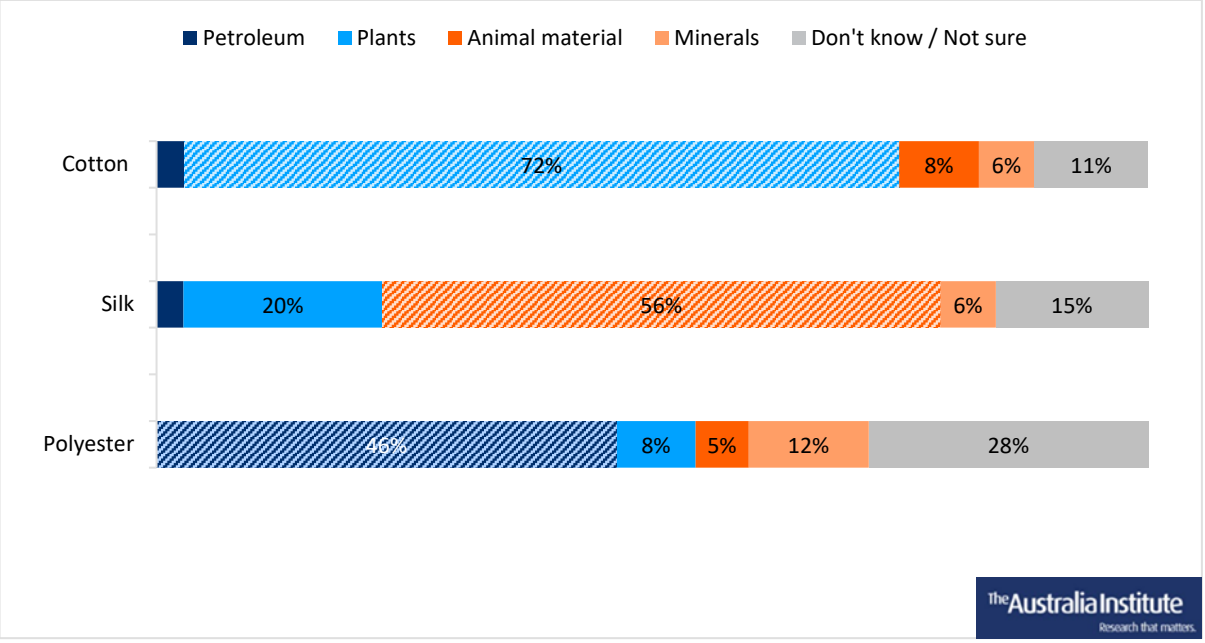
[38] Muñoz and Lein (2023) 'Toxic textiles: Potential health risks associated with toxic chemicals in clothing', *Open Access Government*, https://doi.org/10.56367/OAG-041-9857

[39] Cowley, Matteis and Argo (2021) *Experts warn of high levels of chemicals in clothes by some fast-fashion retailers,* https://www.cbc.ca/news/business/marketplace-fast-fashion-chemicals-1.6193385

Despite the significant use of plastics in textiles, polling conducted by The Australia Institute shows that most Australians do not understand the relationship between textiles and petroleum.

Our poll asked respondents "To the best of your knowledge, what are the following textile fibres made from?" and were presented with three types of fibre – polyester, silk, and cotton, all of which are common in the textiles sold on the Australian market. Just 46% of respondents correctly identified petroleum as the source of polyester fibres. This means that more than half of Australians (54%) do not know that much of the clothing they wear and textiles they use in their everyday life are derived from petroleum (see Figure 4).

Figure 4: To the best of your knowledge, what are the following textile fibres made from?

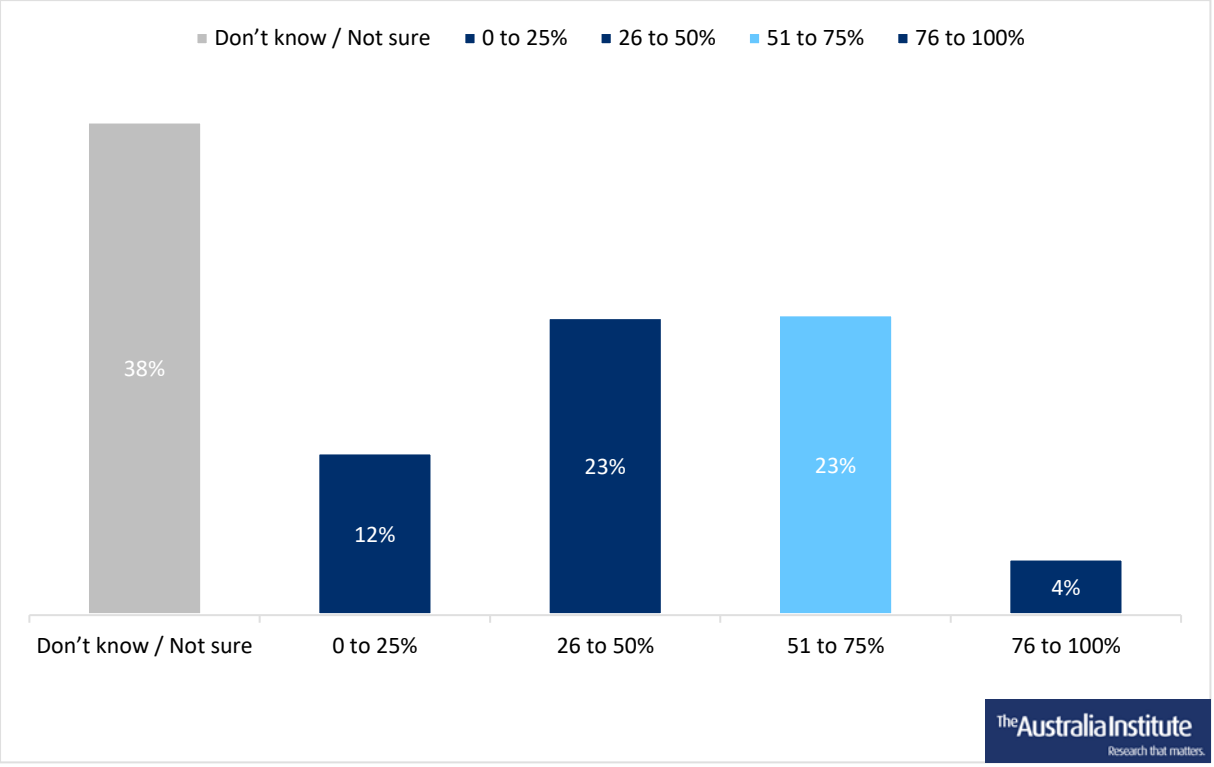


Source: Australia Institute polling.

Note: Correct answer is shown with diagonal lines.

This is concerning because polyester accounts for more than half of the clothing sold in Australia. As shown in Figure 5, our poll asked respondents what percentage of clothes sold in Australia are made of plastic, but just 27% identified a figure higher than 50%. This means that 73% of Australians are unaware of just how much polyester – which ultimately becomes microplastic – is in our wardrobes.

Figure 5: What percentage of clothes sold in Australia are made of plastic?



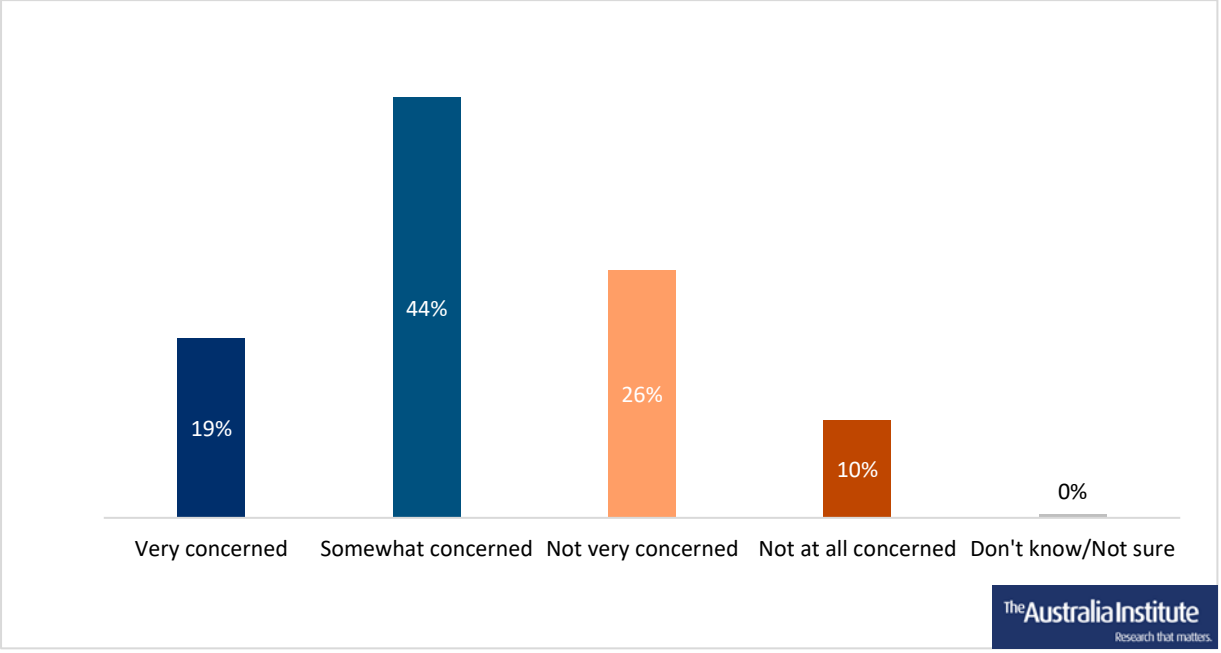
Source: Australia Institute polling.

Note: Correct answer is shown in light blue.

The good news is that Australians *are* concerned about the environmental impact of textiles.[40] As Figure 6 shows, when asked "How concerned are you, if at all, about the environmental impact of clothes, shoes and bags that you buy", 63% of Australians said they were either "somewhat concerned" or "very concerned". Only 36% said they were "not very concerned" or "not at all concerned".

[40] Our polling defined textiles as "a type of cloth or woven fabric made of fibres, filaments or thin threads. For example, yarn, wool, cotton, polyester, leather, nylon, silk and linen are all textiles." Respondents to our polling questions were given examples of textile products including "clothes (including uniforms), shoes and other footwear, bedding and linens, camping gear, furniture upholstery, rugs and carpets, curtains and car seats." See Appendix for a full polling disclosure statement.

Figure 6: How concerned are you, if at all, about the environmental impact of clothes, shoes and bags that you buy?



Source: Australia Institute polling.

Globally, recycled clothing accounts for less than 1% of material used to make new clothing.[41] Australia, which has almost no ability to recycle textiles waste,[42] is no exception. So, what is Australia going to do about this ever-mounting mass of unwanted, discarded clothes? And how do current policies to tackle textiles waste stack up against the growing piles of old shirts, broken suitcases, and used carpet stacked up in our landfills?

TEXTILES AND THE CIRCULAR ECONOMY

Successive Australian Governments have pitched the 'circular economy' as the panacea to all of Australia's waste problems – and textiles have not been an exception. According to the Department of Climate Change, Energy, the Environment and Water (DCCEEW):

> "a circular economy is a way of achieving sustainable consumption and production, as well as nature positive outcomes. In a circular economy, products are either recycled, remanufactured or re-used after they have served their initial purpose. This minimises pressure on the environment, and helps tackle global challenges like climate change, biodiversity loss, waste, and pollution." [43]

[41] Ellen Macarthur Foundation (2017) *A new textiles economy: redesigning fashion's future*, p 37, https://www.ellenmacarthurfoundation.org/a-new-textiles-economy

[42] Australian Fashion Council (2023) *Roadmap to clothing circularity*, p 5.

[43] DCCEEW (2024) *Transitioning to a more circular economy*, https://www.dcceew.gov.au/environment/protection/circular-economy

Drawing on a definition from the Ellen Macarthur Foundation, a charity committed to creating a circular economy, DCCEEW identifies three 'key principles' of circularity: eliminating waste and pollution; circulating products and materials at their highest value; and regenerating nature.[44]

The Australian Government's *National Waste Policy* outlines five key principles that will "enable Australia to transition to a circular economy."[45] Crucially, the first 'principle' is avoiding waste in the first place.[46] While the policy does not specifically mention textiles, since 2021–22 textiles have been included on DCCEEW's "product stewardship priority list", which makes textiles a "current priority for product stewardship action."[47]

Governments at the state and territory level have also committed to circularity. At a 2023 meeting, the nation's environment ministers committed "to transition Australia from a "take, make, waste" economy toward a more resilient and regenerative circular economy that maximises the value of materials and minimises waste and pollution."[48]

The circular economy promises substantial benefits for both the environment and the economy. The *National Waste Policy* suggests that "a hypothetical five per cent improvement in efficient use of materials across the Australian economy could benefit Australia's GDP by as much as $24 billion."[49]

But how does this goal stack up against the reality of Australia's growing textile's waste problem? A functional circular economy – for textiles or any other kinds of waste – depends on two things: the ability to recycle waste (which in this case is mostly plastic fibres), and the creation of reliable markets for the recycled material. To date, a viable way of recycling textiles has proved elusive, and a reliable market for recycled plastic fibres does not exist. As it stands, there are limited incentives for manufacturers to use recycled polyester because, depending on the price of oil, it can be more expensive than virgin feedstock.[50]

The establishment of a circular economy for textiles waste depends on big government interventions including taxation, bans on the import and export of problematic waste,

[44] DCCEEW (2024) *Transitioning to a more circular economy*.

