**Refresh Packaging**

**Comments With Respect to the Proposed Regulations:**

# Canada Gazette, Part I, Volume 155, Number 52: Single-Use Plastics Prohibition Regulations

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# Certified Compostable Shopping Bags to Support Environment & Climate Change Overview

Certified Compostable products' primary use is to collect organic waste and it works as an alternative to your traditional plastic shopping bags. As fellow environmental enthusiasts, we are extremely passionate about reducing waste, which is the sole reason for starting Refresh Packaging. Municipalities and provinces are being misinformed and wrongly legislating against these alternatives to Single-Use Plastic bags in the effort to reduce their plastic waste. Sadly, what is being allowed as acceptable alternatives are products with a higher environmental footprint, like paper and reusable nylon/cotton bags. These products not only are more expensive, but require more natural resources to manufacture and distribute in addition to the end-of-life waste they generate[1] [2]. It's very concerning that the justification we are seeing to ban Certified Compostable Bags along with traditional plastic doesn't support the science or make sense as those same negative arguments apply to the alternatives they are allowing[3].

With the proposed Single-Use Plastic Ban - which we are 100% in support of - there is a great deal of debate on how effective these compostable alternatives are. Not all compostable products are equal, which opens the door to greater discussion. However, as you are aware, the science proves that Certified Compostable Bags are the perfect complement to support and create a successful, sustainable ban[5] for one of the biggest plastic pollutants: Single-Use Plastic bags. They not only are the most effective product for collecting organic waste, supporting the incredible initiatives we're seeing to reduce organic waste in landfills with the implementation of curb-side composting[6], but they have been proven to also decompose completely in the natural environment from marine (tested to dissolve within 3 months) to open-air environments as well as when buried underground[7]. Certified Compostables are also the only product that is laboratory tested and verified to leave behind no toxins at the end of their life[5].

In the effort to support this upcoming ban and provide valuable feedback as to what important factors must be considered, we have compiled this document with supporting science and real-life scenarios in response to Canada Gazette, Part I, Volume 155, Number 52: Single-Use Plastics Prohibition Regulations.

This document is to help educate and arm stakeholders and Policymakers Federally, Provincially and within Municipalities that may misunderstand the value of Certified Compostable Bags and who are instead confusing them with harmful oxo-degradables and other uncertified biodegradable products that are responsible for greenwashing[8] and aiding in the spread of misinformation surrounding compostables.

In this document, you will find many scientific studies from reputable institutions around the world. These worldwide studies have proven that even anaerobic digestion facilities[9] are capable of successfully composting Certified Compostable Bags. We also have testimony from many smaller non-industrial composting facilities that have had incredible success with compostable bags and support them wholeheartedly as it reduces water and increases sanitization in their collection efforts[6]. A suitable alternative to Single-Use Plastic bags is essential for Canada and any level of government to be successful in reducing our plastic waste. Without one, we will fail as so many attempts in the past have failed due to pushback and the use of harmful loopholes[10].

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[1] James, Karli, and Tim Grant. "LCA of degradable Plastic Bags." *Centre for design at RMIT University* (2005). https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.522.7858&rep=rep1&type=pdf

[2] Greene, Joseph. "Life cycle assessment of reusable and Single-Use Plastic bags in California." *California State University* (2011). https://plasticsparadox.com/wp-content/uploads/2021/01/Life-Cycle-Assessment-of-Reusable-and-Single-use-Plastic-Bags-in-California.pdf

[3] https://www.saobserver.net/news/compostable-bags-wont-be-an-option-under-salmon-arms-plastic-bag-ban/ “His concern about compostable bags is that they could be put in a garbage bag and go to the landfill, where they won’t break down.

[4] https://www.newswire.ca/news-releases/canada-one-step-closer-to-zero-plastic-waste-by-2030-845414481.html “A key part of the plan is a ban on harmful Single-Use Plastic items where there is evidence that they are found in the environment, are often not recycled, and have readily available alternatives.”

[5] https://www.bpiworld.org/Composting “Compost is produced through the activity of aerobic (oxygen requiring) microorganisms. The microbes generate heat, water vapor, and carbon dioxide as they transform raw materials into a stable soil conditioner.”

[6] https://www.newswire.ca/news-releases/canada-one-step-closer-to-zero-plastic-waste-by-2030-845414481.html “Minister Wilkinson also took the opportunity to announce over $2M through the Zero Plastic

Waste Initiative for 14 new Canadian-led plastic reduction initiatives. These projects are led by communities, organizations, and institutions, and will promote the development of new and innovative solutions to prevent, capture and remove plastic pollution from the environment." "By improving how we manage plastic waste and investing in innovative solutions, we can reduce 1.8 million tonnes of greenhouse gas emissions per year and create approximately 42,000 jobs across the country."

[7] Napper, Imogen E., and Richard C. Thompson. "Environmental deterioration of biodegradable, oxo-biodegradable, compostable, and conventional plastic carrier bags in the sea, soil, and open-air over a 3-year period." *Environmental science & technology* 53.9 (2019): 4775-4783. https://pubs.acs.org/doi/full/10.1021/acs.est.8b06984

[8] Wei, Xin-Feng, et al. "Microplastics generated from a biodegradable plastic in freshwater and seawater." *Water Research* 198 (2021): 117123. https://www.sciencedirect.com/science/article/pii/S0043135421003213

[9] Poltorak, Alex. Interview by Christine Reyes and Camilo Ferro. *Rooting for Change,* 21 Jun. 2021, https://refreshpackaging.ca/wp-content/uploads/2020/10/Bioplastics-in-Real-Life-Urban-Canopy-Interview_1.webm

[10] https://www.cbc.ca/news/canada/montreal/montreal-has-officially-banned-single-use-plastic-bags-but-heavy-duty-bags-are-ok-1.4470689 "For every bag that we produce, there are emissions," said Sydney Ribaux, Équiterre's co-founder and executive director. The thicker the plastic, the more resources required to manufacture the bag, he said.

## Certified Compostable Bags Reduce Emissions

We have the potential, just by tackling landfill emissions produced from organic waste, to reduce Canada's greenhouse gas emissions by over 52 billion tonnes per year.

In the Federal government's own words, "methane is 25 times more potent than carbon dioxide in terms of its global warming potential," and "emissions from Canadian landfills account for 20% of national methane emissions"[11]. Based on these facts alone, it becomes clear that reducing methane emissions is an issue that is at the forefront of the battle against Climate Change, and that reducing these emissions from landfills is the best place to start. In pursuit of that goal, the diversion of organic waste away from landfills and towards proper composting facilities is key.

Based on literature analysis, the emissions of methane from compost facilities is extremely low, averaging between about 0.02 and 1.8 kg $CH_4$ per tonne of ww (wet waste), and this number

trends even lower when effective management of the compost is practiced[12]. Additionally, aerobic composting of food waste results in emissions between -148 and -64 kg net $CO_2$ and its equivalent gases per 1000 kg of food waste compared to -240 to 1100 kg if the waste ends up in a landfill. Using anaerobic digestion, this number gets even more impressive, with -395 kg net $CO_{2eq}$ per functional unit being emitted[13]. This is why diverting organic waste to composting facilities is absolutely essential in reducing overall greenhouse gas emissions, a primary goal for the Federal government of Canada. Promoting effective composting practices among businesses and consumers is more important than ever. Allowing Certified Compostable Bag alternatives to replace plastic will help support compost as they are the perfect tool for collecting the organic waste from consumers and diverting it to compost facilities.

Another important emissions benefit of Certified Compostable Bags that is overlooked is those produced during transportation. Paper and Reusable Bags are physically thicker and bulkier than Single-Use Plastics, resulting in a heavier gross weight of the product itself, requiring more ships, trains, and trucks to transport them, contributing to emissions. Certified compostable bags are equal in size and weight to Plastic Bags, requiring the same number of transport vessels and resulting in NO increased emissions.

By having retailers switch from Single-Use Plastic bags over to multi-use Certified Compostable Bags, consumers are given the chance to utilize their grocery bags for a second time to collect organic waste. Providing this easy solution for organic waste collection will prevent misinformed but well-intentioned individuals from mistakenly using plastic to collect their organic waste since plastic will no longer be offered come the implementation of the ban. They will also eliminate the issue of organic waste being messy or difficult to handle for the reluctant few that do not consider it worth the hassle. This could reduce the amount of food and yard waste being wrongly sent to landfills by a significant degree. Making composting a common part of everyday life by providing compostable bags in retail establishments will instill the concept of composting as an essential practice for consumers, bringing the issue to the forefront of their minds and resulting in the diversion of organic waste to the proper facilities. As stated above and after informed extrapolation, this could potentially reduce the greenhouse gas emissions being produced by landfills annually by up to 1495 kg net $CO_{2eq}$ per 1000 kg of food waste[14], a significant portion of which is currently a result of methane production. Considering that Canada currently produces about 35 million tonnes of food waste per year,

this could mean a reduction of over 52 billion tonnes of net $CO_{2eq}$ emissions entering the atmosphere per year[15].

It is clear that the Federal government's goal of emission reduction will be best served by implementing policy that promotes the use of Certified Compostable Bags as the replacement for Single-Use Plastics.

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[11] https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/Municipal-solid/greenhouse-gases.html "Methane is 25 times more potent than carbon dioxide in terms of its global warming potential," and "emissions from Canadian landfills account for 20% of national methane emissions" Government of Canada, 2017

[12] Boldrin, Alessio, et al. "Composting and Compost Utilization: Accounting of Greenhouse Gases and Global Warming Contributions." Waste Management & Research, vol. 27, no. 8, Nov. 2009, pp. 800–812, doi:10.1177/0734242X09345275.

[13] [14] Levis, James W., and Morton A. Barlaz. "What is the most environmentally beneficial way to treat commercial food waste?." Environmental science & technology 45.17 (2011): 7438-7444.

