

Tyre & Road Wear Particles in the context of Microplastics

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**EUROPEAN
TYRE & RUBBER
manufacturers'
association**



Tyre and Road Wear Particles

A complex sustainability challenge

The challenge:

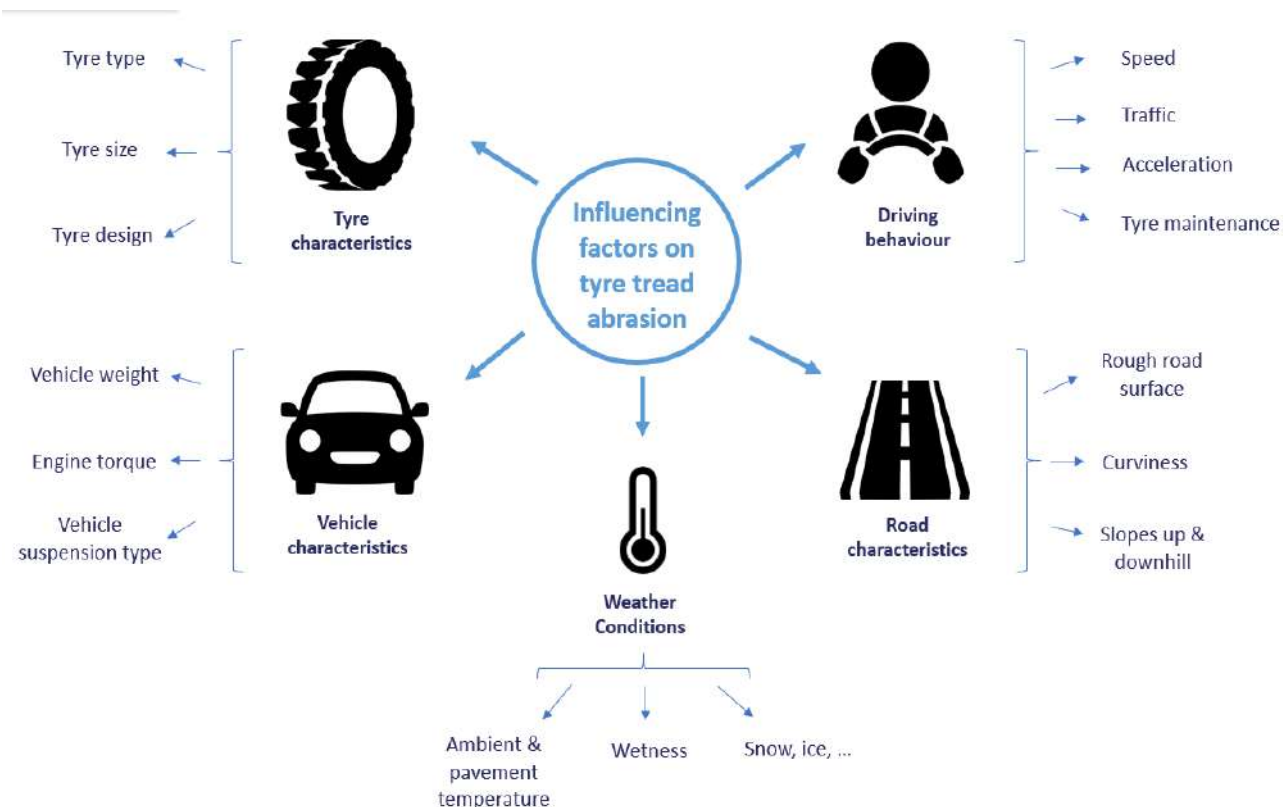
The friction between tyre and road (=grip) is essential to ensure **road safety**;

TRWPs are **tiny debris** which are formed from the friction between the tyre and the road, and consist of an agglomeration of approximately 50% weight by weight (w/w) of tyre tread and 50% road pavement materials

Reducing TRWP is complex.

TRWP levels do not depend exclusively on tyre characteristics and condition, but are affected by several **external factors**:

- driving behaviour,
- road characteristics (surface and topology),
- vehicle characteristics,
- weather conditions.



This is why a **holistic** and **multi-sectorial** approach is needed!

