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Date	13 January 2023

ICC response to call for submissions on potential options for elements towards an international legally binding instrument to end plastic pollution: Business Recommendations

TABLE OF CONTENTS

INTRODUCTION.....	1
EXECUTIVE SUMMARY	2
DETAILED INPUT.....	5
I. Substantive Elements	5
1. Objective/Scope.....	5
2. Core obligations/control measures.....	7
II. Implementation Elements	9
1. Financing, institutional arrangements, assessment of progress of implementation	9
III. Additional input.....	10
Stakeholder engagement.....	10
ANNEX 1.....	12
Business Best Practice Examples to address Plastic Pollution	12
DESIGN & PRODUCTION.....	12
CONSUMPTION	15
BIOTECHNOLOGY	16
WASTE MANAGEMENT & RECYCLING	18

INTRODUCTION

The International Chamber of Commerce (ICC) – as the institutional representative of more than 45 million companies in over 170 countries – applauded the landmark decision at the resumed fifth

session of the UN Environment Assembly (UNEA5.2) to develop an international legally binding instrument (ILBI) to end plastic pollution. ICC fully commends the Executive Director of UNEP, the Executive Secretary of the Intergovernmental Negotiating Committee (INC) and Member States for their determination and willingness to address this pressing environmental challenge.

ICC and its members participated in the Ad hoc open-ended working group in Dakar last year and also engaged in the first INC session to develop an international legally binding instrument on plastic pollution, including in the marine environment in November 2022 and its multistakeholder dialogue where we provided business insights on the key issues identified for discussion.

ICC welcomes the efforts by the INC Secretariat to involve all stakeholders and particularly the business community, in all its diversity, in the process. The INC Secretariat’s call for submissions from stakeholders and Member States to inform INC2, is a critical step in setting the stage for an open, transparent and inclusive process.

In response to the call for submissions and as the INC will consider at its second session to be held in Paris in May 2023, potential options for elements towards an international legally binding instrument, based on a comprehensive approach that addresses the full life cycle of plastics as called for by UNEA resolution 5/14, including identifying the objective, substantive provisions including core obligations, control measures, and voluntary approaches, implementation measures, and means of implementation, ICC offers the following reflections and recommendations for consideration. In preparing this submission, ICC has considered perspectives from member companies and experts from sectors across the plastics value chain, as well as representation from different jurisdictions.

ICC remains deeply committed to support the INC Secretariat’s and Members States’ efforts and forthcoming work to secure an ambitious, effective and workable agreement by 2024 – that rallies all actors of governments and society in the collective charge of addressing plastic pollution - including setting the frame and direction for accelerated business action.

What business needs from the ILBI on Plastic Pollution

The business community has an essential role to play as a key stakeholder in the negotiation of a ILBI on Plastic Pollution and will be an integral partner in the implementation of its objectives. ICC members reaffirm their commitment to inform the deliberations and to contribute extensive experience and expertise, as well as provide constructive recommendations and feasible solutions to the process.

EXECUTIVE SUMMARY

I. Substantive Elements

1. Objective/Scope

To enable and encourage businesses to fully play their role, the ILBI on plastics pollution should:

- **Clearly identify and define an overarching goal, shared objectives and the scope of the ILBI**, in alignment with the UNEA 5/14 resolution, as well as include a realistic overarching target to end plastic pollution by a certain date.

The ILBI should include ambitious and clear objectives and targets that address the full life cycle of plastics as well as clear definitions for key terms and concepts, as well as the types of plastics and substances identified as potentially harmful (through exposure based risk assessments) that will be addressed by the instrument.

- **Provide a global, common vision and harmonised standards, definitions and rules** that strengthen global coordination and align stakeholders behind a common understanding and a shared approach to end plastic pollution and help drive the transition to a more circular economy for plastic. Building on global standards and definitions will foster greater harmonisation.
- **Be underpinned and informed by science and effectively harness scientific knowledge and technological innovation to inform ongoing work.** ICC recommends that the establishment of an UN scientific group that reflects necessary expertise from natural, social and economic sciences, including engineering could be explored in this regard.
- **Include principles and practices of circularity at the core of the instrument to support a global transition to a circular economy** that creates coherent, enabling policy frameworks and conditions to incentivise and support business action, and facilitate an effective circular economy that works in practice and at scale.

2. Core obligations/control measures

- **Balance legally binding and voluntary elements for effective implementation.** In the immediate term, a mix of complementary measures is required, that will be comprised of mandatory and voluntary elements, as well include procedures to adapt these elements over time to help strengthen objectives and targets.
- **Consider national action plans for the prevention and elimination of plastic pollution as a key pillar of the ILBI,** taking into account country-specific circumstances and needs. Particular considerations should also be given to key success factors from global agreements that catalysed joint action, such as the Montreal Protocol on Substances That Deplete the Ozone Layer.

The treaty should also contain legally binding international rules, targets and obligations that are underpinned by latest science and support the achievement of the overarching goal and objectives of the instrument. Existing practices could be considered, such as, for example, Extended Producer Responsibility (EPR) schemes.

- **Support, leverage and upscale existing and new voluntary initiatives and commitments.** A global agreement on plastic pollution would complement and enhance existing initiatives and encourage additional voluntary efforts. However, voluntary action is not enough – it is for this reason that an ambitious, effective and implementable treaty is realized.
- **The ILBI should also promote increased transparency and disclosure** against agreed universally accepted frameworks and standards through clear and balanced reporting requirements that reflect business realities. an ambitious, workable treaty should be realised.

