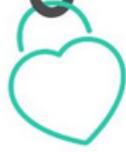


blessing bags



# sustainability policy report





sustainability policy report

# Background

Homelessness has increased in Victoria and throughout Australia in recent years ([The Salvation Army, 2023](#)). The Australian Bureau of Statistics estimated that 122,494 Australians were experiencing homelessness in 2021 ([ABS, 2021](#)). This figure represented a concerning increase of 5.2% since 2016 ([The Salvation Army, 2023](#)). In Victoria, 47 people in every 10,000 people are now experiencing homelessness ([ABS, 2021](#)). Given the ongoing economic impact of COVID-19 and rising rental prices, homelessness is expected to rise further in Victoria ([Council to Homeless Persons, 2023](#)).

Blessing Bags Melbourne is a volunteer-run organisation that distributes bags of essential items to people experiencing homelessness and disadvantage. Since our inception in 2015, we have distributed around 500 bags quarterly. To date, we have distributed around 14,000 bags to people in need. These bags primarily contain toiletries and other items such as a toothbrush, toothpaste, shampoo, conditioner, soap, deodorant, tissues, a muesli bar, and a note of hope and encouragement. As a small, grass-roots charity, we try our best to serve our community with limited financial resources. We rely heavily on donations of disposable products and, therefore, have yet to scrutinise the environmental impact of our work formally.

Nonetheless, we have identified a need to become more environmentally sustainable. We want to help as many people experiencing homelessness as we can while creating as little plastic waste as possible. Moving toward our goal of reducing plastic waste will take time, as we must consult with the community we serve before making any significant changes, such as implementing a circular model or switching to eco-friendly products. However, we have identified a product switch in the short term that will make a positive environmental impact without affecting the quality and convenience of our bags for our clients.

While only some of our bags contain all the toiletry items above, the bag component is consistently offered to our clients. Hence, swapping the polyethylene ziplock bag should be our priority. This policy report explores the environmental, practical, and financial considerations associated with switching our polyethylene ziplock bags with a new bag material type that is secure, cost-effective, and gentler for the environment. Blessing Bags Melbourne is committed to compassionate, evidence-based policy and will use this report to guide decision-making around internal sustainability policies and commitments.

# Rationale

Polyethylene is the most commonly produced plastic and has been commercially used since the mid-20th Century (Scientific American, 2011). Plastic bags made from polyethylene are widely used in retail due to being economical, relatively durable, and convenient (AtlanticPoly, 2013). According to recent figures provided by Ocean Watch Australia, around 5 trillion plastic bags are used yearly, with an astonishing 160,000 bags used per second (OceanWatch Australia). They estimate that the average person uses over 700 bags annually (OceanWatch Australia). In Australia, the annual usage of plastic bags in Woolworths Group stores was around 3.2 billion (Woolworths Group, 2018). If these bags are not reused, they add to the global single-use plastic problem.

Single-use plastic is a major marine pollutant. Plastic makes up around 80% of the debris in marine habitats (IUCN, 2021). Plastic debris has significantly impacted more than 267 species around the globe, including 28% of all marine mammals and 86% of all sea life (Dolle et al., 2022). Clean-up Australia has estimated that single-use plastic impacts the lives of more than 100,000 marine animals and 1 million sea birds (CleanUp, 2023).

The Victorian Government has recognised this devastating impact and has been phasing out certain kinds of single-use plastics across the State, with a single-use plastic shopping bag ban rolling out in 2019 (Sustainability Victoria, 2023). Blessing Bags Melbourne recognises our shared responsibility in safeguarding our marine habitats. We intend to replace our plastic ziplock bags with biodegradable and eco-friendly materials with a softer environmental impact.

In addition to concern about our part in plastic pollution, we recognise the profound implications of climate change on individuals facing homelessness and disadvantage. Climate change not only contributes to the emergence of homelessness through extreme weather events, cost of living increases, and resource scarcity but also exacerbates the hardships endured by this vulnerable population (Blessing Bags, 2023). We aim to address this dual challenge by embracing eco-conscious products and practices. Environmentally sustainable choices mitigate our carbon footprint and bolster our services' resilience during climate-related disruptions. Moreover, these efforts reflect a commitment to the well-being of those we serve, as people experiencing homelessness and disadvantage are disproportionately affected by the escalating impacts of climate change. We are taking crucial steps toward a more climate-friendly future by switching out our polyethylene bags.

Due to the impact of climate change on disadvantaged populations, we are concerned with finding a bag alternative that will reduce both our single-use plastic pollution and carbon footprint. The decision of whether to switch to non-plastic bags is complex, so this policy report will provide the necessary, in-depth information to inform decision-making.

Plastic bags and products, either High-Density Polyethylene (HDPE) or Low-Density Polyethylene (LDPE), are cheap and relatively durable. Common alternatives to polyethylene bags are paper bags, cotton calico bags, and polypropylene bags. However, different environmental costs are associated with each option, including emissions during production. For example, paper bags might seem to be an eco-friendly option yet in comparison to plastic bags, paper bags take about four times the energy to produce and two times the energy to recycle (BBC, 2019). Moreover, they create more air pollution and need twice as much space as plastic bags to decompose fully (Gomez and Escobar, 2022). Paper bags are also likely not durable enough to suit our purposes.