[15] *The Avoidable Crisis of Food Waste (2019), Roadmap*; Second Harvest Value Chain Management International

# Biodegradable vs. Certified Compostable

There is an extremely common misconception that results in the grouping of all biodegradable plastics under one definition. This is categorically inaccurate and harmful. "Biodegradable" is a blanket term for anything that is able to be broken down (degradable) by bacteria or other living things (bio). Biodegradable plastic is defined as "degradable plastic in which degradation results in lower molecular weight fragments produced by the action of naturally occurring microorganisms such as bacteria, fungi, and algae"[16]. Importantly though, biodegradation does not stipulate any kind of time frame or specify the end products that must result from the process.

The term “Certified Compostable'', on the other hand, refers to a much more specific process and result. For a product to be Certified Compostable, it has to meet ASTM (American Society of Testing and Materials) or ISO (International Organization for Standardization) standards[17]. This means that the product must be tested and approved in a third-party laboratory, not just by the company trying to sell it. ASTM D6400 and ISO 17088 both define compostable plastic as “a plastic that undergoes degradation by biological processes during composting to yield carbon dioxide, water, inorganic compounds, and biomass at a rate consistent with other known compostable materials and leave[s] no visible, distinguishable, or toxic residues”[18]. Notice how these requirements include the environmental conditions and rate at which the product must degrade. Not only that, but it makes it extremely clear that the product cannot leave anything harmful behind, especially toxic substances like microplastics. Using this definition, any product simply labelled “compostable” without having undergone the proper certification process is just as bad as one termed “biodegradable” because it does not have proof it abides by the standards that have been set for certification and is extremely misleading for consumers. Additionally, according to ISO 17088 2021, any product that meets the specifications for compostable plastics is not permitted to use the term "biodegradable" in supplier-to-consumer certifications. So if these standards are employed, it's clear Certified Compostables Bags can't be mistaken to be the same as harmful biodegradable bags, eliminating the confusion between the two product types[19].

When a product is certified compostable, it will have some combination of the ISO, BPI, ASTM, or EN Certification Marks on it, indicating that it has met these standards. This ensures that the product has undergone third-party testing and has been approved by independent analysis. Manufacturers use BPI as well as other world-recognized certification requirements to guide their choice of ingredients and make sure that their product will be able to be diverted to composting facilities along with food scraps and yard waste at the end of its life, and that it will break down properly once it does.

The common belief that Certified Compostable Bags will break down into microplastics or will contaminate compost the same way plastic does, is due to the confusion between uncertified plastic alternatives, including those labelled biodegradable, and Certified Compostable Products. The solution for this is quite simple. Through proper standardization and

implementation of policy to outlaw misleading or falsely advertised products, the problem can be sidestepped entirely.

Lumping Certified Compostables into the same category as harmful products is not the answer. On the contrary, Certified Compostable Products like Certified Compostable Bags are the only product that has been proven and tested to fully understand what is left at the end of their life, providing assurance that they are the only product we can be confident is truly eco-friendly and not going to have an even larger negative impact on our environment in the short or long term.

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[16] Rudnik, Ewa. *Compostable Polymer Materials*. Newnes, 4 June 2019, books.google.ca/books?hl=en&lr=&id=xh0tBAAAQBAJ&oi=fnd&pg=PP1&dq=compostable+bags+in+compost&ots=WHnWmCiCBw&sig=mln6KVUJi_bcOWoUJHil7V5qNeA&redir_esc=y#v=onepage&q=compostable%20bags%20in%20compost&f=false. pg.13.

[17] Rudnik, Ewa. *Compostable Polymer Materials*. Newnes, 4 June 2019, books.google.ca/books?hl=en&lr=&id=xh0tBAAAQBAJ&oi=fnd&pg=PP1&dq=compostable+bags+in+compost&ots=WHnWmCiCBw&sig=mln6KVUJi_bcOWoUJHil7V5qNeA&redir_esc=y#v=onepage&q=compostable%20bags%20in%20compost&f=false. pg.13

[18] "Standard Specification for Labeling of Plastics Designed to Be Aerobically Composted in Municipal or Industrial Facilities." *ASTM International - Standards Worldwide*, (2021) https://www.astm.org/d6400-21.html.

[19] 14:00-17:00. "ISO 17088:2021." *ISO*, (2021) www.iso.org/standard/74994.html.

[20] Pellus, Chiara, "Regulations, Watchdogs, Eco-labels, oh my! : The Highly Fragmented and Uncoordinated State of Anti-Greenwashing Efforts" (2014). *Law School Student Scholarship*. 619. https://scholarship.shu.edu/student_scholarship/619

# Greenwashing and Labeling Requirements

Greenwashing “describes the act of misleading consumers about firm environmental performance or the environmental benefits of a product”[20]. For example, if a brand says that their product is “eco-friendly” or “green” without actually having any standard by which they’ve tested this or any real definition for what they mean by those words, they would be greenwashing. Another example is when companies write “compostable” or “biodegradable” on their product or in their marketing but the product has not been tested by any organization that can provide the certifications to back those claims. This has led to many misconceptions regarding all products claiming to be compostable or biodegradable. If an individual has only encountered products that claim to be compostable while not carrying any of the necessary certifications to back that claim, the individual can become jaded and believe that any products labelled as compostable are just a scam and are not actually any better for the environment than plastic. This has also led many composting facilities to assume that all compostable bags and products are actually harmful and will not be properly processed at their facilities. These facilities end up screening out even Certified Compostable Products because they cannot tell the difference between these and plastics that claim to be biodegradable or compostable. The solution to this is simple. By implementing policy that regulates greenwashing and mandates that the proper certifications be obtained before a product is labelled as environmentally friendly, biodegradable, compostable, or any other variation of the term, the issue would be eliminated entirely. According to the ISO (International Organization for Standardization) International Standard 17088 2021, any product that meets the specifications for compostable plastics is not permitted to use the term "biodegradable" in supplier-to-consumer certifications regardless[21]. Therefore, if there are no products labelled as biodegradable or compostable that cannot actually be composted, facilities will not have the issue of having to screen out these products because they will degrade as they claim and have been certified to, resulting in healthy compost. That in conjunction with removing Single-Use Plastic bags will completely remove any contamination issues as only Certified Compostable Bags would be entering the compost facility processing stream.

The European Union has already taken steps to address greenwashing concerns with the European Green Deal, which states that “companies making ‘green claims’ should substantiate

these against a standard methodology to assess their impact on the environment"[22]. We know standardization of this nature is realistic to achieve based on Prime Minister Trudeau's letter [23] to the Honourable Steven Guilbeault; Minister of Environment and Climate Change stating his mandate to update labelling standards for recyclable material, preventing ambiguous labelling to confuse consumers as to what can and cannot be recycled.

According to a study done in 2006 regarding "cruelty-free" labelling of cosmetics, "standardization can most effectively and efficiently be achieved through a voluntary, third-party certification program that sets a labelling standard and then monitors labelling claims, buttressed by traditional false advertising law"[24]. Luckily, the infrastructure to perform standardized testing and administer certifications is already in place, with third-party testing centres like BPI (Biodegradable Products Institute) already established in North America. BPI has been working with legislation and policy-makers to ensure that "definitions of compostability are scientifically accurate, that there are consistent requirements for labelling and identification, and that Certified Compostable Products are a viable solution alongside reducing consumption, reuse, and recyclability"[25]. This means that the only thing left to be done is for governing bodies to put into place the laws that necessitate companies obtain the proper scientific evidence to back their environmental claims before making them.

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[21] 14:00-17:00. "ISO 17088:2021." *ISO*, (2021) www.iso.org/standard/74994.html.

[22] "Initiative on Substantiating Green Claims - Environment - European Commission." Ec.europa.eu, ec.europa.eu/environment/eussd/smgp/initiative_on_green_claims.htm.

[23] "Minister of Environment and Climate Change Mandate Letter." Prime Minister of Canada, 14 Dec. 2021, pm.gc.ca/en/mandate-letters/2021/12/16/minister-environment-and-climate-change-mandate-letter.

[24] Winders, Delcianna J. "Combining Reflexive Law and False Advertising Law to Standardize Cruelty-Free Labeling of Cosmetics." *New York University Law Review*, vol. 81, 2006, p. 454, heinonline.org/HOL/LandingPage?handle=hein.journals/nylr81&div=23&id=&page=.

[25] "Policy & Legislation." Bpiworld.org, bpiworld.org/Policy-&-Legislation.

# Paper and Reusable Bags Increase Emissions

Paper Bags are an incredibly bulky product, weighing about 43g compared to plastic and Certified Compostable Bags that weigh about 7g[26] This not only means that Paper Bags require more natural resources for their production, but that they also increase the cost and environmental impact of transporting them from where they are made to the end retailer where they will be sold. To put this into perspective, one 20-foot container can carry a mass of about 3.1 million Certified Compostable or Plastic Bags (Certified Compostable Bags are of approximately equal size and mass to Single-Use Plastic bags). Alternatively, that same container can only hold about 505,000 Paper Bags, meaning that for every truckload of Certified Compostable Bags, it would take at least 6 GHG-emitting trucks to carry the same number of Paper Bags. To boil it down, transporting Paper Bags to stores requires six times the cost and produces six times the emissions that transporting the same number of Certified Compostable Bags would.

Another study also states that, throughout the lifecycle of a Kraft Paper Bag, approximately 30.2kg of CO2 and its equivalent greenhouse gases are emitted. PLA and starch PBAT, two of the main ingredients in Certified Compostable Bags, were estimated to emit 16.7 and 2.88kg respectively[27]. In addition, these numbers take into account methane emissions that would be produced should the bags wind up in the landfill; therefore, if the Certified Compostable Bags are disposed of properly in a composting facility, this number for PLA and starch PBAT would become even lower as methane emissions are reduced.

