Written submission prior to INC-3

Potential areas for intersessional work to inform the work of INC-3 (following the lists compiled by the co-facilitators of the two contact groups)

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<th>Name of organization (for observers to the committee)</th>
<th>Organisation for Economic Co-operation and Development (OECD)</th>
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| Date of submission | 14 August 2023 |

Introductory remarks

The Organisation for Economic Co-operation and Development (OECD) stands ready to support governments in the design, development and implementation of the ambitious policy packages required to address the challenge of plastic pollution through a coordinated global approach. The next section provides a brief background on relevant OECD past and forthcoming work with ties to negotiations for a legally binding treaty.

The following sections of the submission focus on the following areas for intersessional work identified during INC-2 and/or where recent OECD analysis can provide useful input to intergovernmental negotiations:

i.  **Guidelines for Extended Producer Responsibility** (Contact Group 1 discussions, longer list)

ii.  **Map current funding and finance available to address plastic pollution** (Contact Group 2)

iii.  **Plastics and Climate: interlinkages and policy synergies** (Other issues)

This submission is based on peer-reviewed OECD publications. These include the following:

- OECD 2022b **Global Plastics Outlook: Policy Scenarios to 2060**, [link](https://www.oecd.org/environment/plastics/)
- OECD 2023 **Climate change and plastics pollution: Synergies between two crucial environmental challenges**, [link](https://www.oecd.org/environment/plastics/)

A longer list of relevant OECD publications is provided at the end of each section.
OECD’s past and ongoing work on plastics

The OECD supports the objectives of the intergovernmental negotiating committee mandated to develop an international legally binding instrument on plastic pollution, with relevant analytical work (OECD, 2022). The OECD Global Plastics Outlook publications provide estimates and projections on the evolution of plastics use, waste and environmental impacts. Such an outlook on plastics can help policy makers understand the scale of the challenge to transition to a more sustainable and circular use of plastics, as well as to grasp the environmental benefits and macroeconomic consequences of adopting more stringent policies. The OECD expertise on the use of economic instruments and Extended Producer Responsibility schemes to achieve a sustainable and circular use of plastic materials is also of relevance to inform ongoing negotiations and support implementation in member states.

Forthcoming OECD publications respond to a variety of topics and questions that have already been identified in the negotiations. The work, to be delivered in 2023 and 2024, includes the following:

- A report that will delve into the implications of a policy scenario aligned with the ambitious goal of ending plastic pollution by 2040. With member states engaging in negotiations for a legally binding treaty and policymakers advancing domestic strategies to mitigate plastic pollution, the call to end plastic pollution by 2040 has gained momentum (High Ambition Coalition to End Plastic Pollution, 2023). Therefore, it becomes relevant to explore the consequences of aligning policies with this level of ambition. The report will investigate how the policy scenarios presented in the Global Plastics Outlook can be made more ambitious to achieve a sustainable and circular management of plastic materials and minimise their leakage to the environment by 2040.

- A Regional Plastics Outlook for the ASEAN Plus Three region, i.e., ASEAN member countries in addition to The People’s Republic of China, Korea and Japan. As negotiations progress, there is a growing interest in understanding challenges and opportunities in specific global regions, especially in areas where the largest growth rates in plastic consumption and waste generation are projected, such as Southeast Asia. The report will assess the drivers of plastics use and their environmental impacts within the ASEAN Plus Three region in the absence of new policies. Additionally, it will identify effective strategies to curb plastic leakage to the environment.

- A report on policies to require a share of recycled content in products and packaging composed of plastics. Beyond reduction and reuse strategies, plastics recycling increases material efficiency and circularity, lowers greenhouse gas emissions, and can help decrease the leakage of macro-plastics to the environment when compared to less sustainable disposal methods. Governments have made extensive use of supply-oriented policies to increase the production of recycled plastics, however the quality of recycled plastics has not seen sufficient improvements. Establishing requirements for recycled content in products and packaging can be a potential spur to recycled plastics markets. This paper considers policies implemented or planned by front runners, as well as monitoring and reporting for these requirements.
• A report on “New Aspects of EPR: Extending producer responsibility to additional product groups and challenges throughout the product lifecycle”. Extended Producer Responsibility (EPR) is being discussed as a possible core obligation and means of implementation within the INC process. This paper examines relatively novel applications of EPR to additional product groups (including non-packaging plastics and textiles) and to environmental impacts that occur throughout the product lifecycle (in addition to the traditional focus on end-of-life). Based on select case studies, it outlines preliminary issues and considerations with extending EPR in either dimension and provides key insights on the initial application of these policies.