[45] DCEEEW (2023) *National waste policy*, https://www.dcceew.gov.au/environment/protection/waste/how-we-manage-waste/national-waste-policy

[46] DCCEEW (2018) *National waste policy 2018,* p 11.

[47] DCCEEW (2024) *Minister's priority list 2023-24*, https://www.dcceew.gov.au/environment/protection/waste/product-stewardship/ministers-priority-list-23-24

[48] DCCEEW (2023) *Agreed communique 9 June 2023*, https://www.dcceew.gov.au/environment/protection/circular-economy

[49] DCCEEW (2018) *National waste policy 2018,* p 3.

[50] Hardman (2024) *Plastic recycling needs to be freed from the oil price cycle*, https://www.afr.com/companies/manufacturing/plastic-recycling-needs-to-be-freed-from-the-oil-price-cycle-20240402-p5fgpy

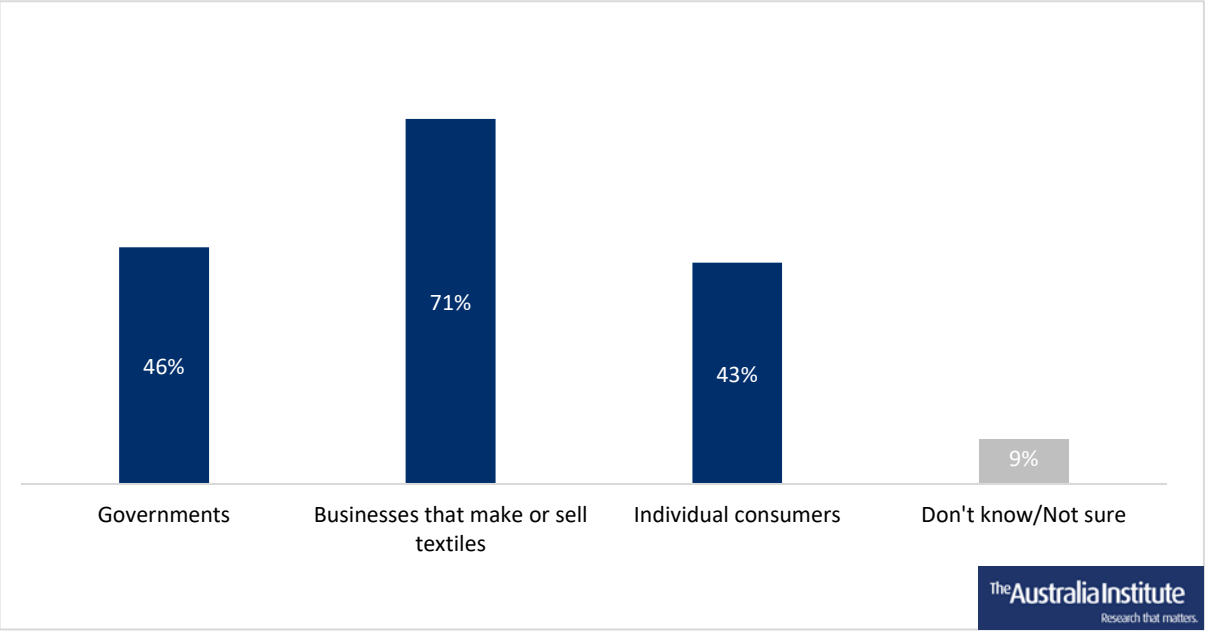
investment in new industry, procurement policies, and other legislation that requires manufacturers to use recycled materials. The development of a circular economy *is* an opportunity for economic growth that can also solve a vexed environmental problem. But the policy leadership it will take is set against the grain of decades of free-market neoliberalism. But the free market and its 'take, make, waste' production model has created the problem, and left to run unregulated, it will only create ever more piles of waste.

Circularity is essential. We must be able to repair, reuse and recycle the waste textiles that clogs landfills, rivers, and oceans around the world. But it is equally important to reduce the overproduction and overconsumption of textiles in the first place. While both are part of the solution, the simplest way to reduce waste is to not create it in the first place.

Existing product stewardship schemes

As Figure 7 shows, when asked "Who should be responsible for eliminating textile waste?" more Australians selected "businesses that make or sell textiles" (71%) than governments (46%) or individual consumers (43%).

Figure 7: Who should be responsible for eliminating textile waste?



Source: Australia Institute polling.

As businesses that manufacture and sell textiles are at the center of the waste problem, it is not surprising that the Commonwealth Government has created a product stewardship scheme in which textiles businesses pay a fee towards efforts to reduce textiles waste. But, as this report shows, a solution to the textiles waste problem depends on action from business, government, *and* consumers.

SEAMLESS

To deal with waste generated by the clothing industry, which is the most visible source of textiles waste, the Commonwealth Government has created the National Product Stewardship Scheme, also known as Seamless. Launched in June 2022, and led by the Australian Fashion Council, its goal, which fits explicitly within a 'circular economy' framework, is to "improve the design, recovery, reuse and recycling of textiles, providing a roadmap to 2030 for clothing circularity in Australia in line with *National Waste Policy*

Action Plan targets."[51] The scheme is expected to formally start its operations in July 2024 and aims to divert 60% of end-of-life garments from landfill (120,000 tonnes) by 2027.[52] Seamless is currently a voluntary scheme, but the Minister for Environment and Water has stated that its goals will become legislated policy in the absence of industry wide participation in the scheme before the July 2024 launch.[53]

As part of the "transition phase" of the scheme (June 2023 to June 2024), Seamless approached 30 of Australia's largest clothing brands to be "foundation" members of the scheme.[54] But participation in the program is voluntary, and as of April 2024 there were only eight "foundation" members.[55] One of these is Cotton On, the largest fast fashion retailer in Australia.[56] Having said this, 100 smaller brands have registered their interest in the program.[57] Members (known as "stewards") can be brand owners or licensees who have an exclusive relationship with a brand for sale in Australia.[58] Stockists (retailers who only stock third-party brands) are encouraged to join Seamless as supporting members, but not as stewards.[59] Stewards are also expected to participate and collaborate in various pilot programs aimed to increase circularity (such as take-back schemes or awareness-raising campaigns), and will be required to confidentially report data on their production (to calculate aggregate contributions to be paid) and the progress they have made against the set targets.[60]

The scheme will be coordinated by a "Product Stewardship Organisation" (PSO) governed by an independent industry board with input from an Advisory Group. The PSO and foundation members will be responsible for determining shared targets for the scheme.[61] Members are expected to contribute 4 cents to the PSO for every garment placed on the Australian market, no matter where it is manufactured (footwear, disposable protective wear and

[51] Australian Fashion Council (2022) *National clothing product stewardship scheme, milestone 1.4 clothing data report*, p 6.

[52] Australian Fashion Council (2023) *Seamless frequently asked questions*, p 1-2, https://ausfashioncouncil.com/program/seamless/

[53] DCCEEW (2023) *Minister's priority list 2023-24.*

[54] Kent (2024) 'Danielle Kent, General Manager Industry Transformation at Seamless, Creating Clothing Circularity by 2030', interview by Elizabeth Formosa, *Fashion Business Mindset*, https://open.spotify.com/episode/1s0ou8stbMmY4PUlxdHQfa?si=Cla7aTtCT5eyRQv_XNaEeg

[55] Australian Fashion Council (2024) *Join Seamless,* https://ausfashioncouncil.com/program/seamless/

[56] Australian Fashion Council (2023) *Progress update: Seamless completes phase one, achieving key milestones*, https://ausfashioncouncil.com/progress-update-seamless-completes-phase-one/

[57] Australian Fashion Council (2023) *Seamless - frequently asked questions*, p 4.

[58] Australian Fashion Council (2023) *Seamless scheme design report,* p 8.

[59] Australian Fashion Council (2023) *Seamless scheme design report,* p 40.

[60] Australian Fashion Council (2023) *Seamless scheme design report,* p 37.

[61] Australian Fashion Council (2023) *Seamless scheme design, summary report,* p 55.

accessories are exempt).[62] Small to medium sized enterprises (SMEs) that import less than 1,000 units per year have the option to waive their contribution.[63]

About 60% of Seamless's funding would go towards improving collection, sorting and recycling infrastructure. The rest would go towards citizen education, accreditation expenditure, administration and technical work.[64] The Australian Fashion Council aims to get 60% of the clothing market (by volume) to sign up for the scheme, which would generate about $36 million per year. If 100% of Australia's clothing industry contributed, Seamless would generate an estimated $60 million a year. However, we estimate that it will require about $1.5 billion a year to develop a circular industry for textiles in Australia. This is largely because the collection and sorting of textiles waste – which will be essential if textiles are to be reused and recycled on a mass scale – is expensive.

The investment of this money into these initiatives could help reduce the amount of textile waste. However, representatives of the textiles industry make up a significant part of the scheme's governance, both in the board of the PSO and the Advisory Group.[65] The importation of ultra-fast fashion is likely to increase, which will inevitably create more waste. While getting these major brands to sign up (or for membership to be made compulsory) will increase the funding Seamless receives, membership cannot simply be a way for businesses that overproduce textiles to greenwash their image. Moreover, Australia's recycling industry, which has a big role to play in helping to develop a local end-of-life infrastructure for textile and reduce the amount of waste exported, is not represented on Seamless's board.[66] Without the meaningful involvement of representatives from the recycling industry in the governance of the scheme, there is little reason to believe that recycling will be a priority. The inclusion of ethical sourcing agents would also help ensure that the right materials are used through the supply chain.

Seamless is one of the first schemes for reducing textiles waste in the world, and this is a welcome step. The scheme is bringing insights into Australia's clothing industry and the waste crisis it faces. However, while the money raised by Seamless could help deal with textiles waste, the more direct way to tackle the problem is to drastically reduce the ever-increasing level of production and consumption in the first place. While another one of Seamless's objectives is to "decouple the growth of Australian fashion from virgin resource use",[67] it is difficult to see how it would, in practice, achieve this.

[62] Australian Fashion Council (2023) *Seamless scheme design, summary report,* p 8.

[63] Australian Fashion Council (2023) *Seamless scheme design report,* p 23.

[64] Australian Fashion Council (2023) *Seamless scheme design, summary report*, p 15; Australian Fashion Council (2023) *Seamless scheme frequently asked questions*, p 1

[65] Australian Fashion Council (2023) *Seamless scheme design report,* p 80-81.

[66] Australian Council of Recycling (2024) *Recyclers in product stewardship*, p 13, https://acor.org.au/publications/

[67] Australian Fashion Council (2023) *Seamless scheme design report,* p 2.

PRODUCT STEWARDSHIP SCHEMES FOR TEXTILES OTHER THAN CLOTHING

While clothing accounts for about 60% of all textiles,[68] things like carpet, curtains, upholstery and mattresses add further to the growing textiles waste problem. Uniforms and workwear (which more than 50% of employed Australians wear) create an estimated 11,000 tonnes of textiles waste annually,[69] and each school in Australia disposes of an estimated 100 to 200kg of wearable uniforms per year.[70] Mattresses and bedding are another source of textiles waste. About 1.8 million mattresses end up in landfill each year, which if they placed end-to-end, would stretch from Darwin to Tasmania.[71] The majority of carpeting also consists of polyester, polypropylene or nylon. In Australia, there is currently no national commercial recycling facilities that processes carpets and rugs. Give a Sheet, an organisation that collects used bed linens for recycling, estimates that the average household has about 15kg of old, worn-out linens – this is about 138 million kg of worn-out linen that will go to landfill unless a viable alternative is found.[72]

Although Seamless is only concerned with textiles waste generated by the fashion industry, several other programs are working to reduce the textiles waste produced by other industries. This includes the Australian Sporting Goods Association (which deals with old sports shoes), Edge Environment (for waste furniture), the Vinyl Council of Australia (for discarded PVC banners) and Equilibrium OMG Pty Ltd (for used child car seats).