Similarly, Reusable Bags are an extremely popular alternative being used to replace Single-Use Plastics. However, they tend to weigh about 85g for a cotton bag and 95g for a PP Reusable Bag[28]. This translates to about 12-14 times as many trucks, ships, and trains being needed for transportation compared to a Certified Compostable or Plastic Bag. The ideal scenario would only involve needing to transport the Reusable Bags a very limited number of times, as people would bring their own bags to the store and new ones wouldn't need to be purchased. However, according to a 2013 study that surveyed 100 people, 67 people owned a total of 437 Reusable Bags, only one-tenth of which were used frequently[29]. This means that people are continuously purchasing Reusable Bags when they forget their own rather than reusing the

same ones multiple times, and more and more Reusable Bags are needing to be purchased and provided by retailers and are ending up in the waste stream.

In summary, the Federal government's primary goal of reducing greenhouse gas emissions would be best achieved via the use of a Single-Use Plastic alternative that is NOT Paper or Reusable Bags. The best option to meet this goal while continuing to provide a viable alternative to consumers is to recognize Certified Compostables as **the best substitute**.

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[26] Greene, Joseph. *Life Cycle Assessment of Reusable and Single-Use Plastic Bags in California*. 2011.

[27] James, Karli, and Tim Grant. "LCA of degradable Plastic Bags." *Proceedings of the 4th Australian LCA Conference*. Sydney: Australian Life Cycle Assessment Society, 2005.

[28] Greene, Joseph. *Life Cycle Assessment of Reusable and Single-Use Plastic Bags in California*. 2011.

[29] Musa, Haruna M., et al. "Measures aimed at reducing plastic carrier bag use: A consumer behaviour focused study." *Natural Environment* 1.1 (2013): 17-23.

## Certified Compostable Bags Are Not Single-Use

Certified Compostable Shopping Bags are not single-use even when they are made from a thinner, more lightweight film; they are always a multi-use product. They are designed to always be used at least twice, once to take goods home from the store and second, to collect organic waste that will then be disposed of in green bin programs like any other certified bin-liner. This alone should eliminate them from consideration for the Single-Use Plastic ban as they are not Single-Use Plastic.

This brings us to the interesting point that Certified Compostable Bin-Liners are still being allowed regardless of how the Federal Government proceeds. Any facility that can accept a Certified Compostable Bin-Liner or garbage bag filled with organic waste can also accept Certified Compostable Shopping Bags as they are exactly the same film as bin-liners, just pressed into a different form. Certified Compostable Shopping Bags also have at least two uses, which is more than what a garbage bag or bin-liner currently has. So it is logical to say that if the Canadian Government is going to allow Certified Compostable Bin-Liners and

garbage bags, then there is absolutely no reason why they would not allow this product in a shopping bag form.

I urge you to consider the logic behind the specifics of this ban before it is put into place. To ban Certified Compostable Shopping Bags when they are not a single-use product and while Certified Compostable Bin-Liners are also rightfully not being banned, would be a huge misstep.

## Misleading Expert Witness Testimony Around Certified Compostable Bags

Our Certified Compostable Products carry Worldwide Certifications including the OKHomeCompost certification and the third-party North American BPI certification, which verifies that a product meets the ASTM 6400 and ISO 17088 standards. This certification states that our Compostable Bags, which can be used as both bin-liners and shopping bags, break down in equal or less than 84 days (12 weeks time). Witness testimony from Chelsea M. Rochman on April 12, 2021, in Committee Evidence - ENVI-24 stated that she does not know of any compostable product that will break down in less than 6 months in an industrial composting facility; our product proves that it does and is verified by third-party testing, otherwise it could not carry the BPI certification.

Additionally, on April 21, 2021, in Committee Evidence - ENVI-26, Manjusri Misra stated that products considered “home compostable” have a one-year degradation time and products considered “industrially compostable” have a six-month degradation time to carbon dioxide and water. Once again, in order for a product to be certified compostable by the leading BPI/ASTM standard, it must break down in equal or less than 84 days in Municipal or industrial composting conditions. These are just some of the limited pieces of information that the committee heard regarding compostable products and are therefore quite troubling as they are not accurate, based on opinion, and still are what is being used as witness testimony driving the proposal around the ban.

Given the proper implementation of policy, it could be guaranteed that any product labelled as Certified Compostable will absolutely break down in less than 6 months (actually, in less than 12 weeks) - it would just have to carry the BPI certification that is already in place. It is extremely important that the government be well-informed of the current standards surrounding Certified Compostable Products in order to make more educated decisions regarding the specifics of the Single-Use Plastics ban. These points have helped to clear up some of the miscommunications that have occurred so far.

## Increasing Waste Through Use of Improper Single-Use Plastic Bag Alternatives

In the Federal government's own words[30], "The proposed Regulations would prevent approximately 1.6 million tonnes of plastics from entering the waste stream over the analytical period, but would also add about 3.2 million tonnes of other materials to the waste stream from the use of substitutes, due to their increased unit weights relative to SUPs. This increase in tonnage of waste would represent additional costs for Municipalities and Provincial authorities, as they are usually responsible for managing the collection, transportation, and landfilling of plastic waste, and would assume most of the associated costs, which would ultimately be passed on to taxpayers."

This statement points to an important fact that the Federal government is already recognizing themselves - choosing the wrong alternative will actually lead to an increase in waste rather than a decrease. Now let's break this down for just bags alone. According to a news release[31] published by the government of Canada in December 2021, up to 15 billion Plastic Bags are used by Canadians every year. Since Single-Use Plastic bags tend to weigh approximately 5g, this translates to about 75,000 metric tonnes of plastic from bags alone. If those 15 billion bags were to be replaced with Reusable Bags, the most popular alternative being considered at this time, this number would actually increase to 1.2 million metric tonnes of plastic or cloth being added to the waste stream (assuming Reusable Bags weigh on average, approximately 80g).

Fortunately, there is another option. If Certified Compostable Bags are allowed and used as a replacement for Single-Use Plastic bags, there would be no additional material added to the waste stream and there is also the potential for massive amounts of organic waste collection. A typical Certified Compostable Shopping Bag, after being used to carry home goods from the store, can then be used to collect about 20lbs of organic waste per bag for compost. If 15 billion Plastic Bags are replaced with Certified Compostable alternatives and are then used for their second purpose of organic waste collection, this could lead to 136.7 million metric tonnes of organic waste being diverted from landfills.

To sum this up, choosing Reusable Bags to replace Single-Use Plastics will remove approximately 75,000 metric tonnes of plastic from the environment but will add about 1.2 million metric tonnes of woven plastic and cloth back into the waste stream, with no additional diversion of organic waste. This adds up to a net ADDITION of 1,125,000 metric tonnes of waste into the waste stream and the environment. Comparatively, replacing Single-Use Plastic bags with Certified Compostable Bags will remove 75,000 metric tonnes of plastic from the environment with no additional material being added back in the form of an alternative bag, and could lead to the diversion of up to 136.7 million metric tonnes of organic waste away from landfills and the environment to be used as a resource. This adds up to a REMOVAL of 136,075,000 metric tonnes of waste from landfills. Please see the below chart.

| Net Waste Diversion of Plastic Bags Based on Government of Canada's Proposed SUP Ban | | | Net Waste Diversion of Plastic Bags Based If Certified Compostable Bags are Allowed | |
|---|---|---|---|---|
| Single-use Plastic Bags Removed from Waste Streams Per year: | Minus(-) | **75,000** Metric Tonnes | Minus(-) | **75,000** Metric Tonnes |
| Alternative Bag to Replace Plastic: | | **Reusable Bags** | | **Compostable Bags** |
| Potential Waste Added to Waste Stream by Alternative Bag Option Per Year: | Plus (+) | **1,200,000** Metric Tonnes | Minus(-) | **0 *** |
| Organic Waste Collected by Alternative Bag Per Year/ Diverted to Compost | | **0** | | **136,700,000** Metric Tonnes |
| **Total Net Waste** | **Plus (+)** | **1,125,000 Metric Tonnes**** | **Minus (-)** | **136,075,000 Metric Tonnes***** |

* Compostables bags do not add to waste streams as they break down to healthy biomass, turning waste into a resource

** The currnet proposed SUP will potentially **ADD 1,125,000 Metric Tonnes Per Year** of waste instead of reducing waste

*** By allowing compostable bags which are also used to collect organic waste, we can support waste reduction of **136,075,000 Metric Tonnes Per Year** and will turn this waste into a healthy soil fertizlier which adds no toxins to the environment. No traditional recycling program can fulfill this.

Based on the Federal government's own words, it is clear that switching from Single-Use Plastics to a heavier, bulkier product is counterproductive and will not solve the issue of adding waste to the environment. Not only that, but it will ultimately lead to added costs for taxpayers in the effort to manage the increase in waste. It is therefore imperative that government officials endorse the use of Certified Compostable Products as a substitute for Single-Use Plastics in order to truly reduce the amount of waste being added to the waste stream.

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[30] Government of Canada, Public Works and Government Services Canada. "Canada Gazette, Part 1, Volume 155, Number 52": *Www.gazette.gc.ca*, 25 Dec. 2021, www.gazette.gc.ca/rp-pr/p1/2021/2021-12-25/html/reg2-eng.html.

[31] Canada, Environment and Climate Change. "Government of Canada Moving Forward with Banning Harmful Single-Use Plastics." *Www.canada.ca*, 21 Dec. 2021, www.canada.ca/en/environment-climate-change/news/2021/12/government-of-canada-moving-forward-with-banning-harmful-single-use-plastics0.html.

# Reusable Bags Need to be Used Up To 20,000 Times to be Worth It

According to a 2018 study performed by the Ministry of Environment and Food of Denmark / Danish Environmental Protection Agency, in order for a single organic cotton Reusable Bag to just be equal to a Single-Use Plastic bag in regard to its negative impact across all environmental indicators, you would have to reuse one bag 20,000 times[32]. Similarly, a conventional cotton bag would have to be reused 7,100 times to have an equal environmental impact to Single-Use Plastic. Even a simple composite bag would have to be reused 870 times for the same effect. This indicates that a Reusable Bag is worse for the environment than a Single-Use Plastic bag, unless it is used 800-20,000 times, at which point, it would only be equivalent to traditional plastic… therefore no improvement whatsoever.

