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Mr. Francis Scarpaleggia, M.P.
Chair, Standing Committee on Environment and Sustainable Development
Sixth Floor, 131 Queen Street
House of Commons
Ottawa ON K1A 0A6
By email: ENVI@parl.gc.ca

Dear Mr. Scarpaleggia:

Re: Study on Single-Use Plastics

At NOVA Chemicals Corporation, we recognize the great value plastics bring to society at large, and the criticality of addressing plastic waste. We are committed to doing our part to end plastic waste and work towards a circular economy. While we strive towards these common goals, we disagree that listing plastic manufactured items on CEPA Schedule 1 to enact single use plastic bans is the appropriate approach to managing these materials, and recommend Canada work with the provinces to establish comprehensive waste management approaches to avoid the consequences associated with bans, including regrettable substitutions for these products resulting in potential health and environmental consequences, and the inevitable economic chill on the plastics industry in Canada with a toxic label applied to plastic manufactured items.

The Circular Economy for Plastics, The Role of Plastics in Our Modern, Sustainable Way of Life

Plastics bring great value to society through performance benefits derived from their light weight and high strength, making plastics the preferred alternative for many packaging, industrial, and durable goods. A study¹ by TruCost shows that alternatives like paper, glass and metal have on average 3.8 times the environmental costs of plastic packaging, and life cycle analyses, such as the 2018 Recyc-Quebec LCA on the plastic shopping bag², consistently show plastic products to be the preferred environmental choice.

We also know these products do not belong in the environment as unmanaged waste. At NOVA Chemicals, our commitment to ensuring plastics stay out of the environment and realize their significant value is a core element of our Sustainability Strategy and we are taking concrete action to address plastic waste. NOVA Chemicals is a founding member of the Alliance to End Plastic Waste³ a CEO-led, cross value chain initiative pledging \$1.5 B USD to end plastic waste. We are also a strategic partner of Project STOP⁴, a program currently delivering waste management and plastics recycling services to three cities in Indonesia. In Canada, we are the lead corporate sponsors of the Great Lakes Plastic Clean-up⁵, an

¹ <https://plastics.americanchemistry.com/Plastics-and-Sustainability.pdf>

² <https://www.recyc-quebec.gouv.qc.ca/municipalites/mieux-gerer/informations-banissement-sacs-plastique>

³ www.endplasticwaste.org

⁴ www.stopoceanplastics.com

⁵ www.greatlakesplasticcleanup.org

initiative we are proud to support with Environment and Climate Change Canada, the Ontario Ministry of Environment, Conservation and Parks, and others to prevent litter from entering the Great Lakes at marina locations across Ontario.

At NOVA Chemicals, we are committed to working towards a circular economy. Our goal, shared with the plastics value chain in Canada, is to achieve 100% of plastics being recyclable or recoverable by 2030, and 100% of plastics packaging being reused, recycled, or recovered by 2040.

NOVA Chemicals has many examples of our commitment to a plastic circular economy, including designing recyclable packaging structures, innovating new products which better accept recycled content, and working to include recycled polyethylene as part of our product slate⁶. In 2020, we partnered with Merlin Plastics of British Columbia to produce over 30MMlbs/yr of high-quality recycled polyethylene⁷ which can be used in consumer packaging again, and in early 2021 we announced a second partnership with Revolution Plastics to meet demand for recycled LLDPE, a material used in flexible packaging. We are also advancing a joint development agreement with Enerkem⁸, a Quebec company, to convert municipal solid waste, including MRF residuals and unrecycled plastic waste, into new feedstock for the production of polyethylene. This technology can use all six plastic items currently designated for bans, and convert them into valuable chemistries now, and as our research progresses, will be able to be converted back to plastics again.

We are committed to Operation Clean Sweep Blue, a best management practice to keep plastic pellets, flake, and powder out of the environment, with increased transparency in reporting all plastic spills.

While there is a critical place in our economy for the vital health and safety benefits of plastics, we agree they do not belong in our waterways or our environment. NOVA Chemicals is strongly supportive of actions to keep plastics in the economy and out of landfills, and plastic pollution out of the environment.

