

PLASTIC AWARENESS AND REDUCTION TOOLKIT



MANUFACTURING



**MIND YOUR
PLASTIC**

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Manufacturing



Introduction

This toolkit was created by Mind Your Plastic for manufacturers across Canada with the aim of guiding action on plastic waste reduction and eliminating single-use plastics. In this guide, we are primarily focused on plastic products and packaging, with the acknowledgement that the plastic pollution problem reaches far beyond single-use plastics and packaging. This toolkit is not necessarily an exhaustive list of options available to businesses on their plastic waste reduction journey. However, there are many alternatives and strategies presented in this toolkit to give a variety of tools and initiatives that businesses can explore.

Each business and organization will have a unique approach to plastic waste reduction based on its needs and capacities. As a result, this toolkit is not a one-size fits all model and no perfect solution is prescribed for businesses to achieve plastic-free operations. Plastic waste is a pervasive issue that requires change on every level of the products and packaging supply chain. This toolkit is a great resource to find a starting point and understand the potential for plastic waste reduction in your manufacturing operations.

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The Plastic Problem

Plastics are present in every area of our lives. It is an extensive problem that has significance beyond just single-use plastics. Understanding that the plastic waste problem extends to many other industries and many other types of plastics, the scope of this toolkit is to address the manufacturing of single-use plastics and packaging. The manufacturing industry is the supplier of disposable plastic packaging to the market for many different uses and applications. Whether it is food ware and food packaging, retail packaging and films, or even single-use plastic office supplies, there is an abundance of plastic waste generated by the manufacturing industry.

In Canada, only 9% of plastics are recycled. Of the remaining plastic waste, 86% is dumped in landfills, 4% is incinerated, and 1% is released into the environment as litter. More than 3.3 million tonnes of plastic waste is produced every year in Canada, with approximately half of that waste coming from plastic packaging. The majority of the plastic packaging manufactured in Canada is designed and made of materials that are meant to be used only once. The growing market for single-use plastics has enabled a linear economy that prioritizes virgin plastics designed specifically for short term use. Unfortunately, the data shows that these plastics, even those perceived to be highly recyclable, are not recycled to the extent you would hope or expect at their end-of-life.

Additionally, businesses and organizations should understand that single-use plastic is only one area of plastic pollution, and the work does not stop there. Although not addressed in this toolkit, we want to assert the importance of examining how your industry interacts with or utilizes plastics in products such as textiles, which produce harmful microplastics, like microfibrils, or e-waste.



Leadership and Policy

It is important for businesses and organizations to design a strategy to minimize or eliminate their reliance on single-use plastics and plastic packaging. It is even more important for businesses and organizations to adopt measures that look beyond recycling as a solution to the plastic pollution problem. A plastic waste reduction plan is a commitment to rethinking and reducing plastics at the source, keeping plastics out of the waste stream. For the most part, the choice by manufacturers and brand owners to make the move away from single-use materials is voluntary. The federal government has started gradually implementing regulations to guide businesses away from single-use materials, but these changes are happening slowly and are not all-encompassing. There are important steps being taken to reduce disposable plastics (e.g. ban on five common single-use plastics, recycled content requirements, and recycling and composting labeling), but other policy solutions (e.g. circular design standards and reusable systems) have not yet been prioritized. As a result, businesses that want to adopt fully circular or reusable operations need to be proactive and show leadership in the initiatives and design changes.

Leadership in plastic waste reduction requires commitment, initiative, and often a high level of collaboration— with other businesses and organizations, customers and consumers, as well as manufacturers and suppliers. Taking action now means blazing paths and finding solutions through hands-on experience. Depending on the size and scope of the business or organization, leadership can look different and take various forms.



Plastic Reduction Target Setting

An effective plan also sets targets and timelines for plastic waste reduction. Targets give your business or organization a tangible goal to achieve and celebrate. Additionally, targets provide an opportunity to measure progress and track the success of your plastic waste initiatives. It should clearly define your target, the actions required to achieve your target, any resources you may need, and a timeline for reaching your target. The targets set in a plastic waste reduction plan should be “SMART” goals, which means they should be:

- S**pecific
- M**easured
- A**ctionable
- R**ealistic
- T**ime-related

After drafting the plan, the timeline creates your guide on when to review your goals and check the progress made. Biannual waste audits are recommended to track your progress and verify that your plastic plan is impacting on the amount and type of waste produced. Mind Your Plastic has a plastic waste audit guide and a self-guided audit available for businesses to track their waste reduction progress.