- **Establish capacity building mechanisms**, including education and awareness raising, in particular for developing and emerging economies.

II. Implementation Elements

1. Financing, institutional arrangements, assessment of progress of implementation

Ensure effective means of implementation – with regards to financial resources, technology development and transfer, capacity-building, drawing from existing systems, and taking into account local contexts and circumstances. It will also be key to adopt policies and incentives that enable and encourage additional private sector investments and strengthen global partnerships between the public and private sector to mobilise implementation needs.

Align public and private financial flows to incentivise market behaviour and investments in circular and sustainable products. Key learnings for past experiences under the Global Environment Facility and the Green Climate Fund should also be considered.

- **Support investment in scalable technologies and solutions across the plastics economy** to help drive action at all levels across the value chain towards a plastic pollution free economy. Effective government policies that genuinely incentivize MSMEs to invest in innovation and technologies will also be key.
- **Establish clear governance and accountability instruments for monitoring, reporting and verification (MRV)** of international efforts and national action approaches, to ensure transparency and robustness of the treaty.

Policies that remove barriers to accessing finance and ensure stable and predictable funding will be key to support less developed countries in their journey towards a circular economy

III. Additional input

Stakeholder engagement

- **Align and engage all stakeholders on a common understanding of, and approaches to, address plastic pollution** to set a sustainable path that leaves no one behind.
- **Recognise the critical role of the private sector in achieving the goal and objectives of the ILBI**, in providing on-the-ground knowledge, experience and expertise, and solutions that will be needed to address the challenge of plastic pollution at the required scale and speed.
- **Build on existing channels for stakeholder and business engagement and contributions and explore additional and strengthened modalities for their involvement.** Existing platforms and initiatives under different UN bodies and international organisations can provide helpful examples for strong business and multistakeholder involvement, such as the Marrakech Partnership for Global Climate Action.

DETAILED INPUT

I. Substantive Elements

1. Objective/Scope

To enable and encourage businesses to fully play their role, the ILBI on plastics pollution should:

Clearly identify and define an overarching goal, shared objectives and the scope of the ILBI which will be essential in charting the direction for collective action and ambition and providing an overarching frame and alignment for future work. The overarching goal should be in line with the UNEA 5/14 resolution to end plastic pollution and should reflect the need for urgent action. Consideration should be given to include a realistic overarching target to end plastic pollution by a certain date.

With respect to the core objectives, ICC believes that the ILBI should:

- include ambitious and clear objectives and targets that address the full life cycle of plastics – upstream (design and production), midstream (consumption) and downstream (waste management and recycling);
- protect the environment and human health from the effects of plastic pollution, and ultimately end plastic pollution, including in the marine environment;
- address the sustainable production, consumption and use of plastic, as well as ensure environmentally-sound management of plastic waste, circular economy approaches, just transition; as well as
- contribute to sustainable economic development and the achievement of the UN Sustainable Development Goals across all countries

Regarding the scope for the instrument, ICC reiterates the need to focus on a comprehensive and progressive approach that addresses the full life cycle of plastics, including production processes, design options, the use of chemicals, additives and polymers, waste management and recycling, whilst also taking into account national circumstances, challenges, capacities, capabilities and feasibility in different economic sectors. In tandem, it would be imperative for the ILBI to provide clear definitions and clarity on key terms and concepts, as well as the types of plastics and substances identified as potentially harmful (through exposure based risk assessments) that will be addressed by the instrument in an effort to tackle the sources/drivers plastic pollution.

- **Provide a global, common vision and harmonised standards, definitions and rules** that strengthen global coordination and align stakeholders behind a common understanding and a shared approach to end plastic pollution and help drive the transition to a more circular economy for plastic. All targets should build on global standards and definitions, with interim targets for the short and medium term differentiated from longer term targets. National circumstances should also be considered with respect to the application of targets. Some countries have already taken bold legislative steps to address plastic pollution at the national level and businesses are also taking action to address the plastic pollution crisis (see

reference to existing voluntary initiatives and Annex 1). However, the lack of a common approach and harmonised standards could hamper efforts for increased cooperation, collaboration and unified action. It is therefore imperative that the treaty is grounded on best practice standards and definitions to foster greater harmonisation, enhance circularity and environmentally sound management of waste. These could include, for example, considerations regarding product design for circularity and labelling. Existing work, definitions and international standards can provide a useful base and reference for consideration in this respect. Standards should evolve over time in-line with global technological developments and best practices

- **Be underpinned and informed by science and effectively harness scientific knowledge and technological innovation to inform ongoing work, including the goal, objectives and actions** across the plastics value chain. Existing scientific literature and recent reports provide useful data and information on the alarming impacts of plastic pollution on the environment, human and animal health. However, an increased understanding of the multifaceted and complex reality of plastic pollution, through reliable and adequate data, scientific and socioeconomic assessments, sound forecasting and measurement metrics as well as the role and impact of technologies and innovative solutions, will be critical to achieve the ultimate goal of the treaty, inform targets and guide actions over time. Lifecycle assessments should be used to inform policy makers and to reduce the risk of any implementation, or use, of plastic substitutions causing inadvertent negative consequences for the intended use or impact. Considering global supply and value chains, trade in plastics, aligning design approaches and the regulation of chemicals will be key to improving the circularity of plastics. Consideration of national circumstances and capabilities is critical to a successful agreement.

ICC recommends that the establishment of an UN scientific group that reflects necessary expertise from natural, social and economic sciences, including engineering could be explored in this regard.

