Regulating a Circular Economy for Textiles in Australia
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Keywords: Circular Economy; Textile waste; Responsive regulation; Policy Mix; Stakeholder Analysis.

Abstract: A shift to a circular economy is essential, and regulation can play a critical role in this transition. In this paper we examine the regulatory frameworks required to promote a circular economy (CE) for textiles through a qualitative analysis of data from Australian and international contexts. Supporting the transition to a CE requires an optimal policy mix that includes direct regulation, self-regulation, voluntary initiatives, education approaches, and economic instruments, such as subsidies and incentives. Using an inductive, interpretive approach to qualitative analysis, we analysed the submissions and Standing Committee sessions of the Commonwealth Government’s 2019-20 Inquiry into Australia’s Waste Management and Recycling Industries and identified the regulatory approaches for which different stakeholder groups are advocating. Public, industry and recyclers all advocate first for economic instruments, with industry bodies next advocating for self-regulation, while both the public and recycling industry next recommend education initiatives. Alongside, our analysis draws on the regulatory approaches of Australia and other nations, as captured in a sample of international government and NGO reports and working papers. We find that Australia’s current regulatory system focuses primarily on normative education and information documents, with fragmented economic and co-regulation on a state-by-state level. Through this analysis, we propose a holistic policy mix that codifies a circular economy approach to textile waste governance and make a series of regulatory recommendations appropriate to the Australian context.

Introduction
In Australia 679,000 tonnes of recyclable textiles are sent to landfills each year (Dept Environment and Energy 2018), and a further 93,500 tonnes of ‘worn clothing and other worn textile articles’ are exported as they cannot be resold domestically (NACRO 2020). However, due to changes in international trade routes following the China National Sword Policy (WTO 2017; Ministry of Ecology and Environment 2017), and COVID-19 (e.g. UNEP 2020; Ellen MacArthur Foundation 2020), Australia is under increasing pressure to develop domestic routes for textile waste (NSW EPA 2018). Developing a robust regulatory mix is critical to this transition. In this paper we examine the regulatory frameworks required to promote a circular economy for textiles through a qualitative analysis of data from Australian and international contexts.

Transitioning to a circular economy (CE) requires material resources to remain in circulation as long as possible and, critically, requires addressing overconsumption and overproduction as well as better management of material flows (Kirchherr et al. 2017). A CE is supported by innovations in waste-to-resource mechanisms, and CE regulatory frameworks are a growing area of interest locally, nationally and internationally (Jacometti, 2019). Yet, although non-binding state policies have been proposed which support the circular economy (e.g. Queensland Government 2019) there remains no binding regulations in Australia to embed the circular economy within the national response to textile waste. In this paper we use regulatory theory to examine the broad mix of instruments (Gunningham, Grabosky and Sinclair 1998; Parker & Haines 2018) which could be used to move towards a CE for textiles.

To examine these regulatory approaches in the context of Australia, we analyse publicly available data in three forms: 1) a review of current Australian approaches across two levels of government, 2) a qualitative analysis of stakeholder perspectives submitted as part of the Commonwealth Government’s House
Standing Committee on Industry, Innovation, Science and Resources launched an inquiry into Australia’s Waste Management and Recycling Industries (2019) and 3) a review of existing international regulatory approaches for textiles in France, EU and the UK.

The Development of an ‘Optimal Policy Mix’

The formative scholarship on regulatory theory, Smart Regulation, Gunningham, Grabosky and Sinclair (1998) classifies different regulatory approaches into categories and identifies conditions suitting each of these categories. developing an ‘optimal policy mix’, the authors consider the interactions between the following categories of regulatory instruments:

- **Direct Regulation** (Command and Control Approach): which generally refers to legislation or an otherwise binding legal obligation which is enforced by financial or criminal penalties in the case of non-compliance;
- **Economic Regulation** which creates financial incentives or incentives for certain actions which might include imposition of a tax, some form of tax incentive or development of trading scheme.
- **Self-regulation**: which refers to a process whereby an organised group regulates the behaviour of its members (for example an industry code);
- **Voluntarism**: which involves individual firms making unilateral commitments towards an environmental target, without any external coercion. This can be compared to self-regulation, which is industry-wide.
- **Education and information initiatives**: which may include corporate environmental reporting; product certification and award schemes; and, community right to know and pollution inventories:

*Smart Regulation* advocates for ‘regulatory pluralism’, where a variety of regulatory approaches and actors are intentionally engaged to develop a harmonised regulatory response. Pluralistic regulatory mixes should be complementary, or ‘mutually reinforcing’, rather than duplicitous, competitive or conflicting. Accordingly, an optimal policy mix can be seen as a ‘dynamic instrument pyramid’ (Ayres & Braithwaite 1992) wherein voluntary economic instruments and decentralised standard setting extend and augment the regulatory efficiency and efficacy of traditional prescriptive regulation. However, these voluntary and decentralised initiatives do not displace the role of direct and binding regulatory instruments. This paper argues that a shift towards a CE for textile waste will require more than voluntary initiatives, with direct and economic regulation being necessary to drive behaviour change of stakeholders across the value chain.