WE STRIVE FOR



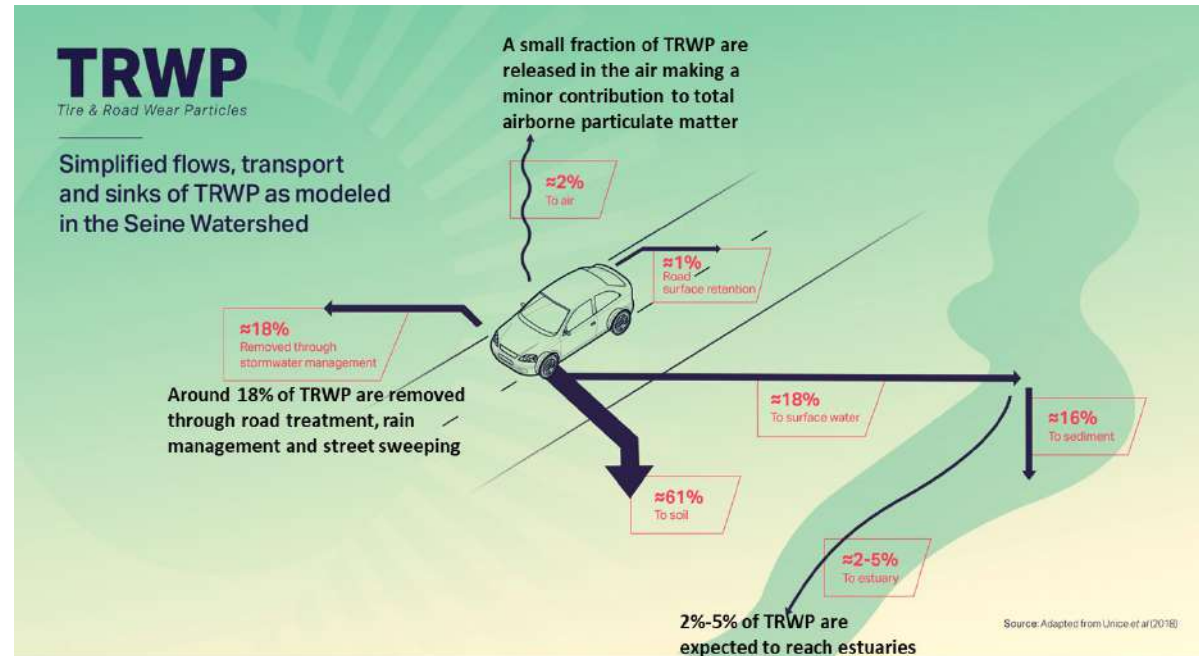
Tyre and Road Wear Particles

Building knowledge (1/2)

2017



- **ETRMA-commissioned study** analysed the distribution and retention of tyre and road wear particles in freshwater and transportation to saltwater environments.
- Main **conclusion** shows that **2-5%** of particles generated on roads are estimated to arrive at the end of river streams which flow into the open waters of seas and oceans.



2005-2020...



- The [Tire Industry Project](#) has been supporting research into tire and road wear particles since 2005
- **15 years** of TIP research knowledge is publicly available at this [link](#).
- TIP's research to date has found that the presence of TRWP presents no significant risk to humans or the environment.

- *Characterizing export of land-based microplastics to the estuary - [Part I](#): Application of integrated geospatial microplastic transport models to assess tire and road wear particles in the Seine watershed. (2018)*
- *Characterizing export of land-based microplastics to the estuary - [Part II](#): Sensitivity analysis of an integrated geospatial microplastic transport modelling assessment of tire and road wear particles. (2018)*