Example plastic waste reduction plan:

Plastic waste concern	Action(s)	Target(s)	Potential barriers or resources needed	Timeline
Knowledge transfer and stakeholder engagement	Work with other manufacturers and stakeholders to better understand plastic waste reduction strategies	Join coalition of stakeholders (e.g. CPP) and engage in meaningful knowledge sharing	- Finding coalitions and working groups of manufacturers and supply chain actors for membership - Establishing best practices and deciding which initiatives will work within your operations	Short term: December 2022
Implementing Golden Design Rules	Use the Golden Design Rules to guide changes in manufacturing designs	Reduce virgin plastics by 50% through installing the defined Golden Design Rules	- Deciding how to change packaging based on design rules - Selecting appropriate alternatives for single-use plastic - Finding suppliers for the alternatives (e.g. suppliers for post-consumer materials)	-Medium term: March 2023
Single-use plastic	Eliminate single-use plastic across the business	Reduce single-use plastic by 100%	- Finding effective alternatives for each single-use plastic item across the business' operation - Educating staff and customers on the alternatives and why single-use plastics should be eliminated - Running refill and reuse program pilots	-Long term: January 2026

Best Practices

The best practice to eliminate plastic waste in manufacturing is to rethink and reduce your plastic footprint.

Rethink

Manufacturing is the sector in which the most impact can be made with rethinking plastic waste. Rethinking in this sector should mean finding non-single-use alternatives to plastic packaging. Recognizing that this type of innovation may take time to test and implement, manufacturers can also look to adopt the [Golden Design Rules](#) created by the Consumer Goods Forum. The Golden Design Rules are completely voluntary, but demonstrate a manufacturer's ownership of the responsibility they have for the product they create, including end-of-life management. The 9 Golden Design Rules aim to optimize plastic design, production, and recycling.

The rules are as follows:

- Increase value in PET recycling
- Remove problematic elements from packaging
- Eliminate excess headspace in packaging
- Reduce plastic overwraps
- Increase recycling value for PET thermoformed trays and other PET thermoformed packaging
- Increase recycling value in flexible consumer packaging
- Increase recycling value in rigid HDPE and polypropylene
- Reduce virgin plastic use in business-to-business plastic packaging
- Use on-pack recycling instructions



Ensure manufactured products have a minimum recycled content as suggested by the Canada Plastics Pact (CPP). CPP has put forward a roadmap to achieve an average of at least 30 percent recycled content across all plastic packaging (by weight) by 2025. Challenges exist both in the supply of plastics to the recycling system and in the demand for recycled plastic, which is why it is important to increase demand for post-consumer material as well as abide by design standards so that products can be recycled to produce post-consumer material. Manufacturers should also avoid non-standard shapes or colours, lower grade plastics, and single-use plastics that are more difficult or impossible to fully recycle.

Best Practices

Plastic waste can be reduced in the manufacturing sector in the following ways:



Manufacturers can reduce their plastic waste by designing and planning for the entire lifecycle of a product. By utilizing non-virgin materials or non-plastic materials for manufacturing, manufacturers are considering where their materials come from as well as where they will end up, post-consumer. Manufacturers can also consider switching from single-use plastic packaging to more recyclable or reusable materials such as paper, glass, cardboard, more durable plastic or aluminum. Plastic waste reduction can be achieved by cutting down on the required amount of packaging and fill materials required as well, by shipping manufactured goods in appropriately sized, fitted boxes or containers.

Reduce

In the workplace

- In the workplace, the manufacturing sector can make the following changes to reduce plastic waste:
- Create a plastic waste reduction team in your workspace to promote reduced waste-generating behaviours, set targets, ask for new suggestions and ideas, as well as organize educational activities. For example, host a lunch and learn about plastic waste, screen a documentary, and ask people how they will take what they learned from the activity to reduce their own plastic waste.
- For workspaces with on-site dining, do not supply or purchase single-use plastic packaging for food items in lunchrooms and cafeterias.
- Encourage staff to bring their own reusable containers and have waste-free lunches.
- Hold a contest or competition to reward those who bring the most waste-free lunches over a month and have the prize be related to plastic waste reduction.
- Seek out B2B services such as [ReThink BioClean](#), which provides bulk zero waste cleaning and janitorial products from their mobile refillery and contribute to your package-free goals.