• A report on the distributional impacts of Extended Producer Responsibility. One criticism of the EPR approach that has emerged in the policy debate is that there is a risk that producers will pass the costs of implementing EPR to consumers through increased product prices, possibly affecting the accessibility of essential goods for low-income households. This paper will review the available evidence of EPR leading to price hikes and analyse possible impacts on low-income households.

• A report on trade policies to promote the circular economy in the plastics value chain.

• Forthcoming work to map funding needs and finance currently available. As detailed below, the OECD has already carried out analysis on the costs of eliminating plastic pollution in developing countries, trends in development finance and strategies to scale up its role in support of action to end plastic pollution. Further work will be undertaken to map finance currently available from different sources, including development finance, domestic public finance and private finance.

i. Guidelines for Extended Producer Responsibility (EPR)

EPR is widely used across OECD members to address packaging waste, but also e-waste, batteries, tyres and end of life vehicles.

Note: The European Union’s Single-Use Plastics Directive will require member states to implement EPR for tobacco product filters by 2025. EPR for durable products includes the electronics, car, battery, and tyre sectors.

Source: Global Plastics Outlook
Extended Producer Responsibility (EPR) is a policy approach that makes producers responsible for their products at the post-consumer stage of the lifecycle. EPR has been widely adopted by governments and companies across the OECD membership where nearly all members have a national or local policy in place for relevant plastic product sectors, including packaging (OECD 2022a). The EPR approach is most commonly used for electronics, packaging, vehicles and tyres.

In OECD countries, EPR has been effective in generating a stable source of funding in support of waste collection and recycling and increased collection and recycling rates, although effects on product design have been very limited.

EPR has successfully contributed to (i) shifting end-of-life (EoL) management costs of products from the public sector to producers and consumers, (ii) increasing separate collection of waste that can be problematic when mixed into the general waste stream and (iii) increasing material recovery rates. For example, from 2000 to 2021, roughly the period in which most OECD countries adopted their EPR policies, the share of municipal waste that was disposed of reduced from 58% to 43% while the share that was recycled increased from 17% to 24% (data source OECD.stat).

However, there is only limited evidence to date that EPR is an effective tool for incentivising producers to change the design of their products or packaging to reduce environmental impacts (e.g. durability, re-use, recyclability) beyond material reductions (OECD, 2016). Owing to economies of scale, most EPR schemes
are organised in an industry-wide way that provides only a limited link between product design and the fees paid by producers per product or per weight of material used. For example, EPR fees for packaging material have traditionally been based on a per kilo fee assessment, which incentivised some material reductions (i.e., light weighting) but did not provide incentives for other design changes to improve product circularity (Laubinger et al., 2021). A more granular and “advanced” fee modulation based on detailed product design criteria can provide producers with stronger design incentives, but can also lead to complications, such as an increased complexity and administrative burden and resulting costs (Laubinger et al., 2021). As well, EPR implementation has not led necessarily to a large reduction in per-capita waste generation of covered products.

In recent years, various emerging market economies have also developed EPR systems for packaging. Existing experiences shed light on a number of specific challenges that need to be addressed in developing countries, such as the need of including the informal sector.

To inform the Global Plastics Outlook publications, the OECD commissioned a series of policy studies of the domestic policy frameworks in 12 non-OECD member countries.¹ This analysis identified that several populous countries with emerging economies have recently adopted EPR or have a voluntary system in place for the packaging and durable products sectors. However, data limitations and the novelty of these policies means that the evidence base concerning their effectiveness is relatively limited.

The various experiences shed light on different national circumstances which call for tailored approaches. International dialogue, however, may help establish a common understanding of the opportunities and challenges of EPR and identify best practices for implementing new schemes. Such considerations include, among others, the importance of stakeholder consultation in designing and implementing a packaging EPR, the need to consider the existing (informal) waste management sector, and the importance of ensuring traceability for transparency and enforcement.

The experience to date in both the OECD and in emerging economies suggests that EPR alone is not a ‘silver bullet’ and is unlikely to be sufficient as a stand-alone policy to tackle improper waste management and leakage. EPR schemes should be based on a few key principles, consider local circumstances, and be part of a larger suite of policy instruments to end plastic pollution through an integrated and coordinated approach.