The waste from used mattresses, which includes a significant amount of textile waste, is such a big problem that it constitutes its own, stand-alone category on DCCEEW's 'Minister's Priority List' for 2023-24.[73] The Minister has called for an expansion of product stewardship for mattresses, and for mattress and bedding companies to become members of the Australian Bedding Stewardship Council.[74] The Council, which is backed by the Commonwealth Government and has Australian Competition and Consumer Commission authorisation, aims to reduce waste and improve the life of bedding products. It is specifically concerned with end-of-life mattresses and plans to include additional bedding products with the development of the scheme.[75]

[68] Ellen MacArthur Foundation (2017) *A new textiles economy.*

[69] Assembled Threads (2023) *Assembled threads*, p 3, 7, https://assembledthreads.com/circularity/

[70] Worn Up (n.d.) *How did you start?*, https://wornup.com/pages/meet-the-team

[71] Australian Bedding Stewardship Council (2022) *End-of-life mattresses are a growing problem not only in Australia but globally*, https://www.beddingstewardship.org.au/end-of-life-mattresses-are-a-growing-problem-not-only-in-australia-but-globally/

[72] Give a Sheet (2023) *Why give a sheet?* https://giveasheetfortheplanet.com/

[73] DCCEEW (2024) *Minister's priority list 2023-24*.

[74] DCCEEW (2024) *Minister's priority list 2023-24*.

[75] Australian Bedding Stewardship Council (2024) *Let's say goodnight to unsustainable bedding,* https://www.beddingstewardship.org.au/

THE EUROPEAN UNION'S STRATEGY FOR SUSTAINABLE TEXTILES

The European Union (EU) has had waste prevention programmes in place for 10 years, which mandate member states to take waste reduction measures. However, in the absence of concrete, quantitative targets, the EU itself acknowledges that "it is difficult to prove a link between the introduction of the programmes and an effect on waste generation".[76] In 2022, as part of its commitments under the European Green Deal and the new Circular Economy Action Plan, the EU introduced its Strategy for Sustainable and Circular Textiles.[77] The Strategy aims at increasing the durability, sustainability, ethics, and safety of textile products; phasing out fast fashion; phasing down textile waste; and making the EU's textile sector more competitive and innovative.[78] The Strategy includes many inter-related initiatives, including the *Revising the Waste Framework Directive*. The Framework Directive is intended to introduce mandatory and harmonised Extended Producer Responsibility (EPR) schemes for textiles (including accessories and footwear) in all member states. These EPRs function in a similar way to Seamless, even though it is technically a product stewardship scheme. Under the EPR schemes, eco-modulated fees would be paid by textile producers to support circular end-of-life infrastructure.[79] Those fees are estimated to be around EUR 0.12 (AUD 0.25)[80] per item, which is five times the fee proposed by Seamless.[81] The proposed revision also includes a mandate to member states to set up dedicated collection infrastructure for recycling and reuse by January 2025.

Within member states, the Netherlands and France offer good examples of EU-compliant EPR legislation that goes further than Seamless. Both the Netherlands and France have managed to get a majority of the textile market to register with a single Producer Responsibility Organisation (PRO), and both have set higher fees per garment than Seamless.

[76] European Environment Agency (2023) *Tracking waste prevention progress — A narrative-based waste prevention monitoring*, p 60, https://www.eea.europa.eu/publications/tracking-waste-prevention-progress

[77] Van Keulen (2024) *5 takeaways from the new EU circular fashion strategy*, https://earth.org/5-takeaways-from-the-new-eu-circular-fashion-strategy/

[78] European Commission (2023) *EU strategy for sustainable and circular textiles,* https://environment.ec.europa.eu/strategy/textiles-strategy_en

[79] Ohana Public Affairs Consultancy (n.d.) *EU Waste Framework Directive: A Deep Dive into the 2023 Revision Proposal***,** https://www.ohanapublicaffairs.eu/2023/09/27/eu-waste-framework-directive/

[80] All currency conversions in this report are based on OECD Purchasing Power Parities (PPP) for 2022 to equalise price levels in different countries. Source: OECD (n.d.) *Purchasing Power Parities (PPP),* https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm#indicator-chart

[81] Ohana Public Affairs Consultancy (2023) *EU EPR: What an analysis of EPRs in France and the Netherlands tells us about the proposed EU-wide rules,* https://www.ohanapublicaffairs.eu/2023/11/02/epr-overview-analysis/

The Netherlands

In the Netherlands, a mandatory EPR scheme for textiles (including clothing and household linen, but not footwear or other textile accessories) has been in place since July 2023.

The government-set targets mandate that, by 2025, 50% of the textile placed on the Dutch market must be recycled or reused. By 2030, the target jumps to 75%. Of this, a minimum of 20% must be reused, and a minimum of 10% must be reused in the Netherlands. At least 25% of the recycling must be fibre-to-fibre. The EPR legislation applies to "producers and importers who professionally release consumer clothing, work & corporate wear, bed, table, and household linen on the Dutch market." Producers are also financially responsible for establishing adequate end-of-life infrastructure for unwanted textile products.[82]

While producers can set up their own infrastructure to meet their EPR obligations, it is recommended that they do so by registering with *Stichting UPV Textiel*, the Netherlands' own PRO for textiles. Currently – less than a year after the EPR scheme was put in place – the PRO represents 70% of textiles producers. This is more than Seamless is hoping to achieve through a voluntary scheme, which shows the benefits of making the scheme legally enforceable.

To cover for the costs of collection, processing, and recycling innovations, *Stichting UPV Textiel* charges producers a fee of EUR 0.10 (AUD 0.20) per kilo of textiles they place on the Dutch market.[83] According to our calculations, this corresponds to about AUD0.05 per garment.[84] This is expected to rise to EUR 0.20 per kilo (AUD 0.10 per item) in 2025 as the program enters its third year. This is more than twice the Seamless fee.[85]

While the Dutch EPR scheme does not address primary resource extraction nor waste at the production level, this legislation has two crucial aspects that Seamless lacks: it sets out binding targets, and mandates producers to submit regular compliance reports through an online platform.[86]

[82] Stichting UPV Textiel (2024) *Extended producer responsibility for textiles,* https://www.stichtingupvtextiel.nl/en/upvtextiel/#watisupv

[83] Stichting UPV Textiel (2024) *Extended producer responsibility for textiles.*

[84] The average garment is estimated to weigh about 250 grams.

[85] Stichting UPV Textiel (2024) *Extended producer responsibility for textiles.*

[86] Dorenbosch (2023) *Warning for all textile companies: the Dutch EPR system is here on 1 July 2023,* https://www.twobirds.com/en/insights/2023/netherlands/warning-for-all-textile-companies-the-dutch-epr-system-is-here-on-1-july-2023

France

France has some of the most advanced EPR legislations in the EU, particularly for textiles.[87] The French EPR scheme ("filière REP TLC"),[88] which has been in place since 2008, sets collection and recycling targets for textiles including clothing, linens, curtains and footwear. By 2028, it aims to achieve a minimum of 60% annual collection of textile waste,[89] and to recycle 90% of the synthetic waste that comes from textiles each year.[90]

Producers, importers and distributors operating on the French market, including online retailers, are required to either enrol in a certified collection organisation or establish their own officially accredited collection and recycling program.[91] Currently, 95% of the French textile market is managed by "Refashion"[92], an eco-organisation financed by mandatory eco-contributions. Under a "polluter pays" principle, eco-contributions are scaled according to the producers' annual turnover and the number of items they sell. Seamless was roughly modelled on Refashion.[93] Like Seamless, these contributions are reduced if the product uses sustainable materials.[94] The rate also varies depending on the type of item.[95] The average eco-contribution is estimated to be about EUR 0.04 (AUD 0.08), which is about 1.5 times the fee collected by Seamless.[96]

In 2021, Refashion collected EUR 52.7 million (AUD 108 million) from its more than 6,000 member brands,[97] which is about AUD 18,000 per brand.[98] In 2022, Refashion collected more than 260,000 tonnes of unwanted textile products and the majority of contributions

[87] Australian Fashion Council (2023) *Seamless scheme design report,* p 51

[88] Ministère de la transition écologique et de la cohésion des territoires (2023) *Produits Textiles (TLC*), https://www.ecologie.gouv.fr/produits-textiles-tlc

[89] Refashion (n.d.) *Key moments and figures,* https://refashion.fr/pro/en/key-moments-and-figures

[90] Ohana Public Affairs Consultancy (n.d.) *EU EPR: What an analysis of EPRs in France and the Netherlands tells us about the proposed EU-wide rules.*

[91] E-commerce Germany News (n.d.) *Textile EPR: Recycling laws for fashion e-commerce across Europe,* https://ecommercegermany.com/blog/textile-epr-recycling-laws-for-fashion-e-commerce-across-europe

[92] Nishimura (2024) *'Extended producer responsibility' textile recycling schemes gain traction globally,* https://sourcingjournal.com/sustainability/sustainability-compliance/extended-producer-responsibility-epr-textile-recycling-eu-sustainability-legislation-wrap-490188/

[93] Australian Fashion Council (2023) *Seamless scheme design report*, p 8.

[94] E-commerce Germany News (n.d.) *Textile EPR: Recycling laws for fashion e-commerce across Europe.*

[95] Ohana Public Affairs (n.d.) *EU EPR: What an analysis of EPRs in France and the Netherlands tells us about the proposed EU-wide rules***.**

[96] Moussa (2024) *Les sites d'ultra-fast fashion comme Shein et Temu dans le viseur des députés,* https://www.lemonde.fr/economie/article/2024/03/14/les-sites-d-ultra-fast-fashion-comme-shein-et-temu-dans-le-viseur-des-deputes_6221904_3234.html

[97] Refashion (n.d.) *Rapport d'activités 2022,* https://refashion.fr/rapport-activite/2022/

[98] Wilson (2021) *Learnings from France on textile waste and EPR,* https://www.innovationintextiles.com/learnings-from-france-on-textile-waste-and-epr/

(EUR 29.4 million/AUD59 million) went to support sorting operations.[99] This is equivalent to Seamless's projected annual budget.

Among high-income G20 countries, France currently has the lowest per capita carbon footprint from fashion consumption, at 146 kilos per year. This is less than a third of Australia.[100] Crucially, this cannot be completely attributed to the textile EPR scheme. Refashion does not represent a radical solution to overproduction. While the rate at which textiles are collected and recycling increased from 27% in 2013 to 39% in 2020, this is not enough to keep up with ever-increasing production. As Refashion itself acknowledges, the number of clothing items put on the market has been steadily increasing – from 552kt in 2013, to 827kt in 2022.[101]

The enduring lack of domestic recycling capacity means that most of the textiles collected are sent for processing outside of the EU.[102]

[99] Refashion (n.d) *Rapport d'activités 2022.*

[100] Coscieme et al. (2022) *Unfit, unfair, unfashionable: Resizing fashion for a fair consumption space*, p 21.

[101] Les Amis de la Terre France (2023) *Textile et fast-fashion: Pour en découdre avec la surproduction,* https://www.amisdelaterre.org/communique-presse/textile-et-fast-fashion-pour-en-decoudre-avec-la-surproduction*/;* Refashion (n.d) *Rapport d'activités 2022.*

[102] Les Amis de la Terre France (2023) *Textile et fast-fashion: Pour en découdre avec la surproduction.*

Reducing production and consumption

The first principle of the *National Waste Policy* is to avoid waste by, for example, "designing products so waste is minimised, [so that] they are made to last and we can more easily recover materials."[103] As discussed below, some Australian companies are already doing this. However, unless the amount of cheap, synthetic textiles coming into Australia is reduced, the amount of waste will continue to grow.

POLICIES TO REDUCE PROBLEMATIC PRODUCTION

Supply chain transparency

Another way of reducing the consumption of textiles is to give consumers more information about where items are produced. By knowing more about what comes into the country, supply chain transparency can help ensure problematic textiles do not come into Australia in the first place. The New York State Fashion Act is a world-leading example of what this could look like. The *Fashion and Social Accountability Act* (Fashion Act), which is scheduled to pass through the New York Legislature in 2024,[104] would require footwear and apparel retailers making a minimum of USD 100 million in revenue and doing business in the State of New York to:

- Map and monitor their supply chain.
- Disclose and report on their due diligence policies on environmental and social risks.
- Disclose their actual and potential social and environmental impact, which includes reporting on their use of chemicals, their impact on water, their greenhouse gas emissions, their uptake of recycled resources and their monitoring and improvement of labour conditions.
- Set environmental impact reduction targets.
- Make all of the above publicly available.

[103] DCCEEW (2018) *National waste policy*, p 11.

[104] The Bill is currently sitting in the New York Assembly Committee. See The New York State Senate (n.d.) *Assembly Bill 2021-A8352*.