The development of a regulatory plural approach to support a CE for textile waste must be responsive, taking into account the ‘attitudinal settings; the broader institutional environment of the regulatory regime; the different logics of regulatory tools and strategies; the regime’s own performance and changes in each of those elements’ (Ayers and Braithwaite). Some scholarship has started to emerge looking how to regulate for a CE (Ibert et al 2017; Fitch-Roy et al 2021; Millios 2021), with analysis of CE regulatory policy across regions (Imbert et al 2017), relating to the forestry bioeconomy (Ladu et al 2020) and marine waste (Stoll et al 2020). In this paper, we apply the regulatory theory of Gunningham, Grabosky and Sinclair to classify Australian regulation, examining both national and sub-national approaches.

**Australia’s Current Policy Mix**

Regulation to support the transition to a CE for textiles in Australia is currently ineffective. Direct regulation exists regarding waste management, but such regulation largely overlooks textile waste. Additionally, while the government is supportive of a CE transition, regulatory action remains confined to Education/Information initiatives (Appendix E).

The Commonwealth government in Australia is responsible for coordinating trade in waste with other countries and is also seeking to play a role in harmonising waste management standards in order to create consistent waste streams for repurposing. As Australia’s waste and recycling policy rests with the Commonwealth government, but is operationalised by the states, territories and local governments (see Appendix A), Australia faces significant regulatory challenges (Lodhia, Martin and Rice, 2020). A series of reports and policy recommendations were released by the Commonwealth government in 2018–2019,
including the Senate Report ‘Never Waste a Crisis: The Waste and Recycling Industry in Australia’ (2018) (an Education/Information document). In alignment with long-established norms (see DEFRA 2011), the Senate report outlined a ‘waste hierarchy’, which prioritises avoiding waste, in order to avoid prevent the unnecessary use of virgin materials. After avoidance, re-use is the next preferable solution, including re-sale. Next is recycling, followed by energy recovery. Finally, the Senate recommends waste treatment. However, the report only mentions textiles once, in the context of China’s bans solid waste imports, with no discussion of textiles governance in Australia.

These five steps have been implemented in the 2018 Australian Government’s National Waste Policy, ‘Less Waste, More Resources’ (‘National Waste Policy’). However, the policy does not conform to Gunningham, Grabosky and Sinclair’s description of ‘command and control’ regulation. Instead, the National Waste Policy operates as an education/information instrument document, reinforcing the waste hierarchy outlined in the Senate Report and outlining a framework for businesses, governments, communities and individuals. Further, while the National Waste Policy recognises that textile waste forms part of the 2.7 tonnes of annual waste generated by each Australian, it does not propose any binding standards or regulatory initiatives to address textile waste.

Direction regulation of waste falls under the Commonwealth Government’s Recycling and Waste Reduction Act 2020 (Cth) (‘the Act’), which highlights the shared responsibility of stakeholders across product supply chains to ensure that materials are managed to reduce their environmental, health and safety impacts throughout the product lifecycle. The Act incorporates the existing Product Stewardship Act 2011, providing for three moves of action:

- **Voluntary product stewardship:** which ‘involves accrediting voluntary arrangements designed to further the objects of this Act in relation to products, and authorising the use of product stewardship logos in accordance with such arrangements’;
- **Co-regulatory product stewardship:** which ‘involves requiring some manufacturers, importers, distributors and users of products (called liable parties), who have been specified in the rules, to be members of co-regulatory arrangements approved by the Minister’; and
- **Mandatory product stewardship:** which ‘enables rules to be made that require specific persons to take, or not take, specific action in relation to products’.

Nevertheless, textile waste regulation in Australia is not yet subject to mandatory product stewardship requirements, instead only managed through non-binding initiatives. The Act also implements waste import bans and is aligned with the Australian Government’s agreement to ban the export of waste. However, neither the import nor export bans include textiles. The regulatory gap in relation to textile waste may be partially attributed to the exclusion of textiles from the ‘priority list’ of products the Minister is considering regulating in 2020–2021 (Australian Government, 2020). Thus, CE regulations for textile waste do not currently exist at the Commonwealth level in Australia.

**Australia’s Textile Waste Stakeholders: Qualitative Analysis and Commentary**

Using an inductive, interpretive approach to qualitative analysis we analysed the Standing Committee Inquiry (2019) submissions and sessions of 41 stakeholders, grouped into nine categories of stakeholders. Using Nvivo 12, we evaluated the issues of concern to stakeholders to identify the regulatory approaches for which different stakeholder groups are advocating (see Figure 1).

![Figure 1: Nine Standing Inquiry stakeholder groups with number of submissions and larger categories as discussed in this paper.](image-url)

The purpose of the Inquiry was ‘inquire into and report on innovative solutions in Australia’s waste management and recycling industries’
(Standing Committee 2019). With 30% of the submissions examining textile waste, the Inquiry outcomes may serve as a turning point for Australia’s almost entirely linear textiles industry. The volume of submissions related to textile waste reveals a disconnection between current policy which largely ignores textile waste, and stakeholder perceptions of it as an important issue.