In theory, this amount of use almost seems plausible. However, in order to reach the mark for an organic cotton bag, you would have to reuse the **same bag** every single day for almost 55 years. This is extremely unrealistic - very few people would even own the same bag for 55 years, let alone use the exact same bag every single day for that entire time. If you're just using a simple composite Reusable Bag, you would have to use the same bag once a week for almost 17 years. Once a week is somewhat more reasonable to be reusing the same bag but it is extremely unlikely that someone would keep using it consistently for 17 years. In the Federal Government's proposal[33] they are anticipating/ hoping people will reuse their Reusable Bags 100 times which even then falls short. They also recognize that "reusable products may not be used to their fullest extent by consumers (e.g. 15 to 20 uses rather than 100 or more uses)".

One study found, upon issuing a survey, that 67 people had a total of 479 Reusable Bags at home, only 10% of which were frequently used[34]. To break this down, each person had about 7-8 Reusable Bags at home and they only frequently used maybe one of those. Since it has become a popular trend to give out Reusable Bags as free branding and to package goods like shoes and gift shop items at no charge, people are finding themselves with more bags than ever, and certainly, more than they can consistently use. This is resulting in plenty of Reusable Bags ending up in landfill, where they are even worse than Single-Use Plastics for persisting in the environment and harming natural ecosystems.

When considering the best option for an alternative to Single-Use Plastic shopping bags, Reusable Bags are the most popular choice. When looking at the entire lifecycle of Reusable Bags, however, they tend to be even worse for the environment than plastic, and are almost never reused enough times to make it worth the damage. With their rise in popularity, far too many Reusable Bags are entering the waste stream and the natural environment, where they persist for a significantly longer time than even Single-Use Plastic. The Federal Government has already recognized in their ban proposal[33] that by removing Single-Use Plastics out of circulation we will remove 1.6 million tonnes of waste from the waste stream, while potentially adding 3.2 million tonnes of waste from the proposed alternatives. It is therefore extremely critical that, when constructing the details of the Single-Use Plastic ban regulations, governments do not endorse the use of Reusable Bags and are well-informed of the harm that this alternative causes.

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[32] Bisinella, Valentina, et al. "Life Cycle Assessment of grocery carrier bags." (2018).

[33] Government of Canada, Public Works and Government Services Canada. “Canada Gazette, Part 1, Volume 155, Number 52”: *Www.gazette.gc.ca*, 25 Dec. 2021, www.gazette.gc.ca/rp-pr/p1/2021/2021-12-25/html/reg2-eng.html.

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## Paper Bags Harmful Environmental Impact

When considering the environmental impact of a bag, one has to take into account the entire life cycle of the product – the “cradle to grave” impact. It is at this higher level of analysis that the argument for the use of Paper Bags begins to fall apart.

During the production process for Paper Bags, about **33 times as much water** is used than in the same process for plastic or Certified Compostable Bags of the same size[36]. Paper bags also take over twice as much material as Certified Compostable Bags take to produce and are responsible for **2-15 times the amount of greenhouse gas emissions**[35]. Additionally, the

transportation chain of Paper Bags from the place of manufacturing to the supplier to the end retailer requires six times the cost and produces six times the emissions compared to Plastic Bags due to the large size and weight of paper alternatives.

Up until the point that Paper Bags are delivered to the consumer, they've already caused a much more damaging effect on the environment than either Certified Compostable or even Plastic Bags. Unfortunately, it doesn't get much better from there. The main appeal of Paper Bags for consumers is that they can be recycled. However, according to a mandate from the U.S. Department of Energy – Office of Scientific and Technical Information which remains published on their website today, only about 28% of paper and paperboard products are recovered for recycling, while 61% is either not available to be recycled or ends up in the landfill[37]. The same report stated that the energy saved by recycling Kraft paper was 0.

Moving on to the last stage of the life cycle of a bag, we arrive at the end-of-life impacts. As stated above, a large percentage of Kraft Paper Bags will not end up being recycled and will instead end up either in a landfill or in the natural environment. There is an important phenomenon known as eutrophication that becomes relevant here. Essentially, when certain products are not disposed of properly and become litter, they degrade somewhat and result in the emission of nitrates and phosphates into waterways. This causes algal blooms, where large amounts of algae grow in the water and hoard the oxygen in the area, causing other plants and animals that would usually absorb the oxygen to suffocate. Kraft Paper Bags have been found to contribute hugely to this phenomenon, about seven times more than a Single-Use Plastic bag[38].

In the development of a successful Single-Use Plastic ban, it is critical that a suitable alternative be available; when it comes to Plastic Bags, this alternative should not be paper.

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[35]Lewis, Helen, Karli Verghese, and Leanne Fitzpatrick. "Evaluating the sustainability impacts of packaging: the plastic carry bag dilemma." *Packaging Technology and Science: An International Journal* 23.3 (2010): 145-160.

[36] James, Karli, and Tim Grant. "LCA of degradable Plastic Bags." *Proceedings of the 4th Australian LCA Conference*. Sydney: Australian Life Cycle Assessment Society, 2005.

[37] Gaines, L. L., and F. Stodolsky. "Mandated Recycling Rates: Impacts on Energy Consumption and Municipal Waste Volume." *Www.osti.gov*, 1 Mar. 1994, www.osti.gov/biblio/10134188.

[38] Chase, Marshall, and Nandini Hampole. "Building Long Term Solutions: Retail Shopping Bag Impacts and Options." *BSR.[online] Available at:< http://www. bsr. org/reports/Bags_and_Brands_ Report1. pdf>[Accessed 09.05. 11]* (2010).

## Certified Compostable Bags are Easiest for Retailers to Adopt

As we work towards a successful ban on Single-Use Plastics, one of the primary demographics to consider are retailers, who have to replace their stores' checkout bags with a non-plastic alternative. Although most store owners are willing to make the transition to a more environmentally-friendly bag, they can become discouraged when they find that the switch is more inconvenient or harmful to their business than the environmental benefits seem to justify.

A small business in Vancouver had to switch from Plastic to Paper Bags as a result of the newly implemented Provincial ban. In doing so, the owner found that she couldn't keep nearly as many bags in her store due to the bulkiness of the paper and couldn't expand her storage space to accommodate the change. This problem would be duplicated in the case of equally thick reusable options as well. According to an article[39] by Global News, "Because paper takes up more space, she can only order 250 bags at a time and is unable to obtain the same volume discount plastic afforded, at $0.17 per unit. Simpson said she's paying $0.48 per unit for Paper Bags and charging her customers $0.25 for each bag. "I am losing money on every single bag," she told Global News." Although retailers are largely willing to switch away from plastics, they simply cannot be expected to redesign business practices to accommodate the use of unsuitable alternatives.

The easiest way to make the ban more palatable for the average individual is to offer a replacement that requires minimal changes to policy and process. The best option for this is Certified Compostable Bags. In form and function, they are virtually identical to Single-Use Plastic bags but without the negative environmental impact. The main difference between using Certified Compostable Bags and Plastic Bags is that the end-user will use the Compostable Bag again for organics collection before disposing of it in the compost bin rather than the garbage. This is essentially the only behavioural shift that will have to occur if Certified Compostable Bags are implemented as the replacement for Single-Use Plastic bags. It is vital for a successful ban that governments banning Single-Use Plastics attempt to accommodate their residents with the easiest switch possible. Curb-side compost is becoming a way of life, thus a culture has already been created that is familiar with Bioplastics going into their green bins through the use of their can-liners. Certified Compostable Shopping Bags are exactly that, a bin-liner, but with additional use, carrying goods home from stores.

Maintaining convenience and ease of switching while saving retailers and consumers money will reduce negative backlash and create added support for the Ban. Inflation is reaching record highs. Adding another costly charge-back to consumers or forcing retailers to increase their

prices because their incidental costs are going up is adding unnecessary hardship to all parties in this already difficult time.

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[39]"'Incredibly Frustrating': Vancouver Small Business Stuck with Banned Plastic Bags - BC | Globalnews.ca." *Global News*, globalnews.ca/news/8556795/vancouver-plastic-bag-ban-complaint/. Accessed 25 Feb. 2022.

## Reusable Bags are too Expensive

Although the decision by many Municipalities and Provinces and the Federal government to ban Single-Use Plastic Bags is certainly a step in the right direction in the effort to help the environment, the public support of these governments toward a shift to Reusable Bags is not without its problems. Retailers, whether running small businesses or large corporations, have to take into account the cost of the alternative that they are using to replace plastic. It is fairly well-known that Reusable Bags are the most expensive option, both for retailers and for consumers. What this extra cost leads to on the retailers' side is companies inevitably opting for the least expensive Reusable Bag that they can find. These are the thinner non-woven polypropylene bags offered by companies like Sobeys[40] and Walmart[41].

These bags are inexpensive because they are thin and will not last very long; many of them (including the Sobeys bags in the above link) are not even able to be machine washed because they would fall apart. This is known by the retailer, such as Sobeys, as it states right on the bag "Hand wash in cold water". Even if legislation is passed saying that Reusable Bags must be machine washable, it is undeniable that retailers and customers alike will tend to opt for the cheapest available option, which is still made of plastics and will ultimately not last as long as governments are intending. This leads to the bags tearing and becoming extra plastic waste in landfills and the environment, not really preventing bag litter at all.

Another issue that arises with the high price of Reusable Bags is that it increases the **disparity between high and low-income individuals**. The high cost of bags on top of continually rising costs of groceries and other essentials creates an even greater strain on those who may be

struggling financially. Not only this but individuals who would ordinarily have re-used their Plastic Bags for garbage collection are now forced to purchase trash bags separately, on top of the Reusable Bags they have to purchase at checkout.