If passed, companies that fail to comply with the Act would face a penalty of up to 2% of the company's yearly revenues in New York.[105]

Meanwhile, the EU is proposing the introduction of digital product passports (DPP) which would allow for an item of textiles to be tracked throughout its lifecycle. The proposed DPP mandate would require all stakeholders across the supply chain to provide data related to labour and environmental standards.[106] The EU Strategy for Sustainable and Circular Textiles would see the introduction of DPPs for apparel from 2026 on, with a focus on environmental sustainability.[107] Seamless mentions DPPs (and similar technologies) as a potential pilot activity in which stewards could engage.[108]

Eco-modulated taxes

As most textile items sold in Australia are imported, imposing taxes on the importation of problematic items – particularly low-quality fast fashion – would reduce the amount of what is destined to become waste from entering Australia in the first place. The 'eco-modulated fee' that Seamless is proposing is a small step in this direction. Seamless is considering granting member organisations a 25% reduction on the 4-cent contribution they are required to pay for each garment they put on the Australian market if the garment is more environmentally friendly. This would reduce the contribution to 3 cents per garment. The exact criteria would be defined by the PSO, but the recommendation is for the eco-modulation discount to be applied for items with a minimum of 98% single material fibre or at least 50% recycled fibre. According to Seamless, 20% of clothing on the market would meet one of the two criteria.[109]

Other countries are going further with eco-modulation. The lower house of France's parliament has passed a bill that would see a tax of EUR5 (about AUD 10) charged on items of clothing deemed to be 'fast fashion', which could increase to EUR10 (AUD 20) by 2030

[105] Douglass (2024) *Challenges of New York's Fashion Act and those helping to prepare for it*, https://fashionunited.uk/news/business/challenges-of-new-york-s-fashion-act-and-those-helping-to-prepare-for-it/2024031274566

[106] Adams (2023) *The EU's digital product passport: What it is, why it's important, & how it will impact supply chain sustainability*, https://www.z2data.com/insights/eus-digital-product-passport

[107] PSQR (2023) *All you need to know about the EU digital product passports,* https://psqr.eu/publications-resources/all-about-dpp/

[108] Australian Fashion Council (2023) *Seamless scheme design report,* p 38.

[109] Australian Fashion Council (2023) *Seamless scheme design report,* p 66-67.

(limited to 50% of the price of a garment).[110] The intention is for the revenue generated to cross-subsidise the domestic manufacturers of more ecologically sustainable textiles.[111]

While the exact thresholds would be defined at a later stage, the French bill proposal offers a definition of what constitutes fast fashion: producing or offering more than a certain number of items of clothing in a certain period (the current proposal is a 1,000-item daily threshold).[112] Importantly, this would include "marketplace"-type platforms, such as Temu.[113] The fees collected though this policy would be used partly to subsidise sustainable brands to make them more competitive.[114] The Netherlands is also considering introducing an eco-modulated fee as part of its EPR scheme.[115]

Another effective way of reducing the importation of fast fashion into Australia would be to tax the purchase of fast fashion from online retailers. According to Roy Morgan, in 2024 Shein and Temu will sell about $2 billion worth of fast fashion to Australians[116] – all of it purchased online. This kind of a tax would not only help reduce textiles waste but make the production of more sustainable alternatives more competitive.

If the Commonwealth Government passes legislation to make membership of Seamless compulsory, fast fashion brands like Temu and Shien would have to join. But, without a meaningful tax on the importation of disposable fast-fashion items, their participation in the scheme is likely to do little more than allow them to make false claims about their environmentally-friendly credentials without having to take substantial action to reduce overproduction.

Lower waste production

Some manufacturers have taken voluntary steps towards reducing waste and minimising the number of items that are produced but never sold. While this is a step in the right direction, without collective and mandatory targets aimed at reducing the volume of

[110] Kent (2024) *What Would Happen if Fashion Were Taxed Like Cigarettes?,* https://www.businessoffashion.com/articles/sustainability/france-fast-fashion-tax-cigarettes-shein/

[111] France-Presse (2024) *France's lower house votes to limit 'excesses' of fast fashion with environmental surcharge*, https://www.theguardian.com/world/2024/mar/15/france-fast-fashion-law-environmental-surcharge-lower-house-votes

[112] Moussa (2024) *Les sites d'ultra-fast fashion comme Shein et Temu dans le viseur des députés*.

[113] République Française (2024) *Proposition de loi visant à réduire l'impact environnemental de l'industrie textile.*

[114] Moussa (2024) *Les sites d'ultra-fast fashion comme Shein et Temu dans le viseur des députés.*

[115] Stichting UPV Textiel (2024) *Extended producer responsibility for textiles*.

[116] Demasi (2024) *Roy Morgan retail sales outlook for 2024*, https://www.roymorgan.com/findings/9437-roy-morgan-retail-forecast-for-calendar-2024

production, these efforts often represent little more than efficiency gains and greenwashing strategies, allowing for even more overproduction (the so-called 'rebound effect').[117]

Having said that, a number of manufacturers have designed textile products and ways of manufacturing that, in contrast to global fast fashion retailers, reduce overproduction. Regeneration is a key part of the circular economy, and these companies show that Australia has the means to help close the circularity loop domestically.

In Australia, Citizen Wolf, a clothing producer and retailer based in Sydney is aiming to produce clothes with a zero waste, circular model in which they make only what they sell, and recycle their old clothes into new fabric.[118] Citizen Wolf has developed imaging technology that allows consumers to purchase tailor-fit clothing using a few simple metrics entered into an online form.[119] Furthermore, the garments they sell are made of natural fibres (not plastic), they offer free repairs to their customers, and they have a takeback scheme in which garments that are no longer wanted are recycled into new products. By ensuring that clothes are durable and fit well, Citizen Wolf hopes that consumers will buy less. Citizen Wolf estimates that their model emits half the amount of carbon per garment as compared to mass produced fashion.

Citizen Wolf's tailor-made technology (which has a claimed 94% accuracy rate) can be licensed, which would allow other clothing manufacturers to create tailored garments. Innovations such as this could help move consumers away from the throwaway fast fashion culture and create a pathway for zero inventory, zero overproduction and zero waste to landfill manufacturing.

Meanwhile, Australian company The Very Good Bra has created a 100% plastic-free bra that is fully compostable. The Very Good Bra estimates that for every 10,000 bras it sells, 1,000 kilograms of plastics are saved from landfill.[120] Compostable textiles like this align with the principle of regeneration, which is one of the central tenants of circulatory. The company and its partners created a new Australian standard for textiles composting, which it hopes will provided the basis for a new international standard, as the United Nations has highlighted.[121] This would be a global first, and it shows the good work Australian companies are doing to help solve the textiles waste problem. However, as long as fast fashion remains cheap and abundant, it is difficult for products like this to compete. This is where policies to reduce the amount of problematic textiles coming into Australia can help.

[117] Vladimirova et al. (n.d. forthcoming) 'Position paper: towards wellbeing for all within the fashion and textiles system: exploring sufficiency approaches to policy', *Environmental Coalition on Standards.* Supplied.
[118] Citizen Wolf (2024) *Circular,* https://www.citizenwolf.com/pages/100-circular
[119] Citizen Wolf (2024) *Circular*, https://www.citizenwolf.com/pages/100-circular
[120] United Nations Department of Economic and Social Affairs (n.d.) *The very good bra*, https://sdgs.un.org/partnerships/very-good-bra
[121] United Nations Department of Economic and Social Affairs (n.d.) *The very good bra*.

POLICIES TO REDUCE CONSUMPTION

There is a clear connection between the increase in cheaply produced, mass manufactured 'fast fashion' and the amount of textiles waste. A legislated reduction target, which could function in a way similar to the Commonwealth's policy to reduce carbon emissions,[122] would be the most effective way to drastically reduce the production and consumption of textiles in the first place. But other policies – which are already being put in place in other countries – would help reduce overconsumption.

Regulating advertising

Like many large companies, fast fashion brands such as Shein and Temu use methods of advertising that rely on the use of personal data,[123] advanced Search Engine Optimisation (SEO), and social media influences to promote their products.[124] Part of the French fast fashion tax proposal requires fast fashion retailers to display awareness-raising messages on their websites that would draw attention to the environmental impact of their products. A prohibition on advertising for fast fashion products – including the use of social media influencers – is proposed from January 2025.[125] By adopting similar policies, Australia could reduce demand for problematic textiles.

Eco labelling

Another way to increase transparency is to establish standards for labels that would tell consumers more about the social and ecological footprint of the textiles they buy, thus empowering them to make more informed choices. This would be similar to the mandatory standards for care labelling that already exist in Australia.[126]

The EU's Sustainable Textiles Strategy also includes a plan to revise the Ecolabel criteria, which would provide a better framework for the use of sustainability-oriented labels.[127] The EU is currently developing a Product Environmental Footprint (PEF) methodology, to be

[122] DCCEEW (2024) *Net* zero, https://www.dcceew.gov.au/climate-change/emissions-reduction/net-zero

[123] Public Eye (2022) *Online fashion: How Shein, Amazon & co. manipulate their customers*, https://www.publiceye.ch/en/media-corner/press-releases/detail/online-fashion-how-shein-amazon-co-manipulate-their-customers

[124] Deffenbaugh (2023) *Why Chinese e-commerce giant Temu's challenge to Amazon is boosting Meta*, https://www.investors.com/news/technology/why-chinese-e-commerce-giant-temu-challenge-to-amazon-is-boosting-meta/

[125] République Française (2024) *Proposition de loi visant à réduire l'impact environnemental de l'industrie textile.*

[126] ACCC (2023) *Care labelling for clothing and textiles*, https://www.productsafety.gov.au/product-safety-laws/safety-standards-bans/mandatory-standards/care-labelling-for-clothing-and-textiles

[127] European Commission (2024) *Revision of EU ecolabel criteria for textile products,* https://environment.ec.europa.eu/news/revision-eu-ecolabel-criteria-textile-products-2024-03-07_en

introduced by the end of 2024. This would lead to the creation of a mandatory label that would give consumers information about the environmental impact of any product throughout its complete lifecycle, based on 16 criteria.[128]

As part of a Climate and Resilience Law adopted in 2021, the French government is working on implementing an eco-labelling scheme for clothing. Items of clothing would be given a score based on eight criteria: water consumption, material durability, manufacturing conditions, the use of pesticides and chemicals, how much microplastic it is likely to release, the use of recycled material, and whether an item can be considered 'fast fashion'.[129]

Through the *ReMade in Australia* program, the Commonwealth Government is seeking to create labelling to encourage consumers to buy products made with recycled materials. The website for the program states that "Australians want to buy sustainable products, but three in five people find it hard to make sustainable purchases," and that "the main cause of this is unclear labelling."[130] While this policy is focused on products manufactured domestically from recycled materials, a similar idea could be effectively applied to imported textiles sold on the Australian market. This would ideally inform consumers about the amount of recycled textiles (rTex) and recycled PET (rPET) in a product. The *National Waste Policy Action Plan* could also help, as it aims to make changes to the Australasian Recycling Label, which would "incorporate information about the percentage of recycled content in packaging."[131]

[128] Ecochain (2024) *Product Environmental Footprint (PEF) – a complete overview,* https://ecochain.com/blog/product-environmental-footprint/; Gumbau (2022) *EU to tackle 'green claims' with unified product lifecycle methodology*, https://www.euractiv.com/section/circular-economy/news/eu-to-tackle-green-claims-with-unified-product-lifecycle-methodology/

[129] Garnier (2023) *L'industrie textile s'inquiète de la mise en place de l'affichage environnemental de vêtements*, https://www.lemonde.fr/economie/article/2023/07/11/l-industrie-textile-s-inquiete-de-la-mise-en-place-de-l-affichage-environnemental-de-vetements_6181517_3234.html

[130] DCCEEW (2024) *ReMade in Australia*, https://www.dcceew.gov.au/environment/protection/waste/consumers/remade-in-australia

[131] DCCEEW (2019) *National waste policy action plan*, p 19.

Extending the life of textiles: Reuse and repair

As mentioned above, Australians are the biggest consumers of textiles in the world, on a per-capita basis.[132] Consumer behaviour is difficult to shift, but without cultural change in the way we buy and use textiles, our waste problem will continue to grow. Whereas Australians buy an average of 56 new items of clothing per year,[133] in France the average is 36.[134] Dr Katia Vladimirova, fashion and postgrowth researcher from the University of Geneva, suggests the difference is in how fashion is valued:

> "In France fashion consumption culture still revolves around style, reusing garments in creative ways by restyling clothes i.e. garments to create varieties of different looks for different occasions. French consumers are much less attracted by social status display through clothes than their Italian or British counterparts, which leads to less consumption overall."