**Industry bodies and retail**

Two industry bodies, one devoted to circular textiles, and one representing the waste management industry, presented a wide array of policy suggestions with the only points of agreement between them being the need for education and the need to incentivise a whole life cycle approach. Only one retailer made a submission, IKEA Australia. They highlighted that the ‘limited to no reprocessing or remanufacturing infrastructure in Australia remains a barrier’ to achieving their goal of 100% circularity by 2030 (see Figure 2).

**Textile Recyclers**

The central recommendation from for-profit textile recyclers was for government to fund infrastructure for effective recycling. They also highlighted the need to incentivise uptake of recycled material through government procurement. There was disagreement between some recyclers as to whether the export of used clothing would continue to be viable. Non-profit charitable textile recyclers also overwhelmingly recommended the government fund new recycling infrastructure in Australia, as well as pointing out the need for further research and development in the area, including waste audits and gathering data on material flows. The non-profit sector also highlighted the importance of self-regulation and voluntarism through EPRs (see Figure 3).

**Public**

Members of the public focused on three main areas for intervention: 1) promoting community-based approaches to extending product lifecycles through repair hubs, clothing libraries, and swapping/sharing events; 2) a subsidy or incentive scheme to promote use of reusable nappies and sanitary items and 3) funding educational campaigns throughout the community to promote sustainable consumption and use.

Community groups highlighted the importance of EPR schemes for difficult to recycle items including, clothing and Manchester, mattresses. Focusing on economic regulatory interventions, they emphasised the need for ‘improved valuation, pricing and incentive mechanisms in the recycling market’. Additionally, two activists promoted restyling and repair as important ways to promote the community keeping clothing in use for longer. Their advice for government included incentivising manufacturers’ use of recycled materials, tax concessions for repair services, and funding educational campaigns to promote swap and repair (see Figure 4).

**Commonwealth Government response**

In their response to the Inquiry, the Standing Committee Report, *From Rubbish to Resources: Building a Circular Economy* (2020) recommended including additional ‘emerging or complex waste streams such as e-waste, solar panels, medical waste and textiles’ into the
Product Stewardship Act 2011. The Report also recommended that the Commonwealth Government ‘develop a specific national textile waste policy which is underpinned by the principles of a circular economy’. Currently, no such binding standards exist, and this recommendation further highlights the lack of direct regulation in the Australian context. However, the Committee envisioned the national textile policy incorporating a variety of complementary regulatory instruments, including financial investment in domestic recycling technology and infrastructure, certification standards for recycled content in textiles and improved consumer education and information in relation to textile waste, reuse and repair.

**International Textile Waste Regulation**

Internationally, a number of regulatory initiatives suggest further approaches for Australia to consider. The Ellen MacArthur Foundation’s (EMF) report *A New Textiles Economy* (2017) recommends an integrated CE policy approach, adopting a systematic view of the economy, as opposed to isolating individual areas and segmenting the already fragmented international environmental law system (Van Asselt 2012). The regulatory recommendations centre mostly on co- and self-regulatory mechanisms, as well as economic instruments, with the government serving a largely supportive role (see Appendix B).

In contrast, the European Union’s ‘Circular Economy Action Plan’ envisions a more active role for governments (European Commission 2020). The CE Action Plan is a non-binding policy instrument, which provides a series of recommendations for future regulatory initiatives. In addressing textile waste, the Action Plan focuses primarily on co-regulatory and economic initiatives, including the introduction of eco-design measures, financial incentives for businesses to adopt circular materials and production processes, and government guidelines about to achieve high levels of separation in the collection of textile waste (see Appendix C).

The role of national governments was also reinforced by the UK House of Commons Environmental Audit Committee Report, ‘Fixing Fashion’ (2019) provides a series of recommendations for domestic implementation of circular economic policies and context-specific fast fashion concerns (see Appendix D). While this document would be classified as an Education/ Information initiative, it recommends the adoption of a robust policy mix, including direct regulation. The report recommends the introduction of bans on the incineration and landfilling of unsold stock which would otherwise be reusable or recyclable. Self-regulation and voluntary commitments are also recommended, including industry commitments to provide rental schemes, lifetime repair policies and more transparent information about the sourcing and lifecycle impact assessment of clothing.

One important example of direct regulation has come to the fore in France, with the introduction Law No. 2020-105 Regarding a Circular Economy and the Fight Against Waste (‘Anti-Wastage & Circular Economy Law’). The law is an example of direct regulation, with the intention to facilitate France’s transition from a linear to circular economic model (French Republic 2020). The Anti-Wastage & Circular Economy Law enacts the major principles used in regulating food waste in the context of the textiles and fashion industries. This includes a prohibition on the destruction of unsold goods, including textile items, which therefore requires manufacturers, distributors and retailers to donate, recycle or repair products. However, the Anti-Wastage and Circular Economy Law also applies a smart policy mix, as it incorporates co-regulatory best business practices, incentives for voluntarism and self-regulation, and a number of economic instruments, including both fines and incentives (see Appendix E).