According to a 2019 article in the Journal of Environmental Economics and Management, “the elimination of 40 million pounds of plastic carryout bags is offset by a 12 million pound increase in trash bag purchases—with small, medium, and tall trash bag sales increasing by 120%, 64%, and 6%, respectively. The results further reveal 12–22% of plastic carryout bags were reused as trash bags pre-regulation and show bag bans shift consumers towards fewer but heavier bags”[42]. What this shows is more evidence as to what the Federal government is referring to when they say, regarding the Single-Use Plastic (SUP) Ban, “The proposed Regulations would prevent approximately 1.6 million tonnes of plastics from entering the waste stream over the analytical period, but would also add about 3.2 million tonnes of other materials to the waste stream from the use of substitutes, due to their increased unit weights relative to SUPs”[43].

If the aim of the Single-Use Plastic Ban is truly to benefit the environment, endorsing the use of Reusable Bags as a substitute simply does not make sense. Certified Compostable Bags are far less expensive (approximately **$0.10-$0.15 per bag for retailers compared to $0.50+ for reusables**), can be reused for organic waste collection purposes, and will not add any plastic waste to the environment. **The right choice is clear**.

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[40]“Https://Twitter.com/R_harrison82/Status/1223325158531723266.” *Twitter*, twitter.com/r_harrison82/status/1223325158531723266.

[41] “Walmart Canada to Eliminate Single-Use Plastic Bags.” *Walmart Canada*, 7 Dec. 2021, www.walmartcanada.ca/newsroom/2021/12/07/walmart-canada-to-eliminate-single-use-plastic-bags.

[42] Taylor, Rebecca LC. "Bag leakage: The effect of disposable carryout bag regulations on unregulated bags." *Journal of Environmental Economics and Management* 93 (2019): 254-271.

[43] Government of Canada, Public Works and Government Services Canada. “Canada Gazette, Part 1, Volume 155, Number 52”: *Www.gazette.gc.ca*, 25 Dec. 2021, www.gazette.gc.ca/rp-pr/p1/2021/2021-12-25/html/reg2-eng.html.

# Plastic Alternatives: End of Life Comparisons

All levels of government are prioritizing the fight against plastic litter and anthropogenic harm to the environment. Single-Use Plastic Bans are an initial step in achieving that goal if implemented correctly. Therefore, it is essential that the replacement for Single-Use Plastics cause as little harm to the environment upon its disposal as possible.

Paper Bags are sub-optimal in terms of their end-of-life impacts, despite a good reputation based largely on the assumption of recycling. Unfortunately, since China's National Sword policy was put in place in 2018, banning the import of mixed paper to its recycling facilities, many countries have been forced to turn to landfills and incineration of mixed paper products as a last resort for their disposal, being unable to match the previous infrastructure they had access to. This move by China resulted in the market being flooded with mixed paper waste as countries that usually rely on exporting to China were forced to find a new solution for their accumulated waste, much of which ended up in Southeast Asia.

When it does occur, **paper recycling is actually an extremely energy-intensive process**, requiring approximately 22 million BTUs of energy[44] for sorting, cleaning, and repurposing paper products. To make one ton of 100% recycled paper also uses about 11,635 gallons of water and produces 1,171 lbs of solid waste. It has been found that when recycling at maximum capacity, although demand for raw materials decreases, consumption of fossil fuels and emissions of $SO_2$, $NO_x$, and net $CO_2$ increase significantly[45], with approximately 3,533 lbs of $CO_2$ and its equivalent gases[46] being produced for 1 ton of recycled paper. Despite all this, however, Paper Bags are still preferable to Reusable Bags in terms of end-of-life impacts because they have been shown to break down in the natural environment over time rather than staying there as litter forever.

Paper Bags also have been used in compost and argued that they are compostable. This is true, and the best way to dispose of Paper Bags. However, in order for these products to not contaminate compost, they must be Uncoated Paper Bags, thus they can not have any varnishes or coatings added whatsoever. It is a common practice around paper product manufacturers to coat their products with Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)[47] which help them become more resistant to grease, oils and moisture. Without these

coatings, the product has an extremely high failure rate during use. It's been debated and found that PFAS are extremely harmful to human consumption as noted by Centres for Disease Control and Prevention's National Health and Nutrition Examination Survey (NHANES)[48] and have been known to contaminate compost. Varnishes are also commonly used to make the product more resistant to moisture. In addition, they are used to enhance the aesthetics of the Paper Bag, which makes the bag no longer suitable to be put in the green bin and composted. When debating which alternative to Plastic Bags is best, it is clear that Paper can also contaminate compost when the wrong products are placed into the compost stream. It's extremely difficult for consumers to know if a Paper Bag is suitable for compost as they are not labelled properly, adding to the confusion of how to properly dispose of them. This makes Paper no different than subpar products that are green-washed to be compostable when they are not certified.

Ideally, Certified Compostable Bags would all be disposed of properly and would end up in composting facilities that can easily process them in a short period of time to produce extremely valuable compost. However, luckily, like Paper, Compostable Bags have also been proven to break down in the natural environment should they end up there by mistake. According to a study conducted by Plymouth University[49], Compostable Bags disappeared completely in the marine environment after 3 months and broke down enough to be unable to hold weight after 27 months buried underground in a university garden, similar conditions to if they'd ended up in a landfill. Comparatively, the vast majority of Reusable Bags will never break down in the natural environment unless it is after many hundreds of years and, even then, microplastics will remain. Regardless of any benefits to using Reusable Bags, the fact remains that, once they are ultimately disposed of, they will persist in the environment exactly the same as any other plastic product.

The proposed Federal Plastics Ban allows Paper Bags to be used as a replacement for Single-Use Plastics so it begs the question, why not allow Certified Compostable Bags as well? They are far more comparable to Paper than to Plastics when looking at their end-of-life impacts since they will break down in the natural environment should they end up there, and they do not carry the added problems associated with paper recycling. In addition, according to a 2021 survey seen by over 53,000 people, 92% of respondents prefer Certified

Compostable Bags to replace Single-Use Plastics over paper. So there are truly no barriers to allowing them, especially if paper is still being allowed.

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[44] Ansari, Zakir, Mohd Shaikh, and Mohd Khan. "Design and development of high strength Paper Bag using non-recycled paper." (2016).

[45] Virtanen, Yrjo, and Sten Nilsson. *Environmental impacts of waste paper recycling*. Routledge, 2013.

[46] Ansari, Zakir, Mohd Shaikh, and Mohd Khan. "Design and development of high strength Paper Bag using non-recycled paper." (2016).

[47] "Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)." *National Institute of Environmental Health Sciences*, 2018, www.niehs.nih.gov/health/topics/agents/pfc/index.cfm.

[48] "Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)." *National Institute of Environmental Health Sciences*, 2018, www.niehs.nih.gov/health/topics/agents/pfc/index.cfm.

[49] Napper, Imogen E., and Richard C. Thompson. "Environmental deterioration of biodegradable, oxo-biodegradable, compostable, and conventional plastic carrier bags in the sea, soil, and open-air over a 3-year period." *Environmental science & technology* 53.9 (2019): 4775-4783.

# Failed Plastic Bag Bans in the Past (and the Lessons We Can Learn From Them)

In order to implement a successful SUP ban, we must take into account lessons learned from past attempts around the world.

A 2021 study reported that Plastic Bag Bans have had limited success, with the primary cited reason being the lack of a suitable alternative being endorsed by governments[50]. Some of the unintended consequences of Single-Use Plastic Bans cited in this study included "the proliferation of reusable shopping bags with unsubstantiated environmental claims"[51], the death of 12 people in San Francisco from E-coli reportedly related to unwashed Reusable Bags[52], and 1.45 million jobs lost[53]. These results point to the fact that transitioning directly to Reusable or Paper alternatives may not be the best option for a successful ban. Certified

Compostable Bags are proven to be environmentally beneficial by nature of the very certifications that govern them, they maintain the hygiene standards of plastic, and they prevent the necessity for plastics manufacturers to shut down since they can simply switch over to the certified compostable resin without having to change much of their processes or lay off workers.

Since 1999, India has been attempting to successfully institute bans on Single-Use Plastics at the State and Municipal levels. Unfortunately, in just about every case, the bans are considered failures. According to an article in The Times of India[54], the primary reason for this failure is, again, the fact that a suitable alternative was not endorsed by the government. In addition, a lack of investment in waste management, proper certification and labeling, and extended producer responsibility are all cited as key instruments of the bans' failures. It is critical that Canadian governments learn from these mistakes and do not repeat them in their own bans. According to an article by Yale Environment 360[55] regarding the attempted bans in India, Keith Weller, a spokesperson for the United Nations Environment Programme (UNEP), has stated that "there is a need for innovation and entrepreneurship," adding that alternative materials — including biodegradable items and biopolymers such as cellulose — need to be seen "as part of a broader strategy toward more sustainable production."

We don't have to look beyond our borders to see a failed attempt to ban Single-Use Plastic Bags. Toronto implemented a ban on Single-Use Plastics back in 2012 and in short order, the ban was reversed on Jan. 1, 2013[56], all thanks to the lack of suitable alternatives. At the time, what was expected to replace Single-Use Plastics was paper. Retailers were immediately outraged at how expensive the alternative was compared to their regular bags and how their customers were not happy with the unreliability of the Paper Bags. The cost increase of using paper was more than retailers could bear and was enough to influence a reversal of the ban. Now as we move forward, it's concerning to see the same alternative being presented as suitable when it failed in the past. The reasons for this failure are even more prevalent now as the cost of paper has increased dramatically from 2013 and the reliability of the Paper Bags is no better now than it was at the time of Toronto's ban. In addition, supply of paper has become a new issue as most companies are having difficulty even sourcing a suitable Paper Bag for their stores.

All of these results taken together support the claim that successful implementation of a Single-Use Plastics Ban will rely largely on the existence and support of proper sustainable alternatives, an increased investment in waste management, and a focus on consistent certification and labeling standards.

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[50] Muposhi, Asphat, et al. “Considerations, Benefits and Unintended Consequences of Banning Plastic Shopping Bags for Environmental Sustainability: A Systematic Literature Review.” *Waste Management & Research: The Journal for a Sustainable Circular Economy,* 20 Apr. 2021, p. 0734242X2110039, 10.1177/0734242x211003965. Accessed 8 Sept. 2021.

