

Usedfully – Textile Reuse Programme Submission on the Climate Change Commission Draft Proposal

Textiles resources dumped in landfill increase greenhouse gas emissions in Aotearoa

Most clothing and textiles ultimately end up in landfill releasing greenhouse gases as they decompose. While the rate of emissions varies by geography (and level of research), there is alignment on the fact that after food waste, textiles are a hotspot for emissions in landfill. Our recent research: **Looking In The Mirror: A review of circularity in the clothing and textile industry in Aotearoa**¹ estimates that annually 220,800,000 kgs of textiles are landfilled each year. The Ministry for the Environment (in Aotearoa) calculates landfilled textile emissions at 1.80 CO₂e per kg². This equates to 397,440,000 kgs CO₂e. Billions of dollars are spent landfilling these valuable commodities, meanwhile virgin resources continue to be extracted to supply the industry and climate impacts escalate. What our research uncovered in Aotearoa is an industry highly aware of the environmental impacts of their sector, an industry no longer satisfied with business as usual and business owners and employees committed to creating a better future but hamstrung by huge infrastructure gaps and grappling with a lack of policy support.

What is needed now is not incremental but era scale change across industry, society and the economy to address this crisis in a just, equitable and enduring way.

The textile and apparel industry is based on a linear production model and geared for growth. The environmental and social consequences of that model are becoming too big to ignore, leading to increasing public awareness of the 'unintended consequences' of our appetite for fast textiles, and increasing

¹ (Casey, B, and Johnston, B. 2020) "Looking In The Mirror: A review of circularity in the clothing and textile industry in Aotearoa." Usedfully.

² (Ministry for the Environment New Zealand, n.d.)

need for regulation. Research into technological solutions to the 'textile waste' problem is belatedly gearing up after decades of neglect, but it is already clear that these solutions cannot be relied upon to 'solve' everything.

The textile value chain is global but has local consequences. The clothing industry has transformed in recent years with the adoption of the 'fast fashion' model. The consequences of this approach to product creation are numerous, and include a decline in durability, consumers wearing each item less, and rapidly increasing volumes of textiles being sent to disposal. According to the Ellen Macarthur Foundation, the clothing industry has doubled its output in just 15 years (faster than global GDP growth), while clothing utilisation is on the decline. With clothing production breaching 100 billion units per year there is a growing awareness amongst stakeholders of the significant impacts of our clothing and textiles.

The textiles industry is essentially built upon a linear model of 'take, make, waste'; meaning that industry growth depends on taking more and more resources, processing them into products, and then selling them to consumers (and encouraging them to buy more). The most commonly used raw materials for textiles are cotton (natural), polyester (synthetic i.e. a plastic derived from fossil fuels) and nylon (also a synthetic plastic). The vast majority of textiles ending up in landfill or incineration (depending on the destination country)

The textile industry is not alone in its adoption of a linear model. Cumulatively this is leading to significant imbalances between resources consumed, and the Earth's ability to renew resources. The organisation 'Earth Overshoot' measures the short-fall of resources in comparison to population, and calculates that the world overshot its annual ecological resources last year on August 22nd. Exceeding the world's annual available resources in 8 months instead of 12, drawing more from nature than the world can replace in the whole year, leaving the world in a resource deficit and contributing significantly to global heating.

All types of textile fibre are resource intensive and have an embedded environmental cost from the land, water, energy and chemicals used. Following the linear model, increasing textile sales requires more manufacturing, and higher use of raw materials. Clearly, the industry is starting to bump up against the limits to growth. For example, natural materials such as cotton or wool require a lot of land and water for cultivation. The fashion industry is projected to use 35% more land for fibre production by 2030 – an

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extra 115 million hectares (or 4.3 times the landmass of Aotearoa) that could be protected, left for biodiversity, to preserve forest to store carbon, or used to grow crops for food to help to feed an expanding population.

Synthetic fibres and yarns are generally derived from non-renewable fossil-fuels and can lead to microplastic pollution. Research has found that globally textiles fibres make about 35% of marine plastic pollution³. However in Aotearoa <u>Scion's water quality studies</u>⁴ in Auckland found that 87% of micro plastic pollution comes from clothing fibres.

