

**Corporate Environmental Responsibility:
A Study of Single-Use Plastics in Canada**

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ABSTRACT

Globally, millions of people are beginning to acknowledge that a wide-scale environmental crisis is occurring with the deforestation of rainforests, severe weather events, marine plastic pollution, and rising global temperatures and ocean levels. This is prompting many to look at the unsustainable practices of large transnational corporations with their extensive supply chains, high emission rates and excessive packaging. In light of public concern, many of these corporations are making voluntary commitments to become more sustainable as a form of corporate environmental responsibility (CER). This paper explores the motivating factors behind CER through the case study of single-use plastics in Canada to understand whether policies and products are genuine in supporting the environment or a form of greenwashing to deflect government regulations, gain legitimacy in the eyes of the public and increase market share. For the purposes of this research, greenwashing is defined as “the phenomena of socially and environmentally destructive corporations attempting to preserve and expand their markets or power by posing as friends of the environment” (CorpWatch, 2001). Literature reviews are used to provide a brief summary of the history of environmental policy in Canada as well as the history and benefits of single-use plastics, the environmental, human health and economic impacts of plastic pollution, and recent changes in public perceptions. With this background knowledge, case studies of corporate commitments are analyzed to highlight differences between CER and greenwashing and how to discern between the two. In order to provide more insight into the Canadian context, stakeholder interviews were conducted with industry, consulting firms and environmental NGOs. Interviews explored sentiments around single-use plastics, potential motives behind voluntary corporate plastic commitments and areas for improvement in terms of government regulations and corporate practices. This paper concludes with recommendations for corporations and governments on how to more effectively manage CER and plastic pollution, while improving waste management systems in Canada. Areas of focus include extended producer responsibility, material procurement, standardized labelling and content guidelines, and the facilitation of collaboration and innovation.

FOREWORD

What initially drew me to the MES program at York University was its interdisciplinary nature, which allows students to explore environmental issues from a range of perspectives including policy, resource management, wildlife conservation, economics, and health. This tied in with my undergraduate studies since I completed a Bachelor of Science from the University of British Columbia with a Major in Biology and Minor in Political Science. At this time, I gained a strong technical background in ecology and was introduced to issues surrounding corporate social responsibility and greenwashing. Due to this, I was interested in continuing my studies in a graduate program that would incorporate my technical background with my interest in policy and politics.

I was able to express this through my MES Plan of Study (POS) by selecting three components: 1) Biodiversity Conservation, 2) Natural Resource and Waste Management, and 3) Environmental Policy and Politics. Although these areas are broad, they allowed me to explore a range of environmental issues through my coursework and work experience with the Ministry of the Environment, Conservation and Parks (MECP), the Waste Wiki Project at York University, and Pollution Probe, a non-profit ENGO. As part of my POS I developed 11 learning objectives, eight of which directly relate to my Major Paper while the other three were achieved through coursework and work experience.

In terms of Component 1: Biodiversity Conservation, plastics are often consumed by wildlife or contribute to entanglement, population fragmentation and mortality. Due to this, I was able to satisfy a learning objective by gaining expertise and technical skills related to ecology and conservation (both at an individual species- and ecosystem-level) through my literature reviews on the impacts of plastic pollution. I also satisfied learning objectives related to Component 2: Natural Resource and Waste Management since a majority of plastics are produced using non-renewable feedstocks and can contaminate waste streams and ecosystems if disposed of incorrectly. In particular, I learned more about the various political and economic interests involved in the production and disposal of plastics, and how they can conflict with environmental interests. I also expanded my knowledge of the different waste management systems in Canada and how they can be improved.

Beyond resource management, plastics have a large role in society in terms of products, packaging and consumer convenience so their production and use is highly political and relates

to Component 3: Environmental Policy and Politics. Due to this, I was able to learn more about the formulation and implementation of policies as well as the role of civil society in pressuring industry and governments. I also gained a better understanding of corporate environmental responsibility and greenwashing through the case studies and stakeholder interviews. The interviews also allowed me to expand my professional network to include new contacts from industry, government and NGOs, which fulfilled a learning objective. Overall, this Major Paper is a culmination of these components, learning objectives and work experiences since the production and disposal of single-use plastics is a complex issue with a range of stakeholders and impacts related to the environment, human health and the economy.

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1. INTRODUCTION

Globally, millions of people are beginning to acknowledge that a wide-scale environmental crisis is occurring with the deforestation of rainforests, severe weather events, marine plastic pollution, and rising global temperatures and ocean levels. Meanwhile, many transnational corporations continue to consolidate money and power by expanding markets and supply chains while involving themselves in political lobbying and scientific research to further self-interests. Although many corporations are actively lobbying against environmental regulations, many are also stepping forward to make voluntary commitments to become more sustainable including Walmart, Coca-Cola, Procter & Gamble, Nestlé and Starbucks.

These commitments are a form of self-governance and corporate environmental responsibility (CER) where corporations voluntarily engage in activities such as reducing pollution emissions, greening supply chains and reducing excess packaging. Although corporate behaviour may seem to promote environmental health on the surface, it is not always clear why corporations engage in CER beyond what is required by government regulations. Therefore, it is important to explore the motivating factors behind CER to understand whether policies and products are genuine in supporting the environment or a form of greenwashing to deflect government regulations, gain legitimacy in the eyes of the public and increase market share.

This dichotomy between capitalist business models and sustainability pledges is driving the growing debate over the degree to which corporations should rely on market-based strategies and corporate self-governance or whether governments should take a stronger regulatory stance to ensure industry accountability. In order to contribute to this debate and better understand CER as it exists today in Canada, it is helpful to explore the relationship between industry and government and how it has impacted the formulation and implementation of environmental policy over the last few decades. Following this, a short summary and definition of CER will be provided as well as a few common motivating factors that could be driving industry behaviour.

1.1 History of Environmental Policy in Canada (1950s-Present)

This section provides a brief overview of the history of environmental policy in Canada from the 1950s to present. It is important to recognize that not all industries, jurisdictions and political parties have had the same regulatory history but there are important trends that can help

us understand how Canadian environmental policy has developed over the last few decades. One trend that is consistent across Canada is that increased public attention and issue saliency provides governments with policy windows to formulate and implement policies (Winfield, 2012b). Unfortunately, public attention can wane as new concerns arise causing regulatory strength and enforcement rates to decline. This process is known as the issue-attention cycle and can be seen throughout Canada's history of environmental policy and the growing power of corporations (Winfield, 2012b).

The environmental regulatory system that still partially exists to this day was first formulated and implemented between the 1950s and 1970s (Macdonald, 2007). At this early stage, Canadian governments held the majority of political power and changes were largely influenced by shifting public perceptions of industry related to health, safety and the environment. The policy approach at this time was considered to be "reactive, tactical, piecemeal and end-of-the-pipe" limiting the ability to effectively manage pollution and global environmental issues (Carter, 2007, pg. 174). Despite these limitations, many industries perceived environmental regulations as an economic threat and sought out ways to weaken environmental standards and lengthen compliance deadlines. During the 1970s, environmental regulations and public pressure forced industry to either adapt or step into the political arena through negotiations, lobbying or policy intervention.

As the environmental movement and public awareness continued to grow throughout the 1980s, governments began to associate the environment with electoral success thus making it a prominent issue for election campaigns (MacDonald, 2007). Due to this, government budgets and teams increased to take on more of an enforcement approach to environmental policies, including industry fines for lack of regulatory compliance. Prevalent environmental issues included acid rain and solid-waste management due to concerns over pollution leaching into water sources and disputes over where to site waste disposal sites (Macdonald, 2007). Many positive environmental programs and policies originated from this time period including the emergence of the 3 Rs: Reduce, Reuse and Recycle to help combat waste management issues.

Despite the growing strength of environmental policy in the 1980s, power began to shift back towards corporations in the 1990s as there was an emphasis on weakening environmental policy and deregulating industry to boost economic growth (Macdonald, 2007). Along with this came reductions in government staffing and budgets transferring power away from regulators to

firms. These changes contributed to a shift away from law-based regulations to voluntary programs where industry made non-binding commitments to improve environmental performance (Macdonald, 2007). Since these commitments were not legally binding, there were no fines for non-compliance and very few industries achieved their promised targets.

a) Case Study: Reuse Versus Recycling - Ontario's Blue Box Program

An example of industry power can be seen in Ontario between the 1970s and 1990s when the soft-drinks industry resisted government policy attempts to shift packaging back to refillable glass bottles rather than disposable aluminum cans. Glass bottles are a significant economic expense since they are heavy to transport requiring decentralized bottling facilities, and need to be collected, cleaned and refilled (CIELAP, 2008). Initially to avoid stricter regulations, the soft-drinks industry entered into a voluntary agreement with the Ontario provincial government to “ensure that 75 percent of its total sales were in refillable containers” but this was never enforced (MacDonald, 2007, pg. 107). This lack of enforcement gave industry leeway to conduct more aggressive political campaigns across Canada to promote recycling rather than reuse since this better supported industry profitability.

The widespread implementation of North American curbside recycling programs further aligned with industry goals of making recycling a viable policy initiative (MacDonald, 2007). As a form of policy intervention, industry offered to fund recycling programs in exchange for weakened regulations culminating in the Ontario provincial government dropping “the regulatory target for refillable sales from 75 to 30 percent” (MacDonald, 2007, pg. 109). Ultimately, the creation of the *Waste Diversion Act* (2002) helped solidify the shared funding of curbside recycling between industry and municipal governments and largely silenced discussions surrounding refillable sales targets (CIELAP, 2008). This case study highlights how industry can wield a large degree of power within the political arena when economically significant practices are threatened by regulations.

Regardless of the industry or type of product, packaging is particularly important when considering durability and weight to minimize transportation costs. When governments threaten to regulate packaging materials, it is seen as a direct threat to industry since it can be a large economic burden to change manufacturing processes. According to MacDonald (2007, pg. 105),

“packaging represented 35 percent of total industry production costs” in 1999. In comparison, reducing carbon emissions or other forms of end-of-the-line pollution does not usually require extensive changes to business practices. For example, managing the pollution impacts from resource and manufacturing industries is estimated to be approximately five percent of total annual operating costs (MacDonald, 2007). Due to this, the food and beverages industry may be more likely to take an aggressive political stance or slightly improve business practices to avoid stricter regulations.

Common industry tactics include negotiations, lobbying, moving investments to other jurisdictions and arguing that there is insufficient scientific evidence to justify changes in business operations (Macdonald, 2007). Despite this, there has been progress in integrating environmental management into business practices and reducing the amount of waste and pollution entering the environment, partially due to the growing acceptance of environmental norms in society.

The trend of weakening federal environmental policy continued throughout the 2000s as former Prime Minister Stephen Harper (2006-2015) introduced various pieces of legislation that drastically reduced environmental protection in favour of industry interests. Harmful legislation such as Bill C-38 negatively impacted sources of environmental protection including the *Canadian Environmental Assessment Act*, the *Kyoto Protocol Implementation Act* and the *Fisheries Act* (Winfield, 2012a). The Bill, which has also been called the “Environmental Destruction Act,” also supported industry by making pipelines exempt from certain legislation and made offshore drilling easier by changing rules around seismic testing (May, 2012). Meanwhile, the operating capacities of Parks Canada, Environment Canada and the National Energy Board were limited due budget and program cuts, as well as changes around the frequency of assessments and the ability to reverse rulings. A recent investigation by the Information Commissioner of Canada has also revealed that the Harper era involved muzzling scientists which limited research and discussion around climate change and other politically sensitive issues (CBC News, 2018).

With the election of Prime Minister Justin Trudeau in 2015, federal environmental policy is only starting to slightly recover but it is still not as comprehensive as many constituents would like. Among other legislative changes, the Prime Minister has strengthened the *Fisheries Act* and

proposed a new *Impacts Assessment Act* to replace the *Canadian Environmental Assessment Act*. Trudeau has also announced a federal carbon tax system for provinces that do not already have an equivalent program in place to help reduce greenhouse gas emissions and combat climate change. Although this is a positive environmental step, Prime Minister Trudeau has also engaged in contradictory behaviour by supporting the oil and gas industry and the controversial expansion of the Trans Mountain pipeline.

As of June 10, 2019, Prime Minister Trudeau announced that the federal government will follow the lead of the European Union and move forward with a ban on harmful single-use plastics which could be implemented as soon as 2021 (CBC News, 2019). In addition, the Prime Minister mentioned the importance of making businesses responsible for the plastics they manufacture and sell. On the surface this appears to be a positive environmental statement but there are no clear steps to achieve the ban and as of yet, no products or materials have been specified. With the upcoming federal election, this public statement appears to be more of an act to appease the public and gain voter support rather than a well-thought out, thoroughly researched plan. Due to this, Trudeau is already facing criticism from constituents and Conservative Leader Andrew Scheer over the lack of details and potential economic impacts. Due to this, the next federal election will be important for determining what role the environment will have in politics and whether industry power and influence will continue to grow. Only time will tell whether Prime Minister Trudeau gets re-elected or is just literally and figuratively grasping at straws.

Prior to Prime Minister Trudeau taking office in 2015, American politics were already beginning to see a shift towards increased environmental concern and progressive politics with the election of President Barack Obama in 2008. Throughout his two terms in office (2009-2016), President Obama made a variety of pro-environmental decisions and enacted legislation related to reducing carbon emissions, improving fuel efficiency standards, supporting green energy, rejecting the Keystone XL oil pipeline, and expanding marine and land conservation efforts (Nelson, 2016). Despite these achievements, American politics began to see an uprising of populist right-wing ideology as many constituents felt that their voices were not being heard, particularly when it came to issues surrounding the economy, jobs and the energy sector.

This right-wing backlash aided President Donald Trump throughout his presidential campaign due to his strong support of industry, deregulation and denial of many environmental

issues including climate change. Ultimately, President Trump's election in 2016 was the beginning of the end for much of Obama's environmental legacy as regulations were rolled back and pro-fossil fuel individuals were appointed to positions of power related to environment. For example, President Trump appointed Andrew Wheeler to be the head of the Environmental Protection Agency despite his history as a coal industry lobbyist (Lambert, 2019). This campaign of deregulation and the stripping back of environmental protection emphasizes the significant amount of power industry and corporations currently hold in the US. This power is beginning to have global implications for politics as right-wing ideology has taken hold in many countries around the world.

Some of this right-wing ideology has likely influenced provincial politics in Ontario as Doug Ford, the Leader of the Ontario Progressive Conservative Party, was elected Premier of Ontario in 2018. Similar to the US, much of the environmental work of former leaders, including prior Premier Kathleen Wynne (2013-2018), is being undone. This includes initiatives related to cap-and-trade, flood management, species conservation and the elimination of the Office of the Environmental Commissioner of Ontario, which was a key environmental watchdog to ensure government accountability. Due to changes like these, provincial Green Party Leader Andrew Schreiner has called the Ford government, "one of the most anti-environmental provincial governments" in generations (Xing, 2019). This highlights the shift in power back to industry as there is an unbalanced focus on economic prosperity without government regulations and enforcement to protect the environment.

Despite severe budget and program cuts, Ford has expressed interest in dealing with single-use plastics and reducing littering and the amount of waste entering landfills. A variety of options were mentioned in a 2019 discussion paper including deposit-return systems, a provincial single-use plastics ban and making producers responsible for waste rather than having municipalities manage it (MECP, 2019). It is often hard to reconcile economic growth and environmental protection but working towards a circular economy could be a win-win for both material recovery and economic growth. Due to this, it is likely that the issue will remain on the province's radar since it is an easy way to appeal to concerned voters while shifting responsibility back onto producers, which helps government coffers. Only time will tell how the government chooses to act on waste diversion and single-use plastics. Ultimately, Canadian industry still wields a large degree of political power at the federal and provincial level in

resisting regulatory changes and lobbying for policy changes that better align with business interests.

Overall, the history of environmental policy in Canada is complicated, as political power has shifted between industry and government over the decades. Although this is only a brief outline of the history of environmental policy, it highlights that industries often perceive environmental regulations as a threat to economic prosperity and favour deregulation and voluntary programs over law-based regulations. This highlights the common perception that there is a conflict between trying to achieve environmental protection and economic prosperity. With the recent uprising of right-wing populism there appears to be a connection to neoliberalism as there is a shift towards the deregulation of industry in favour of free-market capitalism. Due to this, environmental protection may have to rely on voluntary corporate responsibility and commitments in the absence of a rigorous regulatory regime.

1.2 Corporate Environmental Responsibility (CER)

Since the 1950s, many industries have begun to move beyond the narrow focus of managing operations to maximize profitability to improving environmental sustainability and employee health and safety. This behaviour has been encapsulated by a variety of terms and definitions that are hard to distinguish between among scholarly literature including corporate social responsibility, corporate sustainability, corporate environmental responsibility and corporate environmental behaviour.

Generally, corporate social responsibility (CSR) is used to discuss any sort of voluntary corporate behaviour where worker health and safety conditions are improved in addition to supporting environmental protection and sustainability. Although CSR dates back to the 1950s, the most common definition that arose among Montiel's (2008) review of scholarly literature was Carroll's (1979) definition that "the social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time."

The concepts of sustainable development and corporate sustainability have more recent origins in the late 1980s with a focus on limiting business needs to protect resources for future generations and minimizing negative environmental impacts (Montiel, 2008). Therefore, environmental behaviour, environmental responsibility and sustainability are often used

interchangeably and can be understood as a more recent branch of CSR. Despite the different origins of these terms, Montiel (2008, pg. 246) argues that they share a common future of balancing “economic responsibilities with social and environmental ones.” Although all of the social, economic and environmental issues encompassed by CSR are important, for the purposes of this research, there will be an explicit focus on corporate environmental responsibility (CER) in order to better understand why businesses voluntarily engage in certain behaviours that promote the health of the environment.

In 2005, the Pembina Institute published a report in conjunction with Pollution Probe to identify what was important to the ENGO community when defining CER. Jamison et al. (2005) identified the following three themes:

“1) environmental commitment in which the company fully embraces sustainability and has a net positive impact on the environment and society; 2) material and energy management in which the company operates within the finite ecological limits of the environment; and 3) effective stakeholder engagement in which the company is fully transparent and accountable, with a demonstrated process in place to engage and empower stakeholders” (pg. ii).

With this in mind, this paper will define corporate environmental responsibility as the implementation of business practices that minimize environmental degradation and promote sustainability while engaging with stakeholders and civil society in a transparent and accountable way. Ideally, this behaviour goes beyond the minimum environmental standards set by government.

1.3 Industry Motives

Since CER can be expensive in terms of updating infrastructure and supply chains to meet or exceed regulatory standards, it is important to understand the motivations behind environmental behaviours. This can help determine whether policies and products are genuine or a form of greenwashing to deflect government regulations, gain legitimacy in the eyes of the public and increase market share. According to the US non-profit, CorpWatch (2001), greenwashing can be defined as: “the phenomena of socially and environmentally destructive corporations attempting to preserve and expand their markets or power by posing as friends of the environment” (CorpWatch, 2001). Similarly, environmental marketing agency TerraChoice

(2010) defines greenwashing as the “act of misleading consumers about the environmental practices of a company or the environmental benefits of a product or service.”

Although greenwashing behaviours have been occurring for decades, it is widely recognized that environmentalist, Jay Westerveld, first coined the term in the US in the 1980s (Watson, 2016). Westerveld noticed that hotels were promoting the re-use of towels to help protect the environment and reduce ecological damage, when in reality; it helped cut costs and hotels continued to develop on ecologically sensitive land. Common motives behind engaging in “green” behaviours include maximizing profitability and gaining legitimacy in the eyes of the public. It is unrealistic to believe that greening business practices are a win-win for firms because environmental issues are often complex and costly (Macdonald, 2007). Therefore, corporations must weigh the costs and benefits carefully to determine whether engaging in pro-environmental behaviour is economically feasible beyond altruistic reasons.