- **Include principles and practices of circularity at the core of the instrument to support a global transition to a circular economy** that creates coherent, enabling policy frameworks and conditions to incentivise and support business action, and facilitate an effective circular economy that works in practice and at scale. These policy frameworks also need to address the full life cycle of plastics, including upstream, midstream, and downstream measures, and create the necessary enabling conditions to support the economy to progressively move away from single-use plastic and plastics that cannot be recycled or reused.. The ILBI should keep plastics in the economy and out of the environment, and essentially focus on addressing overall plastic pollution, including land-based and marine environments – recognising that 80% of ocean plastics originate on land¹. It should support the necessary shift in the design, use and reuse of plastics, and provide a framework to support actions to help close the loop of plastics in the economy to ensure that products and materials are designed for circularity and are circulated in practice, while taking appropriate steps to tackle leaked plastic waste especially in high leakage economies. It would be equally important to include measures across the plastics value chain to address plastic waste, end-of life management including collection, sorting and recycling, in an effort to ensure waste minimisation and remediation, as well as actions related to managing plastics that cannot be reused or recycled in an environmentally sound manner. Consideration could also be given to

¹ <https://www.wwf.org.uk/updates/how-does-plastic-end-ocean>

increase the demand and use of recycled/reused plastics, for example including public procurement measures to promote preference for and use of recycled/reused plastics. Increased value and demand for recycled/reused plastics would consequentially reduce the amount of plastic in the environment.

For that purpose, it will be critical to understand how trade and trade policies can effectively support a circular economy transition and contribute to efforts to tackle plastic pollution. Policies to address plastic pollution should be developed taking into account potential interactions and integration with trade, climate, biodiversity or other relevant policy objectives and instruments for better coordination and alignment. The critical link to biodiversity is underscored in the recently adopted Kunming-Montreal Global Biodiversity Framework² which highlights the need to prevent, reduce and work towards eliminating plastic pollution. In this context, we also encourage governments to consult the findings of an ICC study – “[The Circular Economy and International Trade: Options for the World Trade Organization](#)” on how smartly designed trade policies and rules can support a transition to a circular and resource-efficient economy. Consolidated thinking between trade and environmental policymaking will be essential if we are to deliver on the shared goal of ending plastic pollution.

A successful transition to a circular economy will require (i) a high-level of cooperation and engagement by all stakeholders and (ii) the enhancement of coherent, consistent and comprehensive solutions that take into account the interaction of different policy instruments and approaches to achieve environmental and climate policy objectives.

2. Core obligations/control measures

- **Balance legally binding and voluntary elements for effective implementation.** In the immediate term, a mix of complementary measures is required, that will be comprised of mandatory and voluntary elements, together with a step-by-step approach to facilitate workable solutions that can be applied broadly, as well as encourage better standards and greater business participation. It would be useful to consider the distinction between different applications and sectors throughout the life cycle, as well as different stages of progress in less developed countries, with a view to providing voluntary elements for new and ongoing recycling processes for materials and flexible mechanisms for achieving the targets. The inclusion of procedures to adapt these elements over time should be explored to help strengthen objectives and targets.
- **Consider national action plans for the prevention and elimination of plastic pollution as a key pillar of the ILBI,** taking into account country-specific circumstances and needs. An ambitious and implementable legally binding agreement with a clear overarching objective, and a common framework for national action plans, will be key to help countries translate the provisions into clear national targets and action plans that aggregate delivery on the treaty’s objective. It would be useful to provide direction and clarity on how business contributions will be taken into account in national efforts towards the achievement of the treaty’s goals and targets.

Member states should be expected to set ambitious and clear targets in national action plans. Whilst country-specific needs are important, and there should be flexibility for countries in how they address reducing plastic pollution, further consideration could be

² <https://www.cbd.int/doc/c/e6d3/cd1d/daf663719a03902a9b116c34/cop-15-l-25-en.pdf>

given to provide target ranges by type of country for areas such as recyclability, use of recycled materials, virgin plastic reduction, collection for recycling and reuse.

Particular considerations should be given to key success factors from global agreements that catalysed joint action. In this respect, governments ~~should~~ draw key learnings from the Montreal Protocol on Substances That Deplete the Ozone Layer, for example, how the Montreal Protocol provides for technical panels involving business, as well as other relevant conventions and existing work, to avoid duplication. ~~provide expert guidance across the entire life cycle of plastic pollution.~~ Existing experiences and best practices as well as other internal and national efforts and reference systems could also be of benefit. Experience has also shown that business and industry in-country engagement in the development and implementation of the climate targets is critical in order for governments to further advance the ambition of their national contributions.

While nationally driven approaches should be at the core of the ILBI, **the treaty should contain legally binding international rules, targets and obligations** that are underpinned by latest science and support the achievement of the overarching goal and objectives of the instrument. Continued consultations with governments, business and all stakeholders on possible options for legally binding obligations will be key in this regard. Existing practices could be considered, such as, for example, Extended Producer Responsibility (EPR) schemes. EPR systems, if developed and implemented effectively, can be a useful policy tool to improve the efficiency of existing systems. In order to be successful, EPR schemes should have a clearly defined scope (i.e. EPR for plastic products/packaging covers the net cost of collecting, sorting and recycling plastic products/packaging, not all municipal solid waste), revenues from EPR must be used solely for investments in infrastructure to collect, sort and recycle products in scope and have an appropriate structure that integrates the role of and impact on businesses and should also include several stakeholders, including local municipalities, consumers, citizens and households. A harmonised approach across EPR schemes applied across geographies can facilitate the creation of markets for circular and sustainable products and can avoid undue administrative burden and barriers for companies.