**Discussion and conclusion**

Under the present regulatory model of waste management, Australia has attempted voluntary regulation and a primarily laissez-faire approach, through avoiding direct regulation or subsidies. While state-based approaches such as landfill levies have been applied, there are CE approaches such as promoting reuse that are not yet utilised to their fullest potential. This is a significant gap, as the prioritisation of reuse over more energy-intensive recycling processes is critical to developing a textiles CE (Payne 2015).

As our findings show, Australia lacks a harmonised national response to textile regulation. Instead, certain waste streams are placed on the ‘priority list’ for regulation, while
others, such as textiles, are omitted from even non-binding education and information instruments. Additionally, Australia has adopted a regulatory strategy centred predominately on ‘waste management’ as opposed to CE. There is an important conceptual difference between ‘waste management’ and the CE, with the former addressing textiles as a discrete problem to be managed, and the latter emphasising intersecting environmental, social and economic challenges and thus the scale of the societal transformation required (Van Fan et al 2019). CE-thinking demands a holistic approach to regulation across the product life cycle.

The largely voluntary regulation of textile waste in Australia can be compared to emerging international initiatives, with both public and private bodies advocating for smart policy mixes. For instance, the importance of direct and economic instruments in achieving circularity is emphasised in France’s Anti-Wastage and Circular Economy Law, which not only internalised responsibility of markets through investment, innovation and voluntary policies, but also introduced prohibitions on the landfilling and incineration of waste, and both fines and taxes to disincentivise unsustainable production and consumption behaviours.

The recent Inquiry into Australia’s Waste Management and Recycling Industries may be seen as a step towards adopting a smart policy mix to textiles regulation in Australia. Australia’s current regulatory system focuses primarily on normative education and information documents, with fragmented economic and co-regulation on a state-by-state level. A harmonised approach is necessary to move beyond this. Figures 5 and 6 shows the optimal policy mix with examples of each approach provided. We propose three key recommendations to drive such a policy mix:

- Recognise textiles in the Commonwealth Government’s ‘priority list’ of waste streams.
- Conceptually replace Australia’s ‘waste management’ current approach with a CE model which incentivises initiatives such as reuse above recycling.
- Prioritise design of direct regulation and economic instruments such as incentives and subsidies.

In conclusion, to date Australia’s regulatory approach to the CE for textiles, or lack thereof, is inadequate in addressing the linear flow of textile waste. In order to maintain pace with global market changes, evidenced by recent public and private body reports, Australia must likewise adopt a responsive, smart and optimal policy mix to achieve a just and circular textiles economy.

![Figure 5: Optimal policy mix as dynamic instrument pyramid](image-url)
Regulating a Circular Economy for Textiles in Australia

Figure 6: Optimal policy mix examples

Acknowledgments
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References


WTO. (2017). Committee on Technical Barriers to Trade ‘Notification’ G/TBT/N/CHN/1211. https://www.wto.org/english/tratop_e/tbt_e/tbt_e.htm


Submission
Please submit the paper both in pdf and WORD format through our online tool at https://www.conftool.org/plate2021
## Appendix A: Textile Regulation in Australia