Environmental Impacts of the Proposed Federal Government Approach and How this Undermines the Establishment of a Circular Economy for Plastics

NOVA Chemicals is strongly opposed to the use of the *Canadian Environmental Protection Act, 1999* (CEPA) Schedule 1 to regulate “Plastic Manufactured Items”. While we appreciate and agree with the need to create a circular economy for plastics, rid the environment of plastic pollution, and minimize plastic waste entering landfills, the proposed use of CEPA Schedule 1 will not achieve those worthwhile objectives.

The five key points of our commentary are as follows:

1. The inappropriate use of CEPA Schedule 1 - List of Toxic Substances
2. The Science Assessment of Plastic Pollution is insufficient to justify action under CEPA.
3. The proposed approach undermines innovation and the development of a circular economy for plastics
4. The Management Framework for Single-Use Plastics requires scientific rigour, transparency and life cycle assessment analysis
5. Establishing performance standards and end-of-life responsibility for plastics is best conducted through CCME with the provinces

⁶ https://www.novachem.com/wp-content/uploads/SustainabilityReport_2019.pdf

⁷ <https://www.novachem.com/media-center/news-releases/nova-chemicals-and-merlin-plastics-join-forces-to-use-curbside-recycling-for-consumer-packaging/>

⁸ <https://www.novachem.com/media-center/news-releases/nova-chemicals-and-enerkem/>

Rather than designating plastics as ‘toxic’ under CEPA and banning certain single-use plastics products, working with the provinces as they roll out Extended Producer Responsibility programs, and ensuring these single use plastic products are collected, provides a better solution for all Canadians.

1. *The Inappropriate Use of CEPA Schedule 1 - List of Toxic Substances*

CEPA is not designed to regulate a broad set of consumer products. CEPA allows for the addition of a substance to Schedule 1 only after that substance has been scientifically assessed and determined to meet the definition of a “toxic” substance. Substances must be assessed individually and added to Schedule 1 separately. The condition to adding a substance to Schedule 1 is a determination that the substance in question is toxic. As such, the substance proposed for addition to Schedule 1 must be identified with sufficient precision that it is capable of assessment for toxicity. Simply put, a listing of “Plastic Manufactured Items” is not sufficiently precise, as there are truly countless items from auto parts to wind turbines, water piping to medical tubing, food packaging to plastic cutlery, all of which are plastic manufactured items.

The Science Assessment on Plastic Pollution specifically assessed plastic pollution as microplastics and macroplastics, which categorize a broad mixture of plastic compositions into two size classes. The Science Assessment made no mention of Plastic Manufactured Items causing harm to biota or the environment. The potential harm identified in the Science Assessment relates to a handful of specific macroplastic items, such as abandoned fishing gear. However, the proposed CEPA listing does not plan to add these specific macroplastic items. Instead, it proposes to list a category (Plastic Manufactured Items), which would contain every product manufactured from plastic in Canada. This category of Plastic Manufactured Items was not addressed in the Science Assessment.

A ‘toxic’ designation for Plastic Manufactured Items is also inaccurate definitionally – since plastics are inert materials – and would blur the line with those substances that are truly toxic and are rightfully managed under CEPA Schedule 1.

The proposed use of CEPA to list Plastic Manufactured Items on Schedule 1 does not appropriately address plastic pollution which is primarily a waste management issue. The Science Assessment does not state that plastic products in and of themselves are an environmental problem, but correctly suggests that improper management of plastic solid waste is the issue. The Science Assessment states that the “poor management of plastics across their life cycle, as well as improper disposal, has resulted in large amounts of plastic waste entering the environment as plastic pollution”.⁹ Listing Plastic Manufactured Items as ‘toxic’ and banning certain single-use plastics inappropriately targets the *use* of plastic products rather than the *pollution* of plastics resulting from the lack of infrastructure, consumer education, and markets to drive secondary use of plastic products. The real issue is that the systems that manage those products do so inadequately. These waste management issues are clearly an area of provincial jurisdiction. There is no sufficient justification for federal intervention, especially in light of the efforts provinces have underway to modernize their recycling waste management systems.