This proposal will outline the environmental externalities of the following alternative bag types:

- Re-usable woven bags made of polypropylene
- Calico bags
- Biodegradable resealable bags

## **Woven Polypropylene bags**

Woven polypropylene reusable bags have both environmental benefits and downsides. These bags are more eco-friendly when used according to the principle of re-usage (Alsabri et al., 2022). By using them repeatedly, their impact on the environment is reduced compared to single-use plastic bags. Additionally, they are durable, meaning they can withstand multiple uses without tearing or breaking easily. However, there are downsides to consider. Firstly, woven polypropylene bags are not biodegradable. This means that when they eventually degrade, they can leave behind microplastics, contributing to the plastic pollution problem (Jeyavani et al., 2022).

Furthermore, producing these bags requires more resources and energy than single-use plastic bags, making them more expensive and polluting. According to some estimates, these bags must be used roughly 104 times to offset their production impact (ABC, 2017). They also need to be washed regularly to prevent bacterial growth. Therefore, while woven polypropylene reusable bags have advantages in terms of durability and reusability, their environmental benefits heavily rely on proper usage and long-term reusability. While Blessing Bags Melbourne is considering ways to incorporate reuse into our model, we cannot guarantee that our clients will reuse our bags, so we are looking for environmental benefits beyond the principle of reuse.

## **Calico Bags**

A primary environmental advantage of calico bags is that they are biodegradable (Vivopak). By adhering to the principle of reuse, calico bags minimize the need for single-use plastic bags, thereby reducing waste generation and preventing plastic pollution. Additionally, calico bags are made from cotton – a renewable resource (CFDA). Moreover, their durability ensures a longer lifespan, reducing the need for frequent replacements and further minimizing waste. Calico bags are washable, allowing for repeated use and maintaining their functionality (PrimePac, 2021). Calico bags can be composted at the end of their life cycle, closing the circular loop (Vivopak). Overall, calico bags offer multiple environmental benefits throughout their life cycle. While calico bags offer significant environmental benefits, it is crucial to consider some potential downsides.

One downside is that the production of calico bags requires cotton cultivation, which can be water-intensive and may lead to water contamination with pesticides and fertilizers (CFDA). Cotton farming can negatively impact water resources and soil health (CFDA) if not managed sustainably. Some studies have shown that organic cotton has a worse environmental impact if a lower yield rate is considered (Quartz, 2019).

Additionally, the manufacturing process of calico bags may involve energy-intensive processes, especially if dyeing or printing is involved ([New York Times, 2021](#)). This energy consumption can contribute to greenhouse gas emissions and climate change. Ensuring that calico bags are produced using eco-friendly practices and that the cotton is sourced from sustainable and responsibly managed farms is essential. Another issue is the potential for overconsumption of calico bags. If people accumulate large numbers of calico bags but fail to use them regularly, it can lead to unnecessary production and waste. Therefore, promoting reuse is crucial to maximizing the environmental benefits of calico bags. However, calico bags must be used around 173 times to offset their negative environmental impacts ([The Conversation, 2017](#)). Blessing Bags Melbourne must consult with our clients and partner organisations to ascertain if reusing bags numerous times will be feasible for most clients.

### **Landfill-Biodegradable Resealable Bags**

Landfill-Biodegradable resealable bags provide several environmental benefits that make them a sustainable alternative to traditional plastic bags. These bags are specifically designed to biodegrade in landfills, reducing the accumulation of non-biodegradable waste ([Biogone](#)). Additionally, they can be recycled along with other soft plastics, further minimizing their environmental impact ([Biogone](#)). The ability to reuse these bags not only extends their lifespan but also reduces the demand for new bags ([Biogone](#)).

However, the benefits of landfill-biodegradability mean they have benefits beyond the principle of reuse. Landfill-biodegradable resealable bags offer a secure closure, protecting the contents from moisture and contaminants. Their durability guarantees they can withstand multiple uses without tearing or breaking ([Biogone](#)). Moreover, these bags are highly convenient, allowing for easy storage and organization of various items. Unlike conventional plastics and 'degradable' plastics, some biodegradable resealable bags do not fragment into microplastics. Specific biodegradable bag brand options like Biogone produce products that are not oxo-degradable, meaning that they do not fragment into microplastics ([Biogone](#)). Overall, these bags offer a range of environmental benefits, making them a more sustainable choice than polyethylene bags.

A possible concern is the potential for these biodegradable bags to release harmful substances during the degradation process. As landfill-biodegradable plastics break down, they can release greenhouse gases, such as methane, which is a potent contributor to climate change.