Best Practices

Below are a few best practices to introduce reuse infrastructure into your business or organization:

Reuse

Reusing plastic in manufacturing is perceived to be difficult because plastic is often made to be less durable, and virgin plastics are frequently cheaper to manufacture. However there are some great reusable solutions for plastic created and used in manufacturing. Research in engineering is being done to discover new ways to increase plastic's viability as a reusable material, including ways to use it in 3D printing. Companies are beginning to reuse plastic production waste and leftover materials from production to make additional or new products. Through right to repair legislation, many countries are also mandating that manufacturers disclose the likely lifespan of the product and make their products repairable when broken. Ensure your product has individual components that are easy to maintain, change, or repair for reuse, and has instruction manuals for consumers to easily repair their manufactured goods.

There are also great innovations in the reuse packaging space. Companies from Clorox to Unilever have begun transitioning their previously single-use plastic packaging to reusable packaging alternatives. Clorox has adopted a reuse system for their trigger sprays that allows customers to purchase a concentration refill for their cleaning sprays instead of buying a new single-use bottle every time. Unilever has adopted a reusable deodorant packaging system for their Dove brand, which also allows customers to purchase deodorant refills for reusable deodorant stick packaging.

Customers are looking for this kind of solution for plastic waste. Make sure your brand is on the cutting edge by piloting and implementing reusable packaging today.



Good Practices & Practices to Avoid

Below is a list of good practices related to recycling:

Recycle

- Build partnerships with recycling facilities and material recovery facilities to secure a supply of recycled plastics to use in your manufacturing processes. If plastic is to be used during manufacturing, it should be recycled content.
- Set a goal to achieve the CPP's 30 percent recycled content standard in plastic and packaging manufacturing, or make your goal higher than 30 percent recycled content to set yourself apart from other businesses.
- Manufacture products that are clearly labeled based on recyclability and compostability.
- Conduct comprehensive research about whether the material used in your packaging and products is recyclable in the majority of municipalities across the country. If the material is not considered to be recyclable or compostable in the majority of Canada, then do not label it as such and search for an alternative material.
- Be responsible for the end-of-life of your manufactured goods by eliminating mislabelling and wish cycling when the product cannot actually be recycled or composted.



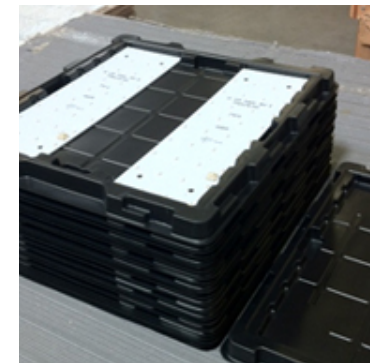
Below is a list of practices to avoid wherever possible:

- Avoid disposable materials that are not recyclable and cannot be reused.
- Single-use plastics are some of the most problematic materials used in product and packaging applications, ending up in landfills and our environment as pollution. Redesign your portfolio wherever possible to eliminate and avoid the waste from these materials.

Landfill

Business Case for Reusables

Manufacturing is a sector where the most change can take place to eliminate unnecessary and problematic plastic packaging and waste. There are many instances of businesses in the manufacturing sector making a shift towards reusables, and not only reaping the environmental benefits but also enjoying the associated cost savings. For instance, Finelite, which designs sustainable lighting solutions for commercial, educational, and healthcare facilities in the United States, was able to shift their manufacturing operations to business-to-business reusables. They switched from using shrink wrap on their products, to wrapping their products in reusable tarps. This resulted in an [annual cost savings of 53%, or \\$9,100 yearly](#). They also had a 40% (\$8,400) material cost savings by replacing corrugated cardboard boxes with reusable bulk containers and straight-wall crates. This reduced the required labour to build the cardboard boxes by 130 hours. Additionally, there were [\\$10,800 cost savings in LED plastic packaging material and 350 hours of labour saved by eliminating unwrapping the packaging material](#). In terms of the environmental benefits, the transition to reusables has eliminated 6,000 pounds of plastic shrink wrap, 14,700 pounds of corrugated cartons, and 4,200 pounds of bubble wrap. Finelite stated that it took less than two years to breakeven on their investment in reusables, but the annual cost savings have continued far beyond two years, while eliminating an ongoing expense with disposables.