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[52] Klick, Jonathan, and Joshua D. Wright. "Grocery bag bans and foodborne illness." *U of Penn, Inst for Law & Econ Research Paper* 13-2 (2012).

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## Marine Impact of Certified Compostable Bags

One of the key issues encountered by stakeholders in the fight against Single-Use Plastic pollution is the issue of these items ending up in the world’s oceans and waterways. It is well-known that microplastics in the ocean have become a pervasive issue that ultimately causes harm to plants, animals, and even humans when you consider the plastic accumulation and biomagnification in the organisms that we eat and its presence in the water that we drink. In determining a suitable alternative for Single-Use Plastics, it is therefore critical to find one

that does not persist in the marine environment and continues to cause harm to the vital ecosystems there.

Luckily, a very valuable paper was released entitled “The Ecological Impacts of Marine Plastic Debris in the South Pacific Region” which includes literature reviews and experimental data to provide a comprehensive overview of marine plastic pollution, with a focus on bags[57]. What this study found is that, actually, “regarding the issue of marine debris the compostable starch-based bags are the best choice as they are the only ones that actually degrade in a reasonable amount of time.” This is partially based on a 2010 study in which compostable, oxo-degradable, and conventional Plastic Bags were studied in the marine environment to observe their degradation[58]. The results of this investigation were that the starch-based Compostable Bags disappeared from the water completely within 16-24 weeks, while 98% of the other two bags still remained after 40 weeks. The same literature review concluded that, in the fight against microplastics, “the main focus should be to stop the plastic pollution at the source, for example by levying Plastic Bags and only allowing completely compostable bags”[59].

Another study found that the only single-use bag with a less damaging impact on marine litter than Reusable or Paper Bags was the starch-based Compostable Bag[60]. More recently, a test was performed investigating the environmental impacts of biodegradable, oxo-degradable, and compostable bags in various environments[61]. This test found that the Compostable Bag disappeared entirely from the marine environment after 3 months.

It is important to note that many arguments tend to come back to the idea that Reusable Bags are always preferable to Single-Use Bags, no matter their composition. This is one of those cases where that theory falls apart a bit. If one of the main concerns surrounding plastic and Certified Compostable Bags is their impact and persistence in the marine environment, how have Reusable Bags escaped this discussion? Although of course, it is assumed that Reusable Bags will be used many times before being disposed of, they will inevitably be disposed of at some point. When they do, their impact on the marine environment is many times worse than even conventional plastics because they are more durable and capable of entangling or being ingested by all kinds of marine life for years and years. Not only this, but most Reusable Bags are at least partially composed of plastic, which will release microplastics into the environment

just as before. This leads to the conclusion that switching to Reusable Bags is only delaying the problems we've found with Plastic Bags by a few months or years (depending on how long you keep your bags). If we want to truly have a positive and lasting impact on the environment, not just for ourselves but for future generations, it is critical that we look for a more long-term solution.

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[61] Napper, Imogen E., and Richard C. Thompson. "Environmental deterioration of biodegradable, oxo-biodegradable, compostable, and conventional plastic carrier bags in the sea, soil, and open-air over a 3-year period." *Environmental science & technology* 53.9 (2019): 4775-4783.

## Success Stories of Single-Use Plastic Bans

It is important to recognize and learn from the successes that other areas and groups have experienced with their own efforts in getting rid of Single-Use Plastic Bags. By taking lessons from these success stories, we are far more likely to have effective and long-lasting legislation regarding the fight against plastic pollution.

In the UK, Co-op introduced Compostable Bags as a replacement for their Single-Use Plastic Carrier Bags back in 2007, with most of their stores adopting the eco-friendly alternative by 2018. More recently, they have decided to stop offering the reusable "Bags for Life"[62] that were previously available for customers to purchase at checkout. This move comes from the company recognizing that offering these bags actually introduces extra plastic into circulation, and it is estimated that removing them will prevent about 870 tonnes of plastic from being sold each year in their stores alone. Jo Whitfield, the CEO of Co-op Food was quoted[63] as saying "increased use of Bags for Life has led to a sharp rise in plastic use. With over 1.5 billion bags

sold each year by retailers, this remains a massive issue for our industry as many shoppers are regularly buying so-called ‘Bags for Life’ to use just once and it’s leading to a major hike in the amount of plastic being produced.” The company also recognizes that offering Certified Compostable Bags increases awareness and involvement in organic waste collection and recovery because they educate their customers on the bags’ valuable second use for collecting organics. Co-op has recommended to governments that all retailers be required to switch over from Single-Use Plastic bags to Certified Compostable alternatives in order to truly move towards a sustainable future. The company is also one of the very few retailers that publicly reports not just on their single-use bag sales, but also on the number of Reusable Bags that they are providing to customers, something that they believe should be mandatory in order to provide an accurate picture of the amount of plastic entering waste streams.

In France, a ban on free distribution of Single-Use Plastic shopping bags in 2016 has led to a reduction in approximately 5 billion plastic grocery bags[64]. Importantly, while the ban includes restricting biodegradable bags, it mandates[65] that the replacement for single-use and biodegradable Plastic Bags be “domestically compostable” alternatives. This is key as it recognizes the important differences between greenwashed biodegradable bags and truly environmentally-beneficial Compostable Bags. It also underscores the vital role that governments can play in providing direction to their constituents as to what they should use to replace banned products. In an effort to prevent the loss of valuable jobs in the plastics industry, the French Environment Minister also proposed investment in Bioplastics like starch-based Compostable Bags as a replacement product, a move that he estimates will create more than 3,000 jobs[66].

While many plastics bans are still in the early stages of their implementation, the successes that have resulted are already undeniable. By offering consumers an alternative that is easy for them to adopt as a replacement for Single-Use Plastics and that is ultimately far better for the environment, governments and businesses have pioneered an important upward shift in the economy and in people's daily lives.

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[62] “Co-Op Rolls out 100% Compostable Bags across All Stores | Co-Op Blog.” *Www.coop.co.uk*, www.coop.co.uk/blog/co-op-rolls-out-100-compostable-bags-across-all-stores.

[63] "Co-Op Bans 'Bags for Life' and Urges Government to 'Go Further.'" *Circular Online*, 30 Apr. 2021, www.circularonline.co.uk/news/co-op-bans-bags-for-life-and-urges-government-to-go-further/.

[64] "Lessons from the Countries Fighting to Kick the Plastic Bag Addiction." *Earth Day*, 20 Apr. 2018, www.earthday.org/lessons-from-the-countries-fighting-to-kick-the-plastic-bag-addiction/.

[65] "France Leads the Way in Banning Single-Use Plastic." *Plasgran Ltd,* 16 Nov. 2016, plasgranltd.co.uk/france-leads-way-banning-single-use-plastic/.

[66] "Lessons from the Countries Fighting to Kick the Plastic Bag Addiction." *Earth Day*, 20 Apr. 2018, www.earthday.org/lessons-from-the-countries-fighting-to-kick-the-plastic-bag-addiction/ .

## Facilities: Their Successes and Their Challenges

Perhaps the most common argument against allowing Certified Compostable Bags in Single-Use Plastic Bans is that composting facilities are unable to process them. This is a widely held misconception based, at least in part, on a lack of information or a misunderstanding. In reality, Certified Compostable Bags are much easier to break down than many other feedstocks, such as large pieces of wood from yard waste, as well as animal byproducts like bones and meats. If a facility is truly having problems with breaking down the Certified Compostable Bags, then it must be having problems with other organic matter as well, which is a symptom of a bigger problem. This is a good indication that the facility may be in need of upgrading to improve its processing capabilities anyways.

The other issue that facilities have is during the physical separation process before composting truly begins. It is very difficult to tell the difference between a Certified Compostable Bag and a Plastic Bag; therefore, both types are often screened out and the Compostable Bag doesn't get the chance to fulfill its end-of-life purpose of becoming a valuable resource. This is a valid point, especially since organic matter gets very dirty and it may not be possible to see a compost message on a Compostable Bag. One option that has been proposed to solve this problem is to require all Compostable Bag resins to be a particular colour. For example, in the city of Greater Shepparton[67] in Australia, the city government has recently started handing out free light purple kitchen bin liners for citizens to use to collect their organics. This reduces confusion about where to put the bags, encourages food waste collection, and makes it easy for composters to sort out the regular plastic from the compostable plastic. Since the rollout of

the program, about 47,000 tonnes of organic waste have reportedly been diverted from landfills. This is an example of forward-thinking in developing new ideas to solve problems rather than scrapping the idea entirely.

However, the most important thing to keep in mind with this last issue is that, once Plastic Bags are banned and gone, there will be nothing to confuse the Certified Compostable Bags with. If citizens do not have access to the problematic Plastic Bags in question, there should be no concerns about them ending up in compost by mistake. This is one of the beautiful things about the ban and yet another side benefit of removing Single-Use Plastics from the waste stream without removing Certified Compostable Bags with them.

Importantly, since this topic centers around Canadian legislation and the legislation of the provinces and territories within Canada, it is necessary to point out that there are actually plenty of composting facilities within Canada that do accept Certified Compostable Bags. Many of these facilities are even in regions where Certified Compostable Bags are either being considered for a ban or have been banned already. A few examples include Revolution Organics, which services the entire Lower Mainland in B.C., ADI International in P.E.I, and Matrec (merged with GFL) located in Montreal. All of these facilities help to encourage organics collection and diversion of organic waste away from landfills by allowing their residents to use Certified Compostable Bags.

These are only a very small portion of the many facilities throughout the country that accept these bags and are able to process them without issue, indicating that the technology and infrastructure exist but that many people may simply be misinformed about its existence.