- **Support, leverage and upscale existing and new voluntary initiatives and commitments.** A global agreement on plastic pollution would complement and enhance existing initiatives and encourage additional voluntary efforts. While it is recognised that voluntary action is critical to build momentum, with forerunners raising the levels of ambition and pioneering rapid responses to the challenge – it will not be enough to achieve the systemic change needed to tackle the plastic pollution crisis. For that reason, it is important that an ambitious, effective and implementable treaty is realized. Existing voluntary initiatives and efforts³, in which a number of businesses are already engaged, could be built upon and leveraged to support and accelerate global action.
- **The ILBI should also promote increased transparency and disclosure** against agreed universally accepted frameworks and standards through clear and balanced reporting requirements that reflect business realities.

³ e.g. the Ellen MacArthur Foundation (EMF/UNEP New Plastics Economy Global Commitment or national/regional plastic pacts); World Economic Forum (Global Plastics Action Partnership/National Plastic Action Plans) and Consumer Goods Forum Plastic Waste Coalition of Action (aligned industry principles on extended producer responsibility (EPR) and common design standards (Golden Design Rules) for plastic packaging)

II. Implementation Elements

1. Financing, institutional arrangements, assessment of progress of implementation

- **Ensure effective means of implementation – with regards to financial resources, technology development and transfer, capacity-building.** Funding and technical assistance, including financial mechanisms, will be integral to support implementation of the instrument and development and deployment of technological solutions. Reflections on financial mechanisms and their implementation should draw from existing systems, and should take into account local contexts and circumstances, as there may not be a one-size-fits all financial instrument applicable to all countries. In determining appropriate funding mechanisms, it would be important to provide clarity with respect to relevant financial resources as well as aspects related to allocation and management of the mechanisms.

It will also be key to adopt policies and incentives that enable and encourage additional private sector investments, and to create the right conditions for business to invest and innovate, including in developing countries. It will be critical to strengthen global partnerships between the public and private sector to mobilise implementation needs to (i) address the social, economic and environmental dimensions of a transition to a circular economy for plastics; (ii) reinforce coherence in implementation, leveraging resources across diverse funding mechanisms; and identifying new and innovative funding sources (iii) strengthen governance and accountability, including for financing, technology innovation and diffusion, and capacity building for people and institutions (iv) enable universal access to collection services and environmentally sound disposal and management practices.

- **Align public and private financial flows to incentivise market behaviour and investments in circular and sustainable products.** There is significant potential to build on existing efforts and utilise public policy levers to leverage the right market-based instruments—at national, regional and global levels. Clear policies and international consistency will be critical to enable business to drive investments in innovation and technological solutions. With respect to proposals for specific new funding mechanisms, building and leveraging existing mechanisms to the extent possible, including the Global Environment Facility (GEF) and Green Climate Fund (GCF) should be explored. Key learnings for past experiences under the GEF and GCF should also be considered.
- **Support investment in scalable technologies and solutions across the plastics economy.** Currently many of the technologies capable of addressing plastic pollution are still at a relatively early stage of development and require financial support to develop and to be deployed at scale. It is integral to support these innovative new technologies to help drive action at all levels across the value chain towards a plastic pollution free economy. MSMEs, in particular in emerging and developing economies will be the lynchpin in any economy-wide transition to a circular economy for plastics and can play a crucial role in driving the innovation needed to tackle the plastic pollution crisis. Effective government policies that genuinely incentivize MSMEs to invest in innovation and technologies will be critical.. Setting clear standards that specify strict criteria will encourage innovation by providing the goalposts against which companies can innovate.
- **Establish clear governance and accountability instruments for monitoring, reporting and verification (MRV)** of international efforts and national action approaches, to ensure

transparency and robustness of the treaty. Leveraging existing and additional scientific research to inform and strengthen obligations and targets over time will be important.

- **Establish capacity building mechanisms**, including education and awareness raising, in particular for developing and emerging economies with (i) funding to build waste collection and management capabilities in key markets and countries located on the coastline; (ii) support for technology, government and consumer knowledge transfers; and (iii) an innovation fund to scale viable initiatives. Taking into account national contexts will be essential for successful implementation, as well as the need to strengthen and support existing initiatives to increase impact with respect to education and awareness.

It would also be critical to remove barriers on access to finance and encourage the development of specific and targeted mechanisms that ensure a stable and predictable funding in support of less developed countries in their journey towards a circular economy.

III. [Additional input](#)

Stakeholder engagement

- **Align all stakeholders**, including business and industry, government and civil society **on a common understanding of, and approaches to, address plastic pollution**. Particular consideration should be given to small and medium sized companies, given their limited capacities and resources. It will be equally important to recognise the existence of diverse national and regional realities and challenges, including across developing and least developed countries and those countries with different levels of plastic leakage. Similarly, the needs of vulnerable communities and low-income households as well as the key role of the informal sector with respect to collection and recycling of plastics, should be taken into account. In working to achieve a plastic pollution free economy, it will be necessary to engage all stakeholders to set a sustainable path that leaves no one behind.

ICC reaffirms the value and importance of stakeholder engagement in the process to develop the international legally binding instrument, as well as the crucial role of all stakeholders, and in particular business and industry, for the implementation of the instrument, and supports the need for urgent and ambitious global action to address rapidly increasing levels of plastic pollution globally.

- **Recognise the critical role of the private sector in achieving the goal and objectives of the ILBI**, in providing on-the-ground knowledge, experience and expertise, and solutions. The business community is a key player in providing the solutions that will be needed to address the challenge of plastic pollution at the required scale and speed.