Tyre and Road Wear Particles

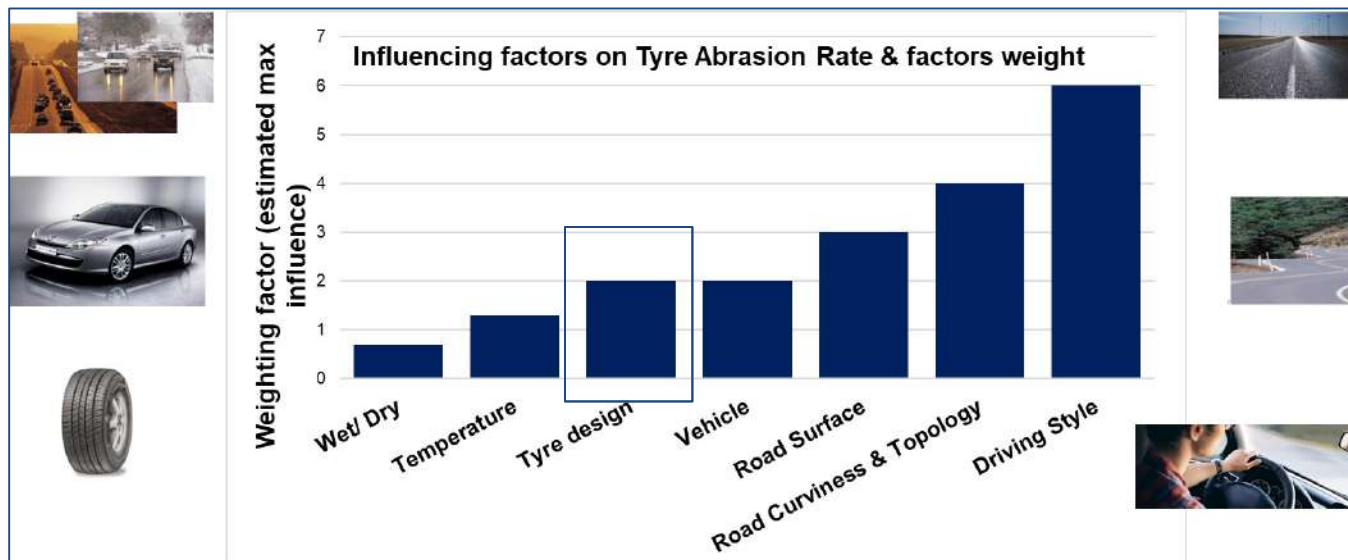
Building knowledge (2/2)

Tyre Industry, through TIP and regional Tyre Associations, continues to study

- **the potential impact to long-term exposure to TRWP,**
- **the degradation of TRWP in the environment, and**
- **the presence, fate and transport of TRWP in air, soil, rivers and oceans**



Tyre and Road Wear Particles Mitigation Measures (1/2) Tyre design – Since **2018**



Intensive industry resources to advance on a feasible and robust abrasion test method which could be used for regulatory purposes
 → to represent European market needs, conditions and targets, as well as new technologies to minimize trade-offs, mainly for wet traction.

Tyre and Road Wear Particles Mitigation Measures (2/2)

A multistakeholder approach – Since 2018



Facilitated by



The Platform aims at creating an open and inclusive dialogue among all relevant stakeholders to explore a **balanced and holistic approach** to address and better understand Tyre and Road Wear Particles.

1. Share **state-of-the art scientific knowledge**: *Repository of Studies*;
2. Achieve a **common understanding** of the possible effects of particles generated during normal tyre use and wear, tyre/road interaction;
3. Identify the **greatest potential for curbing TRWP**, and **co-design mitigation options**.

Stakeholders in the Platform *-growing*

Tyre makers



Roads



Automotive sector



Driving behaviour



Wastewater sector



Chemical industry



Universities/Research institutes



Civil society org.



EU Institutions



National authorities



The outcomes of the 1st year of activities (2018-2019)

After its first year of activities, **two reports** have been published :



The “Scientific Report on TRWP in the Aquatic Environment” by Prof. Dr Martin Jekel from TU Berlin:

Knowledge gaps identified include a.o.

- Need for a reliable and representative **tyre abrasion test**
- Influence of **road parameters** on TRWP generation
- Quantitative **analytical tools** for TRWP
- Degradation in **soils and sediments** (acting as sinks)
- **Capture systems** for TRWP in run-off and sewer overflow
- Improved and validated **mass balance models**
- **Ecological effects** of TRWP