It is estimated that clothing items currently have a life span of between one or two years in the case of underwear and t-shirts, and four to six years for coats and suits.[135] Consumers also keep clothes about half as long as they did in the early 2000s.[136] In addition to reducing production and consumption, extending the lifecycle of garments can help reduce the amount of textiles waste. In its discussion of avoiding waste, the *National Waste Policy* states that "efficient use, reuse and repair" should be encouraged.[137]

Increasing rates of repair

In its discussion of reuse and repair, the *National Waste Policy Action Plan* says the Commonwealth Government will "review and report on recommendations to introduce laws to improve consumers' 'right to repair' options" and "[s]upport community-based

[132] Khan et al. (2023) 'Textile waste management in Australia: A review', *Resources, Conservation and Recycling Advances*, https://doi.org/10.1016/j.rcradv.2023.200154

[133] Australian Fashion Council (2022) *National clothing product stewardship scheme, milestone 1.4 clothing data report*, p 22.

[134] Refashion (n.d.) *Rapport d'activités 2022,* p 13.

[135] Pensupa (2020) 'Recycling of end-of-life clothes', *Sustainable Technologies for Fashion and Textiles,* https://doi.org/10.1016/B978-0-08-102867-4.00012-8

[136] Remy et al. (2016) *Style that's sustainable: A new fast-fashion formula,* https://www.mckinsey.com/capabilities/sustainability/our-insights/style-thats-sustainable-a-new-fast-fashion-formula

[137] DCCEEW (2018) *National waste policy*, p 11.

reuse and repair centres, enabling communities to avoid creating waste."[138] If the Commonwealth Government wants to increase the rate at which textiles are repaired, it could borrow from policies in Europe that offer consumers a discount on their bill.

About a third of countries in the EU have reduced the value added tax (VAT) rate (ranging from 5% to 13.5%) on repair services for several types of consumer products, including clothing and household linen.[139] Similarly, in the United Kingdom, a policy motion proposes to offer reduced VAT rates to resale, rental and repair services, to encourage consumers to extend the life of their textiles. The same motion would extend the existing virgin plastics tax to oil-based textile items that contain less than 50% recycled PET. [140]

France has taken more direct action by introducing a government-funded rebate scheme for textile repairs, with the goal of increasing repairs by 35% by 2028. Customers get a discount of between EUR8 and 25 (AUD 16-51) off their repair bill, which participating shops can then claim back from the PRO Refashion.[141] Our polling shows that such a scheme could potentially double the rates of repair in Australia.

To test the possible effect of a rebate on repairs, respondents in the Australia Institute's poll were split into two equally-sized groups at random. One group was asked how often they get damaged textiles repaired and the other how often they would get damaged textiles repaired if they were given a rebate.

For those asked "How often do you get damaged clothes, shoes or bags repaired?" 39% said they did so for some (25%) or most or all (14%) of their damaged clothes, shoes or bags (see Figure 8).

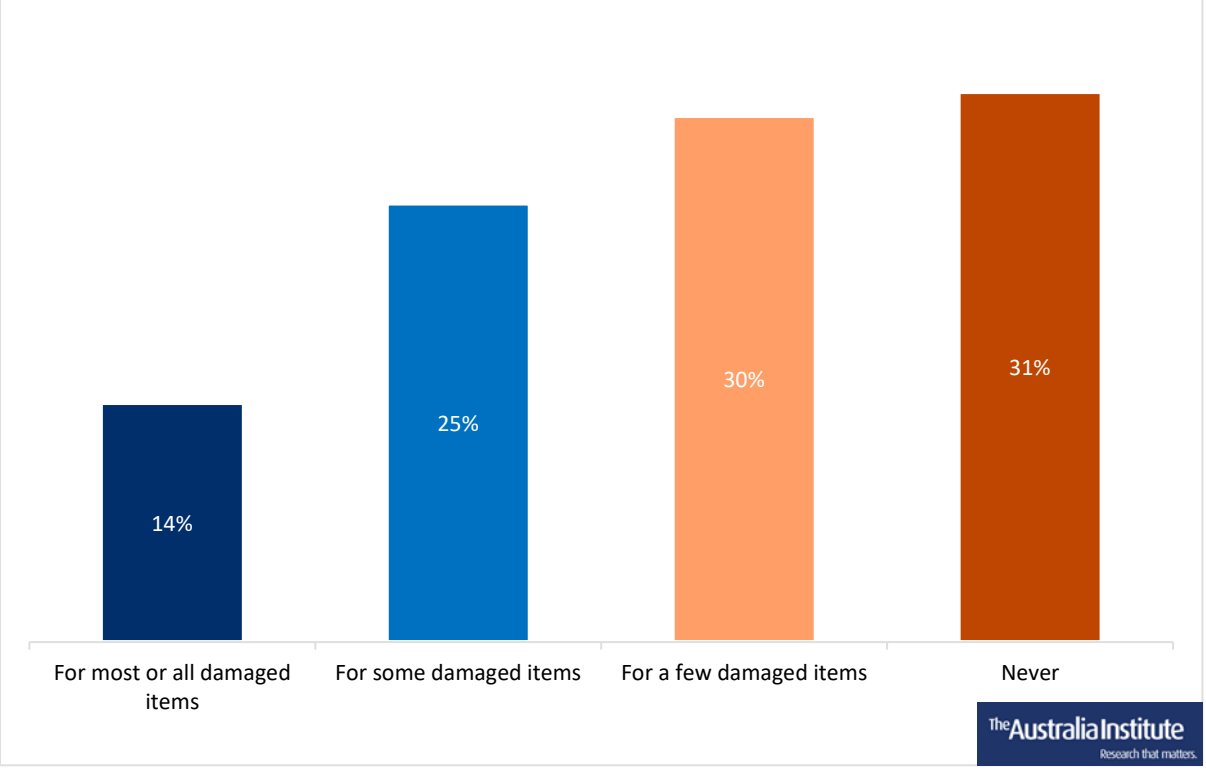
[138] DCCEEW (2019) *National waste policy action plan*, p 9, https://www.dcceew.gov.au/environment/protection/waste/publications/national-waste-policy-action-plan

[139] Manoochehri et al. (2022) *An overview of Europe's repair sector*, p 37, https://www.eionet.europa.eu/etcs/etc-ce/products/etc-ce-products/etc-ce-report-6-2022-an-overview-of-europes-repair-sector

[140] Sarfo (2023) *The tax man comes for fast fashion*, https://www.forbes.com/sites/taxnotes/2023/11/13/the-tax-man-comes-for-fast-fashion/?sh=3a4d34d172d8; Liberal Democrats (n.d.) *Fixing fast fashion - reduce, reuse, recycle,*
https://www.libdems.org.uk/conference/motions/autumn-2023/f16

[141] République Française (2023) *Bonus réparation: une aide financière pour faire rapiécer vos vêtements et vos chaussures,* https://www.service-public.fr/particuliers/actualites/A16951

Figure 8: How often do you get damaged clothes, shoes or bags repaired?



Source: Australia Institute polling.

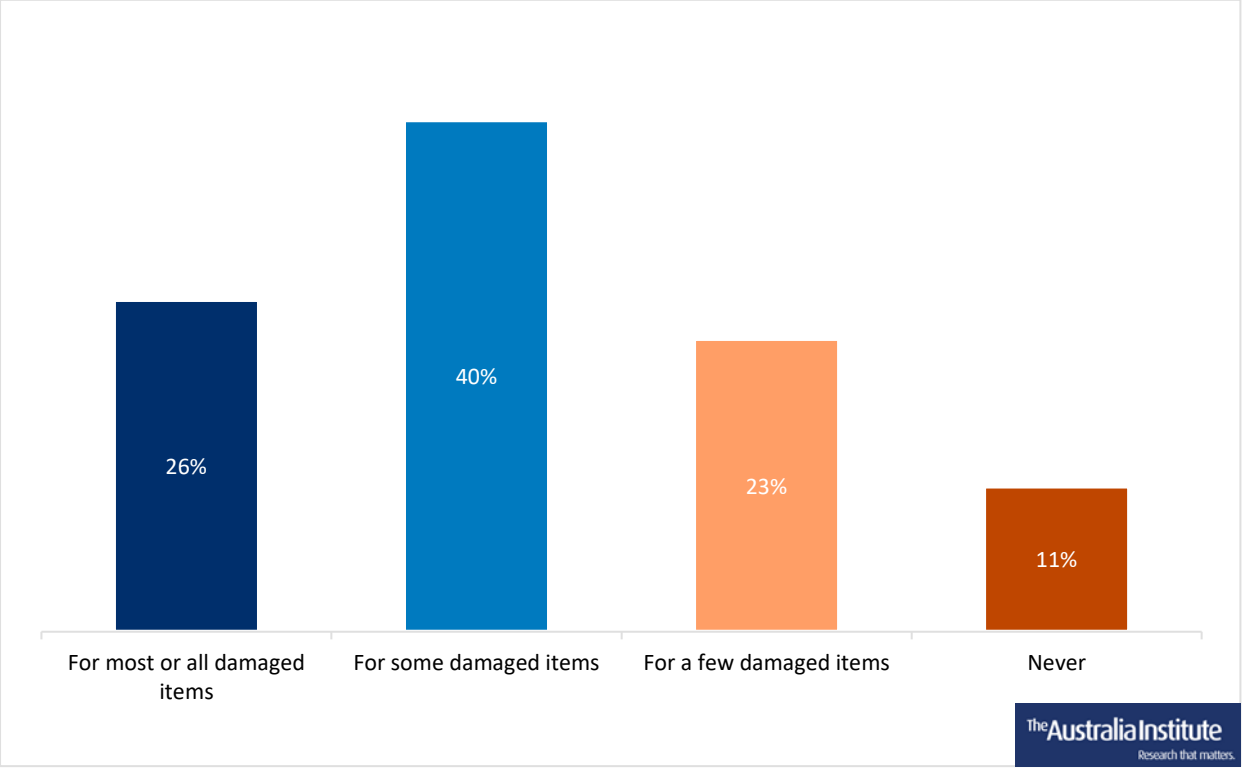
By adopting a rebate policy similar to France, Australia could see a reversal of current consumer behaviour.

Those asked how often they *would* get damaged textiles repaired were first told:

> France has introduced a government-funded scheme that offers discounts to customers when they pay to have their clothes, shoes or bags repaired.

They were then asked, "If a similar scheme were introduced in Australia, how often would you get damaged clothes, shoes or bags repaired?" Only 11% of respondents said they would never do so, while 66% of respondents said they would, which included for either some (40%) or most or all damaged items (26%) (see Figure 9).

Figure 9: If a rebate were introduced, how often would you get textiles repaired?



Source: Australia Institute polling.

Individual and community opportunities for reuse

Besides buying less, one of the easiest things anyone can do to reduce waste in their wardrobe is to reuse and restyle items they may no longer want.[142] By keeping textiles for as long as possible, consumers can help to reduce the natural resources used in the manufacturing of garments, and the waste they create when they are discarded. Restyling – that is the mixing, matching, layering and using accessories on one garment to create a range of different looks for a myriad of occasions – reduces the impulse to purchase new clothes. Borrowing also reduces the waste created from buying excessive amounts of new clothing. Repurposing, redesigning or upcycling unwanted clothes, uniforms, bedding, and curtains, keeps textiles from becoming waste for longer.

If an item is really no longer wanted, there are a range of community-level options for reuse and recycling that can extend the lifecycle of a garment. Clothes swaps allow people to exchange the clothes they no longer need with each other. Participants each bring clothing they no longer need and add it to a donation pool. Participants then 'browse' through the donated pool of good quality second-hand clothing. These swaps can be extended with the

[142] Gbor (2023) *Restyling for the war on fashion waste*, https://www.ecostyles.com.au/blogs/restyling-for-the-war-on-fashion-waste

establishment of a permanent location for donations and collections (like a community library for clothes). There are also apps where people can swap online.

At repair cafés, people with tailoring, textile repair, design and craft making skills help repair damaged items for the public. They also provide an opportunity for people to learn how to repair their own apparel.

Garage sales and second-hand markets are another effective way of reducing waste. At a national level, the Garage Sale Trail facilitates an annual, nation-wide garage sale. In 2023, more than 400,000 Australians shopped or sold items at over 14,000 locations, which meant that the life cycle of over 3 million kilograms of stuff was extended.[143] Plus, sellers generated an estimated $3.6 million.[144]

Engaging in reuse at this community level can be a powerful way to reinforce better choices and support circular systems. However, second-hand garments should not be treated as single-use or disposable. It is still important to be mindful of overconsumption and throwaway culture.