Business engagement, in all its diversity, is indispensable to achieving a circular economy for plastics. Business is not only a central agent of innovation and technological development but also a key engine of sustainable economic growth, employment and just transition, and a source of finance, technical expertise and real-world insights.

In this context, we very much welcomed the call for stakeholders to provide written submissions in view of the INC consideration of potential options for elements towards an international legally binding instrument at its second session, which provides the opportunity

to contribute substantive input to the process, as well as the possibility to engage in the multi-stakeholder sessions held in Dakar and Punta del Este, which provided a unique and invaluable opportunity to give impulse to the multilateral exchange and collaboration required for the process. We also acknowledge the explicit and reiterated calls from Member States during INC1 for the need for more formal business engagement in the process.

- **Build on existing channels for stakeholder and business engagement and contributions and explore additional and strengthened modalities for their involvement.** ICC recommends that in developing the ILBI, the INC Secretariat and Member States should continue to provide all stakeholders with the opportunity to engage in the process through existing and new channels for engagement. Outcomes from the past and future multi-stakeholder sessions should inform the negotiation process. It would also be useful to review and reflect on the effectiveness of past stakeholder sessions to improve and enhance the process for future engagement opportunities.

Whilst we welcome the areas identified for contributions from stakeholders, including from the private sector, we recommend exploring how the INC process can reflect and include private sector expertise formally and substantively to strengthen the envisioned outcomes of the process. Existing platforms and initiatives under different UN bodies and international organisations can provide helpful examples for strong business and multistakeholder involvement. For example, the Marrakech Partnership for Global Climate Action under the UN Framework Convention on Climate Change supports the implementation of the Paris Agreement through strengthened collaboration between governments and key stakeholders. In the past year the Marrakech Partnership has seen an unprecedented growth of non-Party stakeholders taking ambitious action, as evidenced most recently through the significant increase and deepening of commitments and actions recorded on the Global Climate Action portal, including through the Race to Zero, Race to Resilience and the Glasgow Finance Alliance for Net Zero.

ICC and the global business community – including small and medium sized companies - remain committed to supporting governments in the development of an ambitious and effective ILBI by 2024 and to contributing to the process by providing insights and key learnings from innovative business models and exploring potential solutions for systems change across the plastics life cycle to help accelerate collective action to deliver at scale and ramp up ambition and action to transition to a circular economy for plastics.

ANNEX 1

Business Best Practice Examples to address Plastic Pollution

Below is a compilation of business best practice examples of current initiatives to address plastic pollution, as well as suggestions on conditions required to support these efforts and accelerate action towards a circular economy for plastics. This is a non-exhaustive list of industry case studies submitted to ICC in December 2022. [Ongoing research and development projects have not as yet been included.](#) We will continue to collect relevant case studies across the value-chain and make these available to policymakers on a periodic basis.

DESIGN & PRODUCTION

Chemistry Industry Association of Canada (CIAC)

[Pyrowave](#)

Pyrowave's unique technology regenerates post-consumer and post-industrial plastics into new plastics, reclaiming these resources' full value. Pyrowave's patented high-powered microwave catalytic depolymerization technology platform is the most advanced in the work and is now at the forefront of the next generation of plastics. With this technology, a finished product will, for the first time, incorporate fully traceable and segregated recycled styrene.

[Nova Chemicals](#)

In October 2022 NOVA Chemicals launched its new, mechanically recycled polyethylene resin: EX-PCR-NC4. It offers highly versatile design flexibility with the ability to maintain the necessary level of performance while also creating recyclable flexible packaging that remains in the PE stream through a design for recycling approach, without compromising package performance in applications such as shrink, e-commerce, heavy-duty sacks, and protective packaging.

[Winpak](#)

In 2019, Winpak LTD. delivered its ReFresh™ products to address their packaging needs of food manufacturers and brand owners. They believe designing packages for easier recycling is important to achieve a circular economy. Recycle-ready is a way to create high performance, sustainable packaging that is predominantly mono-material and can be recycled at locations equipped with proper collection and sorting infrastructure.

[BASF](#)

In 2020, BASF launched its pilot platform reciChain to address plastic waste. The platform combines the power of blockchain with a digital badge and loop count technology that enables the secured sharing of data among market participants, while improving the sorting, tracing and monitoring of plastics throughout the value chain. The result is a more competitive circular supply chain and also provides better assurance to brand owners of the validity of the certificates they purchase from recyclers and converters.

[Dow](#)

Dow has announced ambitious goals to capture the value of plastic waste and to accelerate its investments and projects to produce circular and low-carbon emission solutions and increasing the use of plastic waste derived feedstocks, including:

- **Close the Loop:** By 2035, Dow will enable 100% of Dow products sold into packaging applications to be reusable or recyclable. As of today, Dow has enabled 85% of packaging applications to be recycle-ready.
 - An example is the development of a new resin made with 70 percent recycled plastic. This innovative new solution, called **AGILITY™ CE**, enables converters to incorporate more than 50% recycled content in the formulation of the final film, without altering its functionality. The availability of this high quality recyclate will help retailers and brand owners meet their sustainability goals while helping reduce the amount of waste going into landfills. See more [here](#).
- **Transform the Waste:** Dow plans to produce 3 million metric tons of circular and renewable solutions annually by 2030, surpassing its previous target to address plastic pollution and meet customers' increasing demands for more sustainable and circular products. To help meet this new ambitious goal, Dow has announced **several circular and mechanical offtake agreements and projects** in [Germany](#), [France](#), [USA](#), Brazil, India, amongst others.