Within the current Canadian context of waste management and plastic packaging, environmental norms within society are changing faster than environmental policy. Despite this, industry actors are still looking for legitimacy in the eyes of the public, even if they are not yet required to change their business practices in relation to single-use plastic packaging. Therefore, industry has a political interest that extends beyond government policy to how the general public and non-government actors think and behave (Macdonald, 2007).

According to Macdonald (2007), legitimacy can be an important source of political power and can be achieved through a variety of means including the genuine improvement of a firm’s environmental performance. In terms of transparency, accountability and environmental protection, this is the ideal method of gaining recognition but it can also be sought through dishonest means. Dishonest ways to gain legitimacy include only changing the *image* of a firm’s performance through media relations and advertising campaigns rather than making legitimate changes to business practices. This behaviour incorporates aspects of greenwashing because it can mislead consumers about corporate practices and products.

Due to environmental problems such as greenwashing, Dauvergne (2016, p. 9) believes that “the pendulum of environmentalism has swung too far toward cooperation and reconciliation with the institutions of capitalism” where corporations are heavily relying on self-regulation and market-based strategies to promote sustainability. Dauvergne (2016) finds that this creates an inherent conflict of interest since the promotion of sustainability is directly linked to a

corporation's continued financial success and expansion of markets. Therefore, there is scepticism over whether efforts to reduce the use of environmentally harmful materials, such as single-use plastics, are genuine or are part of a larger greenwashing campaign.

In general, the market for environmentally friendly products has been expanding rapidly in the last few decades leading to a rise in green marketing as products compete for expanding markets. These marketing campaigns and "green" products can be misleading and contain false information contributing to consumer confusion and the erosion of investor confidence (Delmas & Burbano, 2011). Delmas and Burbano (2011) believe that lax regulations are a driver for greenwashing since the potential for economic gain outweighs the risk of legal and consumer repercussions.

Within North America, TerraChoice (2009) found that out of 2,219 products, over 97% committed one or more greenwashing sins. These sins include vagueness, irrelevance, no proof, false labels and hidden trade-offs, which contribute to consumer confusion when trying to make sustainable purchasing decisions. One concern related to greenwashing is that products with legitimate sustainable benefits will be overlooked limiting the spread of green innovations throughout the market. Contrastingly, Ramus and Montiel (2005) argue that there are instances where industry competition can drive sustainable innovations, such as the development of biodegradable coffee pods.

Ultimately, Ramus and Montiel (2005, pg. 379) believe that industry incorporates environmental management into business practices due to "regulation, the degree of stakeholder pressure, economic advantage, and mimetic pressures from the institutional environment." These pressures often result in corporations publicly committing to environmental policies and targets on the basis that it will positively influence public perception leading to increased market share (Ramus & Montiel, 2005; Dahl, 2010). On the surface, these commitments appear environmentally positive and may win over consumers but many corporations fail to effectively, if at all, implement these policies. Therefore, policy commitments are largely influenced by institutional mechanisms, including stakeholder relations, whereas policy implementation is related to economic incentives (Ramus & Montiel, 2005).

Overall, there are a variety of potential motivators that could be influencing CER, including economic advantages, deflecting government regulations and gaining legitimacy in the eyes of the public. Motives vary between industry sectors and environmental concerns so in

order to narrow the scope of this research, the paper will be structured around the case study of single-use plastics in Canada. This will include an analysis of the history and benefits of single-use plastics, the environmental, human health and economic impacts of plastic pollution, and the changing public perceptions towards single-use plastics. With this background knowledge, the paper will then analyze case studies of corporate commitments to determine whether there are signs of greenwashing or corporate environmental responsibility and how to discern between the two. Moving beyond specific case studies, the subsequent results section will be based around interviews with Canadian stakeholders who represent industry, consulting and the environmental sector. Interviews explored sentiments around single-use plastics, potential motives behind corporate plastic commitments and areas for improvement in terms of government regulations and corporate practices. Finally, this paper will conclude by highlighting some recommendations for both corporations and governments on how to more effectively manage CER and plastic pollution, while improving waste management systems in Canada.

2. RESEARCH METHODOLOGY

2.1 Scope and Rationale of Inquiry

The fields of environmental policy and corporate behaviour are extensive so this paper will approach the topic of corporate environmental responsibility (CER) by using the case study of single-use plastics in Canada. The purpose of this paper is to provide a better understanding of what is motivating corporations to engage in CER and what approaches are being taken to reduce or shift away from the use of single-use plastics. Specifically, whether efforts are genuine to support the environment or a form of greenwashing to deflect government regulations, gain legitimacy in the eyes of the public and increase market share.

This knowledge will help inform whether a stronger regulatory regime is required or whether corporate self-governance and CER can improve the current state of the environment. Research was conducted using a combination of qualitative methods including literature reviews and interviews with NGO and industry stakeholders who have an interest in single-use plastics. Ultimately, understanding corporate behaviour is crucial since business interests are a powerful influence on environmental policy, particularly when it comes to weakening regulations or deflecting public attention away from an issue.

2.2 Literature Reviews

In order to gain a comprehensive understanding of the origins and varying definitions of corporate social responsibility and the more recent offshoot of corporate environmental responsibility, sources of primary and secondary literature were reviewed using online keyword searches. Keywords included: corporate social responsibility, corporate environmental responsibility, corporate sustainability and corporate environmental behaviour. Beyond this, literature was also reviewed to summarize common motives behind CER. In this case, keyword searches included terms such as: corporate voluntary commitments, greenwashing and corporate environmental responsibility. A variety of literature was referenced including scholarly articles and books as well as reports from environmental organizations and marketing agencies such as the Pembina Institute, Pollution Probe and TerraChoice. Scholarly articles came from credible journals including *Organization & Environment*, *Environmental Health Perspective*, *Business and Society* and *California Management Review*.

Beyond corporate responsibility and motives behind voluntary plastic commitments, it is important to understand the related environmental, health and economic impacts of plastic pollution, both in Canada and at a global scale. In order to summarize the current scholarly knowledge on each of the three impact categories, online searches of primary and secondary literature were conducted. Sources were found using a keyword search including terms such as: single-use plastics, plastic pollution, waste management, environment, wildlife, industry, human health and economic impact. As single-use plastics are a relatively new area of research, a majority of the referenced articles were published in the last five years although some go back to the early 2000s. Articles were selected from credible journals including *Proceedings of the National Academy of Sciences*, *Marine Pollution Bulletin*, *Philosophical Transactions of the Royal Society B: Biological Sciences* and *Archives of Environmental Contamination and Toxicology* among others.

2.3 Corporate Case Studies: Criteria for CER Versus Greenwashing

In order to determine whether recent corporate commitments are a genuine form of CER or greenwashing, several corporate case studies were analyzed including Keurig, the Alliance to End Plastic Waste, Starbucks, Walmart, Nestlé and Loop. Ultimately, these case studies were selected because they involve large politically influential corporations and their recent plastic

commitments have received significant attention via news outlets and social media platforms. Case studies were also selected to represent different corporate scenarios since some involve packaging, introducing alternative materials or products, changing business models or are an example of corporations working together. A preliminary online search was also conducted to determine whether there was a sufficient number of articles, scholarly literature and materials to develop and discuss each of the corporate case studies. In addition, the selection process was influenced by discussions with stakeholders during the research interviews since many interesting examples of corporate behaviour were brought up and expanded on to create comprehensive case studies. Where possible, case studies are explored in the context of Canada but in some cases, corporate behaviours are analyzed in other countries since many large corporations operate transnationally.

In cases like these, where there is a large degree of civil society awareness and interest, it is even more important to learn how to distinguish between greenwashing behaviours and genuine CER. Many of these case studies involve commitments made in the last two years while others, such as the Starbucks case study, look at various commitments made over the last decade or so. Greenwashing behaviours are often subtle so the following criteria were used to analyze voluntary commitments, press releases and websites to determine whether they had elements of greenwashing or genuinely promoted CER.

This paper's greenwashing criteria (shown in Table 1) were largely structured around Greenpeace's Stop Greenwash campaign in 2009 where various criteria were developed (Greenpeace, 2009; Ecomerge, 2009). The four "Additional Criteria" were developed for the purposes of this research since there were gaps in Greenpeace's criteria when looking at single-use plastics, particularly in terms of vagueness and the spread of misinformation. These four criteria were developed based on personal observations and concerns related to recent corporate commitments and were influenced by conversations with stakeholders involved in plastics. The CER criteria (shown in Table 2) were also developed for the purposes of this research and are mostly the opposite of the greenwashing criteria in terms of the clarity and quality of targets, deadlines, investments and communication. It is important to recognize that this is not an exhaustive list of all of the greenwashing and CER criteria that exists throughout the literature and there may be other useful criteria when studying different industries or corporations.

Table 1. Criteria to determine whether corporations are engaging in greenwashing behaviour, including four criteria developed by Greenpeace.

Greenpeace Criteria	Definition (Greenpeace, 2009; Ecomerge, 2009)	Example
Dirty Business	“Touting an environmental program or product, while the corporation’s core business is inherently polluting or unsustainable.”	If a company promotes or tries to hide behind a new “green” product while the majority of the company’s business model and investments continue to be unsustainable and polluting.
Ad Bluster	“Using targeted advertising and public relations campaigns to exaggerate an environmental achievement in order to divert attention away from the environmental problems or if it spends more money advertising an environmental achievement than actually doing it.”	If a company were to do a multi-million dollar ad campaign about an environmental conference or a beach clean-up that cost less.
Political Spin	“Advertising or speaking about corporate ‘green’ commitments while lobbying against pending or current environmental laws and regulations.”	If a company advertises itself as environmentally friendly while lobbying against more comprehensive pollution regulations.
It’s the Law, Stupid	“Advertising or branding a product with environmental achievements that are already required or mandated by existing laws.”	If a company is forced (i.e. new regulations) to change a product, material or practice but it uses public relations campaigns to make changes look voluntary or proactive.
Additional Criteria		
Vague deadlines and targets		
Failure to meet deadlines and targets or changing them altogether		
Spreading misinformation contributing to consumer confusion		
Developing narratives to shift blame onto consumers and/or the developing world for lack of waste infrastructure		

Table 2. Criteria to determine whether corporations are engaging in environmentally responsible behaviour.

Corporate Environmental Responsibility (CER) Criteria
Clear targets and deadlines
Significant investments in research and programs
Accurate information contributing to consumer knowledge
Sustainable practices/business models relative to other transnational corporations

By going through press releases, corporate websites, news articles, scholarly literature and articles from environmental NGOs, recent voluntary commitments and corporate behaviour were analyzed to determine which of the criteria it fell under. Greenwashing is often subtle, so the identification of certain behaviours can be subjective. It is likely that there are other corporate actions and behaviours that may have been missed when looking back through these corporations' histories that would classify as one or more of the criteria. With this in mind, the purpose of case studies is to encourage discussion and awareness surrounding corporate behaviour to help pressure for sustainable change. Ultimately, these case studies highlight areas where additional or legitimate CER is needed as well as opportunities for regulations and collaboration with governments. It is important for consumers to be critical of corporate voluntary commitments due to vagueness and conflicting behaviour as well as following-up to ensure that promises are actually fulfilled.

2.4 Interviews

Within Canada, the subject of single-use plastics is extremely topical with news articles being published daily so for the purposes of this research, it was important to ground all of these articles and scholarly literature with the first-hand knowledge, opinions and experience of current stakeholders. This includes individuals involved in analyzing, manufacturing, selling and using single-use plastics. With this in mind, representatives were sought from industry, consulting firms and environmental NGOs and many of the participants had experience and knowledge in more than one area. This breadth of knowledge is particularly important when trying to understand single-use plastics and corporate behaviour in North America since regulatory systems and public knowledge surrounding waste management are not as well-developed as many European countries.

Participants were recruited from a list of industry contacts made available through York University and there was a snowballing effect as participants representing NGOs recommended other contacts and relevant organizations. Various questions were discussed to gain a better understanding of opinions on single-use plastics, corporate motives and initiatives, and necessary government regulatory changes. The purpose of conducting the interviews anonymously was to allow participants to share their opinions on single-use plastics and personal experiences with corporations that would not have been shared otherwise. This was all done in the hope that

certain details or insights would be shared that would help fill in potentials gaps in recent news articles and scholarly literature.

The following questions were provided to participants prior to the interview to allow for the gathering of notes and thoughts. The interviews were conducted over the phone from December 2018 - March 2019 and ranged in length from 30-60 minutes. Written consent was obtained prior to the commencement of interviews and with the consent of participants, some interviews were recorded and transcribed to allow for reference during the data analysis and writing process. Interviews were semi-structured around the following eight questions with additional topics and questions depending on interests and areas of expertise. Since there were overarching themes that came up repeatedly among the participants, the interviews played a significant role in shaping the conclusion and recommendations sections, which can be found at the end of the paper.

a) Questions

- 1) What is your opinion on single-use plastics and do you perceive single-use plastics as vital to maintaining current business practices and modern consumer convenience?
- 2) The current sentiment regarding plastic packaging is very negative, do you think this is a fair characterization of the issue?
- 3) How has product development and packaging changed in response to consumer concern over plastic pollution?
- 4) What strategies and policies are being implemented to reduce single-use plastics?
- 5) What is the strongest driver behind single-use plastic policies and voluntary commitments? (Ex. Stakeholder pressure, consumer pressure, economic advantage, environmental concern)
- 6) Do you think there is anything the provincial government can do to encourage plastic diversion?
- 7) Do you think the government should have stronger regulations in relation to single-use plastic packaging or do you think corporate self-governance and voluntary initiatives are the solution?

- 8) Are there any other products or policies that you would like to highlight related to single-use plastics or reducing plastic pollution?

b) Participants

Table 3. Breakdown of stakeholder interviews relative to sector and number of participants.

Sector	Number of Participants
Industry	3
Consulting*	2
Not-for-profit/Environmental NGOs	3

*Many of the participants, including the consultants, have experience working for and with the government and private sector.

2.5 Interview Data Analysis

Since all of the interview responses were qualitative in nature, information was initially sorted based on which question it most closely related to. Following this, data was coded and a thematic content analysis was conducted to look for recurring themes and keywords. Based on this, information was then combined into categories based on common themes and concepts. Participant responses are either paraphrased or directly quoted and all information is kept anonymous to protect the privacy and work of the participants.

2.6 Key Terms and Definitions

- **Single-Use Plastics:** Plastics that are used once before being thrown away or recycled.

*Not everyone agrees with this definition since plastics that are successfully recycled can have multiple lives in the forms of other products. Despite this, this definition will be used since many of these plastics do not end up being recycled and have environmental, human health and economic impacts.

- **Corporate Environmental Responsibility (CER):** engaging in business practices that minimize environmental degradation and promote sustainability while engaging with stakeholders and civil society in a transparent and accountable way (Jamison et al., 2005).

- **Greenwashing:** “The phenomena of socially and environmentally destructive corporations attempting to preserve and expand their markets or power by posing as friends of the environment” or more specifically, “the act of misleading consumers about the environmental practices of a company or the environmental benefits of a product or service” (CorpWatch, 2001; TerraChoice, 2010).

3. CASE STUDY: SINGLE-USE PLASTICS

3.1 History, Benefits and Sources of Plastics

The plastics industry is relatively new but has grown rapidly since the beginning of plastic production in the 1950s. The industry is now worth an estimated \$600 billion and continues to grow by approximately 8.7% annually (Smith et al., 2018). Current global production of plastic exceeds 320 million tonnes annually with over 40% used for single-use packaging (Wright & Kelly, 2017). Common single-use plastics include beverage bottles, plastic wrap, food containers, cutlery, bags and six-pack rings; products that have become part of everyday life for billions of people. Smith et al. (2018) conducted a literature review on plastics in the environment and found that the most common materials include polyethylene (both high and low densities), polypropylene, and polystyrene. All of which are commonly used to make the single-use plastic products mentioned above.

Successful waste management systems are often correlated with economic development, strong legislation and extensive local infrastructure; without these, there can be excessive waste generation and waste leakage into the environment (Smith et al., 2018). Even with organized waste management systems in the developed world, there are still recycling problems including lack of participation and waste stream contamination when materials are disposed of incorrectly. According to UNEP (2018), only 9% of plastic is recycled globally while approximately 12% is incinerated leaving the remaining 79% sitting in dumps, landfills or the environment. Due to its widespread use, it is also important to recognize that approximately 4% of global oil and gas production is used for feedstock for plastics with an additional 3-4% used to power manufacturing (Hopewell, Dvorak and Kosior, 2009). Therefore, many different types of plastics are produced using non-renewable resources contributing to greenhouse gas emissions.

Due to plastic pollution and environmental concerns, the topic of single-use plastics and marine debris has gained a high degree of saliency worldwide, particularly in North America and Europe. Despite this, there are misunderstandings about where waste is coming since approximately 88-95% of plastic is entering the ocean from 10 rivers, all of which are located in Asia and Africa, including the Yangtze, Ganges, Mekong and Nile Rivers (Schmidt, Krauth & Wagner, 2017). The Yangtze River alone contributes an estimated 1.5 million tonnes to the Yellow Sea annually. Often industry uses information like this to argue that the problem is not with excessive plastic production and profit-driven corporate behaviour but with poor waste management systems and insufficient government policies.

Corporations widely use plastics due to desirable manufacturing qualities including durability and versatility in addition to being lightweight, inexpensive and easy to transport (Mason, Welch & Neratko, 2018). Relative to transporting heavier materials like metal and glass, plastics reduce the amount of carbon emissions entering the atmosphere while being chemical and light resistant (Andrady & Neal, 2009). Plastics also prolong the shelf-life of meat and vegetables reducing food waste while ensuring products are supplied in a safe and hygienic way. Plastics are also invaluable to the healthcare industry ensuring tools and packaging are sterile. According to Andrady and Neal (2009), plastic also have a “high strength-to-weight ratio, allowing minimal material usage (and low cost) in packaging design” allowing corporations to maximize returns on investments. Overall, plastics have played an important role in modern society since the 1950s, particularly as corporations have globalized and expanded to provide a variety of products in a cost-effective, easy to transport, safe and hygienic way.

3.2 Impacts of Plastic Pollution

Despite its widespread use and versatile properties, plastic can be problematic if not disposed of properly since it does not biodegrade and can easily be transported by currents and winds throughout the natural environment. Since the beginning of plastic production in the 1950s, plastic has been accumulating in the environment threatening ecosystems, wildlife, human health, and the economy. A large portion of plastic particles originate as microplastics in cosmetics but secondary microplastics also exist due to the degradation of larger plastic pieces, including cups, bags and cutlery. Ultraviolet radiation, wind and wave action, and abrasion cause

plastics to degrade into micro and nanoplastics making them difficult to track and clean-up (Wright & Kelly, 2017).

According to Smith et al. (2018), “approximately eight million metric tons of plastics enter the oceans annually, and conservative estimates suggest 5.25 trillion plastic particles currently circulate in ocean surface waters.” A large portion of this originates from land-based sources, 75% of which is uncollected waste while the remaining 25% is from waste that was originally in waste management systems (Smith et al., 2018). Plastic debris is also a growing problem for freshwater ecosystems, including the Great Lakes which accumulate almost 10,000 tonnes of plastic debris every year (MECP, 2019). Discarded waste can enter the environment via littering, water outflows, industrial discharge or inadequate waste management systems. When evaluating how to best improve corporate practices and government legislation it is important to consider the different environmental, health and economic impacts of plastic pollution in order to gain a comprehensive understanding of the current state of single-use plastics.

a) Environmental Impacts

At the molecular level, the lack of carbon bonds and functional groups makes plastic a stable material that remains fundamentally the same even as it breaks down into smaller synthetic fragments in the environment (Mason, Welch & Neratko, 2018). Plastic fragments can act as vectors for contaminants and heavy metals causing them to leach into the environment and wildlife upon ingestion (Wright & Kelly, 2017). Wildlife can mistake plastic fragments for food or accumulate it in their bodies through the ingestion of other contaminated species. Marine plastics have been known to cause changes in species behaviour and population dynamics due to entanglement, ingestion, lacerations, strangulation and spread of invasive species (Gregory, 2009; Barnes et al., 2009).