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<tr>
<th>Jurisdiction</th>
<th>Direct Regulation</th>
<th>Co-regulation</th>
<th>Self-Regulation/ Voluntarism</th>
<th>Economic instruments</th>
<th>Education / Information/ Normative Documents</th>
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<tr>
<td>CTH</td>
<td>Recycling and Waste Reduction Act 2020 (Cth)</td>
<td>Australian Packaging Covenant Organisation (APCO) <a href="https://apco.org.au/">https://apco.org.au/</a></td>
<td>Industry Bodies: National Waste and Recycling Industry Council, Australasian Circular Textile Association (ACTA), Waste Management and Resource Recovery Association of Australia (WMRR), Australian Council of Recycling, Australian Sustainable Business Group (ASBG). Labelling Standards: Recycled Claim Standard, Global Recycled Standard (from Textile Exchange) and the Australasian Recycling Label Program are voluntarily used by a number of Australian textile and clothing brands and retailers to demonstrate recycled content.</td>
<td>Commonwealth Government's National Product Stewardship Investment Fund grants – three awarded 2021 to support a circular economy for textiles: corporate workwear (led by Australian Circular Textiles Association); mattresses (Australian Bedding Stewardship Council) and outdoor synthetic textiles (led by The Vinyl Council)</td>
<td>'Less Waste, More Resources' ('National Waste Policy') • Target to separate collections of textiles by 2025 National Waste Policy Action Plan (2019) • Reduce total waste generated in Australia by 10% per person by 2030 • 80% average resource recovery rate from all waste streams following the waste hierarchy by 2030 • Significantly increase the use of recycled content by governments and industry • Phase out problematic and unnecessary plastics by 2025 • Make comprehensive, economy-wide and timely data publicly available to support better consumer, investment and policy decisions</td>
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| ACT | National Environment Protection Council Act 1994  
Waste Minimisation Act 2001  
Environment Protection Act 1997 | LANDFILL LEVY  
- MSW: $96.05/t  
- C&I: $155.05/t  
- Mixed C&I with >50% recyclable material: $211.55/t  
(The dollar figures are prices rather than levy amounts, as ACT owns the landfill and sets fees) | ACT Waste Management Strategy: Towards a sustainable Canberra 2011-2025.  
- Waste generation grows less than population.  
- Expand reuse of goods.  
- Waste sector is carbon neutral by 2020.  
- Double energy generated from waste and recover waste resources for carbon sequestration.  
- Recovery rate increases to over:  
  - 85% by 2020  
  - 90% by 2025.  
Reference to textiles:  
Strategy 1.5: Promote reuse through ACT businesses and charities (includes clothing) |
| NSW | Protection of the Environment Operations Act 1997  
Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation)  
Waste Avoidance and Resource Recovery Act 2001 | LANDFILL LEVY  
Metro areas:  
- Waste: $141.20/t  
- Virgin excavated natural material: $70.60/t  
- Shredder floc: $70.60/t  
Regional area:  
- Waste: $81.30/t  
- Virgin excavated natural material: $73.17/t  
- Shredder floc: $40.65/t  
By 2021–22:  
- Reduce waste generation per capita  
- increase recycling rates for:  
  - MSW from 52% (in 2010–11) to 70%  
  - C&I waste from 57% to 70%  
  - C&D waste from 75% to 80%  
- Increase landfill waste diversion from 63% (in 2010-11) to 75%  
- Establish or upgrade 86 drop-off facilities or services for household problem wastes  
- Continue to reduce litter items.  
- Brief mention that “buying clothing” generates waste in Introduction.  
- Brief mention in Key Result Area 1: Avoid and Reduce Waste Generation – “… second-hand clothing store”  
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<td></td>
<td>Currently under review</td>
<td>Direction 1: Generate Less Waste – ‘Across Australia, about one million tonnes of NSW food and garden waste and 570,000 tonnes of textile waste are sent to landfill every year.’</td>
<td>Direction 4: Create and end markets – ‘…demand for other recovered materials like plastics, textiles and glass is less than the volume of waste we generate.’</td>
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<td>No specific targets are included in the strategy.</td>
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<td>No specific mention of textiles.</td>
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<td>General waste:</td>
<td>Regulated waste:</td>
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<td>25% reduction in household waste</td>
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<td>MSW, C&amp;I: $70/t</td>
<td>Category 1: $150/t</td>
<td>Category 2: $100/t</td>
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<td>90% of waste is recovered and does not go to landfill</td>
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<td>C&amp;D:</td>
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<td>75% recycling rates across all waste types</td>
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<td>achieve zero net emissions by 2050</td>
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<td>reduce emissions by at least 30 per cent below 2005 levels by 2030 (interim target).</td>
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<td>Strategic Priority 2: Transitioning to a circular economy for waste</td>
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| SA | Environment Protection Act 1993  
Environmental Protection Regulations 2009  
- By 2020:  
  - 35% reduction in landfill disposal from 2002-03 level  
  - 5% reduction in waste generation per capita (from 2015 baseline)  
  - Landfill diversion targets in the metro area are:  
    - 70% for MSW  
    - 80% for C&I  
    - 90% for C&D  
    - Maximise diversion in non-metro area.  
  - No specific mention of textiles |  
| | Metro Adelaide  
  - Solid waste: $100/t  
  - Shredder floc: $62/t  
| | Non-metro Adelaide:  
  - Solid waste: $50/t  
  - Shredder floc: $31/t |  
| | South Australia’s Waste Strategy (2020–2025)  
(Consultation Draft)  
- Municipal Solid Waste - 75% diversion (increased from 70%)  
- Commercial and Industrial Waste - 90% diversion (increased from 80%)  
- Construction and Demolition Waste - 95% (increased from 90%).  
- Specific reference to textiles…  
- Finding solutions for emerging and problematic wastes (p. 77): ‘For example, global consumption of and waste associated with textiles and clothing are growing, predominantly due to increased clothing production and decreased clothing utility (Ellen MacArthur Foundation, 2017). |
Opportunities within this industry should be investigated to ensure that clothing, textiles and fibres are kept at their highest value and utility.

- Priority actions (p. 80): Textiles Research opportunities that may reduce the generation of textile waste and increase the recovery of textiles.
- Advocate for approaches that motivate individuals to dispose of unwanted textiles in a responsible manner.