[143] Garage Sale Trail (n.d.) *What is it?,* https://www.garagesaletrail.com.au/about/what-is-gst

[144] Garage Sale Trail (n.d.) *The why,* https://www.lesswastemorecommunity.com/

Keeping waste textiles out of landfill

Keeping waste out of landfills is perhaps *the* key goal of circularity. As the least preferable way of dealing with waste, the *National Waste Policy* puts disposal at the bottom of its 'waste hierarchy'.[145] As much of it is exported, the disposal of textiles waste has repercussions on a global level. This is why the first target of the *National Waste Action Plan* is to introduce a ban on the export of particular kinds of waste, including plastic, paper, glass and tyres – but not textiles.[146] Considering the environmental, health, and social impacts waste textiles have in other countries, and that many textiles are made from the same polymer as plastics, textiles should be included in the plan to ban waste export. However, the ban is only as good as its enforcement. While it was supposed to commence in the second half of 2020, waste exports continue.

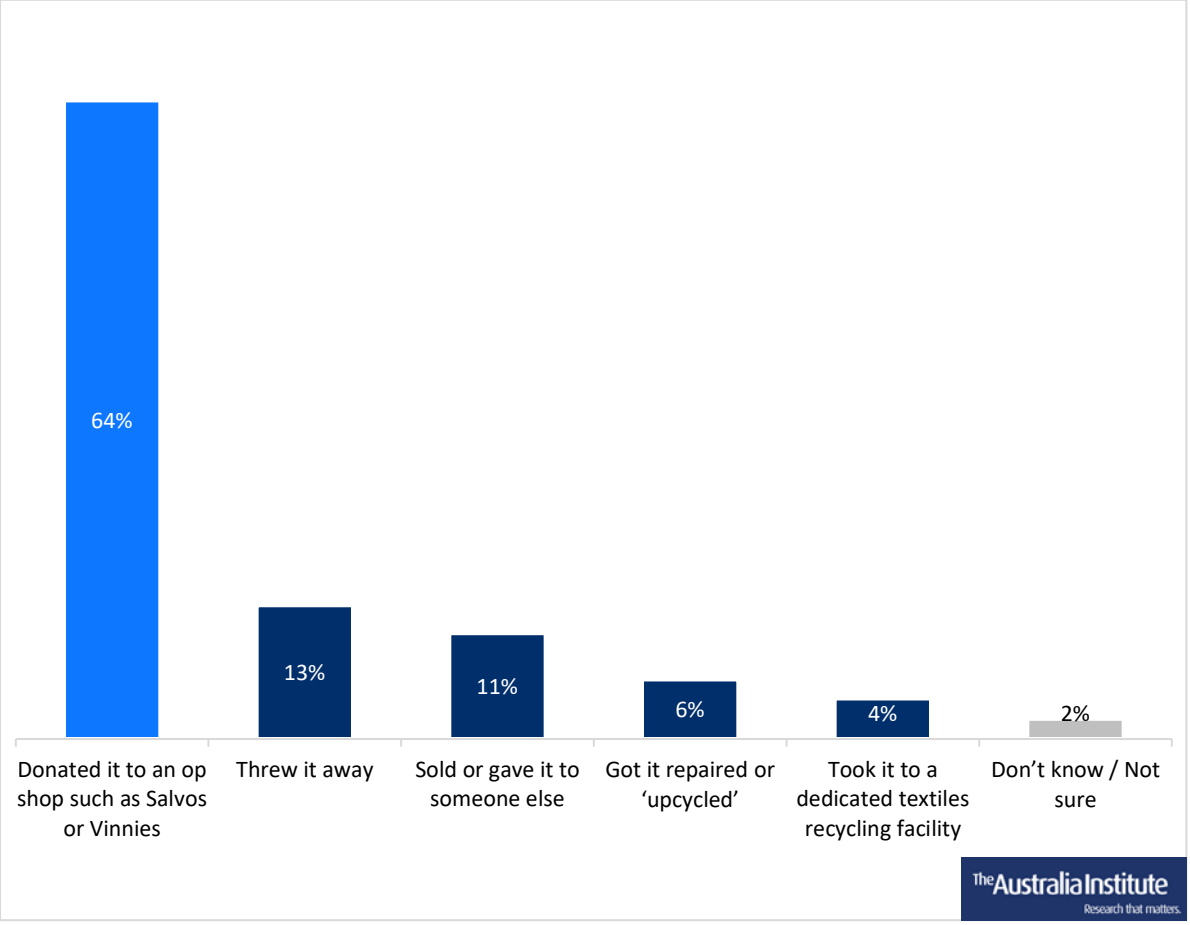
Citing data from the Australian Fashion Council, the *National Waste Report* notes that of the approximately 300kt of clothing that is discarded each year, about 100kt is sent to landfill, while about 200kt is given to clothing donation or collection services.[147] The report states that, in 2020–21, the end destination of donated textiles broke down as follows:

- 30-45kt was resold in Australian charity shops, and a further 3kt was used in charity welfare programs.
- 3kt was processed by Australian textile recyclers to rags, felting or raw chemicals using chemical recycling.
- 35kt was landfilled because it was poor quality or damaged.
- 107kt was exported, mostly to developing countries where some was sold as second-hand clothing.[148]

Australia Institute polling confirms that donating clothing is by far the most common way for Australians to dispose of their used clothing. When asked "Thinking of the last item of clothing that you no longer wanted or could no longer use, what did you do with it?" 64% of people – two thirds – said "donated it to an op shop such as Salvos or Vinnies" (see Figure 10).

[145] DCCEEW (2018) *National waste policy*, p 9.
[146] DCCEEW (2019) *National waste policy action plan*, p 2.
[147] DCCEEW (2022) *National waste report 2022*, p 54.
[148] DCCEEW (2022) *National waste report 2022*, p 54.

Figure 10: What did you do with the last item of clothing that you no longer wanted?



Source: Australia Institute polling.

While it is no doubt a good thing that just 4% of respondents threw their old clothes away, this also hints at the opportunity for increasing rates of recovery through municipal waste collection. Local governments – which already manage waste disposal – could play a bigger role in the collection of used textiles by providing dedicated bins or collection facilities for unwanted textiles. For example, Waverley Council in Sydney's east has a program in which used textiles that are still in good condition are collected from apartment buildings.[149] This is a small start, but councils are well placed to establish the targeted collection of textiles that would otherwise become waste.

As it stands, Australians depend on the charity sector to deal with the clothes the no longer want. Every year Australia's charities sort through an estimated 720 million items of donated clothing.[150] It is not surprising then that Charitable Recyclers Australia, the

[149] Waverley Council (2024) *Waste management for apartments*, https://www.waverley.nsw.gov.au/residents/waste_and_recycling/waste_management_for_apartments

[150] Australian Fashion Council (2022) *National clothing product stewardship scheme, milestone 1.4 clothing data report*, p 22.

organisation that represents the interests of the charitable reuse and recycling sector,[151] is a founding partner of Seamless.[152] For many years, Australian charities have existed for public benefit. Because of the huge role the charity sector plays in sorting and distributing used clothing, it is going to be key to creating a circular domestic economy, and this is likely to require support.

However, until and unless the export of textiles waste from Australia is significantly reduced, much of it will continue to end up as waste in the Global South. According to Charitable Recyclers Australia, 33% of clothes donated to charities in Australia (or 102,000 tonnes) is "exported for reuse in Developing Countries".[153] This makes Australian charities part of a global system in which textiles waste from the Global North is exported to the Global South, where they have significant environment and social impacts.[154] There is significant speculation that textile recycling agencies and charities receive between $600 to $1,000 for every bale of clothing they export form Australia. This would make export a more attractive option than paying a levy to dump waste in Australian landfills. Charitable Recyclers Australia states that its members spend $18 million in disposal fees annually.[155]

Officially, the majority (68%) of the textile waste Australia exports goes to the United Arab Emirates,[156] but statistics from the Australia Bureau of Statistics (ABS) show that the destination for over 50,000 tonnes is unknown.[157] But much of this is exported again, and while it is hard to trace where they end up, the environmental impact of waste textiles is notorious. According to Dr. Yasaman Samie from RMIT university,

> "the lack of efficient sorting and sourcing infrastructure in Australia means that some used textiles are exported to other countries for sorting, and later re-imported back into Australia as high-quality vintage clothing. This cycle also contributes to an unnecessary environmental footprint."[158]

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[151] Charitable Recycling Australia (n.d.) *About,* https://www.charitablerecycling.org.au/about/

[152] Australian Fashion Council (2023) *Seamless scheme design, summary report*, p 2.

[153] Charitable Recycling Australia (n.d.) *Charitable impact*, https://www.charitablerecycling.org.au/education/charitable-impact/

[154] Cobbing et al. (2022) *Poisoned gifts, from donations to the dumpsite: textiles waste disguised as second-hand clothes exported to East Africa*, p 5, https://www.greenpeace.org/international/publication/53355/poisoned-gifts-report-fast-fashion-textile-waste-disguised-as-second-hand-clothes-exported-to-east-africa/

[155] Charitable Recycling Australia (n.d.) *Charitable reuse and recycling enterprises bear the financial burden of illegal dumping and unusable donations*, https://www.charitablerecycling.org.au/waste-levy/

[156] DCCEEW (2023) *Australian exports of waste and recovered materials in 2021-22,* p 5, https://www.dcceew.gov.au/environment/protection/waste/publicationshttps://www.dcceew.gov.au/sites/default/files/documents/abs-waste-exports-annual-summary-2021-22.pdf

[157] DCCEEW (2024) *Waste export summary - October to December 2023,* https://www.dcceew.gov.au/environment/protection/waste/publications/waste-export-summary-oct-dec-2023

[158] Personal communication with Dr. Yasaman Samie, RMIT University, 17 May 2024.

One investigative report from the Australian Broadcasting Commission (ABC) showed that Ghana receives 15 million used garments a week. Of this, approximately 40% cannot be resold because they are either stained or damaged beyond repair, so they end up being discarded in a nation that has little capacity to manage the waste they create.[159] According to one report from Greenpeace, the global trade in second-hand clothing grew ten-fold between 1990 and 2004, and is now worth about $1 billion.[160] A report from the ABC put the figure much higher – estimating that the 4 million tonne global trade in used textiles is worth $4.6 billion.[161]

Similarly grim reports of unwanted textiles filling waterways, beaches and deserts are unfortunately common. One report found that nearly half a billion items of unusable clothing were imported to Kenya in 2021, one in three of which contained plastic fibres that pose an environmental and health risk.[162] In Chile, 59,000 tonnes of textiles waste is imported every year, much of it ends up being dumped in the Atacama Desert.[163]

The health and environmental damaged that these piles of waste create are only beginning to come to light. The prevalence of synthetic materials poses significant threats. When it is burned it creates air pollution, which can create health problems for people who live nearby,[164] and the decay of plastic-based textiles can leech chemicals into soil and waterways.[165]

These environmental, social, and health impacts will grow as long as countries like Australia continue to export textiles waste as part of a practice that has been dubbed "waste colonialism."[166]The ban on exporting textiles that is required to create a domestic circular economy would inevitably lead to an increased need to sort and manage textiles onshore. As it stands, the charity sector has a system of sorting and resale that could be leveraged, but this is likely to need additional support.

[159] Besser (2021) *Dead white man's clothes*, https://www.abc.net.au/news/2021-08-12/fast-fashion-turning-parts-ghana-into-toxic-landfill/100358702; Cobbing et al. (2022) *Poisoned gifts*, p 6.

[160] Cobbing et al. (2022) *Poisoned gifts*, p 5.

[161] Besser (2021) *Dead white man's clothes*.

[162] Changin Markets Foundation (2023) *Trashion: The stealth export of waste plastic clothes to Kenya,* https://changingmarkets.org/report/trashion-the-stealth-export-of-waste-plastic-clothes-to-kenya/

[163] Hospicio (2021) *Chile's desert dumping ground for fast fashion leftovers*, https://www.france24.com/en/live-news/20211108-chile-s-desert-dumping-ground-for-fast-fashion-leftovers

[164] Cobbing et al. (2022) *Poisoned gifts,* p 11.

