PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

ÖBB POSITION

ÖBB/Austrian Federal Railways supports stricter regulations to limit the use of harmful chemicals such as perfluorinated and polyfluorinated alkyl substances (PFAS). In our view, the ECHA restriction proposal represents a significant stride towards achieving the objectives of the European Green Deal.

The aim of ÖBB's contribution to the consultation is to demonstrate the **socio-economic dimension of the planned restrictions** with regard to rail's role as a service in the public interest and in the decarbonisation of transport. The planned restrictions must not jeopardize this role of rail transport.

In 2021, the European Commission presented its 'Sustainable and Smart Mobility Strategy' (SSMS) to pave the way to the decarbonisation of the EU transport system. As outlined in the European Green Deal, the overall result shall be a 90% cut in emissions by 2050, delivered by the transport system. The SSMS sees a key role for the rail sector, which is the least pollutant mode after the bike. The SSMS foresees i.a. that by 2030, high-speed rail traffic will double and scheduled collective travel of under 500 km should be carbon neutral within the EU. By 2050, rail freight traffic will double, high-speed rail traffic will triple, and the Trans-European Transport Network (TEN-T) will be operational for the comprehensive network.

In its Action Plan for Rail (COM(2021(810 final), the Commission acknowledges that reaching the milestones of the SSMS requires important investments and service improvements. To cater this need, in Austria, the government dedicated 19 billion euro for the rail infrastructure in the period 2023-2028.

Railways act as a partner of the European Green Deal, ensuring low-emission mobility for people and goods. Railways provide comprehensive, reliable, accessible, affordable, and safe public service, also in times of crisis, and are part of the critical infrastructure. This is also how we see our role.

Since ÖBB uses products containing PFAS in a wide variety of areas, the new PFAS restrictions will thus affect our railway operations both in Austria and internationally, as well as the expansion of the network, to a large extent and across a large range and variety of areas (see box below).

GENERAL USE OF PFAS AT ÖBB

Electronic devices and semiconductors

- In the rail sector, the use of PFAS in electronics and semiconductors is present in different applications such as wires and cables. For example, in railway traction motors, PFAS are used in the insulation of the wires which are needed to manufacture the winding. Electronic components, semiconductors, and coatings: all railway products (rolling stocks, signaling equipment, infrastructure) need circuit boards to ensure operation and safety, but most components of these circuit boards use PFAS and fluoropolymers.

Building materials & railway construction materials

- Materials containing PFAS, such as roofs, bridge bearings, window frames, sealants, and adhesives, as well as coatings, paints, varnishes and impregnations, are commonly used in rail infrastructure.

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Given this initial comprehensive overview of the complex connections between PFAS and various aspects of our railway sector, it is crucial that the impending restrictions are carefully balanced by the lawmakers, and consider the preconditions needed to succeed in the shift to rail.

The rail infrastructure network not only needs to be expanded, but also the existing infrastructure needs to be enhanced and maintained. Typically, rail infrastructure is built with products with a lifetime of 100 years or more. Here, **ÖBB wants to point out an important safety aspect**: Since old and new infrastructure assets need to interplay, the interoperapbility of existing products and future PFAS free alternatives can pose a major challenge for the safety and upholding of rail operations.

Below, two specific use cases are demonstrated:

EXAMPLES OF SPECIFIC USE OF PFAS AT ÖBB

Sealing applications – a challenge for the integrity of rail infrastructure

- The shift to rail goes implicates higher maintenance. Sealing applications are widely used within railway infrastructure, including roof sealings, seals against ground-level obstacles, track systems, or applications in humid environments. These applications are defined in various classes and standards. One example is DIN 18531, defining the specific sealing requirements depending on types of contact endurance. When selecting alternatives, temperature shifts below -20°C and above +60°C need to be considered. Furthermore, regulations govern the duration of freeze-thaw cycles and UV resistance. Many sealing applications rely on high-performance polymers, often dependent on PFAS either during polymerization or as part of their molecular structure. The absence of interoperable alternatives that meet these standards and requirements can jeopardize the integrity of railway infrastructure and lead to maintenance issues.

Bridge bearings in railroad infrastructure – a challenge for the safety of the rail transport

- For instance, as proposed by ECHA in the Restriction Report in Annex XV (p. 111), also regard bridge bearings in the railway sector. While steel roller bearings are suggested as potential alternatives, specific performance criteria and installation procedures must adhere to DIN EN 1990 standards. This is particularly critical as for railway bridges as the configurations are subject to exceptional longitudinal forces. However, roller bearings have limited endurance cycles of axial forces. When evaluating alternatives and establishing transition periods, these specific requirements must be considered to ensure safety in the railway transport.

