



Response of the EU Tyre and Rubber Sector to the Open Public Consultation on new product priorities for Ecodesign for Sustainable Products Regulation

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Executive summary

The EU tyre industry supports the transition of the Green Deal to move towards a circular economy. The commitment of the tyre industry to the EU circular economy goals is high, and industry is working on a number of measures to make its products more circular and more broadly sustainable. Thus the tyre industry welcomes the ESPR initiative and wishes to contribute constructively. This paper outlines the elements that must be taken into account when considering tyres under ESPR.

Tyres that are to be placed on the EU market, are subjected to strict regulatory requirements. In the near future, the current regulatory spectrum – which includes requirements on rolling resistance, wet grip and noise – will be complemented by requirements on tyre abrasion, to mitigate the release of microplastics in the environment, and tyre wet grip on worn tyre, which should contribute to both safety and tyre lifespan extension. The current and upcoming framework for tyres already addresses some of the ambitions of the ESPR ecodesign requirements to improve circularity, energy performance and other environmental sustainability criteria.

When considering the potential inclusion of tyres into the first ESPR Working Plan, priority should be given to the improvement of the **overall environmental footprint (including carbon footprint) of tyres**. Only such an approach – i.e., addressing the entire environmental footprint – would **provide a holistic vision of the sustainability of tyres**, whereas



focusing on individual ecodesign requirements carries the risk of negative impacts on other environmental or safety related performances.

The potential inclusion of tyres into the ecodesign framework, according to the above approach, must also take into account the following considerations:

- **Support the deployment of innovative and sustainable materials, including renewable materials.** Tyres are made of a set of hundreds of materials and chemicals. For some of them, sustainable substitutions could be developed with recycled materials while for others renewable (bio-based, bio-sourced) can be envisioned. Both solutions are of importance when it comes to improving the **sector environmental footprint** (including carbon footprint) and the sector's **resilience to supply chain disruptions**, which should be equally considered when setting requirements under ESPR. The Tyre industry supports a holistic approach on **sustainable material – including both renewable and recycled materials**
- **Envisage a feasible implementation of potential measures**, given the intrinsic product complexity of tyres. The timeline for any likely product performance measure must be feasible, given that:
 - **Considerations around the possible introduction of recycled content targets have to be assessed against the readiness of the market to supply the quality and quantity needed.**
 - Standards and calculation methodologies for tyre sustainable material (recycled and renewable) content will need to be defined prior to putting quantitative ecodesign requirements in place. The tyre industry is ready to support the Commission on investigating the prerequisites for defining criteria.
- **Consider technical and environmental trade-offs.** Tyres are highly technical and complex products comprising more than 200 materials and engineered in function of dozens of mobility-related performances, safety being the most essential function. As target conflicts are inherent to tyre development, improving one performance area can negatively affect another one. When putting potential new environmental rules for tyres in place, the impact on the balance with safety-related performances and features of tyres therefore needs to be carefully assessed.
- **Ensure the development of EU-wide End-of-Waste criteria** for materials derived from End-of-Life Tyres (ELT). There is currently an untapped potential for an uptake of tyre-to-tyre closed loop materials, but the lack of EU-wide End of Waste criteria creates uncertainties and hurdles for the development of a genuine supply chain for these materials. The recognition of End of Waste status or ELT derived materials is a key enabler for the creation of an effective EU market for secondary raw materials, and to increase the circularity of the tyre sector.
- **Ensure consistency and synergy with the current and upcoming regulations on tyres.** Several regulations are already scheduled, **including soon-to-be-regulated performances** such as tyre abrasion, labelling of retreaded commercial tyres and already regulated performances such as improved energy efficiency (rolling resistance). To avoid double legislation, no separate ecodesign criteria should be defined for performances already regulated under existing/upcoming regulation.



Analysis of the potential measures under the ESPR according to the JRC preliminary study

The JRC study¹ has identified several potential measures for tyres to be regulated under ESPR, namely: Recycling and Recycled Content Target, Reliable testing measures for abrasion, Retreading tyres for waste reduction, upgrading the rolling resistance and sustainable sourcing for rubber.

