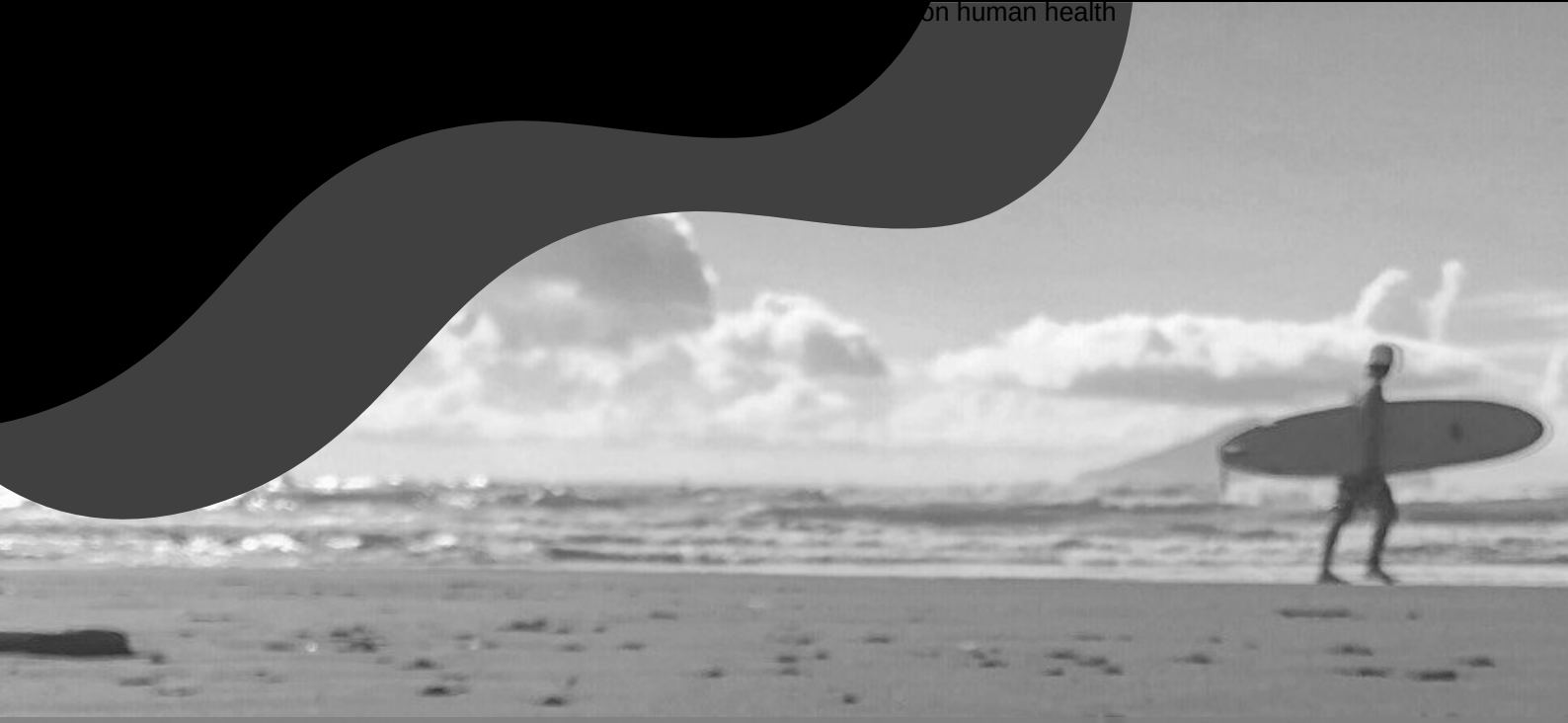

Submission to the Community Affairs References Committee regarding the Impact of microplastics and other toxics on human health