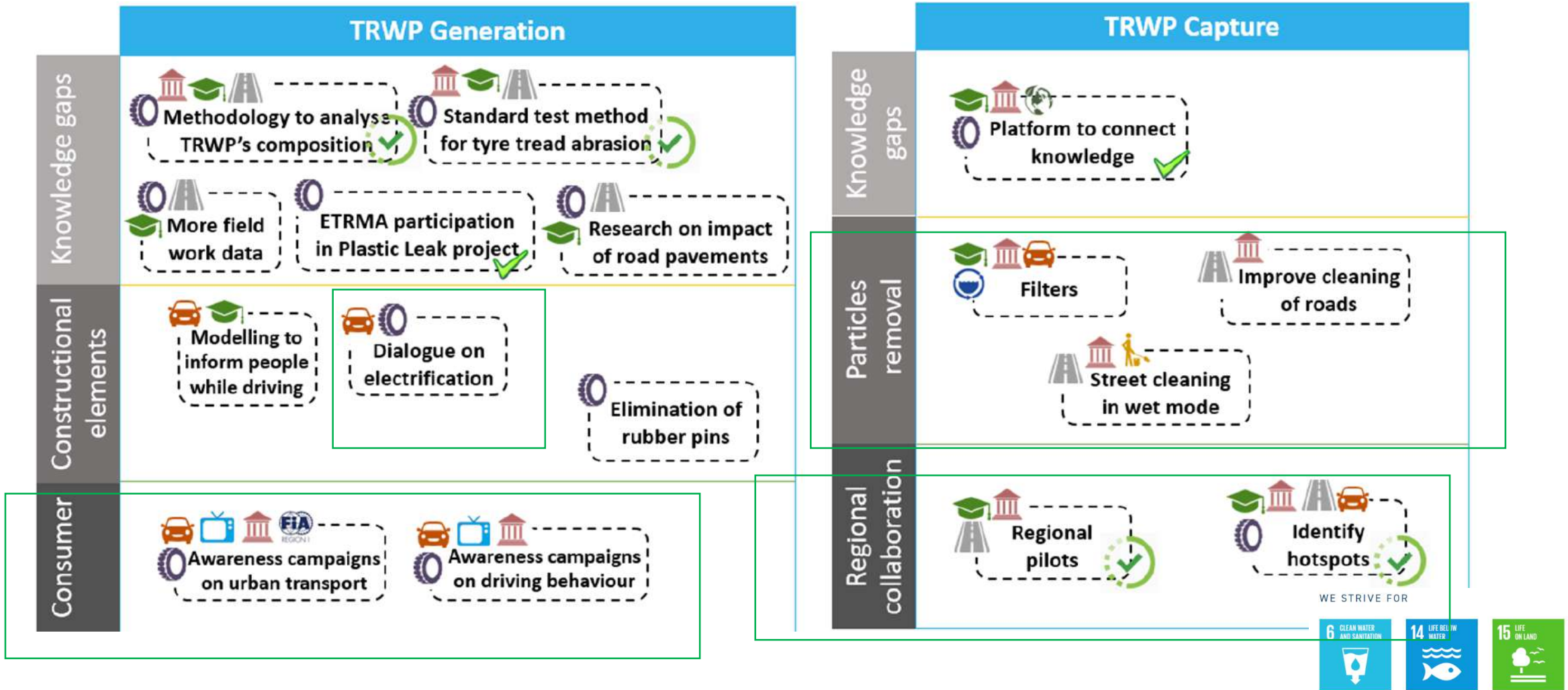


The “Way Forward Report” explores the most promising ways of mitigating the environmental impact of TRWP through potential actions of stakeholders across the entire value chain, including:

- measures to address **TRWP generation**;
- measures to address **TRWP capture and removal**;
- pathways for continued **cross-sector collaboration**.

TRWP PLATFORM Round II (2020-2021)

Further Measures identified that can be implemented in the short term



- **ETRMA commitment to TRWP Platform to become permanent platform**
- Work on **methodologies**
 - **Tyre abrasion rate is the appropriate indicator to address TRWP mitigation.**
 - **Tyre Industry is working towards a harmonised, representative and discriminative test method that could be used for regulatory purposes**
- Address **knowledge gaps**:
 - **through H2020/Horizon Europe...**
 - **Future research e.g. Electrification impact ...**
 - **Tire Industry Project Study plan is on-going**
- Identify **hotspots** to facilitate the launch of regional pilots
 - **With support and contribution of ACR+, EPA network, Local authorities and Cities (Hessen, Oslo, Stockholm...)**
- Create **incentives & awareness raising campaigns** towards positive driving behaviour!!
- Looking for **best practice exchange/ synergies** in the approach of tackling microplastics also with other sectors, such as Textiles, paint etc.

CONCLUSION

- 1) **The Tyre Industry recognises** the need to address TRWP and **sustains its action plan** with strong attention and efforts;
- 2) **Significant knowledge gaps** remain: we aim to address them, and at the same time we call for a proportionate approach to TRWP in the entire microplastics debate;
- 3) **Comprehensive and balanced approach** is essential for effectively tackling TRWP, considering other key tyre requirements;
- 4) **Solutions** can be comprehensive and effective only when **involving proportionately all stakeholders** relevant for the TRWP generation and mitigation;
- 5) **The EU tyre sector remains open for further dialogue and cooperation with the legislator and other relevant stakeholders**



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Thank you

Any Questions?



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