| TAS | Environmental Management and Pollution Control Act 1994 (EMPCA) Environmental Management and Pollution Control (Waste Management) Regulations 2020 | Voluntary levy adopted by regional waste groups at levels of $0 to $7.50/t | The Tasmanian Waste and Resource Management Strategy (2009) (under review at the time of writing)  
- No numerical targets are included in the strategy  
Draft Waste Action Plan (Consultation Draft, June 2019)  
- Introduce a waste levy by 2021 to fund waste management and resource recovery activities;  
- Introduce a Container Refund Scheme in Tasmania by the end of 2022;  
- Ensure 100% of packaging is reusable, recyclable or compostable by 2025;  
- Reduce waste generated in Tasmania by 5% per person by 2025 and 10% by 2030;  
- Achieve a 40% average recovery rate from all waste streams by 2025 and 80% by 2030;  
- Have the lowest incidence of littering in the country by 2023;  
- Work at the national level and with local government and businesses in Tasmania to phase out problematic and unnecessary plastics1 by 2030; and  
- Reduce the volume of organic waste sent to landfill by 25% by 2025 and 50% by 2030. |
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<td>Sustainability Victoria Act 2005</td>
<td>Climate Change Act 2017</td>
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Metro and regional:
- MSW: $64.30/t
- C&I and C&D: $64.30/t
- Rural:
  - MSW: $32.22/t
  - C&I and C&D: $56.36/t

Prescribed industrial (hazardous) waste:
- Category B: $250/t
- Category 3: $70/t
- Asbestos: $30/t

Statewide Waste and Resource Recovery Infrastructure Plan (2016-2046)
- No numerical targets included in the plan

- Strategic Directions
  - Prioritise valuable recovery where economically viable, there is a viable market for end products and results in better community, environment and public health outcomes
  - Reduce landfill reliance
  - Aggregate material streams, around hubs and spokes network, to achieve quantities for reprocessing
  - Utilise land for infrastructure required to manage waste and material streams
  - Evidence-based decision-making for waste and resource recovery options
  - Integrated statewide planning and decision-making to facilitate cost-effective statewide network of waste and resource recovery infrastructure

- Specific References to Textiles
  - 'Textiles' listed as an 'Individual material stream' (p. 20) and measured in subsequent data tables
  - 'Data considerations' chapter (p. 95): Textiles data was considered as a subsection of organics data in previous publications. As most recovered textiles are synthetic, it is now considered in a category of its own. However, detailed data is limited so textiles are not discussed in this chapter.
  - Table 6.6: footnotes that 'A large network of charity collection bins and opportunity shops provide an important role in recycling textiles and other goods. Due to difficulty collecting data on how these are managed and how...
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<td>Avoidance targets</td>
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<td>• 2025 – 10% reduction in waste generation per capita</td>
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<td>• 2030 – 20% reduction in waste generation per capita</td>
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<td>Recovery targets</td>
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<td>• 2025 – Increase material recovery to 70%</td>
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<td>• 2030 – Increase material recovery to 75%</td>
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<td>• From 2020 – Recover energy only from residual waste</td>
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<td>Protection targets</td>
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<td>• 2030 – No more than 15% of waste generated in Perth and Peel regions is landfilled.</td>
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<td>• 2030 – All waste is managed and/or disposed to better practice facilities</td>
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<td>Specific reference to textiles</td>
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<td>• Textiles (clothing and other fabric-based materials) listed as a focus material</td>
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<td>• Opportunities and focus materials (p. 23):</td>
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<td>Textiles: clothing and other fabric-based materials – Textiles contain valuable</td>
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<td>materials and significant embodied energy.</td>
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<td>When disposed to landfill or illegally dumped, textiles represent a loss of resources</td>
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<td>and can negatively impact the environment.</td>
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Appendix B: Recommendations from the Ellen MacArthur Foundation’s ‘New Textiles Economy’ Report

| Ellen MacArthur Foundation ‘New Textiles Economy’ (Education/Information Initiative) |
|----------------------------------|-------------------------------------------------|
| **Direct Regulation**            | The report highlights that policymakers serve an important function in influencing the textiles economy, through realigning incentives, connecting stakeholders across the supply chain, influencing sustainability standards and stimulating innovation. To enable this, the report recommends adopting ‘clear and binding’ policies, mapping out a coordinated approach to circular textiles management. Recommendations for binding regulations included mandatory extended producer responsibility schemes for textiles, such as the model in France, bans on certain chemical uses or imports, and increased harmonisation between national and international standards. However, the report also notes that current domestic bans on the imports of used clothing, including China’s National Sword policy, may inhibit the uptake of recycling globally. Therefore, while the report recommends stronger direct regulation in some instances, it focuses on an integrated regulatory approach, in cooperation with industry and economy demands. |
| **Co-regulation**                | EMF proposes a series of co-regulatory initiatives, where policymakers establish non-binding targets or incentives for collection, and individual industries determine the best model for meeting those requirements. The report suggests that the large-scale system change proposed by the CE ‘can only be achieved’ through coordinated action. EMF therefore recommends a dialogic approach to regulation, with increased transparency and communication across the textiles supply chain, an open evidence base, and new industry standards and guidelines. Importantly, EMF suggests that policy approaches should be informed and enabling. This aligns with regulatory theory on responsive regulation, as it would require textiles regulations to be designed both deliberately and flexibly, to respond to changing market demands while shaping a new CE. |
| **Self-regulation**              | EMF suggests that, in order to transform the textiles market, a high degree of commitment towards designing and producing sustainable garments is required. The report suggests that this could be advanced through industry-led initiatives, such as industry guidelines, aligned efforts and increased transparency. EMF highlights the role of industry associations and initiatives in facilitating and fostering collaboration and communication across the value chain, by sharing information, case studies and best practices. |
| **Economic instrument**          | The Report highlights the key role of economic regulatory measures, in stimulating supply and demand for textiles using recycled materials, or disincentivising the extraction of virgin materials. Another observation of the EMF is that stronger international regulation of chemicals could increase costs wherever textiles are produced, and as such, incentivise manufacturers to phase out certain substances of concern. This economic regulatory initiative may also incite further market competition for the development of environmentally-safe alternatives. |
| **Education/Information Initiatives** | EMF suggests that the EU reclassify recycled materials as non-waste, provided they meet a set of general conditions, and thus improve transport, storage and treatment in textiles recycling schemes. Further, the report suggests that improved measurement and reporting tools could increase transparency about a product’s content, history, use and after-use, durability and recyclability. One example provided is the Sustainable Apparel Coalition’s Higg Index. |
## Appendix C: Recommendations from the European Union's Circular Economy Action Plan