**OECD guidance can be a point of reference to support governments on how to design and implement effective and efficient EPR systems.**

During the intergovernmental negotiations, EPR has emerged as a topic both during discussions on possible core obligations and on means of implementation. During INC-2, Contact group 1 has discussed the adoption of EPR schemes as an expression of the polluter pays principle, the possibility of developing

¹ These included: Brazil, the People’s Republic of China, Egypt, Ghana, India, Indonesia, Nigeria, the Philippines, Russia, South Africa, and Thailand
standards for EPR and EPR guidelines by an experts’ group. The OECD has previously distilled lessons learned from thirty years of its research on the topic area in the 2016 publication “Extended Producer Responsibility: Updated Guidance for Efficient Waste Management”. This document and other recent OECD work can help to inform INC discussions on standards or guidelines for EPR, as well as on the need to adapt EPR schemes to national conditions. The areas that the 2016 guidance covers include:

- Key factors in designing EPR;
- Governance of EPR;
- Financing, free-riding and orphan products;
- Trade, competition, and EPRs;
- Eco-design; and
- EPR systems in emerging and developing economies: the role of the informal sector.

More recently, the OECD has also further researched specific topics of interest that have arisen in the policy debate, such as fee modulation (Laubinger et al., 2022) and online sales (OECD 2019). Currently the OECD is researching extensions of EPR to additional product groups and along the lifecycle and the distributional impacts of EPR. As well, the OECD is working with the Prevent Waste Alliance on a ‘one-stop shop’ for EPR policy guidance.

Further resources:

  Policy highlights: https://read.oecd-ilibrary.org/view/?ref=1128_1128022-j5crhacc6w&title=Global-plastics-outlook-highlights
ii. Map current funding and finance available to address plastic pollution

Developing countries can be particularly vulnerable to the detrimental consequences of plastic pollution and, concurrently, they are often characterised by fast growth in plastics use and considerable leakage rates. This specific context underscores the critical role of developing countries in the global fight to end plastic pollution.

By 2060, plastics consumption is projected to nearly triple from 2019 levels, driven by economic and population growth (OECD 2022b). The largest increases are expected in regions such as Sub-Saharan Africa (x 6.5), India (x 5.5) and South and Southeast Asia (x 3.7). Despite a historical context where plastic use in OECD economies has been higher than in non-OECD countries in both absolute and per capita terms, the growth rate of plastic use in non-OECD economies (x 7.7 over the period since 1990) has surged and now outpaces plastic use growth in OECD economies (x 2.2 over the same period) (Agnelli and Tortora, 2022).

Under the business-as-usual scenario, the largest increases in plastics use are projected to occur in non-OECD economies already characterised by high rates of waste mismanagement and leakage to the environment. In the absence of more stringent policies, the rapid economic growth experienced by developing countries can lead to an increase in waste generation that outpaces improvements in waste collection and management. Furthermore, to harness the lower costs of waste disposal, high income countries have for many years shipped plastic waste of varying levels of quality to developing countries, contributing to the escalating volume of waste in already burdened waste systems in some developing countries (Agnelli and Tortora, 2022). Although the lower labour costs in developing countries can make waste collection and manual sorting of recyclables economically viable (often through informal systems), these efforts are primarily focused on high-value recyclables, while lower-value waste is often overlooked and mismanaged (Agnelli and Tortora, 2022).

As a consequence of these processes and trends, plastic leakage in non-OECD countries is projected to more than double in the 2019-2060 period, from 18.9 Mt to 41.6 Mt² (2022b). While more ambitious policy action is needed in all world regions to effectively end plastic pollution, it is important to recognise that a heavier burden is placed on most developing countries, both in terms of policies and investments required (2022b). Furthermore, the negative impacts of plastic pollution on ecosystems, climate change, human health and livelihoods can be more pronounced or exacerbated in developing countries due to their specific vulnerabilities and characteristics, such as in the case of developing countries that rely more heavily on ocean-based sectors such as fisheries and tourism (Agnelli and Tortora, 2022).

To avoid the business-as-usual scenario referenced above, it is crucial to adopt policies that shift the growth paradigm from a linear model to a circular one, both in OECD and non-OECD countries (OECD 2022b). This approach emphasises waste prevention, the development of robust waste management and

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² This accounts for about 95% of total leakage projected for 2060.
recycling infrastructure, upskilling and regulatory reforms to enhance the efficiency of waste management systems.