Global warming, and the carbon emissions driving this, are of increasing concern to society. The textile industry is also a significant contributor of carbon emissions, with global textile production generating about 1.2 billion tonnes of CO_2e per year. If the industry continues on its current consumptive growth path, by 2050, it could be consuming more than 26% of the carbon budget associated with the 2°C pathway to limit global warming. Carbon emissions occur right across the textile value chain, linked to fertiliser and pesticide use for raw material cultivation, textile manufacture, logistics, consumer use (washing), and also end-of-life where most are disposed of in landfill (or incinerated).

³ (Henry et al., 2018, 483-494)

⁴ Parker,K. "Turning the Tide on Plastic Microparticles", 2019

Our six big issues

1. The pace of change

Do you agree that the emissions budgets we have proposed would put Aotearoa on course to meet the 2050 emissions targets?

Disagree

The Intergovernmental Panel on Climate Change's 1.5 degree report outlines that for a 66% chance of averting climate catastrophe, we must approach emissions reductions with deep cuts in emissions starting immediately. The Commission's proposed approach is not ambitious enough and risks passing many tipping points.

The Commission's waste advice focuses on reducing methane emissions from organics that end up in landfills. However, New Zealand's waste policy does not include natural textiles such as cotton, wool, linen etc as organic material that could be diverted from landfill reducing emissions.

Long-lived GHG emissions are also generated from the extraction, production, transport and consumption of goods, which is intrinsic to our current, unsustainable 'take-make-throw' linear economy. While most countries have signed up to the Paris Agreement some countries have not yet ratified their Agreements. For example Turkey, which is the fifth largest producer of textiles in the world. Using a production based measurement runs the risk of under accounting for goods that end up within the borders of Aotearoa. A mixed method of both Production and Consumption based measurement is needed to ensure emissions are accounted for.

To meet the 2050 emissions targets, the Commission should expand its advice to consider *all* waste streams, and build consumption-based measurements into its analysis.

2. Future generations

Do you agree we have struck a fair balance between requiring the current generation to take action, and leaving future generations to do more work to meet the 2050 target and beyond?

Disagree

The cost of transitioning to a low-carbon future must fall on players most responsible so that policies do not regressively impact low-income communities. According to Ellen Mac Arthur Foundation's (EMF) <u>'Universal</u> <u>Circular Economy Policy Goals'</u> "Continuing the current linear system is projected to lead to resource use nearly doubling from 2011 to 2060, which will further exacerbate diversity loss, global heating, pollution, poverty and uneven distribution of benefits."⁵

New Zealand's approach to transitioning equitably must take into account our role as a developed nation that has historically contributed more than our fair share of emissions, and account for the high-polluting industries that have profited from decades of pollution with little consequence.

Positioning the bulk of reductions in the 2030's puts more of a burden on future generations compared to greater cuts this decade. There are advantages to acting sooner, the EMF report offers this example "*It is estimated that the elimination of fossil fuel subsidies would have led to a reduction in air pollution deaths by 42% in 2015, at the same time as creating global net economic welfare gains of more than USD 1.3 trillion.*"

⁵ Ellen Mac Arthur Foundation's (EMF) 'Universal Circular Economy Policy Goals' (2021)

3. Our contribution

Do you agree with the changes we have suggested to make the NDC compatible with the 1.5°C goal?

Disagree - our changes are not ambitious enough

According to Infrastructure Commission NZ 'Sector State of Play: Resource Recovery and Waste Discussion Document'⁶ New Zealanders send the most municipal waste to landfill per capita in OECD. And we have the lowest municipal solid waste recovery rate behind the US, Australia and the UK. Our fair share needs to reflect our outsized emissions. The NDC should be met primarily through domestic emissions reductions, with offshore mitigation only being a last resort.

4. Role and type of forests

Do you agree with our approach to meet the 2050 target that prioritises growing new native forests to provide a long-term store of carbon?

Agree

We support the commission's focus on large reductions of carbon dioxide with as little reliance on emission removals by forestry as possible.

The Productivity Commission's 'Low Emissions Economy Report'⁷ recommends that among the numerous changes that will be required across the economy, substantial new afforestation is one of the 3 key shifts the country must make.

We support the significant increase in new native forests and the assumption that no further native deforestation occurs from 2025. All native habitats must be incorporated into this approach. For example, wetlands and tussock should be recognised for their role in storing carbon, and protected from destruction.