ETRMA has highlighted below the sectors' feasibility considerations on the potential requirements identified by JRC. While rolling resistance, abrasion and elements of sustainable sourcing are already regulated outside of ESPR, these requirements are also addressed, for sake of a complete assessment.

1. Recycled Content Target

Innovation on the use of recovered, recycled and renewable materials is a continuous endeavour in the conception of tyres. Tyre raw materials must address the technical specificities required for the development of tyres, including sustainability and safety goals. In that respect:

1. **Recycled content in tyres is just one of the pathways to explore and develop towards more sustainable materials in tyres.** Bio-based materials in tyres is another pathway. The two pathways must always be considered together in a tyre life cycle assessment to ensure that the new overall tyre design, including all materials and components, yields a reduction in the environmental impacts from cradle to grave.
2. Tyre recycled content is being given considerable attention by tyre manufacturers and recycled materials are progressively applied in new products. However, there is a **myriad of interplays and conditions to be considered and carefully evaluated.**

While tyre-to-tyre recycling is one of industry's goals, today fully closed-loop recycling of ELT rubber is not yet feasible for technical and economic reasons. There is currently a lack of **data on the interplay between recycled content and tyre performances** – for example rolling resistance, wet grip, abrasion. These uncertainties are related to several factors, among them:

- the interplay amongst various recycled materials;
 - the availability of suitable recycled material for tyres (especially in view of its relatively low technological standard versus highly engineered virgin materials);
 - established definitions and standard methods for tyre recycling ;
 - lack of data on impact and benefits of tyre recycled content from the entire Life-Cycle perspective, as above stated.
3. Standards for tyre recycled content (types and quality) will need to be defined prior to putting quantitative ecodesign requirements in place. Due to the complexity of the matter this will **require sufficient time**. As an example, packaging (which is advanced in recycling compared to other products) will need to be recyclable only from 2030. The challenge is even higher for tyres. Hence, we recommend a reasonable timeline as well as applying a holistic approach to sustainable material.

¹ As per Table 10. Regulated aspects and improvement potential aspects not currently regulated in the EU for the 12 shortlisted end-use products (page 46, JRC preliminary study).



Cornering the potential circularity-related requirements for tyres (end-of-life and material), the supply of recovered and renewable material is expected to be limited in terms of quantity and quality. The same seems true for some existing recovery and recycling channels, where capacity is either decreasing, not available in relevant quantities or need to be completely developed up to scale

ETRMA asks the EU Commission to

- Target the overall environmental footprint of tyres (reflecting a comprehensive LCA approach with benefits and drawbacks), rather than addressing the ecodesign requirements individually, when considering tyres under the ESPR working plan.
- **Consider renewable material as well, and place on an equal footing recycled content and renewable (bio-based, bio-sourced) content.** This will leave flexibility for R&D to identify and promote the most sustainable solution for each material on a case-by-case basis.
- **Investigate the impacts and prerequisites,** considering ELT and tyre material market development, market size, and possible supply/demand effects. This research should evaluate potential development measures of relevant materials and recycling channels, including support measures to align the policy timeline with the time needed for technology and material as well as standards availability. Such an approach should be the next step to investigate the possibilities of recycled content and recyclability in tyres.
- Acknowledge the recycling status for chemical recycling technologies from a regulatory standpoint.

2. Recyclability of tyres

Multiple recycling pathways are needed and will be needed to recover End of Life (EoL) tyres. Both open loop and closed loop recycling options have their future place within the market to recover all end-of-life tyre arisings, including all the technologies necessary to accomplish this (mechanical, physical, chemicals, etc.). Open loop recycling keeps recycled materials within the supply chain for as long as possible and helps to achieve circularity of the sector overall. To facilitate the uptake of recyclates in any application, the quality of the output of recycling streams needs to be considered.