[Loop Industries](#)

Loop is charting the course for a healthier and more sustainable world by developing technology that closes the loop on plastic waste. Their technology drastically reduces the environmental impact caused by PET plastic and polyester fiber waste. The end-product is made from 100% recycled content. Loop™ branded PET is high purity, virgin-quality plastic which is suitable for use in food-grade packaging.

[Polystyvert](#)

Polystyvert has developed a breakthrough technology for recycling polystyrene, using a dissolution process that works on all types of polystyrene: expanded, extruded and injection-moulded ([see video](#)). Their recycled polystyrene product is of high quality and can easily be re-extruded or re-injected, allowing many applications to incorporate 100% recycled materials. Polystyvert has also perfected a coarse filtration process or screening that allows large contaminants to be removed rapidly and easily.

ExxonMobil

ExxonMobil launched its Exxtend™ technology for advanced recycling in 2021 and has since processed 6,700 metric tons (nearly 15 million pounds) of plastic waste, including difficult-to-recycle plastics such as artificial turf, dry cleaner bags, motor oil bottles. The company recently expanded capacity at its Baytown, Texas, facility to approximately 80 million pounds of plastic waste per year, making it one of North America's largest advanced recycling facilities.

ExxonMobil plans to build up to 500,000 metric tons (1 billion pounds) of annual advanced recycling capacity by year-end 2026 across multiple sites globally, leveraging the technology demonstrated in Baytown at company facilities in other U.S. locations, Belgium, Canada, and the Netherlands, as well as collaborating with third parties on projects in France, Malaysia, Indonesia, and Singapore.

In addition to scaling up advanced recycling facilities, ExxonMobil is collaborating with stakeholders to increase plastic waste collection and meet growing customer demand for certified circular products.

ExxonMobil is a founding member of the Alliance to End Plastic Waste, the world's largest organization of business and non-profit partners focused on scalable and economically viable solutions to help address plastic waste in the environment.

In 2021, ExxonMobil formed the Cyclyx joint venture to develop innovative solutions for aggregating and pre-processing large volumes of plastic waste. This includes investing in Cyclyx's first-of-its-kind plastic waste processing facility in Houston, Texas.

In January 2022, ExxonMobil helped create the [Houston Recycling Collaboration](#) alongside the City of Houston and members of industry to significantly increase the community's plastic recycling rate. The collaboration is focused on expanding collection programs and increasing nearby infrastructure for both mechanical and advanced recycling technologies, serving as a model for what could be done with industry and government working together.

Through the company's advanced recycling operations in Baytown, ExxonMobil is making sales of certified-circular plastics, including in the U.S., Canada, Mexico, Europe and Asia Pacific, helping to meet customers' goals around the world for circularity.

To learn more, visit exxonmobilchemical.com/exxtend.

Sasol

Sasol understands the challenges the world faces with respect to plastic waste. Demand for virgin polymers is expected to remain robust driven by societal benefits, population growth and urbanization. Plastic waste in the environment is unacceptable and we are of the view that all parties in the value chain all have a role to play to eliminate plastic leakage into the environment. Sasol's response is informed by the waste hierarchy, principles of circular economy, lifecycle analysis and global best practices. In response, Sasol is executing their Plastics Sustainability approach with four key focus areas including Impact Projects, Innovation, Education and Collaboration.

As one of the largest resin producers in South Africa, many of their initiatives and projects are focused within the country where they work with government and relevant industry participants. One such project is their evaluation of a Chemical Recycling facility.

Aligned with that of the SA Government's Localisation Policy, which is integral to the country's Economic Recovery Plan, Sasol is evaluating the viability of a chemical recycling facility in South Africa as a compliment to mechanical recycling, to further contribute to the elimination of large volumes of plastic waste. Chemical recycling is the broad term used to describe a range of technologies in the waste management industry which allow plastics to be recycled, that are difficult to recycle mechanically. By turning plastic waste back into base chemicals and chemical feedstocks, chemical

recycling processes have the potential to dramatically improve recycling rates and divert plastic waste from landfill or incineration. A facility like this will create value through the valorisation of hard-to-recycle plastic waste and aligns with their objective of providing circular and sustainable solutions for our customers.

Shell

Shell supports the need for urgent action to address the plastic waste challenge, by rapidly improving circularity in global plastic markets, increasing the share of circular raw materials, hence reducing the need for virgin raw materials, and introducing more recycled products in everyday life.

Shell is investing in the plastic circular economy intending to recycle 1 million tonnes of plastic waste a year in Shell's global chemical plants by 2025. This forms part of Shell's broader Respecting Nature ambition to achieve zero waste by reducing waste generated and increasing reuse and recycling in their businesses and supply chains. By 2030, they will increase the amount of recycled plastic in their packaging to 30% and ensure that the packaging they use for our products is reusable or recyclable. Learn more about how Shell manages plastic waste [here](#).

Shell is developing technology that helps to tackle hard-to-recycle plastic waste, and has made investments in chemical recycling in Singapore, the Netherlands, and the US. They are also working with partners at different stages of the value chain and across various industries to grow the market for recycled feedstock. Learn more about our investments in chemical recycling [here](#).

Shell supports the deployment of best practices to avoid plastics entering nature during their production, transport, use, and disposal. They are members of international initiatives such as Operation Clean Sweep (OCS Blue level recognizing excellent practice) that supports industry best practices in handling plastic resins to make sure that there is zero resin loss when handling it from production to distribution.

In order to drive innovative and lasting solutions, Shell is collaborating with industry, NGOs, and government bodies. E.g. As a founder of the Alliance to End Plastic Waste, Shell supports capacity-building projects focused on helping governments to evaluate and improve waste collection and waste management infrastructure.