ÖBB wants to point out that many other potential issues can not yet be forseen, due to missing information on PFAS products in use within the complex and multilateral system of the railway sector. This was also confirmed by ECHA within Annex E.2.10. **A lack of information makes if difficult to estimate the costs that could arise from the planned restrictions.**

ÖBB are concerned that if not designed adequately, the planned PFAS restrictions might lead to a decrease of the availability of rail passenger services and cargo transports, hamper safety, deteriorate quality, and make the rail transport more expensive and thus less competitive. Stemming from these considerations, ÖBB outlines the main demands below.

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Actual availability of alternatives to PFAS must be duly assessed

The overview above highlights that on the path to becoming PFAS-free, the railway sector is **highly dependent on manufacturing industries and complex supply chains and their offer of PFAS-free alternatives**. We would like to stress this highly complex dependency of the railway sector on the manufacturing and supplying industries, which surely is also true for other sectors. Regrettably, suppliers seem mostly unaware of the upcoming PFAS restrictions and are currently unable to assure that alternative products will be available on time.

ÖBB and many other industries are highly dependent on suppliers and therefore call on the decision-makers to duly assess (a) to list in more detail the occurrence of materials containing PFAS (b) the existence of alternatives to PFAS as such and (c) their actual availability on the market in due quantities in order to set appropriate transition periods in cooperation with the rail sector, when defining the transition periods for the new PFAS restrictions.

Transition needs public funding, bans must be proportionate

All industries will face challenges and costs in finding alternative solutions to ensure the safety, longevity and performance of their products and services. ÖBB advocate for a differentiated approach: Where PFAS-free alternatives exist, we recommend carefully differentiating between equipment where exchange or refurbishment of PFAS reliant components is possible and reasonable, and equipment whose replacement / refurbishment would entail unproportionate costs and which should therefore run until the end of their life cycle using PFAS. An example at ÖBB is air conditioning in existing vehicles (see box).

EXAMPLE: CHALLENGES IN TRANSITIONING TO PFAS-FREE AIR CONDITIONERS IN ÖBB TRAINS

Rail vehicles have a life cycle of 30 to 40 years. The transition to PFAS-free refrigerant in train air conditioning systems (existing rolling stock) could incur substantial costs due to the absence of a drop-in alternative. This means that in existing vehicles, it is technically impossible to replace the existing refrigerant by PFAS-free alternatives. Instead, the entire air conditioning system would need to be reevaluated and revamped. This would be a complex process, demanding significant financial and personal resources, and the equipment's disposal would entail further CO_2 emissions.

Currently, approximately 45 tons of refrigerant (R134a) are in use across our vehicles. The plan would involve replacing about 3,000 passenger compartment units and 1,200 control cabin units in passenger trains, and also around 1600 in driver cabins (locomotives). The projected total cost for this transition is approximately 200 – 300 million euros. Additionally, the timeframe provided in the current restriction proposal may not be sufficient to find, test, and implement adequate alternatives.

The same is true for more than 2.500 POSTBUS vehicles. POSTBUS, the largest bus company in Austria, is part of the ÖBB structure. The bus fleet's air conditioning use PFAS R134a which cannot be replaced by an alternative without revamping the entire air conditioning system.

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Moreover, ÖBB advocate for a differentiated approach regarding the factual emissions of equipment. These with low emissions should run until the end of their life cycle, since they would not entail any significant additional pollution resulting from refilling.

ÖBB expects an overall cost increase in the public transport sector as a possible consequence of the transition. If not balanced by public funding, such a cost increase has the potential to make public transport operators less competitive and could slow down modal shift.

The costs of the transition cannot be borne by the sector within the existing budgets, thus ÖBB pleas for the establishment of public funding pools. Where alternatives to PFAS exist, PFAS bans should consider the cost of the transition and the proportionality of measures.

Refurbishment timeline shall consider existing life cycles and maintenance schedules

In the case that existing equipment must be refurbished with PFAS free alternatives, ÖBB advocate for a provision that provides flexibility and allows to integrate this refurbishment into already existing life cycles and maintenance schedules. Such a provision would cater for efficiency and savings in spending.

ÖBB advocate for a refurbishment timeline that allows to integrate the refurbishment of existing equipment into the regular life cycles and maintenance schedules of this equipment.

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