The current situation around the collection and treatment of tyres is the result of many years of research and building the recycling industry. At the end-of-life, tyres are collected, and their treatment (through material recycling and co-incineration) is organized, through the end-of-life tyre (ELT) Management Companies across EU countries, the vast majority of these operating under Extended Producers Responsibility schemes². To develop recycling channels to enable higher shares of recycled content over the longer-term, the **regulation needs to prioritize the most favorable recycling pathways.**

The actual recycling rate and recycling options for End of Life tyres are the result of an imperative for risk management that could restrict some applications and the availability of technologies and outlet markets for safe recycling. In this context, PAH content limits that exist for most products that can be manufactured from ELT recyclate are considered a

² In 2019, 95% of ELTs were collected and treated for material recycling and energy recovery the treatment of ELTs is today largely subdivided into co-incineration in the cement industry (40%), civil engineering applications (3%), and mechanical recycling (52%). Research into other routes, such as chemical recycling through pyrolysis or devulcanization, has been initiated. https://www.etrma.org/wp-content/uploads/2021/05/20210520_ETRMA_PRESS-RELEASE_EL-2019.pdf



factor limiting recycling opportunities. To ensure the use of ELT recyclates as a secondary raw material, a low PAH content in tyre rubber is therefore essential. One of the main sources of PAHs in tyres is carbon black. PAH originating from Carbon Black production processes are strongly bound to the carbon black and are not bio-available from rubber products (including crumb) as demonstrated amply³ and acknowledged and adopted by the RAC⁴. The tyre industry has maximized the removal of PAHs from tyres following the Entry 50 (Aromatic oils restriction) in REACH which has been effective for many years.

ETRMA asks the EU Commission to

- Establish **EU-wide End of Waste criteria** for ELT derived material including granulates, powders, recovered carbon black and oil derived from pyrolysis. Having recycled materials considered as having ceased to be waste is the way to advance the market uptake of secondary raw materials.

3. Reliable testing methods for abrasion (durability)

The Tyre Industry understands the concerns about microplastics and supports the search for effective solutions to tackle microplastic pollution. The subject of Tyre and Road Wear Particles (TRWP) is a priority for the tyre industry, which is collectively working to advance scientific knowledge⁵. Research has shown that the amount of TRWP produced is affected by a combination of factors: tyre design, driving behaviour, road surface and topology, vehicle characteristics and weather conditions.

The members of ETRMA, together with ETRTO (European Tyre and Rim Technical Organization), are committed to achieving technically robust and workable and standardized tyre abrasion test method. In this context it is critical to ensure coordination between UN and EU regulations. A joint task force has been created at UNECE level to propose a new regulation on tyre abrasion performance including a test and threshold for type approval. A regulatory proposal on the test method is expected in February 2024. It is essential that an UN-validated test method is developed before tyre abrasion of tyres in the market can be assessed and limits can be defined. In accordance with general practice at UNECE it will also be essential that the new performance limits to be set will be implemented with sufficient transition times for new type approvals as well as for tyres entering into service or placed on the market to allow the market to adapt to these limits.

ETRMA asks the EU Commission to

- Keep product related legislation on tyre abrasion under the upcoming UNECE / Euro 7 frameworks.
- Support a holistic approach to identify additional mitigation options to the generation and transportation of TRWP which are generated by external factors.

³ <https://publications.jrc.ec.europa.eu/repository/handle/JRC111476>.

⁴ <https://echa.europa.eu/documents/10162/4f099937-658f-8b86-2f62-5e767fab4d6e>.

⁵ <https://tireparticles.info/our-research/>.



4. Retreading of truck and bus tyres for waste reduction (remanufacturing)

Truck and bus tyre retreading is the most established remanufacturing practice in the tyre industry. It involves replacing the tread on worn tyres while preserving the structure of the tyre – its casing – reintroducing it into the distribution circuit of tyres. Retreading extends the life of the casing, optimizing the use of raw materials and energy for production, while also reducing waste. Importantly, it also helps sustain the business of thousands of SMEs involved in the retreading supply chain.

Delegated legislation under the EU Tyre Labelling Regulation to extend the labelling scheme to retreaded tyres for heavy-duty vehicles is still in the making. The retread label can serve as an identifier in the context of EPSR and thus needs to be completed before inclusion of retread as an ecodesign criterion.

Parallel to that, it should be noted that ETRMA members' truck and bus tyres are designed to withstand several use cycles. However, due to the variety of usage conditions, whether **a casing is still suitable for retreading can only be assessed after its usage.** Any *a priori* retreadability criterion via a dedicated test method is currently not feasible.