Business Case for Reusables

In 2021, Wrap UK performed a case study on the company JC Moulding, an injection moulding business in Wales, and their transition towards recycled materials, reuse, and remanufacturing. Through this process, they incorporated more recycled content into the products they manufacture, [increasing the percentage from 5% to 30% recycled content](#). As a result, they were expected to create 6 new jobs, accrue more than [168,000 Great British Pounds in cost savings](#), utilize 756 tonnes of recycled content, and save 503 tonnes of CO2 emissions. Both of these case studies demonstrate different ways in which manufactures can approach plastic reduction within their businesses. Whether it includes changing their supply chains and logistics, or changing the design of the product and packaging, each decision makes a meaningful difference in the overall plastic waste produced. At the same time, these companies invested in plastic reduction, and new reusable infrastructure with the benefit of achieving significant cost savings.



Phasing-in waste reduction

Communicate with your supply chain about any new pilot initiatives or phase-in periods that are being implemented. A phase-in period may allow you to use the remainder of the plastic materials you have, while transitioning away in a practical, economically feasible way. This also allows for time to notify retailers and customers in advance of the changes that are happening. Retailers may need to shift packaging displays or on-shelf arrangements to accommodate new packaging styles or packaging with different properties. It is important that changes be well thought out, so that no large alterations are necessary following implementation. Frequent changes to the standards or expectations of service can contribute to information fatigue or reduce a buyer's willingness to participate.

Employee training and customer awareness

Another key component of plastic waste reduction is to train your staff and educate your customers or buyers. Organize a staff training workshop, or send out a thorough briefing email to outline the changes to their job duties or daily tasks. Training ensures that staff understand the targets and best practices, and that everyone has the knowledge and tools to work towards achieving your waste reduction goals. Innovation is key in the shift away from single-use plastic. Encouraging staff and others in your supply chain to share their ideas related to waste reduction is also important. Additionally, staff meetings can also be used to check in with staff to receive feedback on progress and suggestions to improve reduction on a workplace level as well as an operational level.

A benefit of making changes to reduce single-use plastic is that the customer will be more appreciative of products and packaging that will not end up in the environment at the end-of-life. It's important to invest in customer education, so that they are aware of the changes made and how these changes will benefit the environment. Educational resources can be made available for customers online and even on-pack, so that they can read about your initiatives. E-mail campaigns, newsletters, and in-store signage can be great opportunities to communicate the benefits of going plastic free to your consumer base. Keep the conversation open and ongoing with consumers to foster plastic-free attitudes and to build a reuse culture in your business or organization. Informing customers or members that they have a crucial role in making the shift away from plastic and asking them for feedback will empower them to participate fully in the initiative and take ownership of their plastic habits.

Conclusion

Our toolkit offers an introduction to plastic waste reduction for businesses and organizations. While presenting a selection of best practices, we recognize that this toolkit only scratches the surface of the options and alternatives available for businesses and organizations to explore. Your journey to reducing single-use plastics may be vastly different from others in your industry. There is no one-size-fits-all approach to plastic waste reduction in any sector. With the flexibility and variety of strategies available to businesses and organizations, there should be no hesitation in taking the first step to waste reduction. It is important to assign yourself a leadership role in your sector, take responsibility, and make a plan for the plastic that is used and wasted in your daily operations. The plastic pollution problem is constantly developing, and it is not enough to wait for government actors to mandate waste reduction initiatives. Voluntary action and leadership is essential to preventing further plastic waste and protecting our natural environments.

Additional resources:

- [Golden Design Rules](#)
- [Guidance for Reusable Packaging](#)
- [Mobile commercial refillable cleaning supplies with Rethink BioClean](#)
- [Study on Reuse and Refill of Plastic Packaging by Canada Plastics Pact](#)
- [Canada Plastics Pact Manufacturing and Branding case studies in plastic reduction](#)



Thank you!

Contact us at advocacy@mindyourplastic.ca