Both invertebrate and vertebrate species are affected by plastic pollution including zooplankton, fish, seabirds, turtles and whales (Desforges, Galbraith & Ross, 2015; Boerger et al., 2010; Wilcox, Van Sebille & Hardesty, 2015; Duncan et al., 2018; Lusher et al., 2015). Desforges, Galbraith and Ross (2015) were the first to discover that species of marine zooplankton, vital for the North Pacific marine food web, were mistaking microplastics for food. This raises concerns for other species higher up the food chain since plastic will likely

accumulate in fish and other wildlife species. Evidence of fish ingesting plastic has been found in both the Northern and Southern Hemispheres (Boerger et al., 2010; Foekema et al., 2013; Forrest & Hindell, 2018). Plastics are particularly concerning for coastal communities who rely on fish for their livelihoods and consumption in addition to commercial fisheries.

With regard to seabirds, Wilcox, Van Seville and Hardesty (2015) believe that the threat from plastic pollution is “geographically widespread, pervasive, and rapidly increasing.” When plastic accumulates in the gut of seabirds, it can lead to gut obstruction, poor body condition, increased exposure to chemical pollutants and mortality. There are also numerous studies raising concerns surrounding turtles ingesting both micro and macro plastics (Duncan et al., 2018; Boyle & Limpus, 2008; Lynch, 2018; Schuyler et al., 2014). Duncan et al. (2018) found that of the over 100 turtles sampled, representing seven species and three ocean basins, all individuals tested positive for microplastic ingestion.

Although there have been fewer studies on large marine vertebrates ingesting plastic, such as whales, there have been cases where bodies have washed ashore full of plastic debris. For example, a sperm whale washed ashore in Indonesia in 2018 with “more than 1000 pieces of plastic, including 115 cups, 25 bags, four water bottles and two flip-flops” (Victor, 2018). Scientific studies provide insight on these observational findings, including evidence of micro and macro plastics in whale species such as fin whales, humpback whales and True’s beaked whale (Fossi et al., 2014; Besseling et al., 2015; Lusher et al., 2015). Plastics ingestion can provide whales with a false sense of satiation without providing vital nutrients, ultimately leading to reduced weight and energy (Victor, 2018).

Beyond the impacts to wildlife, plastic can also sink to the seafloor and act as a barrier to the transfer of nutrients and gases contributing to anoxia and hypoxia (Shahidul Islam & Tanaka, 2004; Gregory, 2009). This can alter the physical and biological composition of the seafloor negatively impacting normal ecosystem functioning. These studies support that plastic pollution is a significant threat to conservation efforts for species across all trophic levels as well as ecosystem health as a whole.

b) Human Health Impacts

Due to the prevalence of plastics in the environment, there is concern over the bioaccumulation and biomagnification of plastics in the food chain as plastic particles, known as

micro and nanoplastics, have been found in seafood, processed food and beverages (Wright & Kelly, 2017, Rochman et al., 2015). Macroplastics are broadly defined as pieces larger than five millimetres in size while microplastics are less than five millimetres. Since the impacts of microplastics on human health are a relatively new area of research, the full extent of toxicity and health impacts are not understood, particularly impacts related to chronic exposure.

Within the human body, microplastics can cause physical damage in addition to acting as vectors for toxins or additives incorporated during product manufacturing or from chemical exposure in the environment (Van Cauwenberghe & Janssen, 2014; Smith et al., 2018). Common chemicals include pesticides, persistent organic pollutants and flame retardant chemicals that are expected to leach into the body as plastics degrade (Smith et al., 2018). Health risks are expected to vary with exposure and toxicity levels depending on plastic characteristics including composition, size, shape and hydrophobicity. Potential impacts include damage to the immune system, inflammation of tissue, and cell damage in addition to the effects from the spread of bacteria (Smith et al., 2018).

Van Cauwenberghe and Janssen (2014) found that Europeans who consume shellfish, such as mussels and oysters, could be exposed to up 11,000 particles of microplastics annually. This is due to the fact that many shellfish species are filter feeders causing them to ingest plastic particles in the water column. Other species throughout the food chain are also impacted including fish, small and large invertebrates, and larvae (Smith et al., 2018). According to Tsang (2018), nearly two-thirds of wild flathead grey mullet, a fish species commonly consumed in Chinese meals, are contaminated with plastic fragments. Approximately 60% of these fragments are microplastics from materials commonly used to make single-use products such as cutlery, cups and bottles (Tsang, 2018). Due to findings like this, the Medical University of Vienna tested eight human participants from around the world, including Russia, Italy, Finland, Japan, Austria, the UK, Netherlands and Poland to determine whether plastics could be detected in the gut. According to United European Gastroenterology (2018), all stool samples tested positive for microplastics highlighting the importance of additional studies to determine the likelihood and severity of health impacts. It is likely that this plastic was ingested through contaminated seafood in addition to food and beverages contaminated during food processing and packaging.

There has also been evidence of plastic particles in tap water, beer, table salt and soft drinks (Kosuth, Mason & Wattenberg, 2018; Liebezeit & Liebezeit, 2014; Quintili, 2018).

Kosuth, Mason and Wattenberg (2018) estimate that consumers ingest 5800 particles of synthetic materials annually from tap water, beer and table salt alone. In order to sample for microplastic contamination in bottled water, Mason, Welch and Neratko (2018) purchased over 250 bottles from 19 locations, representing 11 different brands and 9 countries. In total, 93% of the bottled water was found to have traces of microplastic contamination. A majority of this plastic was found to be polypropylene, which is a common material used to manufacture plastic bottle lids which supports that some contamination is occurring during the bottling and packaging process (Mason, Welch & Neratko, 2018).

c) Economic Impacts

When making decisions and considering the extent of impacted industries, wildlife and ecosystems, it can be helpful to have a monetary valuation to reflect the severity and scale of the problem. Since plastic pollution impacts oceans and waterways around the world, impacted industries include commercial fishing, aquaculture, recreational fishing, and tourism among others. There are also expensive clean-up costs associated with removing plastics from waters, beaches and coastlines since plastics can degrade into tiny fragments that are difficult to locate and remove.

According to the United Nations Environment Program (UNEP) (2018, p. 15) the “future costs of removing all single-use plastics accumulating in the environment is estimated as higher than the costs of preventing littering today.” Europe is estimated to spend €630 million annually on cleaning up coastlines while California, Washington and Oregon spend an estimated \$500 million annually for Pacific coastline clean-up (UNEP, 2018; Kirby, 2014). Countries that rely on their coastlines for tourism and fisheries are particularly vulnerable to the growing amount of plastic in oceans and on popular beaches. For example, South Korea lost between US\$29-37 million in tourism revenue in 2011 when fewer visitors traveled to Geoje Island, a popular sightseeing location, due to a large amount of marine debris that washed up onshore (Jang et al., 2014).

Globally, the annual environmental damage caused to marine ecosystems due to plastic pollution is estimated at US\$13 billion (UNEP, 2014). This estimate considers financial losses associated with tourism, fisheries and coastal clean-up. UNEP (2014) also estimated the “total natural capital cost of plastic used in the consumer goods industry” at more than US\$75 billion

annually. This valuation includes the impacts to oceans, loss of resources when recyclable plastic ends up in landfills and the creation of greenhouse gases during plastic production.

Despite these estimates, it is important to recognize that it is still difficult to quantify all of the impacts of plastic pollution including the spread of invasive species and the overall degradation of marine and coastal ecosystem health. Healthy marine ecosystems have cultural and aesthetic significance to many people contributing to the well-being of coastal communities. Therefore, there is inherent value to healthy ecosystems in terms of culture, health and livelihoods that goes beyond the estimated damage to a particular economic sector or industry.

3.3 Changes in Consumer Perceptions and Industry Practices

Due to all of these impacts, single-use plastics are becoming a controversial and salient topic in the eyes of the public and Sylvain Charlebois, a policy and food distribution expert from Dalhousie University, believes “that companies will need to comply with what the public is beginning to expect of them” (Denne, Sadler & Common, 2018). Plastic pollution is a global issue and many regions are ahead of Canada in terms of policies and business practices including the United Kingdom. In the UK, many grocery-stores are taking a stand against wasteful plastics by creating plastic-free zones in their stores and packaging produce, meat, cheese and baked goods in more environmentally friendly packaging including paper, cellulose wrap and compostable beechwood netting (Denne, Sadler & Common, 2018).

Although many of Canada’s grocery-store chains are still lacking in terms of sustainable targets, it is just as important to obtain strong environmental commitments from large corporations including Nestlé and Coca-Cola. A 2018 Greenpeace audit found that the five worst plastic polluters in Canada are Nestlé, Tim Hortons, PepsiCo., The Coca-Cola Company and McDonald’s Corporation (King, 2018). The most common plastic types found were food wrappers, containers, straws, lids, cups and shopping bags among others.

Findings like these are becoming more prevalent across media outlets in addition to graphic images of wildlife suffering from plastic pollution and beaches covered in waste. Many people are also becoming concerned about global waste infrastructure and markets for recyclables following China’s decision to no longer accept contaminated recyclable material as of January 2018. Prior to 2018, China was purchasing over two-thirds of North America’s recyclable material (Denne, Sadler & Common, 2018). These news stories, scientific findings

and social media images are all contributing to shifting consumer perceptions surrounding corporate practices and single-use plastics with many people demanding sustainable change.

4. CORPORATE CASE STUDIES: CER VERSUS GREENWASHING

Whether in response to consumer pressure or other market factors, many corporations are choosing to take on single-use plastics in a variety of ways including changing supply chains, banning plastic straws and investing in reusable business models. Prevalent corporations making public plastic commitments include Starbucks, Walmart, Nestlé, A&W, Procter & Gamble, Unilever and Coca-Cola. These commitments have been met with mixed reactions from the environmental sector, with some accusations of greenwashing arising due to a lack of clarity around plastic targets and phase-out deadlines. The following corporate case studies will attempt to highlight examples of greenwashing behaviour in contrast to positive corporate environmental responsibility. Greenwashing behaviours can be subtle and difficult to identify so this paper will utilize a variety of publications including corporate press releases, media stories and NGO articles as well as applying some of the information gathered during the stakeholder interviews. Overall, this section will help shed light on why corporations are choosing to take on the issue of single-use plastics in terms of CER and whether efforts are genuine or a form of greenwashing.

4.1 Keurig Coffee Pods

Over the last few years, single-serve coffee pods have dominated the coffee market, largely due to consumer desire for convenience and variety. Many industry representatives argue that coffee pods win out over traditional drip coffee in life-cycle analyses since they reduce the amount of food waste as less coffee is poured down the drain. Despite this, a significant number of environmentalists continue to argue that single-serve coffee models are inherently unsustainable and polluting since they contribute billions of plastic pieces to waste streams and the environment every year. To address some of this concern, coffee giant Keurig pledged to make all K-Cup pods fully recyclable by 2020 with recyclable pods first being rolled out in Canada by 2018, followed by the US. Despite this, battles have broken out in the media between Keurig and many Canadian municipalities, including the City of Toronto, over whether or not Keurig K-Cups are actually recyclable (Carcasole, 2018).

Although the pods are being manufactured using #5 plastic (polypropylene), a recyclable material in relatively high demand, consumers still have to follow a series of steps before recycling including allowing the pod to cool, peeling off the foil, removing the coffee grounds for composting and rinsing the pod out (Keurig Green Mountain, 2017; Alter, 2018). Due to all of these steps, many city officials argue that packaging information and media campaigns contain “misinformation” since the coffee pods are not accepted in recycling programs in many Canadian jurisdictions, including the City of Toronto (Rider, 2018). Toronto has already seen an increase in the amount of pods contaminating recycling streams.

Many municipalities are hesitant to officially add coffee pods to their recycling programs since officials are concerned that consumers may mistake all coffee pods as recyclable or fail to properly clean out the pods prior to disposal, which would further contaminate the recycling stream (Rider, 2018). Despite this, Keurig has “unleash[ed] a public education campaign with advertising, social media and grocery store demonstrations on how Canadians can blue-bin” the K-Cups (Rider, 2018). Keurig spokeswoman Cynthia Shanks stated that “the ad campaign reflects our commitment to effective consumer education while also speaking to the financial investment that we’re willing to make to ensure that we drive true behavioural change and a positive impact on the environment” (Rider, 2018). The Keurig website also claims that the company is “working closely with recyclers to make sure they’re ready to sort and recycle [Keurig] pods and other small format plastics” (Keurig Green Mountain, 2017).

Statements like this contradict many municipalities’ experiences in terms of “consumer education” and collaboration since Keurig has not been conversing in good faith and continues to misrepresent products as recyclable even though many municipal systems are not ready to handle them. Based on this paper’s tests for CER versus greenwashing, the purposeful misrepresentation of products classifies as greenwashing behaviour since it contributes to consumer confusion and false brand recognition. It also classifies as Ad Bluster since Keurig is employing targeted advertising and public relations campaigns to exaggerate environmental achievements while diverting attention away from what is ultimately, an unsustainable business model.

Keurig has not always had such an unsustainable history when it comes to products as it did launch a reusable pod called the My-K Cup in 2005. This allowed consumers to buy their choice of bulk coffee and fill the pod themselves, effectively saving consumers money while reducing the use of single-use plastics. Although initially an innovative and environmentally

friendly product, the pods were discontinued in 2014 since they were no longer compatible with the new 2.0 Keurig coffeemaker (Barbash, 2015). This effectively sapped momentum towards reusable pods and led to public outrage as consumers were solely restricted to K-Cups and could not use other brands' products or reusable alternatives.

In a Facebook post, Keurig defended its actions saying that when My K-Cup accessories or filters are used “ the brewer has no way of determining what beverage is being used or how much coffee is being added, and therefore cannot adjust to factors such as brew strength and amount of water, which could represent a safety concern” (Barbash, 2015). Ultimately as consumer backlash grew, Keurig announced it would bring My K-Cup products back but market uptake has been limited and reusable products have received minimal promotion relative to their single-use plastic counterparts. It is likely that Keurig prefers this as the recyclable pods force consumers to repeatedly buy disposable products allowing the company to have control over sales rather than losing profits when consumers buy alternative bulk coffee brands to fill reusable pods. This highlights how corporations will often sacrifice sustainability in favour of profits.

To emphasize just how much Keurig is raking in from disposable products, the company's revenue in 2014 was \$4.7 billion with the majority generated from K-Cup sales. According to Hamblin (2015), this is “more than five times what the company made five years prior.” When placed end-to-end, all of the K-Cups sold in 2014 would circle the globe anywhere from 10.5-12 times with a majority of these ending up in landfills (Hamblin, 2015). Although recent environmental concern may have a negative impact on coffee pod sales, Keurig continues to be a dominant player in the food and beverages market, particularly since it acquired the Dr Pepper Snapple Group in 2018. The merged company, Keurig Dr Pepper (KDP), now has revenue exceeding \$11 billion annually, making it one of the largest beverage companies in North America (McGrath, 2018).

One of the original founders of Keurig, John Sylvan, is no longer with the company and admits that he regrets inventing the K-Cup coffee pod since he originally intended for them to replace drip coffee in the workplace (Evans, 2015). In his mind, the pods were initially “environmentally neutral” since fewer people were going out to coffee chains, like Starbucks, to buy products in single-use cups (Evans, 2015). In a 2015 interview, Sylvan admitted that he did not understand the public's devotion to the product at home and doubted whether the pods would ever be fully recyclable. Due to this, he felt that Keurig would continue “to make those little

plastic cups forever, because they can't think outside the box" and are failing to address the issue "from an engineering standpoint" (Evans, 2015).

Although investments in research and product development are a positive step towards sustainable change and can be a form of CER, Keurig is knowingly spreading misinformation while disregarding the wishes of many municipalities, including the City of Toronto. Misinformation impedes civil society's ability to understand the true environmental impacts of products while causing even the best intentioned of consumers, to develop incorrect waste disposal practices. Meanwhile, Keurig continues to profit off of claims that products are recyclable while not bearing the financial and environmental costs of increased contamination in recycling streams.

Ultimately, Keurig continues to tout K-Cups as an environmentally friendly coffee pod while the corporation's single-serve products and core business model are inherently polluting, energy intensive and unsustainable as billions of pieces of plastic are sold every year. This fits within Greenpeace's greenwashing category of Dirty Business and rather than utilizing the company's significant wealth and market influence to drive innovation, Keurig continues to focus on recyclables rather than transitioning to compostable products or more widely promoting the use and advancement of reusable products. Moving forward, Keurig needs to work with jurisdictions, like the City of Toronto, in good faith to ensure that product characteristics are not misrepresented. Government legislation such as extended producer responsibility could also help solve problems like this by shifting end-of-life costs and responsibilities back onto producers. This is already occurring in British Columbia where EPR legislation is more effectively supporting the collection and use of recyclable single-use coffee pods.

4.2 Alliance to End Plastic Waste

Beyond individual corporate commitments, over 25 companies have come together alongside government, NGO and civil society partners in 2019 to form a not-for profit organization called Alliance to End Plastic Waste. Partners include chemical and fossil fuel companies such as Dow, Chevron and Shell alongside plastic manufacturers and consumer goods corporations like Procter & Gamble and Henkel. The Alliance to End Plastic Waste (2019) has pledged \$1 billion over the next five years to support the improvement of waste management systems, infrastructure and education. If more members join, this amount could increase to \$1.5

billion. This work will occur largely within the developing world with a focus on waste management systems in Asia. The organization acknowledges that plastic should not be entering the environment but chooses to focus on the waste management side of the problem rather than reducing the amount of plastics that are produced.

Given this stance, Alliance partners have faced criticism because they continue to increase global production and promote plastics as a modern convenience that improves living standards and supports hygiene, safety, health and nutrition. Environmental Defence Canada argues that this places the blame on consumers and the developing world rather than corporations acknowledging their role in plastic pollution (Buonsante, 2019). Similarly, Greenpeace argues that corporations are attempting to maintain the status quo on plastics by focusing on keeping them out of the environment rather than reducing production (Wheeler, 2019). In response to the announcement of the formation of the Alliance, Greenpeace Global Plastics Project Leader Graham Forbes said: “Make no mistake about it: plastics are a lifeline for the dying fossil fuel industry, and today’s announcement goes to show how far companies will go to preserve it” (Wheeler, 2019). Without the meaningful exploration of reduction and reusable options, particularly for the replacement of non-recyclable plastics, many within the environmental sector are sceptical of corporate intentions. Therefore, the Alliance can be considered a Political Spin tactic where many corporate contributors are the same ones who would lobby against environment regulations and be staunch defenders of the oil and gas industry.

Beyond this, Buonsante (2019) highlights that the plastic industry is worth over US\$1 trillion annually making the billion-dollar investment worth less than 0.1% of industry market value. A quick review of recent press releases also reveals that these same corporations, including Shell, ExxonMobil, BASF, Mitsubishi Chemical Holdings, Dow Chemicals, NOVA Chemicals and numerous others, continue to invest in multibillion-dollar plants and production lines in order to produce more plastic products and packaging every year (Recycling Network, 2019). For example, Shell recently invested billions of dollars in a new plant in Pennsylvania, USA which will produce over 1.6 million tonnes of polyethylene using non-renewable shale gas as fuel (Laville, 2019). Similarly, ExxonMobil is expanding its production lines in Texas, USA in order to increase production to over 2.5 million tonnes of polyethylene annually (Laville, 2019). Due to this, many within the environmental sector feel that the Alliance is purposely avoiding the idea of reducing plastic production since it would conflict with corporate interests,

including the expansion of markets and profits. For these reasons, the Alliance and its related media campaigns could be classified as Dirty Business and Ad Bluster where more is being spent on increasing unsustainable plastic production and diversionary advertisements rather than achieving substantial systemic and environmental change.