<table>
<thead>
<tr>
<th><strong>EU ‘Circular Economy Action Plan’ (Non-Binding Policy Instrument / Education / Information Initiative)</strong></th>
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<tbody>
<tr>
<td><strong>Direct Regulation</strong></td>
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<tr>
<td>The EU Action Plan outlines the legislation already in place to create mandatory sustainability commitments, including the EU Ecodesign Directive, which regulates energy efficiency and some features of circularity in products. However, recognising the absence of a comprehensive regulatory approach to circularity, the Action Plan states that the Commission will propose ‘a sustainable product policy legislative initiative’. The EU states that the legislation will introduce a ban on the destruction of unsold goods and a restriction on the production of single-use products. Importantly, the Action Plan explicitly provides that textiles will be one of the priority groups addressed by this legislative initiative. Moreover, the report suggests that national initiatives will be improved through increased transparency with international cooperation. This includes a commitment towards ensuring that the EU ‘does not export its waste challenges to third countries’ and a review of the EU rules on waste shipments. Further, the Action Plan states that the EU will propose amendments to the annexes on the Regulation on Persistent Organic Pollutants under the Stockholm Convention. Finally, to support a global shift to a CE, the Action Plan states that the Commission will, among others, propose a Global Circular Economy Alliance; lead in the development of bilateral, regional and multilateral CE agreements, and build partnerships with developing nations to maximise global benefits of a just transition towards the CE. In furtherance of this legislative initiative, the Action Plan proposes a series of complementary regulatory and voluntary approaches.</td>
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<tr>
<td><strong>Co-regulation</strong></td>
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<td>The EU Circular Economy Action Plan states that the EU Commission will propose a comprehensive EU Strategy for textiles, through participatory discussions with industry and stakeholders, with the aim to strengthen competition and innovation in the sustainable textiles sector. The Action Plan outlines several existing co-regulatory initiatives, such as the EU Ecolabel and the EU green public procurement criteria. However, it notes that these initiatives have reduced impacts due to their voluntary nature. Further co-regulatory initiatives proposed include the development of eco-design measures, to ensure that textile products are being consistently designed and manufactured for circularity and improved sorting. The EU Commission commits to cooperating with industry to develop a harmonised system of tracking and monitoring information on substances in waste. The EU will also provide guidelines about how to achieve high levels of separate collection of textile waste, which Member States will have to ensure by 2025.</td>
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<tr>
<td><strong>Self-regulation</strong></td>
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<td>The Action Plan states that it will be empowering business and private consumers to choose sustainable textiles and improving access to use and repair services. The Report also commits to facilitating industry-led reporting and certification system. This includes supporting business-led initiatives to develop environmental accounting principles, as well as encouraging the integration of sustainability criteria into business strategies.</td>
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<tr>
<td><strong>Economic instrument</strong></td>
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<td>The Action Plan sets out a series of economic instruments to support the proposed legislative initiative, including the provision of incentives and support for product-as-service models and investment into circular materials and production processes. This includes investing in the sorting, re-use and recycling of textiles; promoting innovation, industrial applications and regulatory measures in furtherance of extended producer responsibility; and encouraging the broad adoption of economic instruments in EU Member States, such as environmental taxation, landfill and incineration taxes and value added tax rates.</td>
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The Action Plan states that the Commission will propose a revision of EU consumer law to ensure consumers receive transparent information when purchasing goods. This is said to include information about the product’s lifespan and the availability of repair services. Further the Commission is considering setting minimum requirements for sustainability labels and information tools. Significantly, the Commission is in the process of establishing a new ‘right to repair’ and exploring the possibility for new horizontal material rights for consumers, through a review of Directive 2019/771. Finally, the Commission states that it will continue support capacity building through, guidance, education and dissemination of information about sustainable buying practices.