While retreading of tyres for heavy-duty vehicles and aircraft has been an established business model for many years, **retreading of tyres for cars and light commercial vehicles (vans)** has been reduced to a niche market in which only a very small number of companies, mainly SME's, are active with a focus on a small number of sizes. This is due to the following reasons:

- The low level of automation which has increased costs;
- Trade-offs amongst certain environmental performances, e.g. higher material circularity in a product vs. high fuel efficiency during the product's use phase.
- Availability of carcasses for retreading is limited. This results from the high complexity, but also (and foremost) from the high diversity of products and number of sizes in passenger tyre segment. The strict regulatory requirements on the vehicles and on the tyres, the range of vehicle diversification, have contributed to the explosion of tyre sizes available for a given car. For example, a VW Golf before 2000 had less than 5 different tyre size choices, in today's market this has expanded to over 15.
- Retreading requires specific moulds for each tyre size. There are around 1000 different car tyre sizes on the market today, a number that has increased by approximately 250% over the last two decades, with many variants by size, resulting in more than 125,000 different tyre models for passenger cars. The number of tyre sizes and diversity of products is dictated by the need to respond to sophisticated requirements from regulations, OEM's and the market. In the truck and bus segment, on the other hand, more than 95% of the retread market can be covered with 12 sizes.
- Finally, tyre use, age and maintenance heavily affect the retreadability and might also impact the safety of retreaded tyres.



ETRMA asks the EU Commission to

- Issue the delegated legislation under the EU Tyre Labelling Regulation to enhance the benefits for the sector and the environment that the label for retreaded commercial tyres will bring.
- Create a supportive framework to prevent heavy-duty vehicles casings still suitable for retreading from becoming waste to contribute to the ESPR objectives.
- Promote the use of retreaded tyres for heavy-duty vehicles through incentives, such as the Green Public Procurement schemes, introducing mandatory targets for Member States.

5. Upgrading rolling resistance (energy efficiency)

The EU Tyre Industry is fully committed to the decarbonisation ambition of the Green Deal and has been dedicated to reducing its CO2 footprint throughout the tyre life cycle by investing in innovative and sustainable technologies, while improving road safety performance. According to life cycle assessments⁶, the use phase has the highest contribution to the environmental load in the life cycle of a tyre. Addressing tyre's rolling resistance is therefore the most effective measure to improve the CO2 footprint of the tyre.

A more determined tyre regulatory framework tightening the Type Approval limits for Rolling Resistance performance has already been approved in March 2023 under UN Regulation 117 to be transposed into the General Safety Regulation. This will gradually remove more than 50% of the worst performing products from the EU market by 2028. The upcoming revision of the EU Tyre Labelling regulation which will require a rescaling of the label grades for rolling resistance will help consumers to make an informed choice.

ETRMA asks the EU Commission to

- Retain rolling resistance under existing framework - all future improvements should take place within the Type Approval legislation.

6. Sustainable sourcing for rubber (resource use)

Sustainable sourcing is a very broad topic currently covering social, ethical and environmental performances, from the recently adopted Deforestation Regulation to the Sustainable Corporate Governance legislation. In addition to recycled content covered in the first section, there are also other ways to improve sustainability of raw materials, i.e. their sustainable sourcing, such as sourcing of sustainable natural rubber, development of alternatives to natural rubber, use of polymers that have low emissions in their production, or bio-sourced materials. Creating a favourable framework for such approaches is important to complement potential ecodesign requirements. With the coming into force of the Deforestation regulation, which includes natural rubber in its scope, then all rubber and tyres coming into the EU will have to be deforestation-free. This adds to the initiatives already taken by industry to support a sustainable natural rubber supply chain, notably through GPSNR⁷

⁶ <https://www.etrma.org/wp-content/uploads/2019/09/lca-executive-summary-27-09-01.pdf>.

⁷ <https://sustainablenaturalrubber.org/theory-of-change/>



These and other emerging technologies could have a great potential for circularity and should be investigated from an ecodesign perspective, as well.