the climate centre

Impact of microplastics and other toxics on human health

The Climate Centre wishes to contribute a submission to the Community Affairs References Committee regarding the Impact of microplastics and other toxics on human health. The terms of reference for this submission states that: "*The impact of microplastics, toxics and forever chemicals on human health, with particular reference to:*

a) the impact of microplastics, toxics and forever chemicals on reproductive health, including:

i) women's fertility, hormonal disorders, endometriosis, polycystic ovary syndrome and premature menopause,

ii) in utero transmission of microplastics and the impact on placental function and foetal development,

iii) maternal health, including impacts on pregnancy outcomes like miscarriage, preterm birth and still birth, and

iv) fertility impacts across all populations, including men's fertility;

b) disruption of key developmental pathways in the first 1,000 days of life that significantly impact later-life health outcomes like obesity, heart disease, diabetes and cognitive function;

c) cardiovascular impacts, including links between microplastic accumulation in arterial plaque and increased risks of heart attack, stroke and cardiovascular mortality;

d) links between endocrine disrupters and increased rates of cancer in young people, fertility issues, hormone dysregulation, respiratory diseases, inflammatory conditions and immune system dysfunction;

e) the effectiveness of any education or informative efforts to notify the public of potential harms and prevention opportunities;

f) the potential benefits of a national standard for consumer products;

g) protocols and policies of other countries which have proven to be effective;

h) the adequacy of current research, monitoring and measurement standards for microplastic contamination in Australia; and

i) any other related matter."

The Climate Centre wishes to make commentary regarding points e) and g), as detailed below.

Introduction

Microplastics are small pieces of plastic less than 5 millimetres in length. They are a challenge for human health as well as the environment due to their slow decay rate. They spread from human products and end up in our oceans making their way through the food chain onto humans and impacting our health. ("Microplastics - Australian Marine Conservation Society" 2025). This submission focuses on the results of Australia's achievements outlining that there are still challenges. In addition, looking at Belgium and the EU which are leaders in this space to inspire ideas on the ways governments can support action on recycling packaging and join in on international action.

(e) the effectiveness of any education or informative efforts to notify the public of potential harms and prevention opportunities.

Removing the potential harms of microplastics starts by removing them from the environment before they start to decay. This means prevention of the spread from streets to waterways to oceans to keep them out of the environment is key to reducing the spread of microplastics that will eventually impact human health. Notable progress has been made in Australia, but challenges remain. Education will be a key driver of supporting Australians to reduce their waste in every policy change made to reduce microplastics, so they feel empowered and supported to do so.

Soft plastics down

A 2025 Research paper by the CSIRO found that Australia has had a 39% decrease in plastic pollutions along coastlines in the last decade (CSIRO 2025). The most common items found were polystyrene at 24% followed by cigarette butts at 20% (CSIRO 2025). This was likely the result of various banning of plastic item by state governments over the past 20 years. The increasing momentum in banning these products forces individuals and businesses to become more educated on the topics of plastic waste and recycling encouraging a sense of empowerment and taking action. It is likely these bans would not come into play without public support and the efforts of state government to change the behaviour of the community (Borg 2018).

Areas for behaviour change

In the CSIROs research Perth, Newcastle and the Sunshine Coast recording the most common item as cigarette butts (CSIRO 2025). It is estimated that every year 8.9 billion cigarette butts are littered in Australia (Clean Up Australia 2026).

In Clean Up Australia's 2025 annual Litter Report 80% of all counted litter during clean up events was plastics. This was led by cigarette butts at 23% up from 20% in 2024 followed by soft plastics at 18% down from 24% in 2024 (Clean Up Australia 2026). Cigarette butts had overtaken soft plastics as the most found item for the first time in the 3-year history of the annual Litter Report (Clean Up Australia 2026). Cigarette butts take up to 30 years to decompose being made up of shedding plastic microfibres. They are known to poison birds, turtles, whales and fish leaking harmful chemical such as nicotine, heavy metals including cadmium, mercury and lead, and

other known carcinogens (Clean Up Australia 2026). This would then be passed up the food chain to impact human health alongside microplastics.