⁶ Infrastructure Commission NZ 'Sector state of Play: resource Recovery and Waste Discussion'

⁷ Productivity Commission 'Low Emissions Economy Report'

5. Policy priorities to reduce emissions

What are the most urgent policy interventions needed to help meet our emissions budgets?

The ability to lower emissions and extract value from waste is dependent on the processes and infrastructure available. Infrastructure NZ estimates that there is a recycling infrastructure gap in New Zealand of between **\$2.1 - 2.6 billion**⁸ which is needed to divert waste from landfill, along with an additional \$0.9 billion needed in operational funding over the next 10 years. Preventing materials from becoming waste, or processing waste to extract the resources within it, reduces emissions, presents environmental, economic and social benefits, and potentially avoids costs, including:

- Displacing the costs of extracting and manufacturing virgin materials
- Reducing the energy use and carbon emissions associated with the extraction, transportation and fabrication of virgin materials.

Waste legislation is a key determinant of the pathway of goods and materials at their end-of-use. Resource classifications can enable or hinder activities related to recycling, reuse, repair, and remanufacture. Unblocking this issue in current waste legislation can bring economic and environmental benefits. It could also lead to societal benefits through the creation of resource management jobs. European research⁹ has found social and economic opportunities beyond waste diversion, estimating that for every 10,000 tonnes of recovered textile waste 296 new jobs are created in sorting, disassembling and reuse and approx 2000 additional work training, internships and community service opportunities.

Accelerating the adoption of the circular economy is a key outcome of United Nations Sustainable Development Goal 12: Responsible Consumption and Production, which aims to decouple economic growth from environmental degradation, and reduce waste generation through prevention, reduction, recycling and reuse. Aligning policy levers, such as subsidies and tax incentives, with the circular economy can enable the secondary material markets to compete with virgin materials on cost.

⁸ Infrastructure Commission NZ 'Sector state of Play: resource Recovery and Waste Discussion'

⁹ Nordern. (2015). A Nordic strategy for collection, sorting, reuse and recycling of textiles.

An integrated approach by government avoids individual policies for waste reduction and a circular economy being stranded in a wider policy landscape that supports a linear, extractive model. Establishing greater inter-ministerial coordination and coherence between policy measures, is reflective of the interconnected and systemic nature of the economy, the environment and society.

The New Zealand Government has recently made 6 waste streams priority products, requiring mandatory Product Stewardship Schemes and focusing supporting policy, funding and investment on this limited group of products. Despite their impacts, textiles have been omitted from the priority products list. A necessary action is extending the concept of product stewardship as a mechanism for increasing circularity across supply and recovery chains and expand it to a wider range of products, prioritising products with high emissions potential eg. textiles.

The majority of clothing in Aotearoa is made from synthetic fibres, polyester is <u>polyethylene terephthalate</u> (PET), a plastic made from fossil fuels and chemicals. It's omission from NZ's priority products is a lost opportunity to address the most significant contributor to our plastics pollution and to provide supporting regulation and resources to address this waste stream.

Our concern is that this will cause the industry and the necessary investment in infrastructure to lag even further behind, delaying action will compound the challenge. Delay is potentially costly and may limit viable and cost-effective options compounding the issue and pushing responsibility and onto future generations. If New Zealand fails to act promptly, it risks being locked into a high-emissions economy and missing potential future opportunities.

Most clothing and textiles ultimately end up in landfill. Natural fibres such as cotton, wool, linen etc are organic, as they decompose they release GreenHouse Gases. Mandating separate collection of organics (first emissions budget) and banning organic waste (food, paper, etc.) from landfill (second emissions budget) to halve food waste at source by 2030, should be extended to include natural textiles.

More organic waste should be diverted to local and regional composting. Recognising the preference for local communities to build soil and sequester carbon through decentralised local composting systems, rather than centralised anaerobic digestion.

6. Technology and behaviour change

Do you think our proposed emissions budgets and path to 2035 are both ambitious and achievable considering the potential for future behaviour and technology changes in the next 15 years?

Disagree

With existing technology we can achieve far more ambitious emissions budgets, stronger policy recommendations.

The Commission's report currently misses the opportunity to highlight the cost of inaction.

The commission's waste advice takes us in the right direction, but must be more specific and ambitious, including recommending binding waste reduction targets for all waste streams.