2. *The Science Assessment is insufficient to justify action under CEPA*

Listing plastic products on CEPA Schedule 1 based on a literature review and without the rigor of risk assessment significantly undermines the spirit and principles of transparency and evidence-based decision-making that are expected under CEPA and the Chemicals Management Plan (CMP). One of the

⁹ ECCC and Health Canada, “Draft Science Assessment of Plastic Pollution” (January 2020), online: <https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/draft-science-assessment-plastic-pollution.html> (the “Draft Assessment”), at p.11.

core strengths of CEPA and the CMP have been their reliance on risk-based decisions. Science should continue to inform decisions and Canada should not rush into development and implementation of risk mitigation efforts using Part 5 of CEPA before a more thorough assessment and evaluation of underlying risk(s) is undertaken, and cost-effective ways to address those risks are identified, evaluated, and appropriately focused. To approach chemicals management otherwise opens the door to regrettable and unintended consequences as a result of uninformed decisions. We request that Canada conduct a thorough chemical risk assessment of plastic pollution prior to making any determination of risk.

3. The proposed approach undermines innovation and development of a circular economy for plastics

A listing of Plastic Manufactured Items under CEPA Schedule 1 undermines efforts by provinces to establish robust industry-paid and -managed recycling systems, which are premised on capturing the inherent value of post-consumer plastics. Designating plastics as 'toxic' under CEPA will put a chill on investment in innovative recycling technologies needed to advance a circular economy and will remove valuable recycling feedstock from recycling systems when industry is taking responsibility to effectively manage those systems. Ontario, for example, has listed single use items such as stir sticks, straws, and cutlery in the newly expanded Blue Box program regulations and has also set the most ambitious recycling targets on the continent. Alberta's recently announced EPR program will also include single use plastics including those listed for ban federally. We encourage working through CCME with the provinces and territories to reach effective solutions for plastic waste management that promote innovation and the development of circular economy solutions.

4. The Management Framework for Single-Use Plastics requires scientific rigour, transparency, and life cycle assessment analysis

The Management Framework lacks sufficient explanation to provide justification for the categories and criteria used to determine which single-use products would be regulated. It also lacks justification for the selection of a ban to manage these single use products, as opposed to other risk management measures. Critically, it is also missing the need for a life cycle assessment evaluation for alternatives to the single use plastics products proposed to be banned. A life-cycle assessment of plastic products would ensure that both the societal costs of mismanaged plastic products and benefits of plastics are evaluated and compared to alternatives, helping avoid regrettable situations where alternatives selected have a larger overall environmental footprint. Bans do not in and of themselves curtail consumption or eliminate the need for the product, they transfer that need to a new substitute, creating a new and often worse environmental trade-off than plastic products.¹⁰

5. Establishing performance standards and end-of-life responsibility

While we agree that the Government of Canada has a role in the development of recycled content standards and helping to advance a consistent extended producer responsibility (EPR) framework, CEPA Schedule 1 is not an appropriate tool for carrying out these requirements and overlaps exclusive provincial jurisdiction over waste management. We suggest that Canada continue to work with the provinces and territories within the Canadian Council of Ministers of the Environment (CCME) to deliver on CCME commitments to release guidance that would support the harmonization of EPR frameworks across the country.

¹⁰ <http://www.allaboutbags.ca/irelandandlitter.html>

Recommendation 1: Do not use CEPA to regulate a set of consumer products like “plastic manufactured items”. Rather, the Government should re-focus the Management Approach on investments and incentives to develop technological and system-wide process solutions in support of a circular economy. In that context, bans on single-use plastic products would not need to be included as part of the Government’s Management Approach since plastic products would be designed for recyclability and infrastructure would be in place for effective recycling and recovery.

Recommendation 2: The Government of Canada should continue to work through the CCME to establish extended producer responsibility for packaging materials in the provinces and territories.