Ultimately, the Alliance is only voluntary and does nothing to address the excessive production of plastics beyond blaming infrastructure and waste management in developing countries. In cases like this, Forbes believes that “corporations love to use recycling as a crutch to continue production of cheap plastics” when larger systemic change is needed to address the true scale of plastic pollution and excessive production (Wheeler, 2019). Meanwhile, these same corporations continue to receive positive media attention for appearing to look active on the issue despite investments only being a fraction of industry sales and revenue. In addition, these same corporations continue to engage in contradictory behaviour as they express concern about plastic pollution through the Alliance but continue to invest in new infrastructure to increase plastic production. For these reasons, there are elements of greenwashing occurring, including what Greenpeace would define as Political Spin, Dirty Business and Ad Bluster, as well as developing narratives to shift blame onto consumers and developing countries. All of these greenwashing strategies contribute to consumer confusion if the public does not look beneath the surface of corporate press releases.

4.3 Starbucks

Many brands within the food and beverages industry, including A&W, Harvey’s and Starbucks, have publicly announced that they will be eliminating straws from their operations which often involves redesigning single-use lids. Starbucks is one of the most publicly visible brands taking on the issue of plastic pollution but in reality, the corporation has a poor track record when it comes to implementing voluntary commitments. Starbucks claims that it has been working on reducing the environmental impact of its cups for more than 30 years as it sells over four billion cups annually (Pailthorp, 2017). In 2010, Starbucks pledged it was going to make cups 100% reusable or recyclable by 2015, which would involve the implementation of front-of-store recycling bins (Pailthorp, 2017). Just one year prior to the deadline, Starbucks announced that it was unable to meet the target due to varying levels of interest in recycling across its operations and a lack of markets for recycled coffee cups (Gonzalez, 2014). This failure

highlights how many corporations publicly announce a target to look active on an issue without fully planning out how to achieve it.

Failure to meet the target led to protests outside of stores including locations in Seattle, the birthplace of the sprawling corporation (Pailthorp, 2017). Starbucks has attempted to deflect some of this criticism by using advertisements to encourage consumers to purchase or bring their own reusable cups. Although this is a positive step, it is an attempt to change the narrative and shift responsibility onto consumers rather than the corporation producing and profiting off of an unsustainable business model. As of 2019, hot beverage paper cups are still lined with plastic making it difficult for them to be processed and recycled depending on what waste infrastructure is in place. Although the plastic lining helps prevent leakage, it is difficult and costly to remove so many recycling facilities will not bother unless they are receiving large enough quantities to justify the process (Peterson, 2014). Rather than having to redesign waste infrastructure to handle the existing cups, many environmental organizations and people within the waste industry are calling on Starbucks to redesign the cups so they can be handled easily within existing waste streams (Gabbatiss, 2018).

Although the struggle with the hot beverage cup continues, Starbucks has pledged to eliminate the use of plastic straws across its stores by 2020, which it claims will eliminate one billion straws a year across its operations (Mahdawi, 2018). Plastic straws have been a prevalent issue in the media, largely due to the fact that straws are buoyant in marine environments making them highly visible to the public, particularly when the suffering of wildlife is involved. Unfortunately, there are many other more harmful plastics beneath the surface that are not receiving the same degree of attention. Due to this, many corporations latch onto straws since they will appease the public and be a relatively simple and visible answer to the very complex issue of plastic pollution. It is important to remain critical of product or material replacements as they have their own impacts in terms of emissions, pollutants and whether or not they can be easily accepted into pre-existing waste streams.

In the past, straws have been predominantly used with Starbucks' cold beverage plastic cups which will now receive a new plastic lid eliminating the need for straws. Although this has been a relatively quick fix and the lids are made out of the recyclable material polypropylene, they require more plastic to be produced (Mahdawi, 2018). This has caused some speculation over whether or not it is better for the environment but Starbucks argues that at least the cups are

large enough to be captured within existing waste management systems compared to small straws that often leak into the environment (Mahdawi, 2018).

Unfortunately, even if the lids are collected there are limited markets for polypropylene, particularly now that China is no longer importing plastic waste. According to Lerner (2019), only 5.1% of polypropylene was recycled in the US in 2015 and that was with China importing plastics. Therefore, many of these so-called “recyclable” lids will end up in landfills and take anywhere from decades to hundreds of years to decompose since there is no value in processing and repurposing them (Lerner, 2019). Beyond this, Starbucks operates in 75 countries but only has recycling goals for Canada and the US meaning there are missed opportunities around the world for Starbucks to support sustainable change (Lerner, 2019). For these reasons, manufacturing and promoting the new plastic lid has elements of Dirty Business because the core business model and products are still polluting and unsustainable.

The elimination of plastic straws and the promotion of the new lids could also be classified as Ad Bluster since straws are a low hanging fruit that do not require drastic changes to corporate operations. Meanwhile, Starbucks receives a significant amount of positive media attention and brand awareness from relatively inexpensive press releases and campaigns that distract civil society from its unsustainable business practices. In addition, many jurisdictions in North America, including Vancouver, Seattle, San Francisco and New York, are already discussing or beginning to phase out plastic straws so Starbucks is not going above and beyond what will likely be required of them by law in the near future. This behaviour is right on the edge of what Greenpeace would classify as It’s the Law, Stupid where environmental changes are already being mandated in certain jurisdictions by the time corporations take on the issue. By remaining one step ahead of regulatory requirements, Starbucks can appear to be an environmental leader in the press, which would not have occurred if Starbucks waited until more widespread regulations were implemented.

These actions are overshadowing Starbucks’ failure to effectively address the environmental consequences of the plastic lined hot beverage cups. It should not be forgotten that the corporation has a history of making environmental commitments, failing to meet them and then changing deadlines or forgetting about the commitments altogether. Ultimately, there is an element of greenwashing on some level when environmental promises are made if they are not well thought out with feasible, clearly stated targets and deadlines. In cases like this, it is

likely that corporate environmental promises bring more positive attention to brands than actual environmental gains since promises are not fulfilled. Overall, investing in product research and sustainable practices can be a sign of improving CER and Starbucks has had success when it comes to reducing energy and water consumption but there are still a lot of red flags in terms of greenwashing behaviours, plastics and waste management. As Starbucks continues to make pledges and invest in research, it is important to remain critical and pressure for comprehensive action plans to ensure targets are feasible and to hold Starbucks accountable for their environmental commitments.

4.4 Walmart

Not all corporations are hiding behind vague commitments and targets with brands like Walmart stepping forward with a range of approaches to battle plastic pollution and make business practices more sustainable. Walmart wields a significant amount of influence due to its expansive operations, supply chains and revenue of \$500.3 billion, making it the number one corporation on the Fortune 500 list for the sixth year in a row (Mejia, 2018). According to Dauvergne (2016), at least 100 million customers go through Walmart check-outs every week and to supply this kind of demand, the company relies on a global network of more than one hundred thousand suppliers. Although long supply chains “provide flexibility and create savings,” if they are not managed properly they can hide harmful social and ecological practices (Dauvergne, 2016, pg. 56). Thankfully, Walmart is beginning to acknowledge its power and influence and is working towards a circular economy and “moving away from a take-make-dispose approach to one where resources are preserved in production” and materials are recovered and reused (Walmart U.S, 2017).

Walmart has been very effective when reducing packaging in terms of maximizing environmental, economic and marketing benefits. For example, in 2017 Walmart U.S. changed plastic blister packs, commonly used to sell children’s watches, to paper-board packaging. This new packaging “is not only more commonly recyclable, it also gives the customer a better view of and feel for the product, is easier to open, and allows more graphic content to merchandise the product” (Walmart U.S., 2017). These changes boosted sales by over 25% while saving costs and reducing the amount of packaging used on over one million watches. Due to various changes like this, Walmart is able to take advantage of its extensive supply chains and undercut competitors

while maintaining a positive brand reputation in the eyes of the public when it comes to environmental issues like plastics.

Within Canada, Walmart has been receiving praise from various NGOs over its various single-use plastics commitments and the development of Walmart Canada's Charter on Plastics. The 2019 Charter builds on previous targets set in 2016 and consists of a variety of commitments including eliminating unnecessary plastic packaging, reducing plastic check-out bags by an additional 50% by 2025 and supporting a variety of philanthropic efforts related to material innovation, recycling habits and waste infrastructure (RCO, 2019). These commitments extend across corporate operations and according to Lee Tappenden, President and CEO of Walmart Canada, will "help reduce Canada's plastic waste footprint" and support broader societal changes (RCO, 2019). The corporation is also a founding partner, member and signatory to a variety of knowledge hubs, coalitions, charters and foundations related to reducing unnecessary plastics, promoting education, advancing research and engaging with industry to support new recycling infrastructure (Walmart Canada, 2018).

Other positive pledges include the elimination of "hard to recycle PVC and expanded polystyrene packaging from all of its own private brand products by 2025" (Walmart Canada, 2019). Meanwhile, Walmart Canada (2019) will continue to work towards "100% recyclable, reusable or compostable packaging for its own private brand by 2025." The corporation has also committed to becoming more transparent about labelling and will include "How2Recycle labelling" on all private brand products by 2025. Walmart Canada (2019) claims that it is the first retailer to publicly commit to this type of labelling within Canada, which will hopefully pressure other brands to take on similar initiatives.

Similar to Canadian efforts, Walmart U.S. (2017) is changing over its private brand packaging and encouraging suppliers to provide recycling information on packaging to help reduce contamination in recycling streams. To support these efforts, Walmart hosted a Sustainable Packaging Summit in 2016 for suppliers and merchants to share knowledge and foster innovation. Suppliers were also challenged to "develop a plan to redesign packaging for at least one product in the next six months and to adopt a consumer-friendly recycling label, such as the How2Recycle® label" (Walmart U.S., 2017). These are just a few of Walmart's commitments as it continues to improve the availability of environmentally friendly alternatives as well as including more post-consumer recycled materials in its products and packaging.

Walmart also promotes sustainability by providing grants and funds to support recycling infrastructure and ensure that materials are being recovered and utilized in the production stream. For example, Walmart provided a \$225,000 grant to the U.S. Chamber of Commerce and associated civic stakeholders in 2017 to support the optimization of infrastructure, recycling and material recovery from residential, commercial and industrial sources (Walmart U.S., 2017). Walmart has also launched recycling programs outside of North America including programs in Argentina where communities are being encouraged to “separate PET packages in their homes and bring them to recycling stations available at all Walmart Argentina stores” to support the recovery of plastic and glass (Walmart U.S., 2017). According to Dauvergne (2016, pg. 143), Walmart diverts “more than four-fifths of its waste (such as plastic bags, glass, cardboard, and paper) from going into landfills, with stores in Japan and the UK over 90 percent.”

These partnerships, future targets, events and investments help differentiate Walmart from other brands while earning praise from civil society and the environmental sector. According to Jo-Anne St. Godard, executive director of Recycling Council of Ontario (RCO), "this multi-layered plan cuts across all of the areas where Walmart can make a marked difference: internally within its own operations; in partnership with vendors and suppliers; and for its customers" (Walmart Canada, 2019). Due to this, RCO believes Walmart has taken on a leadership role and supports its work with regards to reducing plastic waste. Similarly, Philippa Duchastel de Montrouge (2019b) from Greenpeace Canada believes that “Walmart’s announcement shows that the company is listening to Canadians and acknowledging its role in the plastic pollution crisis.”

These steps highlight that Walmart is taking corporate environmental responsibility seriously, particularly in Canada, by setting clear targets and deadlines while taking a variety of approaches including reduction, recycling, innovation and improving waste management systems. This multi-faceted approach promotes confidence in the corporation compared to other brands engaging in Ad Bluster and Dirty Business where vague high level targets are stated but never seriously pursued. Rather than remaining in a corporate silo, Walmart is actively engaging and supporting knowledge hubs, such as the Plastics Action Centre, and encouraging other brands to become more sustainable by re-evaluating business practices and supply chains. Unlike other corporations, Walmart is not fixating on recycling or blaming consumers for their

purchasing habits. For these reasons, Walmart is a good example of some of the positive changes that can come out of well-thought out corporate environmental responsibility programs.

Although these pledges are an excellent start to tackling the issues of plastic pollution and excessive production, it is important to recognize that they are voluntary commitments and Walmart cannot eliminate all unsustainable products or packaging, such as plastic bottled water, due to low prices and thin profit margins (Graber-Stiehl, 2018). It is also important to acknowledge that Walmart has been accused and paid associated fines for greenwashing activities in the past. For example, in 2017 Walmart was ordered to pay \$1 million to settle a case alleging that plastic products were misleadingly labeled “biodegradable” or “compostable” (Lyons Hardcastle, 2017). This is a violation under California law since consumers may assume that plastics will break down in landfills or municipal composts when they usually require industrial processing. Ultimately, this legal judgment prohibits Walmart from selling plastic products with biodegradable or compostable labels that can be misconstrued unless scientific certifications are included.

Overall, Walmart has become a leader in CER relative to other brands but increased transparency is still needed, particularly for figures around total waste production since the corporation tends to focus on specific waste-reducing initiatives (Graber-Stiehl, 2018). Beyond this, it is vital that the public, NGOs and government continue to monitor and pressure Walmart to ensure that these pledges are achieved and that deadlines do not get delayed. Most consumers have low expectations surrounding corporate sustainability so it is easy to praise small steps when corporations have the power act on a larger scale or implement changes more quickly. Ultimately, government regulations are still necessary to rein in corporate power because although Walmart is stepping forward on a range of environmental issues, it is still a corporation operating within a capitalist system suffering from rampant greenwashing. The mandate will always be to expand markets and increase sales, which is often counterintuitive to sustainability goals.

4.5 Nestlé

Unlike Walmart, other large corporations like Nestlé are facing public scrutiny and protest demonstrations for how they are choosing to tackle plastic pollution and excessive packaging. Nestlé is the world’s largest food and beverage company with a variety of products

including frozen meals, infant nutrition, pet food, beverages and chocolates. Manufacturing and distributing these products requires a wide array of single-use plastics which are increasingly turning up in oceans and waterways. To combat this problem and appeal to the public, Nestlé (2019) recently pledged to make its plastic packaging 100% reusable or recyclable by 2025. Nestlé (2019) proposes to achieve this target by focusing on three areas: “(1) Pioneering alternative materials, (2) Shaping a waste free future, and (3) Driving new behaviour.”

On the surface this may seem like a positive single-use plastics commitment but these three focus areas are extremely broad and fail to include tangible steps on how to achieve widespread behavioural changes. Greenpeace has also accused Nestlé of missing the mark due to a lack of clear corporate targets and a heavy reliance on recycling rather than significantly reducing plastic production and supporting reusables (Duchastel de Montrouge, 2019a; Burns, 2019). Recycling rates remain at low levels in many cities across North America while Nestlé continues to produce more and more plastic every year. According to Greenpeace, Nestlé’s plastic production increased by 13% in 2018 relative to 2017 although Nestlé continues to dispute this claim by calling it a “misunderstanding arising from two numbers which are not comparable” (Burns, 2019).

Ultimately, Greenpeace Oceans Campaigner Graham Forbes believes that “Nestlé’s statement on plastic packaging includes more of the same greenwashing baby steps to tackle a crisis it helped to create...and sets an incredibly low standard as the largest food and beverage company in the world” (Wheeler, 2018b). Due to this, Nestlé is putting responsibility on consumers rather than taking accountability for its role in plastic pollution (Wheeler, 2018b). According to Wheeler (2018a), Nestlé was identified as one of the worst plastic pollution offenders during 239 clean-ups and brands audits across 42 countries. Overall, Nestlé is exhibiting clear greenwashing behaviours by failing to take responsibility for its role in generating plastic pollution, emphasizing recycling over reduction and reusables, and maintaining status-quo business practices and plastic production levels. Therefore, public claims and plastic commitments are misleading and cannot be trusted until meaningful commitments are made with clear targets and steps to reduce plastic production.

Nestlé also has a history of greenwashing when it comes to exaggerating the environmental benefits of products and misleading consumers. In October of 2008, Nestlé Waters had a full page bottled water advertisement in the Globe & Mail where it made a series of

claims including that: “bottled water is the most environmentally responsible consumer product in the world,” “most water bottles avoid landfill sites and are recycled” and “Nestlé Pure Life is a Healthy, Eco-Friendly Choice” (Hills, 2008). A coalition of environmental groups accused these claims of being “false and misleading statements” as well as being “contrary to guidelines that have been set by Canada’s Competition Bureau and the Canadian Standards Association to ensure environmental claims are specific and verifiable”(Hills, 2008).

This example highlights Ad Bluster behaviour where campaigns exaggerate environmental achievements and potentially spend more money on advertising than positive environmental actions. It is also an example of Dirty Business as Nestlé’s core business model is inherently polluting and unsustainable, yet it tries to hide behind flashy statements such as: “environmentally responsible” and “eco-friendly.” Nestlé is also one of the founding investors and partners of Loop, a reusable packaging initiative which is only available in select cities but gives Nestlé positive media attention while deflecting attention from unsustainable practices. Loop will be discussed further in the following section.

Beyond Ad Bluster, Nestlé has a history of violating environmental regulations or lobbying against them when it comes to pollution, water contamination and extraction rates, particularly with their bottled water operations. According to Winter (2017), Nestlé often takes advantage of “economically depressed municipalities” to gain access to water sources for its bottled water operations by promising jobs and new infrastructure in exchange for tax breaks. Bottled water is an inherently controversial industry but Nestlé is known for being particularly aggressive by deploying lawyers against any form of resistance including grassroots movements. Meanwhile the corporation pays nominal extraction fees, as low as \$200 in Michigan, while raking in billions of dollars every year (Winter, 2017). All of this water is ultimately bottled in plastic so it is important to be critical of the full extraction and production cycle since it is an industry that contributes to source depletion and end-of-the-line plastic pollution.

Globally, Nestlé has a pattern of setting up operations in jurisdictions with weak environmental regulations or actively lobbying against legislation to prevent or limit change. A leaked letter to member states of the Council of the EU revealed that Nestlé, alongside Coca-Cola, PepsiCo and Danone, are lobbying against legislation that would require plastic caps to be tethered to bottles by 2025, rather than being detachable (Chapman, 2018). In exchange, the companies proposed a non-binding commitment to recycle 90% of plastic bottles by 2025. Rob

Buurman from Recycling Netwerk in the Netherlands considers this to be a “classic delaying tactic” and an attempt to water down legislation that would ultimately help to address global plastic pollution (Chapman, 2018). Companies, such as Lidl, are already tethering caps proving that it is an effective, simple and relatively inexpensive change to manufacturing processes. Despite this, companies argue they would prefer to invest in technology and promote recycling rather than making legislative changes. This classifies as a greenwashing Political Spin where Nestlé is simultaneously promoting corporate “green” commitments to the public while trying to quietly lobby against environmental laws and regulations.

Past violations, accusations and vague commitments all highlight that greenwashing behaviours are rampant including Ad Bluster, Dirty Business, Political Spin and the spreading of misinformation. These behaviours negatively impact the corporation’s credibility when it comes to protecting the environment since there is minimal evidence that Nestlé is engaging in CER programs or behaviours. This is without even considering poor social responsibility in terms of human rights violations and misleading advertisements related to human health. Some people have even called Nestlé “one of the most hated companies in the world” due to its excessive profits and lack of consideration for environmental and social issues (Andrei, 2017). In cases like this, stronger regulations and enforcement are desperately needed to limit unsustainable practices and environmental destruction since voluntary commitments are clearly not working.

4.6 Loop

Other large corporations, such as Unilever, Procter & Gamble and Coca-Cola, are taking various steps to reduce single-use plastics including investing in a reusable packaging service called Loop. As of 2019, Loop is rolling out its operations in major cities including Toronto and New York and will provide consumers with goods from corporate partners in reusable containers, including laundry detergent, beverages and shampoo. This circular-economy type model will rely on a deposit-fee system where goods will be purchased in reusable containers which can then be returned to a store or picked up during a following delivery (Wiener-Bronner, 2019). Packaging will then be cleaned and ready for reuse, drawing comparisons to milkman delivery services offered in the past.