However, Biogone suggests that the short time frame over which methane is released by their fast-degrading bags allows for active management of this gas with the possibility of harnessing the methane for fuel and energy production ([Biogone](#)). Moreover, some additives used in the production of biodegradable plastics can leach into the environment, potentially causing pollution in soil and water systems. Blessing Bags' Melbourne preferred supplier, Biogone, claims their product does not leave toxic residue behind ([Biogone](#)). There is also a concern that landfill-biodegradable plastics will not break down in cold ocean water, contributing to the marine plastic pollution problem ([Biogone](#)). Additionally, producing landfill-biodegradable plastics requires energy and resources, similar to conventional plastics.

This production process can contribute to carbon emissions and other environmental impacts, such as water and air pollution. All mass-produced bags have environmental downsides, so Blessing Bags Melbourne will continue to explore options to further embed sustainability into our operating model. However, Blessing Bags Melbourne was assured by Biogone's General Manager that the environmental production costs of biodegradable resealable bags are equivalent to polyethylene bags. Biogone bags can take as little as a few months to break down compared to the hundreds of years required for a standard single-use polyethylene bag ([Biogone](#)). Biogone landfill-biodegradable plastics are, therefore, an attractive alternative.

# Cost analysis

Figure 1 provides a comparative depiction of costs for each bag on a per-unit basis.

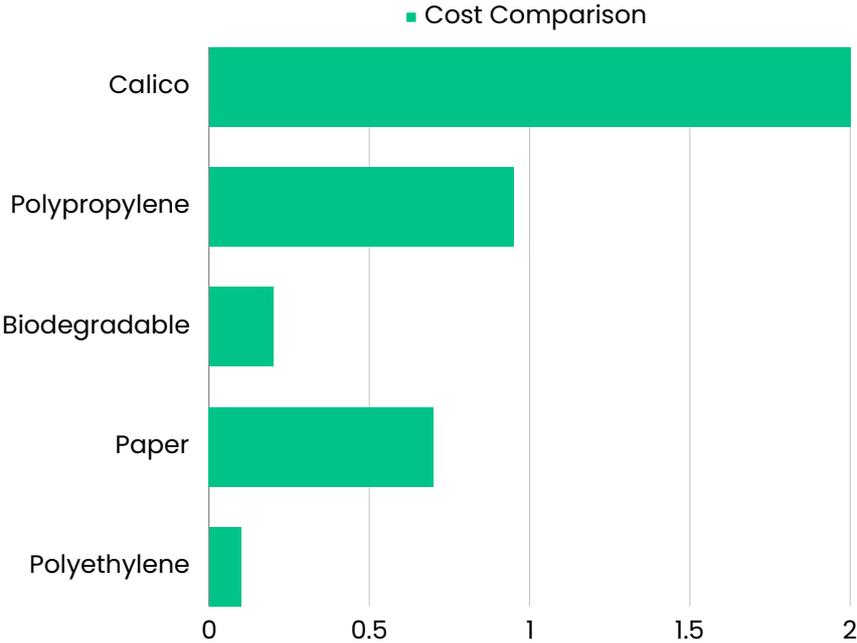


Figure 1

- Polyethylene Ziplock bags: The polyethylene ziplock bag currently used by Blessing Bags Melbourne retails at Officeworks for \$0.10 per unit.
- Biodegradable Ziplock bags: At Officeworks, medium-size (150 x 225mm) Biogone Biodegradable Ziplock Bags cost \$9.98 per 50 (about \$0.2 per unit). This is double the cost of our current polyethylene bag.
- Polypropylene Bags: Drawstring polypropylene bags at the Tote Bag Factory cost roughly \$0.95 per unit, over nine times more expensive than our current bags.
- Calico Bags: Hero Bags quote \$2 per medium-sized calico bag, while Claytons' bags are priced at \$1.35 excluding GST. As captured in Figure 1, switching to calico bags would incur significant costs for Blessing Bags Melbourne.
- Paper Bags: 25-packs of paper bags of comparable size cost around \$0.70 per bag at Officeworks.

While Biogone biodegradable bags are double the cost of our current bag option, they are significantly cheaper than the other bag types analysed and are preferable regarding budgetary constraints.

# Proposal

In conclusion, while calico bags, woven polypropylene, and biodegradable resealable bags may offer environmental benefits compared to single-use polyethylene bags, they also have negative environmental externalities that Blessing Bags Melbourne must consider. Woven polypropylene bags are unlikely to be preferred due to their high cost, likelihood of fragmenting into microplastics, and high environmental production costs. Although biodegradable and reusable, Calico bags may have negative impacts during production and require responsible usage to avoid overconsumption.

Biogone's landfill-biodegradable resealable bags emerge as a conscientious choice for Blessing Bags Melbourne. They will reduce plastic waste without incurring greater emissions during production than polyethylene bags. They are secure and convenient and will not feel radically different from our previous ziplock bags for our clients. This transition aligns with our commitment to sustainability, benefiting our community and the environment. We believe switching to Biogone bags would be an appropriate stepping stone as we continue to explore options to move towards an ever more sustainable model, during which thorough client consultation will be a key operating principle. To mitigate our emissions further, we will continue reducing our overall plastic consumption, promoting recycling and composting, and investing in alternative materials with a lower environmental impact throughout their life cycle.

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