The burden on developing countries and the unequal distribution of projected costs emphasise the need for enhanced international support.

According to estimates from the OECD Global Plastics Outlook (2022b), achieving the global ambition of eliminating plastic leakage to the environment would incur macroeconomic costs of approximately 0.8% of global GDP by 2060. However, these costs (as a share of GDP) are projected to be significantly higher in non-OECD countries than in OECD countries. Sub-Saharan Africa is expected to experience the largest macroeconomic impacts, reducing its GDP by 2.8% below the baseline.

A scaling up of infrastructural investments in developing countries is a key requisite to eliminate plastic leakage globally, in particular to enhance waste management. Estimated annual investments of approximately EUR 25 billion will be required to establish basic waste management infrastructure in non-OECD countries, improve recycling facilities and promote sustainable waste management practices (OECD 2022a). It is also essential to establish sustainable revenues streams that can support the expansion of the coverage of efficient waste collection systems. Beyond waste collection and management, directing investments towards upstream stages of the plastic value chain is crucial to promoting circular consumption patterns and alleviating the burden on waste management systems. Strategies may include supporting solutions to reduce avoidable plastics, promoting reuse and fostering eco-design practices.

Given the high burden borne by developing countries and their pivotal role in combating plastic pollution, well-designed approaches throughout the entire lifecycle of plastics are necessary to assist developing countries in accelerating action to combat the plastic pollution crisis. In recent years, providers of development co-operation finance have increasingly funded plastics-related projects and official development assistance (ODA) specifically targeting plastics projects experienced a six-fold increase between 2014 and 2020 (Agnelli and Tortora, 2022). However, development finance represents only a fraction of the total costs to eliminate plastic leakage in developing countries and is likely to remain a small share of total ODA, given other competing needs. Maximising the impact of development finance involves:

i. their better targeting and alignment with country priorities,

ii. fostering a catalytic role to leverage other sources of financing, and

iii. establishing robust policy frameworks and enabling environments for investment.
Areas for possible further work on financing the elimination of plastic pollution.

The negotiations for an international legally binding instrument to eliminate plastic pollution could benefit from further analysis in the following areas:\(^3\):

1. Tracking all types of financial flows, including official development assistance and other types of development co-operation finance, domestic public finance and private finance, to map funding currently available and identify current trends. This would help to locate financing gaps and support decision making on how to allocate scarce public resources strategically. Such analysis would allow to assess the allocation of financial resources geographically, as well as across the plastics lifecycle (Agnelli and Tortora, 2022).

2. There is significant scope to scale up finance across member states (OECD 2022a; OECD 2022b). In some countries a number of domestic financing mechanisms, including market-based instruments like plastic taxes, as well as Extended Producer Responsibility (EPR) schemes, already exist to support actions to achieve a sustainable and circular management of plastic materials. Analysis of existing measures and the identification of best practices could support their wider adoption.

Further resources:


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\(^3\) This list is based on the work carried out by the OECD, it is not exhaustive, and it does not intend to pre-empt the outcome of next INC sessions in any way.
iii. Plastics and Climate: interlinkages and policy synergies

Plastics contribute significantly to greenhouse gas (GHG) emissions and are intrinsically linked to climate change (OECD 2023). In 2019 alone, fossil-based plastics generated 1.8 gigatonnes of carbon dioxide equivalent (GtCO2e), accounting for almost 4% of global emissions (OECD 2022a). In the absence of more ambitious policies, these emissions are projected to more than double by 2060, reaching 4.3 GtCO2e or 4.5% of global GHG emissions (OECD 2022b). Emissions vary across different plastic polymers, with textile fibres and polypropylene (PP) being the highest contributors, followed by low-density polyethylene (LDPE) (OECD 2023). A reduction in plastic lifecycle GHG emissions is essential for achieving ambitious climate scenarios, including net-zero emissions scenarios.