There has been limited action at both the federal and state levels to act on plastic waste from cigarette butts and this should be the focus in future bans that promote better health outcomes both from microplastics and cigarette addiction. Earlier Australian Government actions have not followed through yet such as stewardship scheme to support the reduction of cigarette butt waste.

(g) protocols and policies of other countries which have proven to be effective.

Key examples of action on micro plastics focus on the story the legislation takes and how industry can respond and feel empowered to create their own actions. International cooperation could be a keyway for the Australian Government together with our region to take meaningful action on waste management, littering and microplastics.

Belgium

Belgium is seen globally as a leader is plastics packaging recycling holding a 60% national recycling rate in 2023 (Eurostat 2025) whilst Australia's packaging recycling rate as stated under B2B (Business to Business) and B2C (Business to Customer) in 2023 to 2024 is 18% which is growing as compared to previous years (Australian Plastics Flows and Fates Reporting - DCCEEW," n.d.).

Belgium's packaging levy on beverage containers started in 1993 alongside other environmental taxes with an environmental levy on single use plastics being added in 2007. The environmental levy focused a communications campaign supporting industry voluntary agreements over several years. The resulting two strategies by government meant the packaging levy was more opposed than the second environmental levy (Card, n.d.).

The initial 1993 was driven by environmental parties that did not have majority in government meaning their laws impact was watered down by other parties in government. The 1993 levy aimed to increase the reuse and recycling of products. The second 2007 environmental levy was designed to disincentivise the consumption of single use plastics. The communications campaign and voluntary agreements led to an organic movement to reduce plastic waste in Belgium independent of government but with more success in supermarkets rather than smaller retailers (Card, n.d.).

For the industry to manage the incoming legislation and be compliant, industry came together and created the company Fost Plus which manages the industry response to increasing positions by the Belgium Government to reduce plastics waste plans (Card, n.d.) as well as the movements currently being driven by the EU. Fost Plus is Belgium's industry led national recycling company ("Who We Are," n.d.)

Australia already has stewardship programs in place should consider adapting these policies for the local context at both national and state level where collaboration with industry can support a more responsible consumption of microplastics

reducing the number of plastics going to waste therefore reducing the risk on human health.

EU microplastics action

The EU drives the regional approach in Europe to waste reduction and the circular economy, especially in the past decade. However, the most relevant actions beyond recycling and waste reduction are direct actions on microplastics. The EU expects that under Water legislation all their member states need to reduce marine litter to support the environment as well as achieve SDG Goal 14 Life Below Water to ensure sustainable use of our oceans (European Commission 2023).

In addition, the EU recognises that microplastics is a global responsibility so looks to influence and support global programs. Trade can be a lever for change in plastics by banning waste exports to countries with high littering rates especially developing countries without necessary recycling infrastructure and waste reduction programs. The EU supports global programs that reduce microplastics such as the International Maritime Organization and the Regional Seas Conventions for the Mediterranean, the Baltic and the Northeast Atlantic and the Black Sea (European Commission 2023). The EU contributes to the Intergovernmental Negotiating Committee on Plastic Pollution that focuses on creating action globally for the full life cycle of plastic, including its production, design, and disposal ("Intergovernmental Negotiating Committee on Plastic Pollution," n.d.).

Australia should consider adapting these policies for the local and regional context at the national and state level. International cooperation in our region is key to supporting human health particularly in the Pacific Ocean as well as Southeast Asia that builds trust between our regions to work on key environment issue impacting everyone.

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About the author

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About The Climate Centre

The Climate Centre is a volunteer-run charitable not-for-profit focused on building bridges between research, policy and communities. It achieves this by undertaking research relevant to local communities, providing digital materials and outreach initiatives that make it easier to interpret climate information and apply it to a local scale, as well as engaging in policy analysis and advocacy to government, and fostering conversations and understanding at individual, community, and national scales through its various projects.