[165] Gbor (2020) *Banning secondhand clothes by the Global South; a blessing or a curse for local fashion industry?***,** https://www.ecostyles.com.au/blogs/2020/7/12/banning-secondhand-clothes-by-the-global-south-a-blessing-or-a-curse-for-local-fashion-industry

[166] The Or Foundation (n.d.) *Make extended producer responsibility globally accountable!,* https://stopwastecolonialism.org/

Banning the export of textiles waste

Restrictions or bans on the export of textiles waste can help stop waste colonisation and solve the problems textiles waste cause in the Global South. Europe is already taking steps in this direction. As part of its amended Waste Framework Directive, the European Commission has clarified the definition of terms such as "waste" and "re-use", and proposed regulations that would curtail the export of Europe's waste. This includes making it illegal to export textiles that are defined as unwearable, and ensure that textiles waste is only exported if there are guarantees that it will be managed without harmful environmental impact.[167]

The French government has proposed that the European Union introduce an outright ban on the exports of used clothing.[168] The environment ministers of Denmark, France and Sweden have requested the European Commission ban the exportation of hazardous textiles waste to countries in the Global South through the international rules of the Basel Convention.[169] The Basel Convention is designed to protect human health and the environment from the adverse effects resulting from the generation, management, and transboundary movement and the management of hazardous waste. Unlike other problematic waste streams, the Basel Convention does not currently require an exporting country to obtain the prior informed consent from the importing nation when exporting textiles waste. There is also no requirement to ensure that the importing country has the capacity to manage textiles waste in an environmentally sound manner. For these reasons, Sweden, France and Denmark are seeking to subject textiles waste to the control mechanisms of the Basel Convention, with two changes: "1) requiring prior informed consent to be obtained for the import and export of textile waste, and 2) banning the export of hazardous textiles waste (e.g. stained with chemicals or paint) altogether."[170]

By applying a similar policy, Australia would have strong and effective measures to curb the export of textiles waste, which would help foster the development of domestic reuse and recycling infrastructure. But Australia does not need to wait for international action. A target of the *National Waste Policy Action Plan* is to ban the export of waste plastics, glass, paper,

[167] European Commission (2024) *Waste framework directive*, https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive_en

[168] Reuters (2024) *France proposes ban on exports of used clothes*, https://www.reuters.com/business/environment/france-proposes-eu-ban-exports-used-clothes-2024-03-14/

[169] Pourmokhtari, Béchu and Heunicke (2024) *Sweden, France and Denmark calls for new global rules on exporting textile waste to developing countries*, https://www.government.se/opinion-pieces/2024/03/sweden-france-and-denmark-calls-for-new-global-rules-on-exporting-textile-waste-to-developing-countries/

[170] Reuters (2024) *Sweden, France and Denmark calls for new global rules on exporting textile waste to developing countries.*

and tyres.[171] Given that over 60% of textiles are made from plastics, it seems logical to extend the ban to textiles. A definition of what constitutes 'unwearable' would also help determine exactly what cannot be exported. Charities often say that they if you would not give it to a friend, you should not give it to a charity because it will end up as waste.[172] This notion seems like a good starting point for a definition of textiles waste.

An export ban would not be entirely unprecedented. In 2017, China banned the importation of 24 categories of solid waste, including plastics, cardboard and paper.[173] Australia, which had been exporting tens-of-thousands of tonnes of soft plastics to China, was forced to deal with this waste. China's ban was an important factor in the creation of the *2018 National Waste Policy* and the attendant *2019 National Waste Policy Action Plan*, which led to a ban on the export of plastic waste.[174]

However, the case of soft plastics also shows the need to invest in domestic infrastructure capable of dealing with waste at every step of the reuse chain, including sorting and recycling. Investment is needed now to ensure Australia does not end up in the same situation as it did with the short-lived RedCycle scheme, in which waste plastics were stockpiled.[175]

Recent policy decisions suggest that the export of waste continues to be facilitated. Because of Australia's limited capacity to recycle plastics domestically, in 2023 the Commonwealth Government approved the export of 20,000 tonnes of plastic waste.[176] Then, in the lead up to the 2024–25 budget, the Commonwealth Government announced that it would scrap a proposed $4 per tonne charge on the export of waste, which was intended to encourage the processing of waste domestically.[177] As the following section will show, if Australia is to create a circular economy for textiles, the establishment of a domestic recycling industry is crucial.

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[171] DCCEEW (2019) *National waste policy action plan*, p 2.

[172] Charitable Recycling Australia (n.d.) *Donating, https://www.charitablerecycling.org.au/education/donating/;* Compagnoni and Ismail (2023) *How can you dispose of your unwanted clothes in Australia?* https://www.sbs.com.au/language/english/en/podcast-episode/how-to-keep-your-unwanted-clothing-out-of-landfill/v8n6vnxqc

[173] Wen et al. (2021) 'China's plastic import ban increases prospects of environmental impact mitigation of plastic waste trade flow worldwide', *Nature Communications*, https://doi.org/10.1038/s41467-020-20741-9

[174] Australian Government (2019) *National waste policy action plan*, p 2.

[175] Vedelage and Dowling (2022) *Coles, Woolworths recycling scheme collapses after secret stockpiles revealed*, https://www.theage.com.au/national/coles-woolworths-recycling-scheme-collapses-after-secret-stockpiles-revealed-20221107-p5bw9q.html

[176] Elks (2023) *Australia to export 20,000 tonnes of plastic, instead of recycling onshore*, https://www.theaustralian.com.au/nation/politics/australia-to-export-20000-tonnes-of-plastic-instead-of-recycling-onshore/news-story/161100aafbd99e80172bb6ff9801f25d

[177] Evans (2023) *Waste export levy to be scrapped in federal budget after warnings 'recycling tax' would send more waste to landfill*, https://www.abc.net.au/news/2024-05-08/recycling-tax-waste-export-levy-scrapped-federal-budget/103815124

Recycling: Investment in local infrastructure and procurement

If Australia's textiles waste can be successfully diverted from foreign landfills, the next challenge for the creation of a circular economy is to establish a domestic industry for the recycling of textile fibres, and a market for their reuse.

The *National Waste Report* notes that, while rates of recovery (through donations) are relatively high, the recycling rate for textiles – an estimated 5% – is the lowest of any waste category covered by the report.[178] And most of this 5% can be attributed to one carpet recycling facility in Melbourne.[179] This means that textiles pose a particular problem for target four of the *National Waste Policy Action Plan*, which is to "significantly increase the use of recycled content by governments and industry."[180] The Plan is clear that the success of domestic recycling depends not only on infrastructure and technology, but on demand for recycled products. It states:

> "Without stable demand, there is little incentive for investment in innovation or new infrastructure. Governments and major companies have an important role in promoting sustainable procurement...
>
> Improving the quality of our recyclable materials is important; equally important is finding ways to use that material productively. If we don't increase demand for recyclables, the industry is not sustainable. Governments, businesses and individuals have an important role to play in buying and using recycled material to create new products, buildings and infrastructure."[181]

Although the Plan discusses recycling mostly in the context of waste construction material, the same is true of textiles waste: without a market for the products produced from recycled textiles, there is little incentive for business to invest. This has proved a vexed problem internationally. For example, Renewcell, the Swedish manufacturer of a pioneering kind of recycled textile pulp made from cotton waste (known as 'Circulose')[182] recently filed

[178] DCCEEW (2022) *National waste report 2022*, p 42.
[179] DCCEEW (2022) *National waste report 2022*, p 53.
[180] DCCEEW (2019) *National waste policy action plan*, p 2.
[181] DCCEEW (2019) *National waste policy action plan*, p 5, 18.
[182] Tonti (2023) *The missing link': is textile recycling the answer to fashion's waste crisis?,* https://www.theguardian.com/fashion/2023/oct/18/the-missing-link-is-textile-recycling-the-answer-to-fashions-waste-crisis

for bankruptcy, despite backing from clothing industry giants such as H&M.[183] Closer to home, the collapse of soft-plastics recycler RedCycle is well known.[184]

In Australia, companies such BlockTexx[185] are aiming to be able to recycle waste textiles domestically. BlockTexx has developed the world's first commercial scale, textile recovery facility capable of recycling complex textile blends, including those containing polyester, into reusable fibres.[186] While these ventures are making positive steps, the challenge of finding uses for these products remains, and the domestic market is limited. If scaled, these kinds of technologies could prove to be the linchpin of Australia's circular economy. But for onshore recycling to become a reality, a significant financial investment in the collection, sorting and manufacturing of textiles waste will be needed.

In addition, a market for the procurement of products remanufactured from waste is needed. Given their significant purchasing power, governments at the state and Commonwealth level are well placed to provide such a market. The Commonwealth Government's *Environmentally Sustainable Procurement Policy*, which "aims to improve environmental sustainability across three focus areas – climate, the environment and circularity," should help.[187] The Policy, which will come into effect in July 2024, will extend to tenders for textile purchases greater than $1 million.[188] Without this kind of investment there is a risk that Australia will never develop a domestic recycling industry.

Tax incentives and tax breaks could also help. In the United States, the recently proposed *Americas Trade and Investment Act* includes a 15% tax discount for textile companies engaged in the circular economy through activities such as collection, repairing or recycling.[189]

Recycling textiles domestically requires significant investment in infrastructure and dedicated procurement policies, but this would go a long way to creating a circular economy. Given that the Australian textiles and fashion sector is worth $27.2 billion and

[183] Fashion United (2024) *H&M-backed textile recycler Renewcell files for bankruptcy,* https://fashionunited.in/news/business/h-m-backed-textile-recycler-renewcell-files-for-bankruptcy/2024022743851

[184] Vedelage and Dowling (2022) *Coles, Woolworths recycling scheme collapses after secret stockpiles revealed*, https://www.theage.com.au/national/coles-woolworths-recycling-scheme-collapses-after-secret-stockpiles-revealed-20221107-p5bw9q.html

[185] BlockTexx (2024) *About BlockTexx*, https://www.blocktexx.com/about

[186] BlockTexx (2024) *Technology*, https://www.blocktexx.com/technology

[187] Australian Government (2024) *Environmentally sustainable procurement policy*, p 7, https://www.dcceew.gov.au/environment/protection/waste/sustainable-procurement

[188] Australian Government (2024) *Environmentally sustainable procurement policy*, p 7, 9, https://www.dcceew.gov.au/environment/protection/waste/sustainable-procurement

[189] Business of Fashion (2024) *A new US trade bill aims to incentivise fashion nearshoring, circularity*, https://www.businessoffashion.com/news/sustainability/americas-act-us-manufacturing-textiles-circularity-legislation/

employs 489,000 people (77% of whom are female),[190] investing in textiles recycling will strengthen the domestic industry.

[190] Australian Fashion Council (2021) *From high fashion to high vis*, p 3, https://ausfashioncouncil.com/high-fashion-to-high-vis-the-economic-contribution-of-australias-fashion-textile-sector/

Conclusion

When the Minister for the Environment and Water, Tanya Plibersek, launched Seamless, she reminded participants that it would not always be voluntary. The Minister set a target date of June 30 2024, and stated that by this time, "if the voluntary scheme is not viable – if we don't believe it's sufficient, or if it's not raising enough money to cover its costs – then I will regulate."[191] However, there is little point in regulating the scheme unless it is likely to drastically reduce the amount of textiles waste in Australia, along with the associated carbon emissions, and drastically increase that rate at which textiles waste are recycled in Australia.

Creating a circular economy will entail a fundamental reorganisation of the 'take, make, waste' method of production. Significant investment will be required in domestic manufacturing, domestic recycling, and the procurement of recycled materials. But this should be seen as an opportunity. As the Commonwealth's own *National Waste Policy* estimates, waste reduction could make Australia billions. Australia already has businesses that are producing textiles in a way that reduces waste, and companies that can recycle textiles waste into new products. This shows that, with the right policy settings, Australia has the capacity to establish a circular economy domestically.

If Australia is serious about reducing textiles waste, the import of fast fashion needs to be drastically reduced, and the export of fashion waste will have to be banned. Unless the amount of cheap, hard to recycle clothing coming into Australia is drastically reduced, the amount of fashion waste Australia has to deal with will continue to increase. And as long as export is the cheapest way to deal with waste textiles there is little incentive for businesses to invest in the infrastructure necessary to recycle it domestically.

Recommendations

To create a robust domestic circular economy for textiles in Australia, this paper recommends that:

- The Commonwealth Government establish targets for a drastic reduction in the consumption of textiles.
- The 'per garment rate' that members pay to Seamless be increased.
- The Commonwealth introduce a tax on 'fast fashion' items put on the Australian market. This could follow the example of the lower house of the French parliament,

[191] Plibersek (2024) *Speech to launch the National Clothing Product Stewardship Scheme,* https://minister.dcceew.gov.au/plibersek/speeches/speech-launch-national-clothing-product-stewardship-scheme

which has passed a bill that would see a tax of €5 (about AUD 10) charged on items of clothing deemed to be 'fast fashion'.[192]

- The Commonwealth Government pass policies to increase supply chain transparency in the textiles industry. New York State's *Fashion and Social Accountability Act* (Fashion Act), which will require footwear and apparel retailers to map and monitor particular environmental metrics, could be used as a model.
- The Commonwealth Government regulate or ban the advertisement of fast fashion. A proposed French regulation would require fast fashion sellers to display awareness-raising messages on their websites that draw attention to the environmental impact of their products. The proposed legislation would prohibit fast fashion products, brands and companies from advertising – including via the use of social media influencers – beginning in January 2025.[193]
- The Commonwealth Government establish labelling standards that inform consumers about the social and ecological footprint of the textiles they buy. This would be similar to the mandatory standards for care labelling that already exist in Australia. This could work in conjunction with the 'ReMade in Australia' brand and include information about the amount of recycled textiles (rTEX) and recycled PET (rPET) in a product.
- The Commonwealth Government subsidise the cost of textile repairs for consumers. This could be similar to policies in the EU, where about a third of countries have reduced the VAT rate (ranging from 5% to 13.5%) on repair services for several types of consumer products, including clothing and household linen.[194] Another option would be to follow the French policy and introduce a government-funded rebate scheme for textile repairs.[195]
- The Commonwealth Government ban the export of textiles waste from Australia within five years. The proposed amendments to the Basel Convention[196] are one way in which this could be done, but Australia does not need to wait for international action. A target of the *National Waste Policy Action Plan* is to ban the export of waste plastics, glass, paper, and tyres.[197] Waste textiles should also be added to the planned ban, especially given that over 60% of textiles are made from plastics. A legal definition of what constitutes 'unwearable' would also help determine exactly what

[192] France-Presse (2024) *France's lower house votes to limit 'excesses' of fast fashion with environmental surcharge*.