- Efforts to secure and enhance the availability of bio-based and bio-sourced materials in the EU.
- A framework to support the further development and uptake of EU-sourced bio-based alternatives, such as dandelions and guayule to produce natural rubber alternatives, and bio-based synthetic polymers.
- Funds and facilitation of the development of strategic projects in the EU that have the potential to help secure the EU's diversified access to critical raw materials and have strong environmental and social performance.

ETRMA asks the EU Commission to

- Consider the diversity of approaches for reducing the environmental footprint of tyres as well and allow for inclusion of sustainable materials into the framework of ecodesign without impairing on tyre's performances related to road safety.
- Deal with sustainable sourcing of natural rubber under the Deforestation Regulation, and support an effective and operable implementation of the regulation.

Conclusions and Recommendations

The EU tyre industry supports the transition towards a circular economy. With strict regulatory frameworks already in place for rolling resistance and with upcoming frameworks on abrasion and enhanced sustainable sourcing of natural rubber through the deforestation regulation, some substantial ESPR requirements are already covered or being effectively taken into account. In that context, when defining further ecodesign requirements under ESPR, consideration should be given to the improvement of the **overall environmental footprint (including carbon footprint) of tyres**. As full closed-loop recycling of ELT rubber is not yet feasible for technical and economic reasons, circularity requirements for recycled content must over the long-term be defined based on a Life Cycle Analysis approach and a thorough understanding of the development stage and maturity of recycling and material markets on a product level. Standards for tyre recycled content (types and quality) will need to be defined prior to putting quantitative ecodesign requirements in place. Due to the complexity of the matter this will **require sufficient time**.

From a Life-cycle perspective, requirements on recycled content should be extended to renewable (bio-based, bio-sourced) content to leave flexibility for identifying the most sustainable solution for each material on a case-by-case basis. A diversity of approaches covering both recycled and renewable materials would effectively contribute to reducing the environmental footprint of tyres.

ETRMA recommends undertaking the following actions to enhance the sustainability of tyres, namely:

- Target the overall environmental footprint of tyres (reflecting a comprehensive LCA approach with benefits and drawbacks), rather than addressing the ecodesign requirements individually, when considering tyres under the ESPR working plan.
- **Consider renewable material as well, and place on an equal footing recycled content and renewable (bio-based, bio-sourced) content.** This will leave flexibility for R&D to identify and promote the most sustainable solution for each material on a case-by-case basis.
- **Investigate the impacts and prerequisites**, considering ELT and tyre material market development, market size, and possible supply/demand effects.
- Acknowledge the recycling status for chemical recycling technologies from a regulatory standpoint.



- Establish **EU-wide End of Waste criteria** for ELT derived material including granulates, powders, recovered carbon black. Having recycled materials considered as having ceased to be waste is the way to advance the market uptake of secondary raw materials.
- Keep product related legislation on **tyre abrasion under the upcoming UNECE / Euro 7 frameworks**.
- Support a **holistic approach** to identify additional mitigation options to the generation and transportation of TRWP which are generated by external factors.
- Issue the delegated legislation under the EU Tyre Labelling Regulation to enhance the benefits for the sector and the environment that the label for retreaded commercial tyres will bring.
- Create a **supportive framework to prevent heavy-duty vehicles casings still suitable for retreading from becoming waste**.
- Promote the use of retreaded tyres for heavy-duty vehicles through incentives, such as the **Green Public Procurement schemes**, introducing mandatory targets for Member States.
- **Retain rolling resistance under existing framework** - all future improvements should take place within the General Safety Regulation.
- Consider the **diversity of approaches for reducing the environmental footprint of tyres** as well and allow for inclusion of sustainable materials into the framework of ecodesign without impairing on tyre's performances related to road safety.
- Deal with sustainable sourcing of natural rubber under the Deforestation Regulation, and support an effective and operable implementation of the regulation.

The EU tyre industry remains available to further support policymakers with its expertise, also through possible additional product-dedicated public consultations in the framework of the ESPR-related process.



Annex 1 Specific Remarks to answers in the Open Public Consultation

As currently structured, the OPC questionnaire does not allow for specific considerations to be given to properly explain the industry position. This annex has been added in order to go into the reasons why ETRMA has chosen to answer the OPC questions in a certain way.

