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Opinion of the European Economic and Social Committee on 'Proposal for a regulation of the European Parliament and of the Council on preventing plastic pellet losses to reduce microplastic pollution'

(COM(2023) 645 final — 2023/0373 (COD))

(C/2024/2487)

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1. **Conclusions and recommendations**

The European Economic and Social Committee (EESC):

1.1. **agrees** with and essentially supports the Commission's proposal on regulating microplastic pellet operations and emissions and mitigating dangerous pollution in this specific area of primary, unintentionally released particles, in all their forms. This initiative has been long expected and it is socioeconomically feasible, proportional and accepted by most stakeholders;

1.2. points to the urgent need to develop the standardised **methodology** for tracking and properly estimating microplastic pellet losses along the whole supply chain. This could make it possible to estimate emissions and monitor progress towards achieving the set environmental target of a 30 % reduction by 2030, although some measures that are too flexible and too soft might risk missing the targets;

1.3. recommends extending the **scope** of the regulation to carriers, with lighter requirements only for the micro companies. Also, the EU should align with the International Maritime Organization (IMO) legislation process. If the IMO does not provide any rules by mid-2026, the Commission should consider provisions to implement for intra-EU maritime transport, as well as laying the groundwork for tackling the secondary microplastics issue of tyres, paints, textiles, geotextiles and detergent capsules;

1.4. suggests, with regard to environmental and human protection aspects, paying attention in the regulation to the **geographical** areas — as potential intervention points for mitigating/reducing pollution — that are most exposed to microplastics emissions, like (populated) areas where there are manufacturing installations, logistics reloading points, storing areas, ports and road networks, as well as all scattered emission sources regardless of the amount released;

1.5. stresses the need to increase the frequency of compliance **verification** and introduce a mid-term revision of the legislation to assess its efficiency and to review and, if necessary, fine-tune the volume limit for pellet operations laid down in the lightened regulatory requirements prescribed for micro and small enterprises. Pollution will still occur unless the pellet-loss limit is set at the ideal level of zero or close to zero, and there is a risk that some companies could try to make unfair use of the volume declaration to avoid stricter rules;

1.6. warns that the rapidly growing production of virgin and recycled plastic pellets makes it increasingly difficult to mitigate their impact. Therefore, efforts to **implement** and enforce compliance with the regulation should be accelerated;

1.7. notes that there is not a high demand for additional workers, except in green-collar areas, but that awareness and training levels have to be increased across the **workforce**. Moreover, occupational health and safety aspects should be reinforced in both new operations and recycling operations. It is vital that the Commission provide specific, tailored methodological and financial support;

1.8. points out that the **international** aspects of the regulation should be taken into consideration to ensure a level playing field in the competitive environment between EU operators that are complying with the regulation and third-country operators;

1.9. emphasises that, due to the lack of robust, evidence-based data, science and **research** activities have to be stepped up, mainly with a view to understanding the harmful effects on human and ecological **health** of microplastic pellet pollution, material flows and emissions along the whole chain and of secondary, unintentionally released microplastics, both concentrated and scattered, which could provide a basis for tailored pieces of legislation;

1.10. points out that the guidelines provided to the economic operators on the equipment to be used and the processes, so as to establish the required risk assessments are rather general and suggests reviewing the Best Available Techniques (BAT) to include pellets and reconsidering the alignment of the requirements for carriers to those of economic operators no later than the mid-term review of the regulation.

2. **Background summary**

2.1. *Microplastics and the problem with them*

2.1.1. **Microplastics** are solid plastic particles, typically smaller than 5 mm, composed of mixtures of **polymers** and functional additives. Overall, around **60 million tonnes** of microplastics are estimated to be used in the EU/EEA each year ([1]).

2.1.2. Microplastics can be primary or secondary **in origin** and can be put in use and **emitted** into the environment intentionally or unintentionally:

Table

Origin v destiny matrix of micro- and nanoplastic pollution ([2])

Origin	Destiny	
	Intentional	Unintentional
Primary	Capsules Artificial turf Cosmetics, household goods Plastic exfoliating particles etc.	Plastic pellets (virgin and recycled)

([1]) Plastics — the fast Facts 2023, https://plasticseurope.org/wp-content/uploads/2023/10/Plasticsthefastfacts2023-1.pdf.
([2]) Kiran, B.R., Kopperi, H. & Venkata Mohan, S. Micro/nano-plastics occurrence, identification, risk analysis and mitigation: challenges and perspectives. Rev Environ Sci Biotechnol 21, 169–203 (2022), https://doi.org/10.1007/s11157-021-09609-6.