Although the promotion of reusables is a positive step to combat plastic pollution, some environmentalists have criticized Loop’s large corporate investors for failing to change their own

business practices and packaging. Many of these same corporations continue to have high rates of plastic production and have been listed as the worst plastic polluters in waste audits conducted by organizations like Greenpeace (Wiener-Bronner, 2019). In fact, that is why the founder of Loop, Tom Szaky, originally approached these corporations and leveraged poor waste audit results as a reason to invest in the reusable pilot project (Caruso, 2019). Due to this, there is concern that the corporations investing in Loop are using it to garner public praise while deflecting attention away from their own business practices and negative media attention. Some people are already calling for Loop to include more ethical brands to promote a sustainable closed-packaging loop rather than demonstrating a level of indifference to the problems already plaguing these corporations.

There is also concern that reusable business models like Loop will only work in large urban cities where there is a niche market. Currently, Loop is not accessible to rural communities as well as some low-income families as consumers have to pay a \$20 shipping fee on orders under a certain price point or specified weight (Caruso, 2019). There is also a deposit fee ranging from \$1 to \$10, which is refundable but requires people to pay extra money upfront for the same product they can get elsewhere.

Although Loop is an innovative business model with potential for expansion with other delivery services like Amazon, it is just one method to combat plastic pollution. It also increases costs and emissions associated with transportation, particularly when empty reusable packaging is shipped back to facilities for cleaning (Caruso, 2019). Without broader changes and preventative measures from corporate investors who mass-produce consumer goods globally, there will only be minor environmental improvements in select urban cities within the developed world. This could classify as Dirty Business as corporate investors are touting Loop while maintaining their own global practices built around excessive plastic production. Meanwhile, corporations may try to argue that Loop is still in the early pilot project stages and as of yet, does not warrant larger changes to corporate practices, but it is unlikely that Loop will ever work across all global markets due to factors like cost and transportation.

In addition, many of these corporate investors, including Nestlé and Coca-Cola, continue to lobby against environmental laws and regulations that would help reduce plastic pollution such as the tethering of bottle caps, as mentioned above in the previous section. Even prior to this, Coca-Cola has been lobbying against other environmental legislation including the

implementation of deposit-return schemes, which have been proven to increase recycling rates. For example, leaked documents revealed that Coca-Cola and other industry representatives repeatedly approached government officials in Scotland over the last few years to lobby against a deposit-return scheme (McClenaghan, 2017). The former Minister Richard Lochhead was quoted saying: “I am puzzled as to why drinks companies that participate in successful deposit and return schemes in many markets around the world continue to resist new schemes being introduced in Scotland and elsewhere.” Coca-Cola has admitted that changes to beverage regulations are a cause for concern since they can reduce demand and require changes to distribution models which can negatively impact net operating revenues and profitability (McClenaghan, 2017).

A leaked internal report from Coca-Cola Europe in 2016 revealed a matrix used by the corporation to determine what regulations, taxes and policies could potentially be a threat to business practices (see Figure 1 on the following page) (McClenaghan, 2017). Depending on the level of impact and likelihood of materializing, Coca-Cola highlighted whether a monitor, prepare or fightback approach was necessary. The fightback approach was recommended for “disruptive/unfair EPR schemes,” “increased collection and recycling targets,” “EU scheme for deposit systems” and “refillable quotas” among others. This contradictory behaviour classifies as a Political Spin since corporations are advertising or speaking about Loop as an example of a corporate “green” commitment while they have been spending millions of dollars lobbying against environmental regulations in the past and present.

Public policy risk matrix & lobby focus

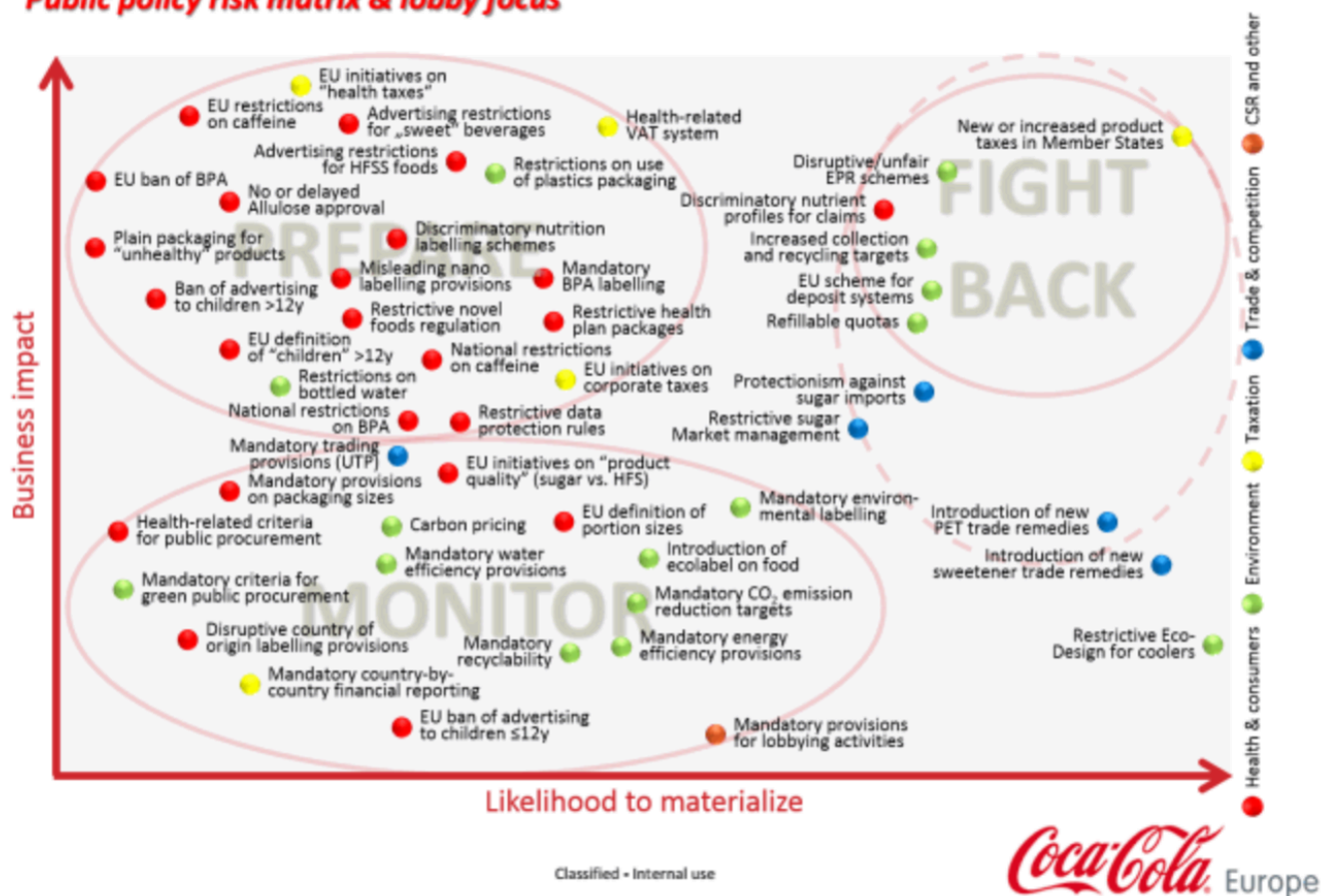


Figure 1. Coca-Cola Europe matrix highlighting public policy risks and lobbying focuses with their associated business impacts and likelihood of materializing which dictate whether a prepare, monitor or fightback approach is recommended (McClenaghan, 2017).

Overall, many of the corporations funding Loop are the same ones subtly engaging in Dirty Business and Political Spin greenwashing behaviours. To combat this, it is important to continue to monitor corporate activity across the breadth of operations and pressure for sustainable systemic change. This includes the re-evaluation of supply chains, product packaging and business practices as well as investing in research, infrastructure and partnerships with non-profits to improve corporate reputations. Otherwise, Loop is just one small component of CER that may be overshadowing destructive practices and rising plastic production in other markets.

4.7 Conclusion

Overall, these case studies highlight the various ways, both genuine and via greenwashing, corporations have chosen to combat plastic pollution and garner positive media attention and brand awareness. Many corporations, like Nestlé, continue to rely on vague

commitments and misleading advertising campaigns in order to seem active on environmental issues while failing to make any substantial changes to business practices, supply chains, products or packaging. Meanwhile, corporations like Starbucks and Keurig have made some progress in terms of investing in research and making coffee lids and pods recyclable but a significant amount of plastic is still being produced to support unsustainable business models. There are also substantial issues surrounding transparent labelling and communication, which can mislead the public into thinking products and packaging are easily handled by existing waste management systems and infrastructure, while many jurisdictions are frantically trying to limit waste stream contamination. Beyond this, Coca-Cola and other prominent brands continue to lobby governments behind closed doors to weaken, delay or eliminate regulations while publicly posing as a friend of the environment.

Therefore, a majority of the corporations mentioned in the case studies are engaging in a disproportionate amount of greenwashing behaviours relative to genuine CER, with the most common greenwashing behaviours being Dirty Business, Ad Bluster and Political Spin (see Table 4 below for full summary). In other words, these corporations are promoting products and using advertising campaigns to tout or exaggerate an environmental achievement while their underlying business models continue to be unsustainable or are lobbying government to weaken or eliminate environmental regulations. With the current power and influence of social media and online news, the greenwashing behaviours of Dirty Business and Ad Bluster are often intertwined. This is evident in online advertisements and press releases for “green” products or initiatives while unsustainable business practices are kept hidden. Thankfully, the power of the Internet also extends to investigative reports, audits and campaigns, which are helping to pressure corporations to become more sustainable.

It is also important to recognize that beneath all of the greenwashing, positive changes are being made when it comes to investing in research since corporations are acknowledging that plastic pollution is a salient issue in the eyes of the public. Even if it is just a small investment to improve recycling infrastructure or reducing the amount of plastic used in packaging, it is still a step towards improving CER. This highlights how CER and greenwashing behaviours are not mutually exclusive and that corporations can be promoting sustainability in some areas while perpetuating harmful practices in others. For example, Keurig developed reusable pods but chooses to focus advertising campaigns on “recyclable” plastic pods even though most Canadian

municipalities do not accept them in recycling streams. Ideally growing public interest and government pressure will encourage larger investments to support transitions to more sustainable business operations rather than just focusing on a single “green” product or material replacement.

The corporations that have been most successful at advancing CER are the ones that acknowledge that mitigating plastic pollution and working towards a circular economy are complex tasks requiring multi-level approaches and solutions. Areas that need work include consumer education, stakeholder engagement, transparent labelling, material procurement and the re-evaluation of supply chains rather than just funnelling money into advertising campaigns. Out of the six case studies, Walmart is the best example of these positive behaviours because they are working with their suppliers and challenging partners to advance sustainable practices, labelling and waste collection while being relatively transparent with the public. Despite this, Walmart still has more work to do but at least they are taking initiative and setting a benchmark for other corporations who continue to skirt their responsibilities.

For a full summary of the case studies and corporate behaviours in terms of greenwashing and CER, see Table 4 on the following page.

Table 4. Summary of corporate case studies relative to greenwashing and corporate environmental responsibility (CER) criteria.

Criteria	Keurig	Alliance to End Plastic Waste	Starbucks	Walmart	Nestlé	Corporations Investing in Loop*				
							Dirty Business	Ad Bluster	Political Spin	It's the Law, Stupid
	X	X	X		X	X				
	X	X	X		X	X				
		X	**		X	X				
			X		X					
	X				X					
		X	X							
	X									
		***	X	X		X				
				X						
				X						

Legend symbol	Notes
*	Loop's reusable business model it a positive example of an environmental initiative but the corporations funding it continue to have unsustainable business practices and engage in greenwashing behaviours (need positive action on both fronts)
**	In the case of eliminating straws, many jurisdictions have already made regulatory steps to ban straws so Starbucks may not be as revolutionary as they are trying to appear in press releases
***	\$1-1.5 billion may seem like a significant investment but it is only a fraction of annual industry revenue

Ultimately, these case studies highlight how corporate commitments can vary in terms of targets and deadlines as well as the quality of communication with consumers, NGOs and governments. Some of these commitments are more extensive and costly than others in terms of changing corporate supply chains and practices relative to the more straightforward promises of banning plastic straws. As public interest continues to grow, the number of corporations making voluntary commitments will likely increase since it is an easy way to gain positive brand awareness and market share. In order to ensure this behaviour is genuine and to promote circular economies and sustainable practices, government regulatory intervention is required.

It is also important to acknowledge that a majority of the case studies involve corporations that operate transnationally, which means that greenwashing and CER behaviours extend beyond Canada and have global impacts and repercussions. It is likely that greenwashing strategies are more sophisticated in Europe since the issue has been on public and government radars longer due to land constraints and waste management issues. This has led to a stronger legislative and policy frameworks forcing some corporations to become more sophisticated and aggressive in their political lobbying and other greenwashing behaviours. Contrastingly, other corporations are beginning to see that the issue and public attention is here to stay and are genuinely working to become more sustainable. As discussion and policy continue to develop in Canada, it is likely that Canada will follow in Europe's footsteps with some corporations becoming more accepting of sustainability paradigms while others continue to invest more time and money into lobbying.

In many of these cases, greenwashing behaviour is not blatant but helps to deflect attention away from rising plastic production or attempt to make a corporation look like it is more involved in the issue than it actually is. It is important to draw attention to this behaviour so consumers have a better understanding of products and corporate behaviour so they can help pressure for greater environmental responsibility and sustainable business practices. Meanwhile, innovative corporations should be praised and supported to help incentivize more widespread change while encouraging inactive corporations to step forward and start making changes. Therefore, environmental organizations play an important role in monitoring corporate behaviour and calling out vague promises or commitments that have not been met. Governments also have a responsibility to do more in terms of implementing legislation, such as extended producer responsibility, so corporations are held responsible for the full lifespan of products and

packaging. This will help level the playing field for corporations and help quell fear that innovation is a dangerous risk that could lead to a market disadvantage.

5. INTERVIEW RESULTS

Beyond conducting a literature review and analyzing case studies, it's important to gain insight from stakeholders working in the field when trying to get an accurate picture of single-use plastics and corporate behaviour within the context of Canada. Stakeholder participants represented industry, consulting firms and environmental NGOs with many having experience and knowledge from more than one area. Various questions were discussed to gain a better understanding of opinions on single-use plastics, corporate motives and initiatives, and necessary government regulatory changes. Since there were recurring overarching themes throughout the interview process, this section played a significant role in shaping the recommendations listed at the end of the paper.

5.1 Single-Use Plastics Status-Quo and Alternatives

In general, all participants agreed that plastics are an expanding part of our economy and market but acknowledged that there is growing awareness from civil society, industry and government over the environmental problems associated with plastics. When looking at plastics and corporate practices, it is important to acknowledge that there are varying definitions when it comes to single-use plastics in Canada. For example, plastic bottles may be defined as single-use when they can be recycled and used multiple times. Due to this, most participants felt that it is important for the public to consider differing definitions and why classifications may not be accurate. A few participants also mentioned that when diving into the issue of plastic pollution and starting to cast blame, it is important to recognize that single-use plastic packaging did not just appear randomly, it came from consumer demand for convenience and benefits surrounding extending shelf-life, hygiene and reducing transportation costs. Therefore, one participant felt that there is a "huge lack of understanding by the public, politicians, NGOs...they're focusing on plastics but they should probably be concerned about all packaging."

In general, good business practices are focused on "resource efficiency and getting the best environmental, economic and social consequences" but one participant emphasized that there are priorities, including human health, since a lot of single-use plastics deal with food

products or carrying food products. Therefore, a few participants defended plastics in their role of promoting safety and hygiene while prolonging the shelf-life of food products and limiting food waste since it also has a large environmental impact. Contrastingly, another participant argued that the evolution of plastics has less to do with minimizing environmental impacts and more about minimizing costs.

Regardless of definitions, all participants agreed that plastic products and packaging continue to be produced in excessive amounts, which provides consumers with a certain level of convenience and functionality but has often overlooked environmental impacts. One participant called the widespread use of plastics “unnecessary” as well as “incredibly damaging.” Due to this, many participants felt that we have created an unsustainable system moving forward since there are limited markets for plastics at the end of their life cycles and inadequate waste systems to capture them. One participant felt that “collectively, it doesn’t matter whether you’re industry or the general public or a policy-maker...you can pretty much rally around the fact that we just have too much of it” in our system, marketplace, disposal, recycling programs, parks, oceans and freshwater sources. Participants also acknowledged that the system has become distorted by the externalization of environmental costs since companies are not paying for the end of life management of the plastics and the products they sell. This has created a “collective recognition” that there needs to be change and because of this, plastics have really been “a lightning rod to the issues of waste management.”

Although there are some single-use plastics that are a novel way to do things, one participant felt that there is an excuse being perpetuated that there is no alternative but “it’s usually there’s not an affordable alternative that’s easy for [corporations] to use.” For example, a minority of participants supported glass in certain applications while other participants were sceptical as it is difficult to implement at a large-scale since it is “very heavy and very low value.” Other participants chose to focus on the continued “responsible use” of plastics, which involves reduction and reuse but not eliminating plastics “at the expense of food, hygiene and safety” since food waste would likely increase. Part of the “responsible use” of plastics is promoting sustainable product cycles so plastics are re-integrated back into corporate cycles to limit waste.

Participants also brought up product life-cycle analyses and how plastics will still win out over other products, such as reusable metal containers since they are lightweight, versatile and

inexpensive to transport. Due to these properties, plastics are an efficient material for products like bottled water in terms of stacking and maintaining structural integrity during shipping. Other participants were more concerned that waste has predominantly been perceived as a “weight-based issue” since there can be unintended environmental impacts associated with relying on the lightest material available. Due to this, material use needs to be re-evaluated and targets carefully set so unintended environmental and economic consequences are limited. Moving forward, all participants emphasized the importance of innovation whether it is in developing “better plastics” or reusable options made with alternative materials. Alongside innovation, participants highlighted the importance of consumer awareness regarding the products they are purchasing and disposing of rather than maintaining an out of sight, out of mind mentality. Media attention has been extremely helpful in breaking people out of this mentality and educating consumers about the growing accumulation of waste in marine and freshwater environments.

5.2 Public Sentiment and Issue Saliency

All participants agreed that sentiment regarding plastic pollution and packaging is currently very negative and has hit a “tipping point,” largely due to a growing awareness and media attention on marine plastic pollution and ocean gyres. In the past, people tended to speak broadly about garbage, refuse and litter with a focus on land contamination without distinguishing between different types of materials so this is the first time in the last few decades where there is a “hyper-focus on one particular material.” One participant also emphasized the degree to which the issue has galvanized public attention faster than any other issue including climate change due to the amount of materials in the environment making it a tangible issue for many people. In general, discussions on waste management and plastic pollution have been around longer in Europe due to land constraints and waste management issues but discussions are continuing to evolve in Canada, followed by USA. Many other countries are also starting to express concerns over plastic pollution but are limited in their ability to respond due to a lack policies and investments in waste management systems.

Although participants felt that concern is justified since plastics should not be ending up in our waterways, they acknowledged that there are misconceptions and misinformation when it comes to civil society’s understanding of the issue. For example, participants expressed concern over the degree to which the public can latch onto individual products or negative images, such

as the sea turtle with the straw in its nose, because although these images are “very effective at a very high level to influence consumers,” it is not always a balanced argument. “Sometimes the public gets distracted by a single type of plastics, like a straw or a coffee cup, and there’s the risk that people get really fixated on one type of material” when it is the entire waste system and way we manufacture and consume things that is the problem.

Beyond a narrow focus on the issue, the public may also become confused about the different benefits and problems associated with varying plastic materials. For example, one participant felt that polyethylene terephthalate (PET) can be unfairly targeted, “when it is actually the most recyclable plastic that we have” and commonly used for products like bottled water and soft-drinks. The public may also “vilify packaging as the sole source of the problem” when in reality, plastics in all forms of application should be re-evaluated to help solve the issue of plastic pollution. Another misconception is that all companies are bad when many consider themselves environmental stewards and invest a lot of resources in testing and research that the public may not be aware of.