In terms of particular expectations from the instrument that would be useful to support, amplify/accelerate Shell's efforts, they believe that enabling actions across the lifecycle of plastics will be key. This would include improving and increasing waste management infrastructure and ease of transport, access to post-use plastics, increasing the volume of plastics being reused or recycled; supporting innovation and technology deployment including the scaling of chemical recycling technologies; fostering design for circularity principles and harness scientific knowledge to inform decisions; provide global definitions, guidelines, and technical standards while recognizing national circumstances for implementation.

CONSUMPTION

Coca-Cola

As a global beverage company, Coca-Cola is focused on the entire packaging lifecycle and recognizes its responsibility to help solve the global plastic packaging waste issue.

As such, it has launched the [World Without Waste Program](#). The Coca-Cola Company's World Without Waste program is an ambitious sustainable packaging initiative that focuses on three key areas: Design, Collect and Partner. Coca-Cola is also a signatory of the EMF Global Commitment – whose targets intersect with the company's World Without Waste Program.

Regarding the design target of the World Without Waste Program, the Coca-Cola company has committed:

- To make 100% of their packaging recyclable globally by 2025 – as of 2021 – they are at a level of 90% globally.
- To use at least 50% of recycled content across all packaging materials by 2030 – as of 2021 – 23% of recycled material is used in the packaging globally and 13.6% for PET plastic packaging.
- To reduce their use of virgin plastic derived from non-renewable source by a cumulative 3 million metric tons by 2025
- Have at least 25% of all beverages worldwide by volume sold in refillable/ returnable glass or plastic bottles or in fountain dispensers with reusable packaging by 2030.

Regarding the Collect target, the Coca-Cola company has committed to:

- Collect and recycle a bottle or can for each one they sell by 2030

Additionally, Coca-Cola has also increased its collaboration with partners across industry, government, and civil society to holistically tackle the global plastic waste issue. The Coca-Cola company has invested extensively and partnered with a number of companies worldwide to increase recycling. For example, Coca-Cola announced a \$500 million system investment to expand its refillables capacity in Mexico.

Coca-Cola believes that developing a circular economy—an economic system aimed at eliminating waste through the continual use of existing, valuable resources—is the most impactful way to address waste and climate issues created by packaging. Looking ahead, Coca-Cola will continue to work with industry peers to advocate for government policies and regulations that support a circular economy, including well-designed EPR and Deposit Return Schemes (DRS), as well as obtaining approval for use of PET in food-grade packaging.

Unilever [placeholder]

BIOTECHNOLOGY

Novozymes

Biotech has the potential to recycle plastics that cannot be recycled today; produce plastic from renewable resources replacing fossil building blocks; and produce plastic that is biodegradable for those plastic applications that are not possible to recycle.

Novozymes is committed to sustainability, innovation, and biological solutions to address some of the world's biggest challenges – including plastic pollution. Novozymes helps turn unrecyclable waste into virgin quality plastic. Together with their partner Carbios, their aspiration is to avoid sending plastics to landfills or incineration. Their current focus is on PET-based packaging that is not mechanically recycled today. They also target polyester-textile fibers, and the technology can turn, for example, sports t-shirts into a recycled bottle or food packaging. The technology can also create a closed fiber to fiber loop moving towards true circularity for the fashion industry.

This innovative technology is based on enzymes that break down used PET into its original monomers - providing plastic producers with the same quality raw materials as new, fossil based plastic building blocks. In that way they can ensure almost infinite loops of plastic recycling.

Together with their partner Carbios, they also target PLA plastic, used to produce industrial compostable food packaging. Novozymes produce a PLA degrading enzyme that stays inactive during the product's use. When disposed of, the enzyme is activated under home composting conditions and disintegrates the plastic, which is then digested by the micro-organisms in a compost bin. It could also facilitate and accelerate industrial composting of PLA. This invention enables the production of bio-based and fully home compostable yogurt pots, salad bags, trays, agricultural films, etc.

Novozymes has the goal of becoming circular in their own operations and are working towards making their packaging recyclable, reusable or compostable. Their partnership with Carbios is a good example of innovative technology developed and implemented by different players across the plastic value-chain, however they need to scale and move beyond one facility to truly harness the advantages of this technology at a global scale. They would like to engage in more initiatives to combine partners across the value chain and the public sector. However, to make those initiatives viable there are some fundamental requirements that need to be addressed:

- Encourage the use of recycled plastics, for example through recycled content targets;
- Encourage and invest more in collection and sorting infrastructure for recycling;
- Discourage use of virgin fossil-fuel based plastics, for example through taxation, and discourage landfill and incineration;
- Funding for innovation and scale up; and
- More harmonized and simple labelling to help consumers make the right choices when buying and disposing of plastics.

Polymateria

Polymateria is an innovative technology company based out of Imperial College London that has developed a revolutionary biotransformation process enabling plastic to biodegrade in the natural environment safely and quickly, while remaining compatible with recycling systems at scale.

At a global level 32% of plastic packaging is currently neither collected nor recycled. Polymateria's biotransformation technology addresses this issue and ensures polyolefins (polyethylene, PE & polypropylene, PP) fully and swiftly biodegrade into CO₂, water and biomass in the open terrestrial environment if they escape collection systems. The technology is equally applicable to biobased or conventional polyolefins.

The biotransformation process has been proven to leave no microplastics or toxic substances behind and to work in real-world conditions. Both of these developments are underpinned in the peer-reviewed scientific literature in the respected [Polymers journal](#). You can read more about Biotransformation [here](#).