Detailed questions on our advise:

The majority of the textiles that enter the Aotearoa market originate offshore, with the wool sector being the only significant local operator. Much of the non-financial impacts of these textiles therefore also occur offshore also e.g. water pollution, carbon emissions. However, once the textiles enter Aotearoa, they tend to remain here, even at end-of-life.

A good understanding of the Aotearoa context in this space is prevented by a lack of data. Currently available data for textiles is generally non-existent, with only high-level data available in terms of textile volumes being disposed of in landfill. MfE estimates that textiles comprised 4% of total waste volumes to landfill in 2008 (126,240t)¹⁰. Auckland Council estimates that textiles are currently 9% of their landfills, and that at current growth rates this would rise to 14% by 2040. Better quality data of the waste entering Aotearoa landfills, or for textiles specifically would enable better management of the issue.

¹⁰ (Ministry for the Environment New Zealand, 2009)

Waste

18. Do you support the package of recommendations and actions for the waste sector? Is there anything we should change and why?

Support all of the Actions

"Collectively we have created a world where our emissions have destabilised the planet's climate and our waste has disrupted every ecosystem on the globe."¹¹ Dr Stephanie Pride

Ten years from now there will be little tolerance for waste in the value chain. Research company McKinsey and Co suggest that *"By 2030, we need to live in a world in which 1 in 5 garments are traded through circular business models"*¹². At today's global scale that equates to 20 billion garments produced and reused through a circular system. Dr Pride describes a future state where "waste is an unnecessary burden on us all" and where "low emissions are a key part of marketing and a source of pride for business and community" and where potentially "the public are concerned about both price and emissions when choosing goods and services"¹³.

The growth in manufactured textile volume is resulting in increasing volumes of textiles being sent to landfill at end-of-life with the knock on increase of biogenic methane emissions from decaying textiles. The current New Zealand Waste Strategy 2010 sets no specific targets, timelines, actions, or responsibilities for waste minimisation or coordination of the processing of waste streams.

In the absence of a mandated approach direction, New Zealand deals with some of its processing needs by exporting a proportion of its waste textiles. The export of our unwanted clothing has a number of negative consequences – it undercuts local clothing production resulting in the loss of skilled jobs, and it replaces localised clothing with used western clothing, with the loss of local interpretation and cultural expression through clothing design. Off-shoring used garments also pushes the associated environmental and social impacts to other countries. It does not address the volume of textiles we are

¹¹ (Pride, S) 'Navigating Critical 21st Century Transitions' New Zealand Society of Local Government Managers.

¹² (McKinsey and Co., 2020) Fashion On Climate: How the fashion industry can urgently act to reduce its greenhouse gas emissions.

¹³ (Pride, n.d.)

consuming and also does not meet consumer expectations of resource reuse and environmental stewardship.

It also creates vulnerabilities in New Zealand's resource recovery and waste management value chain. Offshoring routes have the potential to undermine investment in onshore solutions. Due to the fragmented sector governance, sub optimal data and the reliance on international markets, there is no strategic direction on what the optimal onshore/offshore processing mix is. This was noted by the Prime Minister's Chief Science Advisor who recommended that the government strategically invest in or incentivise development of systems and infrastructure to deal with our own plastic waste onshore, specifically in relation to PET, HDPE, PP and possibly LDPE.

This could be expanded to include textiles eg: polyester (PET) as offshoring textiles leads to a potential waste of value add and broader economic and social benefits through investment in onshore processing infrastructure, job creation, etc.

We agree with the Commission's recommendations:

Government take steps to support the reduction of waste at source, increase the circularity of resources in Aotearoa and reduce waste emissions by:

- a. Setting ambitious targets in the New Zealand Waste Strategy for waste reduction, resource recovery and landfill gas capture to reduce waste emissions in Aotearoa by at least 15% by 2035.
- b. Investing the waste levy revenue in reducing waste emissions through resource recovery, promotion of reuse and recycling, and research and development on waste reduction.
- c. Measuring and increasing the circularity of the economy by 2025.
- d. Extending product stewardship schemes to a wider range of products, prioritising products with high emissions potential.
- e. Legislating for and funding coordinated data collection across the waste industry before 31 December 2022.

Organisations supporting this submission:







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