Origin	Destiny	
	Intentional	Unintentional
Secondary	Not applicable	Tyre/road wear particles Textile fibre loss Paint (peeled, worn, ground, sanded paint, etc.) Plastic goods (worn, degraded)

The above three segments have to be dealt with separately in terms of legislation, as they have different users, different life paths, different requirements in terms of potential prevention, different intervention points, different actors and different tools.

2.1.3. The ranking of **all unintentionally** released microplastics by volume and split rapidly changes over time as new results are frequently published showing different volumes and very wide estimated deviations: the total emissions from the six main sources are 800 000-1 800 000 (90 % of the total) ([3]).

2.1.4. The problem with microplastics: according to the summary of the relevant scientific opinion of the Group of Chief Scientific Advisors to the European Commission, *Environmental and Health Risks of Microplastic Pollution*, microplastics can be found in the air, water and soil, where they may persist in the environment, enter the food chain and accumulate in living organisms. Furthermore, microplastics can act as substrates for biological and chemical contaminants, thereby potentially serving as long-range transport vectors of contaminants in the environment ([4]). The continuous release of microplastics from multiple scattered emission sources results in the pseudo-persistence of microplastics in the environment and widespread occurrence due to diffuse sources of pollution. Acute exposure to a high concentration of microplastics, chronic exposure and the long-terms effects of the pseudo-persistence of microplastics in the environment need to be further investigated, thus particular attention should be paid to these issues, as we do not yet know how **damaging they may be for human health and the environment** ([5]).

2.1.5. Therefore, it is **recommended** to both **prevent and reduce** microplastic pollution by legally targeting the most polluting activities, by taking politically and socioeconomically feasible action and by promoting microplastics research and standardisation of estimation methodologies, following the precautionary principle ([6]).

2.2. *Microplastic pellets*

2.2.1. **Scope, definition:** 'plastic pellet' means, consistent with ISO/TC 61 Plastics, a small mass of preformed molding material, solid polymer-containing particles, to which additives may have been added, having relatively uniform dimensions in a given lot, regardless of their shape and appearance.

2.2.2. **Pellet loss volumes:** estimates show that between 52 140 tonnes and 184 290 tonnes of pellets were **lost to the environment** in the EU in 2019 ([7]).

([3]) Current EU initiatives to prevent microplastics in the environment — Werner Bosmans, Team leader 'Plastics', DG Environment, 9 March 2023, https://bmbf-plastik.de/sites/default/files/2023-03/Bosmans_EU_initiatives_MP.pdf.
([4]) https://www.pops.int/TheConvention/POPsReviewCommittee/Meetings/POPRC17/POPRC17Followup/tabid/9096/ctl/Download/mid/25661/Default.aspx?id=4&ObjID=30809.
([5]) European Commission, Directorate-General for Research and Innovation, Group of Chief Scientific Advisors, Scientific opinion on microplastic pollution, Publications Office of the European Union, 2021, https://data.europa.eu/doi/10.2777/554917.
([6]) https://www.pops.int/TheConvention/POPsReviewCommittee/Meetings/POPRC17/POPRC17Followup/tabid/9096/ctl/Download/mid/25661/Default.aspx?id=4&ObjID=30809.
([7]) Commission Staff Working Document — Impact Assessment Report (SWD(2023) 332 final).

2.2.3. **Pellet sources:** plastic industrial raw materials come in different forms, including **pellets, flakes, powders and liquid** forms, all referred to collectively as '**pre-production** plastic pellets', as they do not become end-use products for final customers. Pellets can reach the environment through losses occurring at every stage in their supply chain: production (virgin or recycled), processing, transport, distribution, other logistics operations, waste management, etc. Therefore, tackling pellet losses clearly requires a supply chain approach ([8]).

2.2.4. **Pellet emissions:** it is estimated that losses happen at a higher rate at **processing and recycling** installations (0,02 %-0,06 % of the total volume processed or recycled) than at **production** ones (0,01 %-0,03 % of the total volume produced), and at an even higher rate during **transport** and logistics operations (0,03 %-0,12 %). Stakeholders mostly agree that losses are due to improper handling ([9]).