**Appendix D: Recommendations from the UK’s House of Common's ‘Fixing Fashion’ Report**

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<tr>
<th>UK’s House of Common’s ‘Fixing Fashion’ Report (Non-Binding Policy Instrument / Education/ Information Initiative)</th>
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<tbody>
<tr>
<td><strong>Direct Regulation</strong></td>
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<td><strong>Co-regulation</strong></td>
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<td><strong>Self-regulation</strong></td>
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</tbody>
</table>
| **Economic Instrument** | **Tax**  
- The Penny Tax: By issuing a charge of one penny per garment produced in the UK alone, a predicted $35 million euros may be raised and invested into improving clothing collection and sorting systems. This governance strategy has the potential to disincentivise virgin materials entering the market while also stimulating the market for recycled fibres and creating new ‘green’ jobs in the recycling sector;  
- Reform taxation laws: reward companies that design sustainable textile products, while penalising those that do not;  
- Tax textiles containing less than 50% PET  
- Follow Sweden’s lead and reduce VAT on repair services  
**Incentives**  
- Implementation of the EU’s Ecodesign Directive in the Circular Economy Package into UK Resources and Waste Strategy, and upcoming ‘Environment Act’  
**Investment**  
- Government investment in WRAP’s Sustainable Clothing Action Plan;  
- Government investment in research concerning the environmental performance of different materials |
| **Education / Information Initiatives** | The report outlines a series of educational and informational regulatory interventions in the consumption, refurbishing, redistribution, maintenance, sharing and collection of materials. One example of this is the integration of textile design and repair lessons in schools. The report also recommends that the UK government publishes a publicly accessible listing of the retailers required to release a modern slavery statement, without accompanying penalties for those countries failing to comply. |
### Appendix E: Recommendations from France’s ‘Anti-Wastage and Circular Economy’ Law

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<tr>
<th>Category</th>
<th>Recommendation</th>
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<td><strong>Direct Regulation</strong></td>
<td>France’s new legislative instrument introduced a command and control prohibition on the destruction of a variety of unsold goods, including fashion items, as well as the mandatory incorporation of a minimum level of recycled material into new products. Manufacturers, distributors, and retailers with unsold textiles inventory will be required to donate or recycle products instead of incinerating it or dumping it in landfills. In accordance with the international law ‘polluter pays’ principle, the French legislation also requires companies to finance the destruction of waste that they intend to create. Further, the Act creates an obligation to inform consumers about the environmental qualities and characteristics of waste-generating products. This information includes the incorporation of recycled or renewable materials, and the durability, composability, recyclability and repairability of an item, through marking labelling or display. Producers are required to inform consumers of any eco-contribution paid by the producer. Retailers with an establishment of more than 400m² offering mass consumer products are required to have selective sorting bins at the checkout. These obligations will enter into force on 1 January 2022.</td>
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<td><strong>Co-regulation</strong></td>
<td>The Consumer Code includes not only prohibited or regulated business practices, but also ‘encouraged’ best business practices. France’s law introduced amendments to their producer responsibility system, which will ask producers to achieve quantifiable recovery, reuse, repair and eco-design targets. France is also introducing new streams into its extended producer responsibility schemes, including a stream for sanitary textiles. Finally, the producer responsibility scheme will also require producers to report to the Minister about the nature, quantity and destination of exported waste.</td>
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<td><strong>Self-regulation</strong></td>
<td>France’s legislative scheme will incentivise voluntarism and self-regulation through offering a bonus on the contribution producers pay to the ‘PRO: Producer’s Responsibility Organisation’, for those products designed in an ecologically-sustainable way.</td>
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<tr>
<td><strong>Economic instrument</strong></td>
<td>France’s existing Environmental Code, which codifies an administrative penalty for ‘the illegal abandonment of waste’, including binding measures of consignment, suspension, works carried out ex-officio, fine and daily penalty. The ‘Anti-Wastage and Circular Economy Law’ builds upon the Code, giving the mayor the power to impose a maximum fine of 15,000 euros at an earlier stage in the enforcement process, in order to enable immediate deterrence. Additionally, the Code fixes a tortious fine of 75,000 euros and two years’ imprisonment for ‘abandoning or having deposited waste’, under conditions contrary to the provisions of the Code. The new law expands economic incentives for manufacturers to design their products for recyclability. Finally, EPR schemes will be harnessed to financially support actors involved in reuse and insertion through employment, such as waste sorting, recycling and recovery centres, in addition to financing ‘repair funds’, to reduce the costs of product repair for consumers.</td>
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5 Environmental Code Article L. 541-10-18.  
6 Environmental Code Article L. 541-3.  
7 Environmental Code Article L. 541-46.
# Regulation of a Circular Economy for Textiles in Australia

The law includes an entire Part focused on 'Better Informing Consumers'. This includes, but is not limited to, creating a single logo to communicate to consumers that the waste is subject to a sorting rule, harmonising the colour of waste bind and developing a mandatory methodology for environmental labelling. The Act outlines compulsory warnings, such as 'do not discard in the wild' and prohibited ones, including 'biodegradable' and 'environmentally friendly', to prevent greenwashing. The Act defines waste to mean 'any substance or any object, or more generally any moveable good, which the holder disposes of or which he [sic] intends or is under the obligation to dispose of'.

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8 Article L. 541-1-1 of the Environmental Code