GENERAL QUESTIONS ON END-USE PRODUCTS

- **1. Do you agree with the identification of the following end-use products for a potential first action under ESPR – Agree.**

Justification: We qualify our support for the prioritization and inclusion of tyres as follows: Tyres that are to be placed on the EU market are already subjected to strict regulatory requirements. In the near future, the current regulatory spectrum – which includes requirements on rolling resistance, wet grip and noise – will be complemented by requirements on tyre abrasion, to mitigate the release of microplastics in the environment. The current and upcoming framework for tyres already addresses some of the ambitions of the ESPR ecodesign requirements to improve circularity, energy performance and other environmental sustainability criteria.

- **2. Are there any other end-use products you believe should be added to this list?_ No comment**

- **3. [...] Please rate the priority of the below products from 1 to 3, with 1 denoting the lowest importance and 3 the highest – 1 (low importance).**

Justification: When considering the potential inclusion of tyres into the first ESPR Working Plan, priority should be given to the improvement of the **overall environmental footprint (including carbon footprint) of tyres**. Only such an approach – i.e., addressing the entire environmental footprint – would **provide a holistic vision of the sustainability of tyres**, whereas **focusing on individual ecodesign requirements carries the risk of negative impacts on other environmental or safety related performances**.



TYRES PART

Product scope: Products included are car (C1) tyres, van (C2) tyres and heavy-duty vehicle (C3) tyres.

- **Q1** [Should certain elements be added to or removed from the above scope description] → **reply: Agree with the scope.**

Justification: , some of the requirements may apply only to certain tyre categories. Tyre segments are different from one another and have different needs and applicability of ecodesign criteria. And require product type assessment.

- **Q2 Tyres can be very different from one another. In order to be able to set effective requirements under the ESPR, the appropriate level at which to do so needs to be chosen.**

At What level do you believe eco-design requirements for tyres should be liad down→ **reply: Other.**

Justification: it is not clear what the EU Commission means for products (groups) vis-à-vis “articles”. As a general principle, requirements should target the scope of product categories (C1,C2,C3); however, some of the requirements may apply only to certain tyre categories. . Furthermore, ddecisions on appropriate levels of ecodesign requirements on recycling content can only be defined once an in-depth assessment on feasibility (technological, material availability, performance impact) has been carried out.

- **Q3 Do you believe that action under the ESPR would contribute to better addressing the environmental sustainability aspects of tyres, compared to existing EU level legislation/initiatives?** → **reply: Yes.**

Justification: Tyres that are to be placed on the EU market, are subjected to strict regulatory requirements. In the near future, the current regulatory spectrum – which includes requirements on rolling resistance, wet grip and noise – will be complemented by requirements on tyre abrasion, to mitigate the release of microplastics in the environment, and tyre wet grip on worn tyre, which should contribute to both safety and tyre lifespan extension. The current and upcoming framework for tyres already addresses some of the ambitions of the ESPR ecodesign requirements to improve circularity, energy performance and other environmental sustainability criteria.- When considering the potential inclusion of tyres into the first ESPR Working Plan, priority should be given to the improvement of the **overall environmental footprint (including carbon footprint) of tyres**. Only such an approach – i.e., addressing the entire environmental footprint – would **provide a holistic vision of the sustainability of tyres**, whereas **focusing on individual ecodesign requirements carries the risk of negative impacts on other environmental or safety related performances**.



- **Q4 For tyres, which of the following products aspects do you believe will be the most important to regulate under ESPR?** → *reply: Others, see position paper*

Justification: A life cycle assessment approach is needed to assess how to best regulate performance and eco-design criteria under the ESPR framework. Priority needs to be given to the whole environmental footprint above individual requirements. This approach and what is needed additionally is given in the industry position paper.

- **Q5 [Additional comments – max. 500 characters]**
Now 496 characters

The questionnaire doesn't allow to correctly express ETRMA's position. The ETRMA answer to the first question for tyres in the General Part would have been a 'partly agree' if that option would have been available. There are many elements that must be taken into consideration before tyres are included in the first group of products under ESPR. Please see the attached position paper for our views. This also includes an Annex that reflects our argumentation regarding the answers to the questions.

FINAL REMARKS

- [Max. 1000 characters]
For a full explanation of ETRMA's views please see the attached position paper