2.3. *The legislative field*

2.3.1. **Voluntary proceedings:** Operation Clean Sweep (**OCS**) started in the USA and has been developed by the industry for 30 years now. It helps tackle pellet leakage through collective learning. In Europe, European Plastic Converters and Plastic Europe developed an **OCS Certification Scheme**, which has 2 800 members, in 2022 ([10]). A similarly targeted tool was adopted under the OSPAR Convention for the maritime segment ([11]). The Commission proposal is based on those practical experiences.

2.3.2. **Microplastic legislation:** the area is mainly covered by directives aimed at reducing emissions' **transport** to and **spread** via waters, waste waters and air ([12]).

2.3.3. **Secondary microplastics:** the ongoing initiatives focus on designing legislations **tailored** to the different sources of secondary, unintentionally released microplastics. For the time being, the Commission is focusing on primary plastic pellets (see also the obligation to annually report on pellet losses under the REACH Regulation ([13])) while other, secondary, unintentionally released microplastics, like those from paints, textiles, geotextiles, tyres and detergent capsules, are partially being tackled (see Euro 7 for tyres, and the Ecodesign for Sustainable Products Regulation ([14]) for textiles and paints) ([15]). The EESC recently developed relevant opinions on these specific areas ([16]).

2.3.4. **Pellet regulation:** this proposal aims to **reduce pellet losses to the environment** and would lead to an estimated 54 % to 74 % decrease compared to the baseline, equivalent to a **6 % reduction in the total** amount of unintentional microplastic releases. In line with the Commission's **30 % overall reduction target** for microplastics released to the environment, it is aimed at helping **preserve ecosystems and biodiversity, decreasing potential health impacts and benefiting local economic activities**.

([8]) https://www.pops.int/TheConvention/POPsReviewCommittee/Meetings/POPRC17/POPRC17Followup/tabid/9096/ctl/Download/mid/25661/Default.aspx?id=4&ObjID=30809.

([9]) https://www.pops.int/TheConvention/POPsReviewCommittee/Meetings/POPRC17/POPRC17Followup/tabid/9096/ctl/Download/mid/25661/Default.aspx?id=4&ObjID=30809.

([10]) Operation Clean Sweep (OCS) voluntary free programme, https://www.opcleansweep.eu/.

([11]) https://www.ospar.org/documents?d=46269.

([12]) Current EU initiatives to prevent microplastics in the environment — Werner Bosmans, Team leader 'Plastics', DG Environment, 9 March 2023, https://bmbf-plastik.de/sites/default/files/2023-03/Bosmans_EU_initiatives_MP.pdf.

([13]) Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, p. 1).

([14]) COM(2022) 142 final.

([15]) Current EU initiatives to prevent microplastics in the environment — Werner Bosmans, Team leader 'Plastics', DG Environment, 9 March 2023, https://bmbf-plastik.de/sites/default/files/2023-03/Bosmans_EU_initiatives_MP.pdf.

([16]) OJ C 62, 15.2.2019, p. 280; OJ C, C/2024/888, 6.2.2024, ELI: http://data.europa.eu/eli/C/2024/888/oj; OJ C 146, 27.4.2023, p. 35; OJ C 443, 22.11.2022, p. 130.

2.3.5. According to consultations, stakeholders prefer lighter requirements for micro and small enterprises and for others who handle less than 1 000 tonnes per year, with derogations from annual internal reassessment and external certification. Since, according to the Commission's assessment, 12,5 % of the biggest players handle 80 % of all pellets, this approach is intended to ensure the appropriate mitigation of potential impacts on smaller players' operations and strike a proportional balance between their compliance capacities, complex resource requirements (time, human and financial) and the complex benefits/yields (environmental, health, biodiversity, economic).