Polymateria's technology meets a new independent standard published by the British Standards Institution, the BSI PAS 9017 standard for the '*Biodegradation of polyolefins in an open terrestrial environment*'. Swiftly being adopted across global markets, this is the world's first end-to-end standard ensuring full biodegradation of polyolefins in the open terrestrial environment without creation of microplastics or toxic substances.

The technology is deployed globally, especially in regions where the challenges of leaked plastic waste are highest like India and South-East Asia. India, for example, has one of the world's most wide-ranging bans on single-use plastic items, with biodegradable or compostable alternatives being required instead.

On account of its contribution to circularity and tackling plastic pollution, Polymateria was awarded as a World Economic Forum Tech Pioneer in 2021.

WASTE MANAGEMENT & RECYCLING

Gemini Corporation

- 1. Urban project to increase collection in cities in developing economies:*
 - Collection and segregation of waste are the biggest challenges in developing economies.
 - Most of the collection and recycling is done by the informal sector without proper infrastructure. As a result, recycling quality is very low, and hygiene is poor.
 - Until now, Gemini has given 50 Baling machines to waste collectors in India, which has multiplied the volume and income of these collectors.
 - Gemini is collecting around 750 tonnes of plastic waste through this newly developed network and recycling it in their plants (or partner plants).
 - Reclaimer Outreach Program – every month, 50 Reclaimers (otherwise known as Ragpickers) are uplifted by providing them with basic necessities in the areas where the baling machines are installed. The current tally is around 750 reclaimers in their network.
 - The recycled material (or finished products such as shrink films, polybags, etc.) is sold at a premium and majorly exported to developed countries. These premiums fund the entire program of upliftment, social impact, and additional collection.
 - Blockchain-based Plastic Credit Certificates are issued with end-to-end traceability to global brands to fulfil their Plastic packaging obligation – with complete trust and transparency.
- 2. Rural project to establish a waste management system in remote areas in developing economies:*
 - Gemini has created a collection, sorting, and recycling system involving the local community in 3 villages (to be replicated in 10 villages) in Rajasthan.
 - These villages do not have enough plastic waste to make collection and recycling economically feasible (collection in 3 villages per day is less than 50 kgs of plastic waste)
 - The villages in developing economies need more plastic for food preservation, medical facilities, fuel efficiency, etc.
 - Creating these waste management facilities needs additional financing from brands that are putting their packaging in these markets
- 3. Exporting good quality plastic scrap to save the recycling industry*
 - The recycling industry is predominantly active in developing economies. However, developing economies do not have a local collection and segregation infrastructure to feed the recycling plants to full capacity. Good quality feedstock is not readily available for recycling.
 - More than 175 countries have implemented the Basel Convention amendment which has posed challenges to the trade of plastic scrap. These amendments have crippled the recycling industry by restricting good quality feedstock to the recycling plants through import.

- Gemini has still been able to supply good quality feedstock to recycling plants in developing economies from developed economies – with 100% compliance and traceability.
- The quantities have reduced but nonetheless amount to more than 10,000 tonnes a month globally.
- Gemini believes that control through compliance and monitoring would be preferable to imposing bans on plastic scrap.

Instruments that can drive such change are:

- Plastic Credits – with end-to-end traceability and European Standards, can be made compulsory to limit the plastic footprint of every company (like Carbon Credits in the EU).
- Recycled material should be made compulsory to use, especially in Secondary packaging, and should be stringently implemented under law.

Ragn-Sells

Circular solutions for Plastics

Ragn-Sells (www.ragnsells.com) sees the potential to reduce greenhouse gas emissions embedded in different materials with new circular solutions. Today only 9% of plastics are recirculated and the remaining 91% are either in use, landfilled, incinerated, or dumped into our oceans or the surrounding environment. The 9% that are recirculated Ragn-Sells sources from what is termed Pile 1 - the potential is in the other 91% in Pile 2. Learn more about Pile 1 and Pile 2 [here](#).

Ragn-Sells has three guiding principles that they strive to fulfil when creating circular loops for any material, in this case exemplified with plastics:

1. **Reduce the need for virgin extraction.** Less oil is needed.
2. **Decontaminate the material.** When recycling mixed plastic waste, there is a need to first remove any unwanted substances.
3. **Don't push any hindrances to future generations.**

Examples of how Ragn-Sells creates new material loops through mechanical or chemical recycling:

- Ragn-Sells is one of the biggest actors in the Nordics when it comes to sorting **high value plastics** that are sent back to the producers of plastic material. Directly replacing the use of oil (pile1)
- They have a solution that extracts plastics from organic waste and from this produces new materials (pile 2). [First to recycle plastic from organic waste \(ragnsells.com\)](http://www.ragnsells.com)
- Ragn-Sells has a new collaboration with Van Werven to extract recirculated plastics from mixed waste (pile 2). [New treatment plant for mixed plastic waste in Denmark \(ragnsells.com\)](http://www.ragnsells.com)
- When plastic is contaminated, or not possible to recirculate mechanically, they have a leading solution to extract the salts after energy recovery that makes it possible to produce new plastics from the salts (pile 2). [Ash2Salt \(easymining.se\)](http://easymining.se)

The world's first Ash2Salt factory will be inaugurated in April 2023.

The biggest challenge in reducing the waste of plastics is the low demand for recirculated materials. Prioritising goods and materials produced from recycled origin is needed, public procurement can demand recycled origin already now. Changes in standards and some push in legislation would also support the circular transformation needed.