A few participants also mentioned how the public may not have a comprehensive understanding of where waste is coming from since a majority of marine plastic is coming from ten river systems in the developing world due to practices such as open-ocean dumping of residential waste. One participant said that this “is absolutely wrong and causes problems but the controlled use of products and the controlled disposal has a lot of benefits as well,” which consumers may not have a comprehensive understanding of.

Ultimately, one industry representative felt that “it really gets down to society not knowing the benefits of plastics, some ignoring it because they have agendas, or they are just not educated enough on it and how it benefits their lives” causing them to take plastics for granted. Beyond excessive packaging and the use of plastic straws, some participants also argued that plastics have a valuable role in terms of food protection since they help prevent spoilage and reduce food waste. Therefore, some participants did not feel like the public had a comprehensive understanding of the issue with one participant promoting plastics as an “amazing 21st century material that really your lifestyle, your health is directly related to.”

In contrast, other participants felt that “the public’s visceral reaction and disgust at the impacts of our consumption and our wasteful ways, is pretty accurate... [and] the more people that understand the system, the more they can look at real solutions.” One participant mentioned

how “in the past, there has been a lot of focus on litter and individual responsibility for plastics and avoiding waste and blaming the consumer for making wasteful choices.” Despite this, there has been a positive trend lately of a “person understanding the full scale of this global plastics problem [and] beginning to see that this isn’t an individual choice problem, this is a systemic problem.” From this awareness, more blame is shifting to companies who are profiting off the system and are very proactive in lobbying against environmental regulations. Due to this, a few participants felt that the public’s perception is becoming more accurate.

In general, these responses reflect a range in opinions over the degree to which the public’s understanding of the issue is accurate, but there is an overall consensus that public knowledge and interest is much further along than it has been in the past. Ultimately, participants felt that public concern can be a powerful tool because it can force consumers to look at what they are buying and how they treat and dispose of packaging, as well as influence corporations and government for better practices and regulations. This mentality has made the issue of plastic very topical and is generating pressure on businesses to implement changes.

When asked if the issue will continue to hold the public’s attention, a majority of participants felt that the issue has been growing for a while and even though some people are getting desensitized or overwhelmed, others are getting mobilized. Contrastingly, some participants expressed concerns over momentum since there is no clear alternative material, particularly when trying to prevent food waste and maintain safety and hygiene. Participants also highlighted how there can be discrepancies between what people say about environmental issues and what they do or purchase when it comes down to convenience, quality, taste and cost. Despite this, other participants were very optimistic with the momentum and discussion that has already been achieved. Many people are shifting their perspectives on plastics and “while there’s more looking at zero waste lifestyles and our responsibilities, there’s also a lot more recognition of corporate responsibility” and recognizing that this is a systemic problem.

5.3 Product Development and Corporate Changes

When discussing recent corporate commitments, policies and product development, many participants felt that it was still too early to see significant changes since the issue has only been on the public’s radar for approximately two years. Due to this, one participant felt that stronger economic drivers are still necessary to push companies into action beyond small responses

related to brand awareness. Other participants felt that companies are becoming more innovative due to a growing awareness of plastic pollution and this is helping to promote increased funding and research around product development and pollution. Industry research often involves partnering with NGOs and conducting pilot projects on issues such as plastic pollution on beaches and consumer recycling habits. Due to this, environmental organizations play an important role in supporting corporations and “guarding against false solutions,” which may involve bringing awareness to vague voluntary commitments “that won’t actually have a big impact.”

In terms of changing business models, participants acknowledged that some corporations are making efforts to include more recyclable materials in their products and packaging while working towards close-looped operations to promote plastic diversion. Despite this, one participant felt that large corporations are still not doing enough and that small businesses are the ones making larger changes and “blazing a trail.” For example, there are “zero waste stores where you can buy your products without packaging and small businesses, restaurants and bars that have stopped using disposable cutlery and disposable straws...and small manufacturers that are packaging their products in glass or other refillable containers.” Therefore, participants tended to support the sustainable initiatives of small businesses while more time is still needed to properly assess larger-scale corporate targets and implementation rates.

Beyond the scale of small businesses, other participants brought up projects like Loop which aim to create more of a “sharing-economy type of model” where consumers will be able to buy goods from corporate partners in reusable containers, including laundry detergent, beverages and shampoo. Other businesses are also moving away from plastics by promoting products like paper straws or not providing them at all. While most participants were happy that businesses have been making an effort, one industry representative felt that businesses were just “moving to materials that the public perceives to be better for the environment” when studies have shown that they still have significant environmental impacts.

Many single-use alternatives still have negative environmental impacts in terms of energy consumption and high emissions during development when there are reusable alternatives. For example, a few participants were concerned over products like single-use compostable coffee pods due to a lack of infrastructure to properly manage the waste. One participant acknowledged that “just because you can innovate a product doesn’t mean we have a system that can handle it.”

Other participants were less concerned and felt that this was a standard step where business was always one step ahead of governments due to large research budgets and the ability to quickly implement changes. Another participant mentioned the unintended consequences of limiting plastic grocery bags since many people utilize them a second time for household waste and now have to buy plastic kitchen garbage bags, which are often made out of thicker plastics.

Rather than implementing sustainable initiatives and product changes, a few participants felt that companies are putting more effort into distracting people away from waste issues and the implications of marine plastics. One participant felt that the promotion of the incineration of plastics was a form of distraction since it has its own negative environmental impacts and does not address the root of the problem, which is the excessive generation of unnecessary plastics. Therefore, some corporations are involving themselves in government lobbying to resist change rather than focusing on sustainability and product innovation.

In general, all participants agreed that there are still areas that need improvement including marine litter, using more recycled content in packaging, better infrastructure for material recovery and processing, and more markets for the materials that are collected. Improvement in these areas will involve collaboration with governments and many participants felt that industry would welcome collaborative efforts to reduce, reuse and recycle. Beyond corporations, one participant also emphasized how there is a coalescing of provincial and federal jurisdictions, regardless of political affiliations, surrounding the issue of plastics, which is a promising step towards change.

When discussing whether governments or businesses are moving more quickly on the issue of single-use plastics and plastic pollution, participant responses were divided. One participant felt that plastics are a “big challenge for policymakers” since they are a relatively new issue on the policy landscape and “governments are in a mad scramble and business is moving faster than they are.” In contrast, other participants felt that governments are staying on top of the issue, particularly in Europe where there is a greater understanding of the scope of the issue and the importance of addressing it. Although Canada and the USA may be further behind in regulating single-use plastics, some participants did not feel that industry is far ahead. Ultimately, participants agreed that the issue will have to play out politically since consumers cannot always afford or want to bear additional costs. Therefore, businesses and retailers have a responsibility to make products and packaging as cost-effective as possible.

5.4 Motives Behind Voluntary Corporate Commitments

Out of all of the topics discussed, the motives behind voluntary corporate commitments had the most diverse range of answers with many participants acknowledging that they have seen elements of greenwashing. Responses included environmental concern, stakeholder and consumer pressure, market opportunities and economic incentives. Globally, there are some corporations with a strong appreciation for the environment and interest in sustainability that has been built into company culture, values and practices. Despite this, many corporations are still focused on maximizing profits and appeasing consumers with vague targets and commitments. Overall, when considering whether or not recent plastic commitments will be fulfilled, one participant answered that “some will, some won’t...but that said, when considering the amount of resources, be it money, be it the rejigging of product research, this is serious and there will be changes.” There is momentum behind the issue now due to public concern that will generate some form of change; “the question is how do you respond and...still deliver what consumers want” in terms of convenience for a busy modern lifestyle.

Consumer Pressure and Brand Concern

Many of the participants who have worked with large corporations were sceptical of recent plastic commitments due to long implementation timelines and vague targets. One participant acknowledged this by saying: “a lot of big businesses are making some tentative steps...but I’m sceptical because I think a lot of those steps are done more for media attention and to greenwash a company’s image, more than it is to make long-term and widespread change.” Another participant also emphasized how corporations are attempting to protect and elevate brand reputations by appearing to be active on the issue so they have something to announce to the public.

One industry representative even felt that the shift towards voluntary plastic commitments is harmful for the environment. This participant viewed brands and retailers as “giving up the fight on the environment” by shifting away from plastics because “they know their consumers are going this direction and...they don’t want to swim upstream.” The participant felt that this was unfortunate and called these actions a “planet killer” because “if we’re trying to mitigate climate change, become more sustainable, I believe the use of plastics is a way to conserve, it’s lightweight.” In addition, the participant felt that corporations are attempting to

appease the public to maximize profits, even with the knowledge that it is going to generate more food waste.

Other participants agreed that corporate actions are largely being driven by brand concern and negative media attention surrounding waste and brand audits that are highlighting plastic pollution. One example brought up was the recent launch of Loop, the reusable packaging initiative that is being supported by a variety of large corporations. One participant was sceptical of the project since many of the participating corporations were “previously attacked by Greenpeace for their international record on waste and to deflect negative attention, they are now focusing on this really small activity that will only reach a very small portion of the market.” Therefore, the participant felt that these actions were more of a distraction to get positive public attention without corporations having to make major changes. Ultimately, public concern is generating a response but without consistent regulations, “there is absolutely an element of greenwashing making it very difficult for a consumer to understand what they’re purchasing when it comes to packaging.”

Participants also discussed the conflicting behaviour of some corporations where they may promote an environmentally friendly product, like a plant-based plastic, while lobbying against deposit return schemes that are proven to get back plastic bottles. Therefore, corporations may seem environmentally friendly in one market but utilize aggressive lobbying tactics in another market to defeat or weaken environmental regulations. Corporations may also invest money in research as an attempt to deflect or delay government regulations. Ultimately, corporations have a habit of suggesting voluntary approaches in response to government regulations and try to come up with something “flashy that will distract people.”

Shareholder Pressure

Many participants acknowledged that shareholder pressure may play a role albeit a small one since shareholder concern will largely depend on the strength of consumer concern or arise due to financial losses. Due to this, shareholder pressure will fluctuate more depending on if the issue is the dominant news story for a week or two but when media attention declines, stakeholder pressure will likely subside. Ultimately, “shareholders will not tolerate increased expenditures on investments” since they are driven by profits and it is unlikely that there will be a major deviation from this behaviour in the near future. Therefore, shareholder interest is largely

driven by profits and negative public perceptions threaten this while also opening up market opportunities for innovative products, packaging and materials.

Market Opportunity and Cost-Driven

One participant acknowledged that some companies have a sustainable platform from which they will develop and sell products from but they generally do not have a majority of market share in the industry. Therefore, cost tends to be the biggest driver for companies and the motive behind recent plastic related changes. Although largely driven by cost and market opportunities, one participant emphasized that “corporations did not set out to be villains...most businesses are in a mad scramble to try and figure out what consumers seem to want and sometimes they get it right and many many times they get it wrong.” One participant spoke of a discussion with a CEO where he said “I’m not in the business of selling packaging but I want to minimize those costs for my consumers and minimize the impacts on the environment and the economy.” Therefore, there is a subset of businesses that understand that a majority of plastics come from non-renewable petroleum products and are starting to think about plastics differently for their own sustainability and brand longevity.

Currently, there is international pressure on brands to do better which has created gaps in the market for new products and packaging that have been “completely consumer driven” due to concerns over price and environmental reservations regarding waste. In terms of single-use packaging, it was the recognition that fewer people were eating at home and traditional sized packaging was creating a lot of food waste and limiting convenience away from the home. Due to this, one participant argued that single-serve is not “evil consumerism” but an extension of what people need and are willing to pay for. For example, single-serve coffee pods “responded to a desire for variety, a desire for choice, and certainly a desire for convenience.” Despite this, there are companies that “have very intentionally promoted products as recyclable even after being told repeatedly that their product is not recyclable in the system.” Due to this, one participant felt that companies may “deliberately mislead people” when they devote space on packaging to recycling information rather than acknowledging that it may not be recyclable in certain jurisdictions.

When setting future targets and committing to sustainable initiatives, participants also wondered “why companies need a decade to make a change” since “setting targets far off really

has very minimal impact and we can't really wait that long." Unfortunately, "the thing with corporate commitments is that they get headlines but there is no legal obligation for them to meet that target" unlike regulations where companies must meet a target or face a fine. Without regulations, participants felt that companies are not as motivated to be innovative and do not want to be undercut by other companies in the marketplace.

Waste From the Developing World

When discussing the motives behind corporate environmental commitments, one of the topics that consistently came up was that the majority of marine plastic pollution is coming from ten river systems located in the developing world, including countries like China and Indonesia. Due to this, some participants, including those representing industry stakeholders, felt that it was unfair that countries like Canada and the US are being scrutinized since they have "very sophisticated waste management systems" in place. Other participants felt that blaming the developing world for poor waste management systems is a "form of deflection" and is like blaming consumers; it does not address the root of the problem. Industry needs to be held accountable for poor corporate practices and for the products they put into the marketplace. One participant felt that some of the companies perpetuating this argument are the same ones that "would argue against labour regulations, waste regulations and energy regulations" since the market is set up in a way that costs are externalized and companies can get away with not worrying about the end of life of their products. Ultimately, it's corporations' products and they are the ones profiting.

In defense of industry, one participant brought up the Alliance to Ban Plastic Waste, which involves industry stakeholders investing \$1 billion to help with the development of waste infrastructure and systems in the developing world. This participant felt that this voluntary step by industry was a great form of action while other participants claimed that it is "another tactic to distract people from the real responsibilities" of corporations in terms of handling resources and waste. Ultimately, one participant highlighted that actions like this are "a tiny fraction of their sales" but receive positive media and consumer attention when "it's a distraction from the real solution which is, it's their product and it's their packaging, then it's their garbage."

Overall, there was a dichotomy between participants in terms of who is responsible for plastic pollution with some participants choosing to spread blame evenly among the developing world, industry and consumers. This can be seen in one participant's statement that "the world,

the plastics industry and brand owners, the P&Gs, Unilevers, Dows, Imperial Oils, you, me and consumers have to manage resources a lot better.” Contrastingly, other participants felt that this was a form of deflection and specifically called out industry and corporations for poor waste and resource management.

5.5 Government Intervention Required

Overall, talk of stronger government regulations and enforcement was welcomed by all stakeholders, regardless of their backgrounds, instead of relying on corporate self-governance and voluntary commitments. One participant felt that we have already tried having voluntary systems in place with no success since “companies have had years to come up with a solution to [plastics] and they haven’t done it and only now when people are getting outraged they’re actually acting on it.” Meanwhile, government regulations have been lacking in terms of both implementation and enforcement prompting one participant to say: “when you’re informed well, you create good policy and I quite frankly have not been seeing a lot of good policy,” highlighting that there is still more work to be done by governments across Canada.

Beyond voluntary corporate commitments, participants felt that there are numerous ways in which governments can promote plastic diversion including improving consumer awareness, implementing extended producer responsibility legislation, creating market incentives and utilizing plastic bans. To achieve systemic change, participants felt that governments must set some sort of “regulatory floor” coming from a basis of scientific evidence with clear targets, standards and definitions. This way, “outcomes-based regulations and legislation” would provide a level-playing field for corporations and allow them to be innovative, leverage creativity, justify investments to shareholders and utilize markets to come up with solutions within the framework of government legislation. This will also help drive cost-effectiveness in terms of corporate practices, infrastructure and packaging while dealing with externalities associated with waste.

Without backdrop legislation, corporations have expressed concern that changing practices and investing in innovative research will be a financial burden and put them at a competitive disadvantage relative to other corporations maintaining status-quo practices. This sentiment is not limited to discussions around single-use plastics and is a common industry argument when tackling environmental issues. One participant recalled facing these concerns in the past during the development of the Ontario blue-box program. Some companies willingly

stepped forward to assist in program funding while others resisted due to concerns over cost and being put at a competitive disadvantage. Overall, there are some responsible corporations who push for government involvement when faced with issues like plastic pollution and other corporations that prefer to remain in the background and need to be pushed into action via regulatory approaches. Ultimately, government targets and regulations are needed to stem the tide of plastic pollution and will “inform what corporations or societies should do in terms of the materials they use.”

Extended Producer Responsibility (EPR)

In terms of regulatory solutions, the concept of extended producer responsibility came up consistently during the interview process. Regardless of whether participants represented industry, governments or environmental organizations, participants acknowledged the value in industry “managing packaging and products as well as collection, processing and markets, and paying for it.” Therefore, industry would be responsible, both “physically and financially,” for the full lifespan of the product or packaging and would have a vested interest in how it is disposed. This would help support the transition towards a circular economy rather than the traditional linear “take-make-waste” economy.

The EPR system in British Columbia has already been successful in expanding the range of materials accepted in blue bins while other regions are being forced to cut down. Unfortunately, BC is a small part of the global market so until more provinces transition to EPR, many corporations would rather pay the extra cost to do business in BC rather than modify packaging. This emphasizes the importance of harmonizing waste systems across the country so there is a stronger incentive for corporations to make changes. This would help drive innovation and force industry to come up with solutions based on the targets and objectives set by provincial governments. Participants also praised EPR for its ability to incentivize better designs while driving “more infrastructure, in terms of getting back post-consumer products and education on responsible use of all materials, not just plastics.”

Despite the benefits, a few participants emphasized the importance of formulating EPR legislation so it is focused on outcomes, has clear definitions and high diversion targets as well as proper oversight and enforcement. One industry representative highlighted the importance of selecting targets carefully because that will dictate how industry responds and innovates to come

up with solutions. Another participant emphasized this by saying that “the goal right now is to divert x tons of your material from landfill” but if the target becomes about reducing emissions and carbon footprints then “they’re going to go to the lightest weight, lowest intensive material.” Other than plastics, “there are no other materials that are going to address that because we still need to eat and we still need to deliver the products in a safe way.” Overall, EPR legislation must be formulated, implemented and enforced carefully but all-in-all it is just one method to help manage waste and is not a “silver bullet” to solving issues like plastic pollution. Therefore, other regulatory solutions, material procurement and market incentives must be considered.

Government Procurement and Market Incentives

When talking about EPR, a few participants also brought up the power of governments from a procurement perspective since they are big buyers of goods, services and materials. Due to this, they have tremendous purchasing power beyond regulatory approaches, which can help “make significant shifts in local markets” while generating a demand for certain materials. One participant also brought up the example of the Federal Government of Canada and its recent commitment to reduce certain types of single-use plastics across its operations. This has a large impact on relationships with vendors and suppliers and can incentive positive change. One participant also spoke of the procurement power of municipalities, like the City of Toronto, since they can be massive buyers of goods and services, which can incentivize change in the market.

Overall, procurement was highlighted as an important area for governments to explore since the current waste management system is limited because there is “no value in the products, the material, the packaging, that’s being produced and therefore it’s just leaking into the environment.” In many communities across Canada, recycling is piling up and ultimately being sent to landfills since there is no market demand for materials. For example, from August 2017 to January 2019, the value of film plastic, commonly used in plastic bags, dropped by 53% in Ontario (Jarvis & Robinson, 2019). Therefore, it is important to create the right market incentives so materials have value and will end up being collected and reused. Deposit-return systems are also known to be successful in terms of generating an incentive for the collection of materials so they are diverted away from landfills and the environment. Ultimately, market incentives can be powerful for encouraging the collection of materials in combination with comprehensive government regulations.

Single-Use Plastic Bans

The topic of single-use plastic bans also came up consistently during the interview process with some participants in favour of certain types of bans while others expressed concerns over lack of enforcement, unintended consequences and barriers to business models. One participant spoke about bottled water bans and how they can drive consumers to purchase other disposable beverages, such as soft drinks, which have heavier packaging, require more water to be produced and have fewer health benefits. Therefore, certain types of bans may not actually reduce the amount of plastic that is being disposed of. Two participants also felt that single-use plastic bans introduce economic barriers to business models, particularly if packaging and product requirements vary across jurisdictions. In this case, many corporations may approach governments and say they would prefer a provincial ban to allow for consistent business practices. Other participants felt that “there is rationale for governments to step in and ban materials”, especially if materials are toxic or have low recycling rates. But along with this, policymakers must consider why the product is problematic, if there are replacements or if the material could be dealt with through more of an outcomes-based model.