[193] Vie publique (2024) *Proposition de loi visant à réduire l'impact environnemental de l'industrie textile*, https://www.vie-publique.fr/loi/293332-proposition-de-loi-fast-fashion-impact-environnemental-mode-jetable

[194] Manoochehri et al. (2022) *An overview of Europe's repair sector*, p 37.

[195] République Française (2023) *Bonus réparation: une aide financière pour faire rapiécer vos vêtements et vos chaussures.*

[196] Pourmokhtari, Béchu and Heunicke (2024) *Sweden, France and Denmark calls for new global rules on exporting textile waste to developing countries.*

[197] DCCEEW (2019) *National waste policy action plan*, p 2.

textiles waste cannot be exported. The charity sector would also benefit from support to manage the textiles waste that would accumulate after a ban is introduced.

- Investment in Australia's domestic recycling capacity be substantially increased. This could be through direct funding, grants, or tax incentives such as those proposed in the *Americas Trade and Investment Act*, which would include a 15% tax discount for textile companies engaged in the circular economy through collection, repairing or recycling.[198] Investment should also include providing support for education, training and apprenticeships in textiles recycling.
- Governments at the state, territory and Commonwealth level introduce or expand procurement policies for the purchasing of products made from textiles recycled in Australia. The Commonwealth Government's recently-introduced *Environmentally Sustainable Procurement Policy* is a step in the right direction.[199]
- The Commonwealth Government provide tax incentives for businesses that purchase materials made from textiles waste recycled in Australia.

[198] Business of Fashion (2024) *A new US trade bill aims to incentivise fashion nearshoring, circularity*.

[199] Australian Government (2024) *Environmentally sustainable procurement policy*, p 7, 9.

Appendix: Polling

METHOD

Short disclosure statement

Panel provider	Dynata
Research company	The Australia Institute
Client commissioning the research	NA
Fieldwork dates	19 March 2024 to 22 March 2024
Mode of data collection	Online recruited from research panel
Target population	Australian adults aged 18+
Sample size	1,008
Australian Polling Council compliant	Yes
Voting intention published	No
Long disclosure statement	See below

Long disclosure statement

Effective sample size after weighting applied	971
Margin of error associated with effective sample size	±3%
Variables used in weighting	Age, gender, and state/ territory based on Australian Bureau of Statistics "National, state and territory population" data
Gender identity categorisation	Those who answered the gender identity question as "Non-binary", "I use a different term", or "Prefer not to answer" had their responses included with females for the purpose of reporting, due to constraints from weighting data availability
Weighting method used	Raking method
Full question text, responses categories and randomisation	See below
Source of online sample	Dynata's online panel
Positioning of voting intention questions in questionnaire	Immediately after demographics, before policy questions
How were undecided voters handled?	Respondents who answered "Don't know / Not sure" for voting intention were then asked a leaning question; these leanings are included in voting intention crosstabs
Method of calculating 2PP	NA
Voting intention categorisation	Voting crosstabs show voting intentions for the House of Representatives. "Coalition" includes separate responses for Liberal and National. "Other" refers to Independent/Other, and minor parties in cases where they were included in the voting intention but represent too small a sample to be reported separately in the crosstabs
Location results	Results are shown only for larger states

Australian Polling Council Quality Mark

DETAILED RESULTS

No preceding questions in the poll are expected to have influenced the results of the questions published here.

Textiles are a type of cloth or woven fabric made of fibres, filaments or thin threads. For example, yarn, wool, cotton, polyester, leather, nylon, silk and linen are all textiles.

Examples of textile products are clothes (including uniforms), shoes and other footwear, bedding and linens, camping gear, furniture upholstery, rugs and carpets, curtains and car seats.

Who should be responsible for eliminating textile waste?

The order of options was randomised for each respondent. Respondents could select any number of responses, except "Don't know / Not sure" (which was exclusive). On average, respondents selected 1.7 responses.

	Total	Male	Female	NSW	VIC	QLD	WA
Governments	*46%*	44%	49%	50%	45%	46%	35%
Businesses	*71%*	70%	72%	70%	72%	70%	67%
Individual consumers	*43%*	42%	44%	47%	40%	40%	42%
Don't know / Not sure	*9%*	8%	9%	9%	9%	9%	15%

	Total	Labor	Coalition	Greens	One Nation	Other
Governments	*46%*	46%	46%	56%	37%	40%
Businesses	*71%*	71%	71%	75%	73%	66%
Individual consumers	*43%*	47%	45%	36%	31%	43%
Don't know / Not sure	*9%*	7%	8%	8%	9%	16%

How concerned are you, if at all, about the environmental impact of clothes, shoes and bags that you buy?

	Total	Male	Female	NSW	VIC	QLD	WA
Very concerned	*19%*	19%	19%	22%	17%	16%	14%
Somewhat concerned	*44%*	37%	51%	43%	46%	44%	45%
Not very concerned	*26%*	31%	21%	24%	27%	29%	33%
Not at all concerned	*10%*	13%	8%	11%	8%	11%	8%
Don't know / Not sure	*0%*	0%	1%	1%	1%	0%	0%

	Total	Labor	Coalition	Greens	One Nation	Other
Very concerned	*19%*	22%	13%	29%	16%	16%
Somewhat concerned	*44%*	49%	43%	48%	30%	37%
Not very concerned	*26%*	24%	30%	20%	24%	30%
Not at all concerned	*10%*	6%	14%	2%	28%	14%
Don't know / Not sure	*0%*	0%	0%	0%	1%	4%

Thinking of the last item of clothing that you no longer wanted or could no longer use, what did you do with it?

The order of options was randomised for each respondent.

	Total	Male	Female	NSW	VIC	QLD	WA
Threw it away	*13%*	17%	10%	13%	11%	14%	16%
Took it to a dedicated textiles recycling facility	*4%*	4%	4%	6%	3%	3%	3%
Donated it to an op shop such as Salvos or Vinnies	*64%*	60%	68%	63%	67%	65%	64%
Got it repaired or 'upcycled'	*6%*	7%	5%	6%	7%	6%	3%
Sold or gave it to someone else	*11%*	9%	12%	12%	10%	9%	10%
Don't know / Not sure	*2%*	2%	2%	1%	3%	2%	3%

	Total	Labor	Coalition	Greens	One Nation	Other
Threw it away	*13%*	14%	14%	12%	12%	15%
Took it to a dedicated textiles recycling facility	*4%*	4%	5%	5%	0%	4%
Donated it to an op shop such as Salvos or Vinnies	*64%*	65%	65%	58%	70%	61%
Got it repaired or 'upcycled'	*6%*	5%	6%	10%	3%	4%
Sold or gave it to someone else	*11%*	10%	9%	12%	13%	14%
Don't know / Not sure	*2%*	2%	2%	2%	2%	3%

France has introduced a government-funded scheme that offers discounts to customers when they pay to have their clothes, shoes or bags repaired.

If a similar scheme were introduced in Australia, how often would you get damaged clothes, shoes or bags repaired?

This question was asked of half of the respondents.

	Total	Male	Female	NSW	VIC	QLD	WA
For most or all damaged items	*26%*	26%	26%	31%	23%	24%	11%
For some damaged items	*40%*	37%	42%	38%	43%	40%	46%
For a few damaged items	*23%*	26%	20%	21%	24%	20%	30%
Never	*11%*	11%	11%	10%	10%	15%	13%

	Total	Labor	Coalition	Greens	One Nation	Other
For most or all damaged items	*26%*	21%	21%	42%	26%	31%
For some damaged items	*40%*	48%	36%	37%	28%	36%
For a few damaged items	*23%*	18%	31%	15%	33%	21%
Never	*11%*	13%	12%	6%	13%	12%

How often do you get damaged clothes, shoes or bags repaired?

This question was asked of half of the respondents.

	Total	Male	Female	NSW	VIC	QLD	WA
For most or all damaged items	*14%*	13%	14%	11%	16%	9%	13%
For some damaged items	*25%*	22%	27%	23%	26%	27%	27%
For a few damaged items	*30%*	34%	26%	34%	27%	30%	27%
Never	*31%*	31%	32%	33%	32%	34%	33%

	Total	Labor	Coalition	Greens	One Nation	Other
For most or all damaged items	*14%*	16%	14%	12%	8%	11%
For some damaged items	*25%*	29%	19%	37%	19%	24%
For a few damaged items	*30%*	29%	34%	30%	22%	25%
Never	*31%*	27%	33%	21%	51%	40%

To the best of your knowledge, what are the following textile fibres made from?

The order of options was randomised for each respondent.

	Total	Male	Female	NSW	VIC	QLD	WA
Polyester							
Petroleum	*46%*	51%	42%	44%	46%	47%	44%
Plants	*8%*	10%	6%	8%	9%	9%	4%
Animal material	*5%*	6%	5%	6%	7%	3%	7%
Minerals	*12%*	13%	11%	14%	14%	10%	11%
Don't know / Not sure	*28%*	21%	35%	28%	25%	31%	34%
Silk							
Petroleum	*3%*	3%	2%	3%	4%	2%	2%
Plants	*20%*	21%	19%	17%	26%	20%	14%
Animal material	*56%*	58%	55%	60%	47%	60%	59%
Minerals	*6%*	6%	6%	7%	6%	3%	9%
Don't know / Not sure	*15%*	13%	18%	14%	17%	15%	17%
Cotton							
Petroleum	*3%*	4%	2%	2%	4%	1%	4%
Plants	*72%*	70%	74%	75%	70%	75%	69%
Animal material	*8%*	10%	6%	9%	8%	7%	8%
Minerals	*6%*	7%	4%	5%	6%	7%	5%
Don't know / Not sure	*11%*	9%	13%	9%	12%	11%	14%

	Total	Labor	Coalition	Greens	One Nation	Other
Polyester						
Petroleum	*46%*	49%	46%	45%	46%	44%
Plants	*8%*	8%	5%	12%	13%	8%
Animal material	*5%*	4%	6%	7%	6%	4%
Minerals	*12%*	11%	13%	12%	14%	12%
Don't know / Not sure	*28%*	27%	31%	24%	21%	33%
Silk						
Petroleum	*3%*	3%	3%	4%	2%	0%
Plants	*20%*	20%	22%	18%	30%	9%
Animal material	*56%*	58%	56%	52%	49%	63%
Minerals	*6%*	3%	5%	9%	7%	7%
Don't know / Not sure	*15%*	15%	14%	18%	13%	20%
Cotton						
Petroleum	*3%*	2%	3%	6%	0%	1%
Plants	*72%*	71%	74%	64%	81%	78%
Animal material	*8%*	11%	5%	9%	8%	9%
Minerals	*6%*	4%	7%	9%	1%	4%
Don't know / Not sure	*11%*	12%	11%	13%	9%	8%

What percentage of clothes sold in Australia are made of plastic? Give your best guess.

	Total	Male	Female	NSW	VIC	QLD	WA
0 to 25%	*12%*	16%	9%	13%	8%	16%	16%
26 to 50%	*23%*	25%	21%	21%	24%	20%	25%
51 to 75%	*23%*	20%	26%	22%	26%	20%	18%
76 to 100%	*4%*	4%	5%	4%	5%	3%	2%
Don't know / Not sure	*38%*	35%	40%	40%	36%	41%	39%

	Total	Labor	Coalition	Greens	One Nation	Other
0 to 25%	*12%*	12%	15%	8%	13%	12%
26 to 50%	*23%*	23%	23%	25%	22%	15%
51 to 75%	*23%*	21%	20%	34%	24%	21%
76 to 100%	*4%*	6%	2%	5%	10%	3%
Don't know / Not sure	*38%*	38%	39%	27%	31%	49%