Potential Unintended Health Consequences of the Proposed Approach

Plastics are critical in the food supply chain for food safety and security, keeping food safe from human contact, germs, and cross contamination between products.

Plastics also reduce and prevent food waste throughout the food supply chain, a critical public health issue. Roughly one-third of the edible food produced for human consumption is lost or wasted globally. The Toronto Food Policy Council reports that \$31 billion worth of food is wasted in Canada each year, representing 40 per cent of food produced in Canada annually.¹¹ A large portion of this food waste is edible and could be redirected to communities with low food security.

Plastics packaging reduces food loss and waste by protecting food products, extending shelf-life, and promoting behaviour change (e.g., portion control, resealable features, consumer messaging). For example, plastic film helps increase shelf-life of fresh meats up to 21 days or more, and plastic vacuum packaging extends shelf life 10 times longer than store-wrapped meat, resulting in 75% less food waste.

The Health Products and Food Branch of Health Canada (HPFB) reviews food packaging materials used in Canada in a scientifically robust process that gives Canadian food manufacturers and consumers the confidence that food packaging will not adversely impact the food that it contains. Declaring plastic manufactured items ‘toxic’ in Canada will conflict with this important activity and potentially lead to confusion both within industry and for consumers and may also decrease confidence in the regulator.

Listing of Plastic Manufactured Items on Schedule 1 of CEPA could have unexpected ramifications. An increasing number of organizations use presence on lists, such as Schedule 1, as a surrogate for materials to avoid in their products. This is also increasingly happening at various governmental levels, worldwide. Use of such broad listing language could potentially result in the loss of plastic materials in the manufacture of important consumer products, and critically, food packaging where plastics bring enormous benefit to food safety and shelf life.

It is not the government’s job to pick “winners”, which will be a result of enacting a ban on the six plastic items proposed for ban, as Canadians will look to alternative materials to replace the banned items. Therefore, there needs to be a comprehensive life cycle assessment of the potential alternatives which evaluates impact to the health of Canadian and the environment.

For example, one of the many positive attributes of plastic is its water resistance. This is an area where plant-based and paper alternatives are clearly deficient. In fact, it has been noted ¹² that plant-based and some paper-based straws use fluorinated chemistries such as perfluorobutanoic acid (PFBA),

¹² Alina Timshina, Juan J Aristizabal-Henao, Bianca Da Silva, John A. Bowden (2021) The last straw: Characterization of per- and polyfluoroalkyl substances in commercially-available plant-based drinking straws, *Chemosphere*

¹² Alina Timshina, Juan J Aristizabal-Henao, Bianca Da Silva, John A. Bowden (2021) The last straw: Characterization of per- and polyfluoroalkyl substances in commercially-available plant-based drinking straws, *Chemosphere*

perfluorooctanoic acid (PFOA) and perfluorohexanoic acid (PFHxA) to achieve the necessary water resistance, and further that the straws will leach these compounds, even at low temperatures. It was found that none of the plastic straws contain these compounds. Perfluorinated chemistries are noted to be persistent environmental pollutants, and PFOA is listed on CEPA Schedule 1. Although plant-based straws may be preferred due to their perception of biodegradability, the presence of chemicals like these may actually hinder the total biodegradability of such products, creating the same outcome with more serious chemical pollutants than the comparable plastic straw.

Another recent study on reusable bags notes the presence of many harmful bacteria to human health¹³ due to contamination of the reusable bags with foods (meat juices, vegetables) and poor consumer behaviour in regularly washing the reusable bags. Single use plastic bags, including those containing recycled content, do not pose this risk, and have the ability through store take-back programs and EPR programs to be recaptured and recycled, preventing avoidable illness in the population. Not only must we be aware of regrettable alternatives to plastics from an environmental LCA perspective, but also from the perspective of the everyday health of Canadians.