One participant emphasized that some single-use plastic bans have been successful, including bans in the EU and City of Vancouver, where bans are being phased in for certain types of plastic products and packaging. One participant praised these bans since they are being gradually phased in which gives industry a chance to show whether they are serious or not in terms of reducing plastic pollution and becoming more sustainable. The participant felt that many companies will make promises and set far off targets but with phased in bans, there are predetermined time limits and consequences if they are not met. Other types of legislation and tools can also be beneficial including only providing plastic straws and cutlery upon request or requiring reusable dishes for meals eaten in a restaurant. Overall, a majority of participants agreed that certain types of plastic bans can be beneficial but they are only one tool and need to be enforced to have credibility.

Types of Diversion and Waste Infrastructure

Beyond EPR and plastic bans, participants discussed different types of diversion and waste management infrastructure along with their benefits and drawbacks. Most participants supported mechanical recycling since it keeps waste out of landfills and provides materials with

multiple lives relative to converting plastics into fuel, also known as waste-to-energy, since it only gives materials one more life. Due to this, some participants, particularly those from the non-profit ENGO sector, felt that waste-to-energy is more of a distraction away from better solutions and innovative recycling technologies. In comparison, one industry participant emphasized the importance of using “all of the options in the toolbox” in order to combat plastic pollution and get to zero waste, including incineration. This participant felt that incineration is a “fairly clean source compared to other energy sources” since it reduces dependence on landfills and associated greenhouse gas emissions, such as methane.

Overall, this highlights the varying perspectives in terms of how waste should be disposed of but all participants agreed that more plastic diversion is necessary. Some of this will come from “21st century solutions including chemically or molecularly recycling dirtier plastics that cannot be managed by traditional mechanical recycling.” Despite these promising innovations, a few participants mentioned that there are barriers to implementing these technologies since governments do not formally recognize them as methods of diversion or recycling due to outdated policies.

Better Enforcement of Existing and Future Regulations

Many participants also raised concerns over the lack of enforcement of provincial regulations. With regards to Ontario waste management regulations, one participant called the government “spineless” for failing to enforce regulations or fine those failing to comply. Due to this, many participants felt that “if existing rules and policies were enforced, that would be a huge step forward,” regardless of future legislation and initiatives. Current limitations include a failure to enforce municipal plastic bans and corporations choosing not to comply with regulations since they do not believe the government will enforce them. One participant compared waste management initiatives to climate change and the Paris Accord because “they never meet their targets but there are no ramifications if they don’t.” This can create even more confusion for the public since they think a ban or regulation has been enforced so they step back from the issue when nothing has really changed. In part, lack of government enforcement is influenced by industry lobbying interests so it is important the public continue to be engaged and aware of what is going on.

Municipal Involvement

Beyond the role of the provincial government, a majority of participants felt there was also a role for municipalities to support businesses, enforce littering by-laws, educate consumers and gather and report data regarding the state of the waste management system. Many small to mid-sized businesses lack capital and knowledge to tackle waste management issues relative to large corporations so this could be an area for municipalities to provide assistance. One participant emphasized that municipalities are better at achieving outcomes due to their economies of scale and this knowledge would greatly benefit many businesses.

When discussing municipal single-use plastic bans, participant opinions were more divided. One participant expressed concern over how varying municipal bylaws can create a patchwork of policies and introduce economic barriers for businesses trying to operate across multiple jurisdictions. Due to this, the participant felt that regulatory intervention should be left to “the purview of the Ministry of the Environment of each province because they manage the environment, economy, jobs and investments” while municipalities do not have these big issues to manage. The provincial government also has more regulatory power when dealing with corporations since a majority of decisions are made at corporate headquarters overseas. Other participants felt that this sentiment was “misguided” since municipalities are responding to resident concerns that they feel are not getting heard even if they are limited by their lack of broad-based tools. Therefore, most participants saw value in municipal involvement since they “play a really important role around auditing, capturing and reporting data so that we understand where potential problems are within the system.”

Standardized Labelling and Content Guidelines

Governments could also become more involved in standardizing labelling and content guidelines for plastic products and packaging. Participants emphasized that standardized labelling would allow for more consistency in terms of what can be recycled and what bins materials go in across municipalities and provinces. This would help reduce consumer confusion while improving recycling rates. One participant also discussed how it would be helpful if companies were required to provide information on how to dispose of their products at the point of sale to help clear up confusion. Despite the benefits of standardized labelling, many

participants acknowledged that formulation and implementation becomes complicated and fragmented in terms of provincial and federal regulatory jurisdictions.

Participants also felt that standards could be developed for industry, which include finding alternatives for certain types of plastics that are more difficult to process or cannot be recycled. Taxation could be utilized to create the right market dynamics to discourage the use of virgin materials and the wasteful disposal of resources. Beyond this, the government can create content requirements for packaging regarding what percentage of it needs to be from recycled or non-virgin materials as well as “ban[ning] problematic materials, like they have done with microplastics.” Another participant urged the government to look beyond plastics since “the bluebox is a collection of materials that work best together so let’s make sure we take a systems-approach to get to zero waste across the breadth of all packaging and materials.” Therefore, sustainable material management was supported beyond working towards a circular economy.

Stakeholder Collaboration and Consumer Education

Regardless of how single-use plastics and plastic pollution are approached, participants emphasized the importance of stakeholder collaboration in order to generate good discussions and policies. Due to this, participants felt that governments have the responsibility of “bringing people together to determine what are the issues that matter most and that need to be solved.” Regardless of whatever regulations or policies come out, they “need to have input of the people who have to deliver products and packaging.” Without this, there may be unintended environmental and economic consequences, lack of communication between stakeholders and additional industry resistance. Collaboration can also lead to creativity and better solutions that would not have been possible without getting a range of interests and experience around the table. Participants also discussed how governments should facilitate the creation of educational materials to improve consumer awareness about plastics, alternative materials and their disposal. This would be a way to spread scientific information to clear up misconceptions while also encouraging the diversion of plastic away from landfills.

5.6 Conclusion

In conclusion, the results of the interviews support that plastics do provide a certain level of functionality and convenience but continue to be produced in excessive amounts and have often overlooked environmental impacts. It is important to acknowledge that there were some

divisions in answers between industry and non-industry stakeholders including who is to blame for the current state of plastic pollution. Industry stakeholders tended to shift blame onto the developing world for a lack of waste infrastructure and waste management systems since a majority of waste is coming from ten river systems whereas Canadian systems are more advanced with only small amounts of waste leaking into the environment. Contrastingly, non-industry stakeholders emphasized how corporations continue to mass produce and sell plastics so responsibility should fall to them rather than shifting blame onto consumers or the developed world for lack of waste infrastructure.

These opinions influenced stakeholder responses when discussing whether or not civil society has a good understanding of single-use plastics and plastic pollution. Industry was more likely to argue that consumers did not understand that waste was coming from the ten river systems while non-industry stakeholders felt that the public was grasping the severity of the problem and was correct in blaming industry and large transnational corporations for excessive plastic production. There was also some disagreement over the effectiveness of single-use plastic bans with non-industry stakeholders seeing more value in them while industry representatives were more likely to raise concerns over how they can introduce economic barriers to business models. Beyond this, all stakeholders were in favour of extended producer responsibility to help work towards a more circular economy. It is uncommon to have agreement from both industry and non-industry stakeholders when developing potential solutions to environmental issues, so stakeholders should capitalize on this and encourage collaboration and discussion.

In terms of what could be motivating corporations to make voluntary public commitments, a variety of factors were brought up including environmental concern, stakeholder and consumer pressure, market opportunities and economic incentives. In general, participants felt that maximizing profits and protecting brand reputations tended to be the most powerful at incentivizing change. Even though a majority of participants were sceptical of voluntary plastic commitments and their implementation, many felt that there is now enough momentum, research and consumer awareness behind the issue to generate change at a larger scale.

Overall, recurring interview themes and key take-aways include that:

- The public's understanding of the issue is fairly accurate but people should avoid getting fixated on products like straws and continue to pressure corporations and governments for sustainable change and regulations.

- Waste infrastructure and management in the developing world is lacking and could use investments and support, but this will not solve the root of the problem, which is excessive plastic production.
- Voluntary commitments are not effective when dealing with plastic pollution and excessive production so stronger regulatory regimes are needed to rein in the power of large corporations and to create more effective waste management systems and markets to incentivize material procurement.
- Since there is widespread support for EPR, this could be an important area to rally behind to encourage discussion and collaboration to work towards a more circular economy.
- EPR will help create new markets and incentives around the procurement and re-use of materials, which are currently lacking.
- Single-use bans have value for certain products and materials but preferably, should be implemented at a provincial or federal level to avoid a patchwork of municipal by-laws.
- Regardless of which tools or strategies are chosen, the government must do a better job at enforcing regulations in order to maintain credibility, protect the environment and hold industry accountable for the products they manufacture and sell.

6. CONCLUSION

Ultimately, more action is required to clean-up the plastics currently in our oceans as well as reducing the “approximately eight million metric tons of plastics [that] enter oceans annually” (Smith et al., 2018). Plastics may be versatile for manufacturing, but they also have significant environmental, human health and economic impacts if not disposed of properly. Environmental impacts include wildlife mortality, spread of invasive species, physical and biological alteration to the seafloor, and changes in species behaviour and population dynamics (Gregory, 2009; Barnes et al., 2009). These impacts accumulate and magnify throughout the food chain as plastic fragments can act as vectors for contaminants and heavy metals, which can leach into bodies upon ingestion (Wright & Kelly, 2017).

Although the full impacts of plastics on human health are still not fully understood, consumption can contribute to immune system damage, inflammation of tissue, cell damage and the spread of bacteria (Smith et al., 2018). Plastic pollution also has a significant economic impact on a variety of industries including commercial fishing, aquaculture and tourism among

many others. Hundreds of millions of dollars are spent annually on cleaning up plastic pollution with the global environmental damage to marine ecosystems estimated at US\$13 billion (UNEP, 2014). Therefore, this is a billion dollar problem without even considering the unquantifiable loss of marine and coastal ecosystem health, which has cultural and aesthetic importance to many coastal communities.

Thankfully, the sentiment surrounding plastic pollution and packaging has hit a tipping point, largely due to negative media attention and a growing public awareness of plastic pollution and ocean gyres. Many people are starting to believe that the current use of plastics is excessive, unnecessary and ultimately unsustainable since there are limited markets for recycled materials and inadequate waste systems in many parts of the world to effectively capture waste. The current system is distorted by the externalization of environmental costs since companies, including Nestlé, Keurig, and Starbucks are not paying for the end of life management of the plastics and products they sell. Meanwhile, many industry representatives are trying to argue that civil society is failing to recognize the benefits of plastics since they help to prevent food spoilage and waste, provide convenience, and ensure products are safe and hygienic.

Although corporations promote resource efficiency and the consideration of all environmental, economic, and social consequences, there are priorities when it comes down to maximizing profits and ensuring products are delivered in a safe and hygienic manner. Due to its lightweight, versatile and relatively inexpensive nature, many corporations lack incentive to look beyond the use of plastics in products and packaging. When discussing motivations behind corporate single-use plastic commitments, interview participants had a range of responses including environmental concern, shareholder and consumer pressure, market opportunities and economic incentives. Regardless of these potential motivations, there is a large degree of scepticism in terms of whether corporations will implement their recent plastics commitments due to long implementation timelines and vague targets. These vague targets and timelines can be seen in the corporate case studies and highlight how greenwashing behaviours are still rampant in order to make corporations look more active on an issue than they usually are.

As public concern and media attention continues to grow, the number of corporations making voluntary commitments will likely increase with targets surrounding reduction, recycling, reuse and closed-loop operations. Many of these commitments, like Starbucks' elimination of straws, are done more for short-term media attention to appease the public rather

than having to make substantial changes to business practices. Appeasing the public also helps corporations maximize profits but some single-use changes may be false solutions as they can have their own negative environmental consequences including increased food waste, energy consumption, emissions and difficult disposal when there are reusable alternatives. Therefore, the case studies and stakeholder interviews support that many corporations are attempting to protect and elevate brand reputations by joining the discussion surrounding single-use plastics and plastic pollution, even if actions are minimal.

Shareholder or stakeholder pressure can also be a motivator for change but this will largely depend on the strength of consumer concern or arise due to financial losses. Shareholders may also recognize that global pressure on brands is creating market opportunities for product and packaging innovation due to concerns over price and excessive waste. Some corporations are also starting to acknowledge that a majority of plastics are made out of non-renewable petroleum products and are looking to make changes for their own sustainability and brand longevity. Walmart is a good example of a company that recognizes that brand longevity is connected to sustainability and is supporting a range of CER initiatives including consumer education, greening supply chains and reducing packaging.

In many cases, cost is the biggest driver behind corporate decisions so it is imperative to develop cost-effective alternatives for many single-use plastics. Alternatively, there are some corporations that have noticed this gap in the market, like Keurig, and have falsely promoted products as recyclable or sustainable even when governments have told them that existing waste management streams cannot handle them. Therefore, there is a subset of corporations that are taking advantage of market demand for sustainable, compostable or recyclable products without ensuring that a system is in place to properly handle products and packaging. Many of the interview participants admitted that they have witnessed behaviour like this firsthand and that government intervention is needed.

Beyond this, a few participants felt that companies are putting more effort into distracting people away from waste issues and the implications of marine plastics rather than implementing sustainable initiatives and product changes. One participant felt that the promotion of the incineration of plastics was a form of distraction since it has its own environmental implications and does not address the root of the problem, which is the excessive generation of unnecessary plastics. Corporations may also engage in conflicting behaviours such as promoting an

environmentally friendly product in one market while lobbying against environmental regulations in another. Investments in innovative research may also be used as an attempt to deflect or delay government regulations. Therefore, corporations have a habit of suggesting voluntary approaches in response to government regulations and try to come up with something “flashy that will distract people.”

Industry may try to argue that civil society does not have a comprehensive understanding of the issue since a majority of the waste is coming from ten river systems located in the developing world, including countries like Indonesia and China. Due to this, some industry stakeholders are trying to deflect blame onto the developing world for poor waste management systems rather than acknowledging excessive plastic production and a system where waste from the developed world is offloaded on developing countries. This tactic is also evident in the Alliance to End Plastic Waste case study where corporations are choosing to focus on recycling infrastructure and systems in the developing world rather than reducing plastic production. Many feel that this stance is a form of deflection and will not address the root of the problem since costs are externalized and corporations can get away with not worrying about the end of life of their products. Overall, where to place blame for the current state of plastic pollution and whether or not improving recycling will be enough to fix the problem, were two major points of division among interview participants.

Regardless of motivations and personal opinions, it is rare to get such a hyper-focus on a single material and plastic pollution has really galvanized public attention quickly, particularly in comparison to other environmental issues such as climate change. In the past, there tended to be a focus on individual responsibility and blaming consumers for waste but civil society is beginning to understand the global scale of plastic pollution and how it is a systemic problem. From this awareness, more blame is shifting to companies who are profiting off the system and attempting to lobby against environmental regulations. Although some people may be getting desensitized or overwhelmed by all of the negative media coverage, others are getting mobilized. There has already been significant discussion around zero waste lifestyles and the need for systemic change so it is likely that plastics will remain salient for civil society, governments and corporations. A high level of public attention helps create a policy window for government to become more involved and a common solution that arose from analyzing the case studies and

interviewing stakeholders was that extended producer responsibility is a key place to start to ensure corporations are held accountable for the full life cycle of products and packaging.

7. RECOMMENDATIONS

Ultimately, plastics are a relatively new issue on the Canadian policy landscape but everyone who participated in the interview process was in favour of governments taking a stronger regulatory stance on single-use plastics and packaging. Many participants felt that we have already tried a system of self-governance and voluntary initiatives which has led us to where we are today in terms of plastic pollution and a system built around excessive production and corporate profit. This sentiment is echoed by many experts within the environmental field and can be seen in the following quote by Dauvergne (2018):

...trusting [corporations] to lead sustainability efforts is like trusting arsonists to be our firefighters. Here and there, they are extinguishing a fire or two, at times even relishing the task. But, compelled by their structure and purpose to pursue profits and growth at any cost, at every opportunity they are also setting new fires, all the while gesturing excitedly at areas doused in CSR to distract from the flames rising all around them (pg. 14).

Although corporate responsibility is important and has its place for improving business practices, both environmentally and socially, governments and civil societies need to do a better job at reining in the power of big business to prevent further environmental degradation (Dauvergne, 2018). In order to reduce single-use plastics in Canada and deal with plastic pollution, possible methods include: improving consumer awareness to promote plastic diversion, implementing extended producer responsibility legislation, utilizing single-use plastics bans, and creating market incentives to support material procurement and markets for plastics. Regardless of what regulatory approaches are taken, it is crucial that they are formulated and enforced in a comprehensive manner to ensure credibility and avoid unintended consequences and confusion.

Federal Government

PROBLEM – Labelling on products and packaging is often inconsistent and misleading

Within Canada, there are many public misconceptions when it comes to waste management, plastic pollution and corporate behaviour, which are being perpetuated by

inconsistent and misleading labelling practices. Many manufacturers are vaguely labelling products and packaging so it is not clear to consumers that a certain material may not be recyclable, compostable or biodegradable in their jurisdiction or that it requires certain processing or infrastructure that may not be readily available. This can contribute to waste stream contamination costing municipalities millions of dollars in extra processing and loss of valuable materials to landfill. In addition, there are varying definitions for terms like “compostable” and “biodegradable” contributing to consumer confusion. For example, some compostable materials require industrial composting with long durations at specific temperatures and moisture levels while many consumers associate composting with simple backyard systems.

RECOMMENDATION – Develop standardized labelling requirements to promote transparency and reduce consumer confusion

The Government of Canada should continue to develop standardized labelling requirements for products and packaging to reduce confusion around which materials are recyclable, compostable, biodegradable or ready for landfill. Since there is variation among provincial waste management systems, the Government of Canada will have to work with provincial governments to develop standardized labelling. This may include requirements for more specific and transparent labels in terms of what must be done before a product is disposed of (e.g., taken apart and/or cleaned) or what processes occur after collection (e.g., how long it takes to be broken down, whether it requires industrial-level temperatures, etc.). This could be as simple as adding a sentence onto the back of packaging or adopting more transparent labelling practices, such as Walmart’s How2Recycle labelling. Alternatively, regulations could require brands to display this information at the point of sale. This will help inform consumers when purchasing products while increasing recycling rates and reducing waste stream contamination.

PROBLEM – Corporations are not responsible for the full lifespan of the plastics they manufacture and sell so they are less concerned with material recovery and waste stream contamination

Currently, corporations are not responsible for the full lifespan of the plastics they manufacture and sell so the logistics and costs around material recovery and reuse are not a priority. One of the key factors that participants felt is limiting corporate innovation is the fear that changing practices will be a financial burden and put corporations at a competitive

disadvantage relative to other others maintaining status-quo practices. To achieve larger systemic change, participants felt that governments must set some sort of regulatory floor or backdrop legislation coming from a basis of scientific evidence rather than relying on voluntary corporate actions and innovation. Without a level playing field, corporate greenwashing will continue to exist preventing much needed “systemic and transformative change” (Dauvergne, 2018, pg. 18).

RECOMMENDATION – Develop a full EPR program at the federal-level or support provinces in their development/harmonization of EPR programs

Ideally, the Government of Canada should develop EPR legislation to shift the physical and financial responsibility of waste management back onto the corporations that produce and sell plastics. If enforced effectively, outcomes-based regulations like EPR will provide a level-playing field for corporations and allow them to be innovative, leverage creativity and utilize markets to develop solutions within the framework of government legislation. This will help drive cost-effectiveness and deal with the externalities associated with waste.

Although EPR at the federal-level would be ideal for harmonizing regulations across the country, provincial governments are further ahead in researching and formulating EPR legislation so it will likely continue to play out at the provincial-level. Despite this, Prime Minister Trudeau did acknowledge the importance of producer responsibility in a recent announcement but with the upcoming federal election, it is unlikely that there will be much regulatory movement in this area. If EPR is not implemented and enforced at the federal-level, the Government of Canada should support provinces in their formulation, implementation and enforcement of EPR legislation in order to work towards a circular economy rather than a linear take-make-dispose approach. Please see the following section for more information on how to develop comprehensive EPR programs at the provincial level.