3. **General remarks**

3.1. The EESC essentially **agrees with and supports** the proposed regulation as:

— it is a **necessary**, **feasible** and **pragmatic** step towards meeting the 2030 zero pollution action plan target ([17]),

— it builds on the **30 years' experience** of the voluntary **OCS** programme, adapting and transforming its components into a more efficient regulatory format ([18]),

— it aligns with the latest **scientific findings** and recommendations from the Group of Chief Scientific advisors, showing priority weightings and key areas for further progress ([19]),

— it considers the outcomes of the **competitivity check** and the **micro, small and medium enterprises (MSME) check,**

— it addresses primary plastic pellet pollution, which is **easier to define and can be separated** from all other, more complex, secondary, unintentionally released sources so immediate action can be taken, yielding results,

— it targets the value chain of the **primary 'pre-production' section**, which involves a limited number of industrial players who are more aware of the issue. This focus allows for more efficient and targeted legislation, avoiding complexities, i.e. time constraints and the considerable resources, research, capacity building and extensive legislative coordination required to regulate the subsequent 'use', 'end-of-life' and 'recycle' stages of the functional product value chain and the resulting secondary emissions, which involve a high number of consumers, further operators and public authorities ([20]),

— the majority of pellet losses can be attributed to deficiencies in material flow **management**; there is a good **agreement** level and support for the proposed version from the vast majority of stakeholders ([21]) following a manifold set of stakeholder consultations and impact assessments. Due to the segment's characteristics, i.e. that losses are biggest in the transport sector, it can be advisable to include carriers in the scope, with only micro companies exempted and halve the volume limit for lighter requirements for this sector.

([17]) *Towards Zero Pollution for Air, Water and Soil* (COM(2021) 400 final).
([18]) Operation Clean Sweep (OCS) voluntary free programme, https://www.opcleansweep.eu/.
([19]) European Commission, Directorate-General for Research and Innovation, Environmental and Health Risks of Microplastic Pollution, Publications Office of the European Union, 2019, https://data.europa.eu/doi/10.2777/65378; https://www.pops.int/TheConvention/POPsReviewCommittee/Meetings/POPRC17/POPRC17Followup/tabid/9096/ctl/Download/mid/25661/Default.aspx?id=4&ObjID=30809.
([20]) Kiran, B.R., Kopperi, H. & Venkata Mohan, S. Micro/nano-plastics occurrence, identification, risk analysis and mitigation: challenges and perspectives. Rev Environ Sci Biotechnol 21, 169–203 (2022), https://doi.org/10.1007/s11157-021-09609-6.
([21]) Commission Staff Working Document (SWD(2023) 333 final).

3.2. The EESC welcomes the fact that the proposal takes into account the heavyweight subsector of **mechanical recycling**, which is the fastest increasing source of microplastic pellets, hence emissions. This calls for improved separation of plastics in waste collection and enhanced **sorting** processes to shift from mixed mechanical downcycling to specific recycling for the purpose of retaining value ([22]).

3.3. Efforts and investment should be increased to accelerate **research** and build a comprehensive, quantitative knowledge base on the **lifecycles**, generation, paths and accumulations of **other** secondary, **unintentionally** released degraded microplastics fragments, including biodegradable ones. After impact assessments have been carried out on the matter, specifying the best prevention and mitigation points, a decision should be made as to which policy instruments and legislation types are best suited to further tackling this microplastic emission problem.

3.4. The **deviations** of estimated volumes, ratios of emissions and accumulations, and the complex integrated socioeconomic costs/benefits (or investments/yields) of mitigation efforts are extremely scattered, i.e. the minimum-maximum rates of 1:3 to 1:8 are too wide. This makes it very difficult to target action and to measure and monitor progress.

3.5. It is essential to develop a **standardised** pellet-loss estimation methodology, partly due to the difficulties in identifying who the 'polluter' is in order to properly apply the 'polluter pays' principle. Standardisation will need sector-specific considerations to take into account the different volumes per use. This will be key to enabling comparability, monitoring progress, targeting players and ensuring cost-efficiency. In terms of **monitoring**, considering the increase in the annual quantity of pellet loss, annual **reporting** under the REACH Regulation is key.

3.6. **Material flow analysis (MFA)** is a most promising model — also used by the European Commission's Joint Research Centre — describing and estimating the full life destiny of polluting components. Developing sampling and analytical methods and gathering further experimental data are crucial to supporting the accuracy of MFA ([23]). It is advisable to set a volume-of-losses target, ideally equal to zero or as low as possible, alongside the SME criteria to justify adhering to the lighter regulatory requirements.