In the facilities where Certified Compostable Bags are currently not accepted, there is an opportunity for expansion and upgrading of composting infrastructure so that these places can accept, not only Certified Compostable Bags but the other materials like meats, bones and dense yard waste like wood that they must not be able to process either. In some facilities, the solution to that struggle with such materials can be as simple as to run the large deposits of debris through and process them again. This is exactly what Urban Canopy[68] does in Chicago, Illinois, according to Alex Poltorack, Distribution and Operations Lead. Where that is not an option, facility upgrades are necessary. This demonstrates the need for government investment

in waste management infrastructure, specifically in the area of organics processing, an investment that contributes hugely to reducing the country's greenhouse gas emissions, creates valuable jobs, and creates a circular economy.

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[67] "Free Compostable Bin Bags to Be Delivered to City of Greater Shepparton Homes." *Riverine Herald*, www.riverineherald.com.au/news/free-compostable-bin-bags-to-be-delivered-to-city-of-greater-shepparton-homes/.

[68] Poltorak, Alex. Interview by Christine Reyes and Camilo Ferro. *Rooting for Change,* 21 Jun. 2021, https://refreshpackaging.ca/wp-content/uploads/2020/10/Bioplastics-in-Real-Life-Urban-Canopy-Interview_1.webm

## Bylaws Regarding Certified Compostables

In a time when greenwashing is tragically common and consumers can find it difficult to determine what choices they should make to truly be more environmentally friendly, they must often look to the leadership of their governments to figure it all out. This means that it is vital for governments to have all the information they can, and to be consistent when coming up with regulations that involve the environment. Unfortunately, there are a few examples within Canada where contradictory legislation could be creating some extra confusion for citizens regarding Compostable Bags.

For example, a few Municipalities in British Columbia have used identical phrasing in their bylaws regarding the banning of single-use bags. Victoria[69], Nanaimo[70], Salmon Arm[71], and Saanich[72] all state in their bylaws that "For certainty, no Business may: (a) sell or provide to a customer a Plastic Bag;". Each of these Municipalities' bylaws also state that "'Plastic Bag' means any bag made with plastic, including biodegradable plastic or compostable plastic, but does not include a Reusable Bag;". These regulations do appear fairly straightforward initially, but the issue arises when you consider the recommendations that each of these locations have provided to consumers for organic waste collection.

On the City of Victoria website[73], it states that ASTM-D6400-Certified Compostable Bags are allowed to be used for your green bin. The city even goes so far as to say that “large rolls of ASTM D6400 compostable liners are available for sale at the Public Service Centre at City Hall and at the Crystal Pool and Fitness Centre.” In Salmon Arm, the city has urged citizens via their Facebook page[74] to use Certified Compostable Liners for their food waste collection, as it helps prevent organics from sticking and freezing to the inside of their green bins, making it easier and more sanitary for collection workers to do their job. The City of Nanaimo website[75] tells people to “place items loosely or use Certified Compostable bags” for their green carts. Similarly, in Saanich, the city website[76] provides valuable information by clarifying that Certified Compostable Bags are allowed to be used for kitchen catchers but Plastic or Biodegradable ones are not.

Each of these Municipalities has clearly done an excellent job on becoming well-informed of the differences between Certified Compostable Bags and Plastic or “Biodegradable” alternatives, as is made clear from their wording and recommendations regarding waste collection. It would be a shame for this valuable education to not also be applied to their laws governing checkout bags. These are certainly not the only areas where this kind of confusing legislation exists either, they are just a few examples. To reiterate, any composting facility that is able to accept and process Certified Compostable Bin Liners is also able to process Certified Compostable Shopping Bags, as they are made from the exact same resin and are typically even thinner and therefore easier to break down than the bin liners.

This all leads to the burning question of why Certified Compostable Shopping Bags are being lumped in with Single-Use Plastics when areas all across Canada recognize the valuable differences between the two.

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[69] “Checkout Bag Regulation Bylaw No. 20-025”, NO. 20-025 CHECKOUT BAG REGULATION BYLAW, *A BYLAW OF THE CITY OF VICTORIA*, 2018.

[70] “Checkout Bag Regulation Bylaw 2020 No. 7283”, *CITY OF NANAIMO BYLAW NO. 7283,* A BYLAW TO REGULATE THE USE OF CHECKOUT BAGS, 2020

[71] “CITY OF SALMON ARM BYLAW NO. 4478”*,* A bylaw to regulate the use of checkout shopping bags, *City of Salmon Arm,* 2019

[72] "THE CORPORATION OF THE DISTRICT OF SAANICH BYLAW NO. 9589 CHECKOUT BAG REGULATION BYLAW"*, THE CORPORATION of the DISTRICT of SAANICH,*2020

[73] "Garbage & Organics." *Https://Www.victoria.ca*, www.victoria.ca/EN/main/residents/garbage-kitchen-scraps/garbageandorganics.html.

[74] "City of Salmon Arm - as Temperatures Drop Our Collector Is Finding That Food Waste Is Freezing in Green Bins and They Are Unable to Empty Them. Please Consider Using Compostable Bags in Your Kitchen Catcher through the Winter Months. When Full, Tie-up and Put in Your Green Bin. Bags Must Be Certified Compostable with the Logos Shown. Paper Bags or Newspaper May Also Work, but Any Moisture That Seeps through May Cause It to Stick to the Bin. If You Have Any Questions, Please Contact the City at (250) 803-4000 or Email Info@Salmonarm.ca. | Facebook." *Www.facebook.com*, www.facebook.com/199952370055913/photos/a.220645214653295/4957441817640254/.

[75] "Organics." *Www.nanaimo.ca*, www.nanaimo.ca/city-services/garbage-recycling/kitchen-waste.

[76] "Greener Garbage Collection Guidelines." Https://Www.saanich.ca, www.saanich.ca/EN/main/community/utilities-garbage/garbage-organics-recycling/greener-garbage-collection-guidelines.html#Garbage.

## Options Available Where Compost Facilities May Not Be

According to a 2021 report[77] by The Environmental Research & Education Foundation of Canada, "residential access to curbside and drop-off organics management programs also support existing infrastructure with 91 percent of the population living in an area with some type of organics management program." This number may be surprising to those that think of composting and organics processing as a limited or inaccessible waste management sector. In reality, 91% of Canadians have access to some type of organics management program. With the proper investments into environmental responsibility, these programs could be bolstered in order to handle even more organic waste than they already do, including more difficult feedstock processing.

Even for the 9% of Canadians that reportedly do not currently have access to an organics management program, there are plenty of solutions available. Composting technology is a rapidly growing sector, with research resulting in brilliant new innovations all the time. There are countertop composting systems like the Tero[78], produced by two women from Laval University

in Quebec City, which allows anyone to process their food waste right in their kitchen, producing valuable fertilizer that they can use for their household gardens and plants.

Another great option is for Municipalities to encourage composting at home. For example, Bellechasse Regional County Municipality[79] in Quebec, despite not offering curbside organics collection yet, encourages responsible waste management by offering training workshops for residents to learn to compost at home, and selling countertop collection bins and backyard composters for that purpose. Home composting technology has also evolved greatly to improve the efficiency and quality of the process, with products like the Hungry Bin[80] and the Speedibin[81] becoming more popular and accessible all the time.

On a larger scale, there are now plenty of modular composting systems being offered that are excellent for business use and for residential complexes like apartments and condos. Companies like Novi-Comp[82], Brome[83], and Green Mountain Technologies[84] offer in-vessel composters that are typically only three to ten feet in length and allow for industrial-level composting. Businesses and residential complexes can purchase these vessels to place in their parking lots or behind buildings on their property, allowing them to process their organic waste right on-site and use the valuable fertilizer for whatever purpose they choose. These systems are also becoming popular for universities, farms, and isolated work sites like mines that do not have access to a larger-scale composting facility.

Despite the excellent range of organics management and processing in Canada, there are still smaller and more remote areas where citizens may not have easy access to composting facilities that process organic materials like Certified Compostable Bags. Luckily, with the amazing technologies currently being offered in Canada and beyond, many options are available for these people. All of the innovations described above are viable options for disposing of Certified Compostable Bags responsibly. This means that, even in areas where compost facilities are not yet at the level of being able to handle this product, areas where government investment is needed to improve the capacity of these facilities, solutions are already available and accessible for everyone in the meantime.

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[77] *Data & Policy Program Data Driven Analysis to Drive Sustainable Materials Management State of the Practice of Organic Waste Management and Collection in Canada*. 2021.

[78] "À Propos: Countertop Composter: Tero." *Tero CA*, https://teroinnovation.ca/en/pages/a-propos-tero

[79] "Compostage Domestique - Matières Organiques - Gestion Des Matières Résiduelles - Pour Les Citoyens -." *MRC Bellechasse*, https://www.mrcbellechasse.qc.ca/fr/pour-les-citoyens/accueilgmr/matieres-organiques/compostage-domestique/ .

[80] "Green Tools." *Greentools,* https://greentools.ca/

[81] "Our Composters." *Speedibin Composter,* https://speedibin.com/pages/our-composters

[82] "In-Vessel Composting." *Novid Inc.,* https://novid.ca/in-vessel-composting/

[83] "On-site Industrial Composting Systems." *Brome Compost Inc.,* https://www.bromecompost.com/en/

[84] "In-Vessel Composting Systems - Earth Cube." *Green Mountain Technologies Commercial Composting Solutions,* https://www.compostingtechnology.com/in-vessel-composting-systems/earth-cube/

## Certified Compostable Bags Increase Sanitation and Health

An important consideration in the banning of Single-Use Plastics is the potential impacts on human health. It is well-known that a key issue with using Reusable Bags as a replacement for plastic is the issue of bacterial formation and transmission in cloth and polyester bags. With citizens using Reusable Bags to carry home groceries and other food items, there is a high likelihood of bacteria growing within these bags and very few people wash them frequently or thoroughly enough to combat this issue. According to a 2012 study [85] performed in response to a Single-Use Plastics Ban in San Francisco, emergency room visits and fatalities spiked after the ban came into effect, with a reported 12 E-Coli deaths being attributed to unwashed Reusable Bag use. Conversely, Certified Compostable Bags do not need to be washed and can be reused for their second use of organic waste collection long before the risk of food-related contamination arises.