PROBLEM – Recycled materials are accumulating at waste disposal sites due to limited market demand

Within the current Canadian market, recycled plastics have little or no value since there is a limited demand for materials. In the past, much of this waste was shipped to foreign markets, including China where it was repurposed into products and packaging but now that China has closed its borders to plastic waste, recycled materials are piling up at waste disposal sites. This highlights the importance of developing incentives for material recovery and reuse to work

towards a circular economy. EPR will help create value and demand but there are also other ways governments can incentive market shifts.

RECOMMENDATION – Develop recycled content requirements, tax the use of virgin materials, and utilize the government’s procurement power to support sustainability across government operations

In addition to EPR regulations, interview participants felt that industry standards should be developed, including content requirements to incentive the use of recycled materials in products and packaging rather than relying on virgin materials. This will increase the demand and value of recycled materials helping to promote the correct disposal, procurement and reuse of waste. Sustainable behaviours and content requirements can also be incentivized through the use of taxes by making virgin materials more expensive to use. Beyond this, the federal government should use its extensive procurement power to lead by example and support the use of sustainable products and packaging throughout government operations. Strategies like these will help promote material procurement and market demand at a larger scale while increasing public awareness.

PROBLEM – Many plastics continue to be produced that are difficult to recycle or cannot be recycled, even though there are better alternatives

Many corporations and industry groups are not motivated to develop alternative products and packaging since plastics are versatile, durable and relatively inexpensive. This has contributed to the use of plastics that are difficult to recycle or cannot be recycled, which ultimately contaminates waste streams and end up in landfills or leak into the environment. In the past, the Government of Canada has found it beneficial to ban certain materials and products, including microbeads, to force corporations to innovate and develop alternatives.

RECOMMENDATION – Implement and enforce a single-use plastics ban for certain materials that are difficult to recycle or cannot be recycled

The Government of Canada should implement and effectively enforce a single-use plastics ban for products and packaging that are difficult to recycle or cannot be recycled. Banned materials should be determined in consultation with provincial and municipal governments as well as industry and NGO stakeholders. Many jurisdictions in Europe are already implementing plastic bans and can act as a source of information when developing

Canadian legislation. Unlike voluntary commitments with vague targets, bans can be phased-in and have predetermined targets and consequences for lack of compliance. This will remain an area of interest for many people due to Prime Minister Trudeau's recent announcement that the federal government plans to implement a single-use plastics ban as soon as 2021 if Prime Minister Trudeau is re-elected. At this time, it is still unclear which products and materials would be included and what steps would be taken to implement and enforce a ban.

Provincial Governments

PROBLEM – *Corporations are not responsible for the full lifespan of the plastics they manufacture and sell so they are less concerned with material recovery and waste stream contamination*

As mentioned in the previous section, corporations are not currently responsible for the full lifespan of the products and packaging they manufacture and sell. Meanwhile, waste systems continue to be plagued by waste stream contamination, high operating costs, and the accumulation of materials with little or no value due to limited market demand. Many municipalities across various provinces are struggling to operate waste management programs and facilities under these conditions.

RECOMMENDATION – *Implement full EPR programs, harmonize the list of accepted materials for blue-box programs across jurisdictions, develop clear and consistent definitions for terms like diversion, and avoid developing a system that is heavily reliant on waste-to-energy*

Moving forward, EPR legislation will be crucial to shift both the physical and financial responsibility of waste management back onto corporations. Currently, many provincial governments are looking into EPR legislation so at this stage, it is more likely that EPR programs will be implemented at the provincial-level. With EPR, corporations will be responsible for the full lifespan of the products and packaging they produce so they will have a vested interest in how they are disposed and utilized. This will help drive innovation related to products, packaging and waste infrastructure while forcing industry to come up with solutions based on the targets and objectives set by governments. Outcomes-based regulations and

legislation like this will help create a level playing field for businesses while dealing with externalities associated with wasting resources.

Despite these benefits, provincial governments should be careful when designing EPR programs and carefully consider what will be classified as diversion, particularly when trying to transition towards a circular economy. Many industry stakeholders are trying to argue that waste-to-energy is an important solution to manage waste but it only provides materials with one additional use rather than multiple uses via recycling, repurposing or repairing materials, products and packaging. Waste-to-energy also has negative impacts on the environment and human health as pollutants can contaminate air, water and soil. Due to this, waste-to-energy should not be used as an easy out for waste management; rather, governments should encourage investments in innovative research to develop and improve other forms of diversion, including recycling and composting. Provinces should also ensure that waste management systems and blue-box programs are harmonized across jurisdictions when implementing EPR, including a standard list of accepted materials that can be adapted as systems, materials and technologies change over time. Ultimately, standardization and harmonization will help reduce consumer confusion and waste stream contamination.

PROBLEM – As EPR programs are developed for plastics, the market could be flooded with biodegradable and compostable plastics, which lack industry standards and could contribute to waste stream contamination

Regulations and EPR legislation have to be formulated carefully to avoid unintended consequences as corporations innovate material, product and packaging alternatives. For example, some municipalities are concerned that EPR legislation will lead to the rapid development and adoption of biodegradable and compostable products and packaging. Many municipalities do not have adequate waste facilities to break down a wide array of compostable and biodegradable materials so there would be an increased risk of waste stream contamination. Municipalities would then be responsible for the management of these materials and related expenses if EPR legislation only included traditional plastics, particularly since many compostables would end up in green bins. Some corporations may even choose to invest heavily in compostable innovation as a way to appear environmentally active on the issue while also avoiding costs associated with EPR regulations.

RECOMMENDATION – Develop industry standards for biodegradable and compostable products and packaging

Provincial governments need to develop industry standards for biodegradable and compostable packaging and products alongside EPR legislation to limit unintended consequences from plastic-related regulations. In order to develop industry standards, governments should form technical working groups with a range of stakeholders to encourage collaboration and creativity. Currently, the Government of Ontario is developing EPR legislation for plastics so they are in a position to inform and influence other provinces while working towards a circular economy on a national and bi-national scale. Therefore, this should be kept in mind when developing regulations for traditional, biodegradable and compostable plastics to promote the harmonization of regulations and waste management systems rather than having province-specific approaches.

PROBLEM – Policies and solutions are often developed within corporate and government silos rather than collaborating and sharing information

Since waste is largely managed and regulated at the provincial level, it is important for provinces to formulate, implement and enforce a stronger regulatory regime to limit waste stream contamination, leakage into the environment and corporate greenwashing behaviours. When it comes to environmental issues, a lot of decisions are made within corporate and government silos rather than collaborating and sharing information. Silos make it difficult to develop new and innovative approaches that encompass a range of social, economic and environmental factors since a single group may prioritize one over the other.

RECOMMENDATION – Engage stakeholders in a meaningful and transparent way to promote communication, collaboration, data sharing and innovation

When formulating or reviewing legislation, provincial governments should engage with various stakeholders by forming issue-specific working groups as well as hosting workshops and conferences to ensure that discussions and policies are comprehensive. Without this, there may be unintended environmental and economic consequences, lack of communication between stakeholders and additional industry resistance. Collaboration can also lead to creativity and better solutions since there are a range of interests and experience around the table. Meaningful collaboration can help dispel public confusion and overcome mistrust towards industry from past

issues surrounding miscommunication and lack of implementation. In addition to stakeholder collaboration, innovation and research are important to mitigate plastic pollution and come up with new materials and options. Innovation can materialize in various ways including the development of more recyclable plastics with a lower carbon footprint, compostable materials, reusable alternatives, and new recycling methods and infrastructure.

PROBLEM – Recycled material is accumulating at waste disposal sites due to limited market demand

As mentioned in the previous section, recycled plastics are piling up at recycling facilities and waste disposal sites since there is limited market demand causing plastics to have little or no value. Incentives must be developed to encourage material procurement and re-use to work towards a circular economy. EPR is just one policy tool to increase demand and value for plastics but there are also other ways governments can incentive market shifts.

RECOMMENDATION – Utilize procurement power to promote sustainability across government operations while promoting robust markets for materials via recycled content requirements, taxes on virgin materials, and deposit-return schemes

Similar to municipal and federal governments, provincial governments should support material procurement by using their extensive influence and purchasing power to promote sustainable materials, products and packaging. Provinces can also use taxation and content requirements to promote a circular economy where materials are used multiple times rather than relying on virgin materials. Deposit-return schemes can also be used as a market-based mechanism since they have been proven to be effective at promoting the collection of certain materials and ensuring that plastics are not unnecessarily going to landfill or leaking into the environment. Despite this, deposit-return systems should not be utilized in isolation and should be combined with other regulations and market-based strategies to promote robust markets for a variety of materials.

PROBLEM – Many plastics continue to be produced that are difficult to recycle or cannot be recycled, even though there are better alternatives

Without incentives or regulations, corporations will continue to manufacture plastics, as they are versatile, durable and relatively inexpensive. Although it may be difficult to replace

single-use plastics in certain applications where safety and hygiene are important, such as medical products, many everyday products and packaging continue to be unnecessarily made out of plastics that are difficult or impossible to recycle within existing waste systems. For example, black plastic is not recyclable in many jurisdictions, including the City of Toronto because sorting technology cannot differentiate between black plastics and black conveyor belts (Nanowski, 2018). Despite this, it continues to be used in many applications including plastic take-out containers and coffee lids contributing to waste stream contamination.

RECOMMENDATION – Support a single-use plastics ban at the federal-level for materials that are difficult or impossible to recycle or if that fails, develop provincial-wide plastics bans for certain materials

Depending on whether the federal government chooses to move forward with a single-use plastics ban, provinces could have an important role in terms of sharing information and formulating legislation. Alternatively, if the federal government fails to legislate a single-use plastics ban, provinces should collaborate with municipalities, industry groups, indigenous businesses and NGOs to ban certain materials, products and packaging that are not recyclable or are difficult for waste systems to manage. Where plastics cannot be eliminated, it is important to promote the responsible use of plastics which involves reduction and reuse where possible, as well as promoting sustainable material management so plastics are re-integrated back into corporate cycles to limit waste. Regardless of what happens, it is important for different levels of government, industry and NGOs to collaborate to develop innovative solutions, while maintaining clear lines of communication to educate the public and encourage sustainable behaviours. This could be in the form of press releases, news articles and stories, pamphlets that can be physically handed out or emailed, and educational campaigns and advertisements on social media platforms.

Municipal Governments

PROBLEM – Small businesses have limited resources, time and access to information relative to large corporations

Many small businesses have limited time, money and access to information relative to large corporations restricting their ability to research and transition to more sustainable materials, products and business practices. Due to this, municipalities can play an important role in

supporting businesses that are interested in becoming more sustainable but do not know where to start or where they could have the greatest impact.

RECOMMENDATION – Support small businesses as they transition to more sustainable operations and practices via information sharing, tax incentives and funding programs

Municipal governments should share information, relevant research and lists of sustainable suppliers and products to encourage sustainable sourcing and business operations. Municipal governments should also facilitate and encourage collaborations between businesses and different levels of government while supporting change through tax incentives and funding programs. Many small businesses do not have extensive supply chains or partners so simple changes to business operations can help boost sustainability relatively quickly while having a positive impact on brand recognition and the local community as a whole. This could be as simple as restaurants finding alternatives for plastic straws or using paper bags and compostable packaging when customers purchase products or order food for take-out.

PROBLEM – Lack of awareness, convenience and accessibility contributes to low recycling rates and waste stream contamination

Currently, there is a lot of consumer confusion in terms of how to dispose of waste and what materials are accepted, which is compounded by the fact that waste facilities and curbside programs are not always easily accessible or convenient to reach in different jurisdictions. For example, recycling rates are lower in northern municipalities due to the inconvenience of having to drive to waste depots rather than having curbside programs or more abundant waste depots (Waste Wiki, n.d.). Urban municipal populations also have their fair share of recycling problems since many multi-residential buildings have out-dated waste infrastructure, including a lack of garbage rooms or chutes. In addition, residents may not understand their buildings waste management procedures or may be discouraged to take their waste to parkades or basements that are dirty and poorly lit. Recycling rates can also be lower in municipalities with large immigrant populations since individuals may not be familiar with recycling programs or waste management infrastructure.

Overall, it is important for consumers to become more educated about the products they are purchasing and from whom, as well as the proper disposal of waste rather than maintaining

an out of sight, out of mind mentality. Whether everything goes into one bin or needs to be sorted into multiple bins, clear communication is crucial so the public understands where waste goes and what materials are not accepted. Currently, many consumers do not realize that recycled goods are just sitting in communities across Canada since many facilities and programs are more expensive to operate than the value of the collected materials.

RECOMMENDATION – Develop multi-residential building policies for waste management, enforce littering by-laws, and develop educational materials and programs to increase public knowledge and awareness

Municipal governments should formulate and implement multi-residential building policies for both new buildings under construction and old infrastructure requiring retrofits to encourage consistent waste management practices. Municipalities should also continue to enforce littering by-laws to reduce the amount of waste leaking into the environment threatening ecosystems, human health and the economy.

Municipal governments should develop educational materials and programs to help clear up misconceptions while encouraging the diversion of plastic away from landfills. Areas of focus should include: how waste management systems work, what materials are recyclable, and problems associated with waste stream contamination. Educational materials should also include scientific information to inform the public and can be customized depending on municipal demographics and local waste management problems.

PROBLEM – Need a better way to share public concerns, data and knowledge among different levels of government and industry

Although many within the plastics industry would prefer to have waste management handled at the provincial- and federal-level to ensure policy consistency, local problems and concerns may be missed if municipalities are not involved in planning and discussions. Public concern can be a powerful tool because it can force consumers to consider their actions as well as influence corporations and governments for better practices and regulations. This in turn will help promote market incentives to ensure that a wide range of materials can be collected and reused.

RECOMMENDATION – Gather, report and share waste management data with other stakeholders, including provincial and federal governments

Municipal governments should act as a conduit for public concerns to higher levels of government as well as gathering and reporting waste management data. This will help highlight common trends across municipalities and provinces while identifying where more comprehensive programs, infrastructure or education are needed to improve recycling rates and decrease waste stream contamination. One way to do this is to have municipal representatives participate in working groups, workshops and conferences organized by provincial and federal governments.

PROBLEM – Recycled material is accumulating at waste disposal sites due to limited market demand

Every year, municipalities spend millions of dollars on waste management and collection programs even though it is becoming increasingly difficult to find buyers for waste materials or if they can, the value of materials is limited. Due to this, large amounts of recyclable waste continue to sit at facilities taking up land and taxpayer money.

RECOMMENDATION – Lead by example and use procurement power to promote sustainability across government operations

To help create demand for materials and shift markets, municipal governments should explore the procurement of materials, products and services to support sustainable alternatives. In particular, large municipalities, such as the City of Toronto, have significant influence and material procurement power, which can help make significant shifts in local markets while generating a demand for certain materials. It is also important for municipalities to collaborate and share information to improve waste management infrastructure to allow for systems to be more consistent and harmonized. This will reduce consumer confusion, frustration and waste stream contamination.

PROBLEM – Municipal plastics bans create economic barriers for businesses

In terms of single-use plastic bans, municipal bans can have some merit if higher levels of government are failing to act but in general, the case studies and research interviews support plastic bans at a federal- or provincial-level. This prevents there from being a patchwork of

municipal by-laws, which can create economic barriers for businesses and disrupt distribution channels when trying to operate in multiple jurisdictions.

RECOMMENDATION – Collaborate with other levels of government to develop a plastics ban at the provincial- or federal-level

Municipalities should collaborate with provincial and federal governments to develop a coordinated policy response while working with industry and NGOs to develop innovative solutions. Municipalities will be able to provide information and data on local problems while supporting and enforcing the policies developed at the provincial- and federal-level.

Table 5. Overarching recommendations for each level of government.

Level of Government	Recommendations
Federal	<ul style="list-style-type: none"> • Develop standardized labelling requirements for products and packaging • Develop EPR legislation or support provinces in their formulation, implementation and enforcement of EPR legislation <ul style="list-style-type: none"> ◦ Collaborate with stakeholders (government, industry, NGOs) via working groups, workshops and conferences • Utilize taxes to incentive the use of recycled materials over virgin materials and develop industry standards, including recycled content requirements for products and packaging • Use procurement power to lead by example and promote sustainability across government operations • Formulate, implement and enforce single-use plastics bans (or support them if they are implemented at the provincial-level) • Clearly communicate with the public to dispel misconceptions and encourage sustainable behaviours while ensuring that stakeholders understand their obligations
Provincial	<ul style="list-style-type: none"> • Develop full EPR programs or support the Government of Canada in their formulation, implementation and enforcement of EPR legislation <ul style="list-style-type: none"> ◦ Collaborate with stakeholders (government, industry, NGOs) via working groups, workshops and conferences ◦ Standardize/harmonize the list of accepted materials for blue-box programs across jurisdictions ◦ Develop clear and consistent definitions for terms like diversion ◦ Promote reduction, reuse and recycling rather than developing a system that is heavily reliant on waste-to-energy • Along with EPR regulations, develop industry standards for biodegradable plastics and compostable materials, products and packaging • Engage stakeholders in a meaningful and transparent way to promote communication, collaboration, data sharing and innovating

	<ul style="list-style-type: none"> • Encourage sustainable behaviours via material procurement, deposit-return schemes, recycled content requirements, and taxes on virgin materials • Formulate, implement and enforce single-use plastic bans (or support them if they are implemented at the federal-level)
Municipal	<ul style="list-style-type: none"> • Educate and support small businesses that have limited resources and access to information relative to large corporations • Develop multi-residential building policies for waste management and enforce littering by-laws • Develop educational materials and programs for the public to dispel misconceptions and encourage sustainable behaviour • Act as a conduit for public concern and gather and report waste management data to higher levels of government • Use influence and purchasing power to support material procurement • Implement or support single-use plastic bans (preferably implemented at a provincial- or federal-level)

In summary, these are just a few tools and potential areas of focus for Canadian governments, civil society and corporations in order to combat plastic pollution and reduce the production and use of single-use plastics. Since waste is largely regulated at the provincial level, it is crucial that provincial governments take a stronger regulatory stance to rein in the power of big business and ensure that tangible steps are being taken rather than relying on voluntary corporate commitments. When it comes to EPR, labelling requirements and single-use plastic bans, provincial or federal governments should drive the creation of policies since this will create a consistent regulatory framework across the country and ensure that there are not unnecessary economic barriers to business models. Beyond this, municipalities still have an important role to play in terms of educating consumers, enforcing littering by-laws, supporting small businesses and sharing waste management data with other levels of government.

Right now, a majority of transnational companies that utilize plastic materials and products have their manufacturing facilities outside of Canada. This means that without EPR and a reason to consider the full life-cycles of products and materials, there can be few incentives to procure plastic waste in many of the markets where goods are sold. This is compounded by the fact that China is no longer accepting plastic waste from other countries so it continues to pile up in Canadian recycling facilities and landfills. Therefore, voluntary commitments are not a comprehensive solution and corporations must be held accountable for the end-of-life of their products and materials. Even if it is not cheap or convenient at first, EPR will force corporations

to procure and reuse materials in a circular business model while encouraging innovation to reduce costs and protect the environment.

Moving forward, additional research should be conducted on these areas of recommendations to determine how to best formulate and implement different policy tools, market-based incentives, and forms of communication and education. In particular, international case studies should be used to analyze a range of EPR programs, including different materials and levels of corporate responsibility, to determine which regulations are effective and which can be improved upon. This will help inform policy-makers while supporting Canada's transition to a circular economy within a more rigorous and harmonized regulatory framework. If the current system does not change, plastics will continue to leak into the environment due to excessive plastic production, corporate greenwashing, lack of government regulations and enforcement, and ineffective waste management systems. This is extremely concerning as plastic waste is a global threat, not only to the environment but also to human health and the economy.

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