All stages of the lifecycle of plastics, from production to waste disposal, contribute to climate change. Approximately 90% of quantifiable GHG emissions from plastics can be attributed to the production and conversion stage, mainly because of the heavy reliance of plastic production on fossil fuels and the high energy consumption involved. Fossil fuels accounted for 93% of total plastics production in 2019. Despite growth in the use of recycled plastics, they only represent around 6% of production and they are expected to make up only 12% of total plastics use by 2060, in the absence of additional policies. Biobased plastics, derived from biomass sources like corn or sugarcane, currently account for 0.6% of total production. While a shift towards biobased plastics could reduce reliance on fossil fuels, increased demand for biobased plastics could lead to significant changes in land use, deforestation and resulting loss in biodiversity, as well as increased use of water and chemicals. To upscale biobased plastics without negative consequences, careful consideration of land use implications, related GHG emissions and other environmental impacts is necessary (OECD 2023).

Improved waste management plays a crucial role in reducing the GHG intensity of plastic end-of-life treatment. Plastic end-of-life emissions account for 10% of quantified GHG emissions from the plastics lifecycle emissions and vary depending on the disposal option chosen (OECD 2023):

- GHG emissions arising from mismanaged waste are poorly quantified but are expected to be substantial. For instance, recent research estimates that degradation in the environment and non-sanitary landfills result in an additional 2 million metric tonnes (Mt) CO2e of methane emissions annually.

- Among the environmentally-sound waste management options, incineration remains the most GHG-intensive one, accounting for over 70% of quantified GHG emissions from the end-of-life stage, although some emissions could be offset through waste-to-energy processes.

- Recycling enables the production of secondary plastics that can substitute for primary plastics, resulting in a reduction of over two-thirds of emissions compared to primary production, or at least 1.8 tonne of CO2 e for a tonne of polymer produced. The exact emission reductions achieved through recycling depend on the polymer and the energy mix of the recycling sector locally. While new recycling technologies could facilitate the expansion of secondary plastics markets and
reduce their GHG emission intensity, their environmental impacts need to be carefully evaluated. This is particularly the case for plastic-to-plastic chemical recycling, which might allow to increase plastic recycling rates, but may also substantially increase GHG emissions compared to mechanical recycling techniques.

Ambitious policies addressing plastic pollution can generate significant co-benefits for the climate. The OECD Global Plastics Outlook (2022b) shows that a comprehensive policy mix, encompassing the entire lifecycle of plastics, is required to effectively end plastic leakage to the environment. Such ambitions would result in a 50% reduction (2.1 Gt CO2 e) in plastics lifecycle GHG emissions compared to the baseline scenario in 2060. In addition to mitigating environmental impacts of plastics leakage, countries could get closer to achieving their climate objectives.

**Available results indicate that the most cost-effective way of reducing GHG emissions from the plastics lifecycle is to slow down global plastics use and waste generation (OECD 2023).** The reduction of plastic lifecycle emissions primarily stems from policies that restrain plastic use, such as the implementation of plastic taxes, as well as policies that encourage the shift towards recycled plastics, such as taxes on non-recycled plastic waste and recycled content targets. Furthermore, policies such as Extended Producer Responsibility (EPR), landfill and incineration taxes, deposit-refund systems or pay-as-you-throw schemes can lead to improvements in waste management systems, resulting in a higher share of recycled waste and in less mismanaged waste, and hence lower GHG emissions per unit of plastic waste. It is important to note that a shift from waste mismanagement to recycling alone will not be sufficient to reduce plastics end-of-life emissions below current levels due to the projected increase in the overall volumes of plastic waste, making a strong case for policies that enable reductions in plastics use and plastic waste generation.

**There are also important opportunities to create synergies in policies to mitigate climate change and plastic pollution (OECD 2023).** Policies to mitigate climate change and policies to curb plastic pollution show complementarity in the environmental issues they address: the former impacts the GHG intensity of plastics production (mainly through a shift in energy sources), while the latter reduces plastics use, waste and mismanaged waste. The combination of the two policy packages can reduce GHG emissions from the plastics lifecycle by two-thirds compared to the Baseline, by 2.8 Gt CO2e (OECD 2023). Importantly, climate change mitigation policies impact virgin plastics, which are more energy intensive than recycled plastics, leading to a larger increase in the share of recycled plastics in total plastics use compared to the introduction of plastics policies alone.

**Further resources:**

OECD (2022b), Global Plastics Outlook: Policy Scenarios to 2060.  
https://www.oecdilibrary.org/environment/global-plastics-outlook_aa1edf33-en  
OECD (2023) Climate change and plastics pollution: Synergies between two crucial environmental challenges.