Certified Compostable Bags also increase sanitation in organic waste collection. By placing your organics in a clean bag rather than loosely in a kitchen catcher or newspaper, decomposition-related bacteria are contained inside rather than transferring to your bin. Collection workers also don't have to worry about coming into contact with any food-borne illnesses as the food waste remains contained in the bag rather than contaminating green bins. Similarly, since the inside of bins does not become covered in slimy, sticky organic matter,

there is no need to wash them out as often between uses. This leads to a decrease in unnecessary water consumption, as well as preventing harsh or harmful chemicals from entering our groundwater or waterways through storm drains when green bins are washed out in people's driveways.

With the state of affairs over the last 2 years when attempting to manage the Covid-19 global pandemic, we have seen firsthand just how important it is to prevent the spread of viruses and bacteria. As the world attempts to get back to a more normal life, we must not forget the lessons learned and do what is in our power to not add to the spread. When it comes to managing how our food is handled and how we interact with goods on a daily basis, Certified Compostable alternatives will be a valuable tool to maintain sanitation and reduce the spread of disease. Alternatives that are coming and going with more exposure, putting all who come into contact with its path at risk, need to be discouraged.

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[85] Klick, Jonathan, and Joshua D. Wright. "Grocery bag bans and foodborne illness." *U of Penn, Inst for Law & Econ Research Paper* 13-2 (2012).

## Calgary, Alberta: Success with Certified Compostable Bags

As we move towards a successful solution to the single-use plastics problem plaguing our country, it is important to recognize and learn from current successes in attempting to tackle this issue. An example of success while using and supporting certified compostable bags is seen in Alberta, specifically Calgary, the province's largest city. Calgary has not instituted a ban on certified compostable bags, nor have they indicated their intention too. Like many other cities in Canada, they promote the use of certified compostable bags for organic waste collection and accept them in their green bin program. Since the implementation of their green bin program in 2016, there has been a reported 64% decrease in black cart volumes as an estimated 130,000 tonnes of organic waste are diverted away from landfills annually. The city is now in discussions about a $50 million expansion of their composting facility[86], including the addition of an anaerobic digestion facility that will result in the production of valuable biogas that can be sold as fuel. All of this success is aided by the use of certified compostable bags by citizens for collection of their organic waste.

Plastic bags winding up in compost bins is a common problem that some municipalities say stems from confusion between plastic bags that cannot be composted and certified compostable bags that can. Calgary recognizes this as an issue stemming from a lack of information, which they intend to fix through the launching of educational campaigns, rather than banning compostable bags altogether. Every year the city of Calgary does an audit[87] of how compost programs are working. City workers go around to different neighbourhoods in Calgary and inspect green bins that have been placed outside for collection. In 2019, the program had expanded impressively to include inspection of more than 200,000 homes[88]. They look for three things: participation (how often carts are being put out for collection), capacity (how full green bins are), and contamination (unacceptable or hazardous materials present in the bins). When they find materials in the bin that are not compostable (plastic bags for example), they leave behind a tag on the bin with information to educate the residents about where these items should go in the future.

The program has been successful, reportedly resulting in an impressive 17% decrease in contamination[88]. By going straight to the source of contamination and directly educating residents on what can and cannot be composted, the problem is handled without the need for sweeping bans that may include items that do not even contribute to contamination in the first place. Ultimately, the program also acts to save money that would otherwise have been spent on penalties for cart contamination, which are charged to the city by the third-party organizations responsible for sorting through the waste. In 2019, an estimated $1 million was paid in these avoidable penalties[88]. The city of Calgary is also currently researching the possibility of distributing certified compostable bags to the city's residents to aid in their education program, and has reached out to our company as a resource in this project.

Seeing cities like Calgary investing in environmental education for their residents and obtaining good results as well as monetary benefits in the process is very encouraging for the future of our country. As long as we continue to focus on spreading science-backed information wherever possible, there is no reason that we cannot tackle the pollution problems that we are currently facing.

[86] Smith, Madeline. “City Recommends $50m Expansion for over-Capacity Composting Plant.” *Calgaryherald*, Calgary Herald, 15 Jan. 2022, https://calgaryherald.com/news/local-news/city-recommends-50m-expansion-for-calgarys-oversubscribed-composting-plant .

[87] White, Ryan. “Green Cart Spot Checks Aim to Ensure Calgarians Are Aware of What's Compostable.” *CTV News Calgary*, CTV News, 9 Nov. 2017, https://calgary.ctvnews.ca/green-cart-spot-checks-aim-to-ensure-calgarians-are-aware-of-what-s-compostable-1.3669385 .

[88] Smith, Alanna. “City Expands Waste Bin Spot-Check Program, Targets 205,000 Homes.” *Calgaryherald*, Calgary Herald, 8 Dec. 2019, https://calgaryherald.com/news/local-news/city-expands-waste-bin-spot-check-program-targets-205000-homes .

# Conclusion

In the effort to implement the most effective Single-Use Plastics Bans throughout Canada, it is vital that decision-making bodies have all the information they can get. It is important that we do not follow in the footsteps of failed bans of the past and instead offer a suitable alternative to replace Single-Use Plastics - one that is easiest for retailers and consumers to adopt, beneficial towards creating a circular economy, and, most importantly, the best possible option for the environment. Through the extensive research and testing described above, it has become clear that the best replacement for Single-Use Plastic Bags is Certified Compostable Bags. With the proper certification standardization, investment in waste management, and education of the general public, this will create the best possible ban for us all - humans and Earth alike. Please feel free to reach out with any questions or comments you may have or if you would like additional support and resources on this topic by emailing info@refreshpackaging.ca or calling 1-877-434-2384.

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CALGARY
February 14, 2022

The Honourable Steven Guilbeault, M.P.
Minister of Environment and Climate Change
House of Commons
Ottawa, ON
K1A 0A6

Dear Minister,

**RE: Certified Compostable Shopping Bags in Single-Use Plastic ban**

I write to you today concerning the proposed federal Single-Use Plastics (SUP) ban. An organization within my constituency, Refresh Packaging, is concerned about how Certified Compostable Shopping Bags may be included in the ban.

As it stands, Certified Compostable Shopping Bags (CCSBs), made from bioplastics, are classified as harmful SUP shopping products and are listed under the proposed ban. Most essentially, these **compostable shopping bags are not a single use product.** Not only can they be used more than once, but they can be used both as a shopping bag and as a liner for domestic compost bins.

These specific bags carry 5 worldwide certifications, including the OKHomeCompost certification and the North American BPI certification which meets the ASTM 6400/ ISO standard. This certification verifies that the compostable bags, which can be used as both bin-liners and shopping bags, break down **in less than 84 days (12 weeks)**.

Witness testimony from Chelsea M. Rochman stated on April 12, 2021 (ENVI-24) that she does not know of any compostable product that will break down in less than 6 months in an industrial composting facility; this product breaks down in 12 weeks and is verified by third-party testing, as confirmed by the BPI certification. This is one of very few pieces of information that the committee heard regarding compostable products, and it is therefore concerning that it is so misleading.

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This shopping bag produced by Refresh Packaging, and other similar CCSBs, has the potential to provide a cheap alternative both to paper and cloth bags, for both consumers and businesses. As was seen in Montreal, to not provide a direct alternative to plastic shopping bags may elicit a backlash from retailers. Allowing CCSBs in the market will prevent plastic shopping bags which slip through loopholes in the policy, from entering our waterways and littering our communities, by supplying an alternative to businesses and consumers. CCSBs provide a solution, while more costly than SUP shopping bags, they are 20 to 50x cheaper than paper or cloth alternatives.

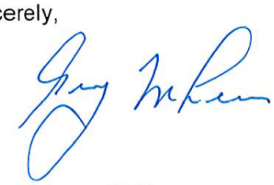
The federal government indicated that there is the potential to reduce 1.6 million tons of plastic waste with the SUP ban. By allowing reusable shopping bags and other alternatives to stay in circulation and removing SUP bags, resulting in an increase in the need for these products, the government also recognizes the potential to increase waste to 3.2 million tons.

On behalf of my constituents, I ask the government to work with businesses to create labelling standards and requirements, so that **certified compostable products which meet the end-of-life standards set by ASTM/ISO around capacity to be composted are allowed to be sold in Canada under the impending ban**.

To create labelling standards with strict requirements for only certified compostable shopping bags to be distributed will ensure waste reduction success and eliminate the greenwashing of non-compostable products and prevent those same products from clogging up composting facilities.

Thank you in advance.

Sincerely,



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Ministre de l'Environnement et du Changement climatique

Minister of Environment and Climate Change

Ottawa, Canada K1A 0H3

MAR 25 2022

Ms. Christine Reyes
Chief Executive Officer
Refresh Packaging
christine@refreshpackaging.ca

Dear Ms. Reyes:

I am responding to your correspondence of July 13, 2021, addressed to my predecessor, the Honourable Jonathan Wilkinson, providing comments on Canada's proposed Single-Use Plastics Prohibition Regulations. I regret the delay in replying.

As Minister of Environment and Climate Change, I agree that the issue of single-use plastics cannot be solved without the involvement of plastic packaging producers and manufacturers. The way plastics are currently used and managed affects Canada's ecosystems and wildlife, and burdens the economy. It is time to shift toward a more resource-efficient and circular economy for plastics.

Environment and Climate Change Canada is currently reviewing all comments received during the public consultation period on the proposed Single-Use Plastics Prohibition Regulations, which closed on March 5, 2022. The proposed Regulations can be found at *www.gazette.gc.ca/rp-pr/p1/2021/2021-12-25/html/reg2-eng.html*. All comments received will help guide the development of the final Regulations.

Additionally, the Department is engaged in work with stakeholders to assess and develop certification regimes for compostable products. Given your organization's work and expertise, I encourage you to engage in this work. You may do so by contacting *plastiques-plastics@ec.gc.ca*.

I appreciate your taking the time to share your insight and experience during this process. Please accept my best regards.

Sincerely,

The Honourable Steven Guilbeault, P.C., M.P. (il/lui/he/him)

Canada