3.7. The EESC **warns** that, according to the most recent scientific evidence, pollutant **accumulation** is highest in soils, followed by continental waters and then by marine areas, even though public attention has so far been reversed. It recommends focusing on all these areas equally.

3.8. Non-EU market pellet **imports** need to be carefully reviewed in order to ensure that the same conditions prevail for all industrial stakeholders, ensuring a level playing field for EU operators.

3.9. The maritime transport of pellets deserves more attention due to its specific routes, transfer technologies and conditions. The EESC recommends that the Commission keep supporting the IMO's ongoing work towards international legislation. If the IMO does not provide any rules by mid-2026, the legislation on maritime transport can be implemented on purely intra-EU shipping with strongly precautious technical conditions on the carrying, handling, and packaging methods. The existing good practices, like those of the Antwerp Port project ([24]), should be widely published.

([22]) European Commission, Joint Research Centre, Amadei, A., Ardente, F., Modelling plastic flows in the European Union value chain — Material flow analysis of plastic flows at sector and polymer level towards a circular plastic value chain, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2760/66163.

([23]) Operation Clean Sweep (OCS) voluntary free programme, https://www.opcleansweep.eu/; A.E. Schwarz, S.M.C. Lensen, E. Langeveld, L.A. Parker, J.H. Urbanus: Plastics in the global environment assessed through material flow analysis, degradation and environmental transportation, Science of The Total Environment, Volume 875, 2023, 162644, ISSN 0048-9697, https://doi.org/10.1016/j.scitotenv.2023.162644.

([24]) https://safety4sea.com/port-of-antwerp-to-launch-zero-pellet-loss-innovation-challenge/.

4. **Specific remarks**

4.1. *Labour aspects*

4.1.1. Compliance with the new regulation will require additional human resources and **new job profiles**, calculated by the Commission at around 4 000 full-time equivalents (FTEs). This will affect the **split** between blue-collar, white-collar, green-collar workers and technical staff in the new workforce.

4.1.2. It is essential to **raise** awareness and increase specialised skills and buy-in across the **entire workforce**. The envisaged technical support from the Commission is welcome, and it has to be modulated and tailored to the functional areas of the workers concerned.

4.1.3. The potential occupational **health and safety** impacts of the regulation should be carefully explored. These must be addressed when reviewing and redesigning work processes and working conditions.

4.2. *System management and economies*

4.2.1. The new **administrative and enforcement costs** incurred by the competent national and EU authorities might be relatively moderate, except for certification costs, depending on the number of certificates ([25]). However, awareness-raising, capacity building and training for all stakeholders, especially the workforce, in order to run an efficient compliance and verification system could potentially be more challenging than expected without proper support and coordination from the European Commission.

4.2.2. As per the lighter requirements for SMEs, and since self-reporting and self-assessments are less efficient than external and independent controls, it is advisable for all Member State authorities to increase the **frequency** of environmental inspections. The EESC underlines that it is vital to strengthen external controls and carry out a mid-term revision of this legislation in order to take on board potential new scientific findings and implementation gaps.

4.2.3. The growing volumes of pellet **imports** will reduce the emission sources from manufacturing but increase losses from the transport and conversion sections of the pellet supply chain.

4.3. The **pellet measures** seem to be based on size, technology and on Member States' criteria, which are rather **flexible** and therefore confer a higher level of responsibility on the relevant authorities. Due to the lack of standardised methodology, there are no requirements for maximum losses allowed. The review and updating of the BAT legislation for both manufacturing and transportation is an urgent need.

4.4. Economic operators are required to establish their **risk assessment** plans according to the annexes to the Commission's proposal, but the guidelines provided are too general. Furthermore, carriers, except for micro ones, should be included in the scope of the requirement to perform risk assessments. **Moreover, safety measures** should be included when workers handle pellet spills and clean-ups.

4.5. Attention has to be paid to locations that are **exposed** to concentrated emissions, like the areas around installations, logistics points, transport hubs, roads and crossings used for the transport of pellets.

Brussels, 14 February 2024.

The President
of the European Economic and Social Committee

Oliver RÖPKE

([25]) Cost-benefit analysis of policy measures reducing unintentional release of microplastics, 21 March 2022 — Stakeholder workshop; https://microplastics.biois.eu/EC_ENV_Unintentional_Microplastics_Workshop_3_old_sources.pdf.