The Proposed Management Approach does not consider the impacts that banning plastic products would have from a food safety or food security perspective, nor does it consider the benefits plastics play in the medical and healthcare industries in protecting human health and preventing disease transmission. By associating the use of the word 'toxic' with plastic products, it will create consumer confusion and concern, undermining confidence in the health and safety measures of these highly regulated products.

Recommendation 3: Develop a life cycle assessment of single-use plastic products compared to alternatives when used in the quantities required to replace plastic.

The Economic Chill of listing plastic manufactured items as toxic

NOVA Chemicals remains very concerned that The Government of Canada has not taken into account the economic impacts of bans on the plastics sector or the economy, nor the proposed listing of plastic manufactured items as toxic substances. Such a listing on CEPA Schedule 1 provides Canada broad regulatory power to enact bans not only on the proposed 6 items, but on future items as well, and with minimal consultation with industry or the Canadian public. Labeling plastic manufactured items toxic sends a false signal to investors and financial institutions, who are increasingly aware of ESG principles and incorporating ESG into their investment strategies, potentially restricting access to capital for companies making critically important plastic products.

The plastics sector is an SME-driven industry; 86 per cent of Canada's plastic product manufacturers are family-run businesses across the country. Based on data from Statistics Canada, the Chemistry Industry Association of Canada has estimated that the designation of single-use plastics could be applied to approximately one quarter- \$5.5 – 7.5 billion- of Canada's plastic product shipments, representing 13,000 – 20,000 Canadian direct jobs. Indirect jobs range from 26,000 – 40,000 jobs.

At NOVA Chemicals, we represent 2350 Canadian jobs, primarily in Ontario and Alberta, where we manufacture polyethylene for use in a wide variety of packaging applications. In 2020, our revenue was \$4.3 Billion CAD, and we sold 2270 kilotonnes of polyethylene in the global marketplace, including 17% of sales in Canada. Our customers in Canada include plastic bag and food service packaging makers, who

¹³ J. Barbosa, H. Albanoa, C.P. Silva, P. Teixeira (2019) Microbiological contamination of reusable plastic bags for food transportation, *Food Control*.


will be harmed by the proposed ban on the six single use products, further challenging the domestic markets for plastics and increasing our need to find international markets for our product, at discounted margins due to higher transport costs.

Furthermore, adding all plastic manufactured items to CEPA Schedule 1 *List of Toxic Substances* could put at risk additional aspects of the \$35 billion plastics supply chain, especially resin producers with major operations in Alberta and Ontario. This designation will send a strong negative signal to the industry as it considers future investments. Alberta, Ontario, BC, and Québec are all prioritizing chemistry and plastics investments as part of their economic growth and recovery plans.

Recommendation 4: Before proceeding with the proposed approach, the Government should conduct an analysis of the economic and job impacts on the plastics industry of designating plastics under Schedule 1 of CEPA and banning some plastic products.

NOVA Chemicals recommends that the Government of Canada continue to work with the CCME on harmonizing a provincial approach to integrated plastic waste management; provide a framework for incentives and innovation towards a plastic circular economy; require life cycle assessment to evaluate the environmental and health effects of alternatives to the single use plastics proposed for ban; and conduct an economic and jobs analysis of the impact of the bans and listing of plastic manufactured items.

Sincerely,

DocuSigned by:

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Luis Sierra
President & CEO
NOVA Chemicals Corporation

About NOVA Chemicals

NOVA Chemicals develops and manufactures chemicals and plastic resins that make everyday life healthier, easier and safer. Our employees work to ensure health, safety, security and environmental stewardship through our commitment to sustainability and Responsible Care®. NOVA Chemicals, headquartered in Calgary, Alberta, Canada, is wholly-owned ultimately by Mubadala Investment Company of the Emirate of Abu Dhabi, United Arab Emirates.

NOVA Chemicals is also a member of the Chemistry Industry Association of Canada (CIAC) Plastics Division, which represents Canada's leaders in plastics sustainability – a \$35 billion sector that directly employs over 93,000 Canadians. The Division encompasses the entire plastics value chain, including resin and raw material suppliers, processors/converters, equipment suppliers, recyclers, and brand owners.