DIGITALEUROPE

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Call for a safe and sustainable transition towards PFAS-free electronics

The digital industry has been, and continues to be, committed to improving the environmental performance and safety of all products placed on the market.

DIGITALEUROPE members fully support the transition to PFAS-free electronics. The electronics and semiconductor sectors account for less than 1% of all PFAS uses and releases (source: Annex XV report). Emissions, especially from fluoropolymers, are extremely limited. But our industry is determined to substitute PFAS wherever possible in a timely fashion and limit the risks for people and the environment.

However, it will take time for the digital and electronics industries to replace PFAS in their products and processes in a safe, responsible manner. There are considerable challenges related to the full implementation of PFAS substitution plans and in many cases, new alternatives are still to be developed and made commercially available.

Rushing into an immediate ban may lead to unintended consequences such as **disrupted supply chains and product shortages which would eventually harm critical EU goals such as circular economy, decarbonisation, connectivity etc.**

We therefore strongly believe that to facilitate successful and sustainable implementation the electronics sector needs sufficient time to enable crucial research and development, supply chain adaptation, product redesign, certification and conformity testing.

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Challenges for the electronics sector

Complex articles and supply chains present major challenges for identifying PFAS in electronics and proceeding with proper substitution analyses.

- **Identifying and quantifying PFAS uses**
  Electronic products contain over 1000 individual parts and rely on global, complex supply chains. There are no PFAS reporting obligations for suppliers and no tools for locating PFAS with precision in complex electronics, which makes using this substance hard to track. Information gathering is further complicated by trade secret/confidential business information protections. To date, the electronics industry has identified more than 60 applications of PFAS – e.g. circuit boards, batteries, cables, displays, and specific components in hard disks, microphones - and is still investigating those uses.

- **Finding non-PFAS options**
  Fluoropolymers are the most commonly used and less harmful class of PFAS substances. They are generally selected because of their heat resistance, high flame retardant ratings, voltage, water and oil repellence properties, low friction, chemical resistance, mechanical strength and many more particular properties. There are **no drop-in alternatives with the same properties as PFAS materials**. This makes it extremely difficult to find or develop non-PFAS options. New materials might have to be invented for some uses.

- **Redesigning products**
  Most non-PFAS alternatives do not have all properties of the original PFAS substance. Using the PFAS-free part will require greater **design changes** in the product to accommodate for the different properties. This also leads to a new **extensive testing and requalification process**, which can be complicated and time-consuming. Conformity testing labs have a limited testing capacity, which could, in turn, cause even more delays.

A ban with only 18 months transition period, as proposed, would force market withdrawal of most electronic products and cause significant economic damage. A study by Becca Johansen et al. (2023) from Ricardo issued by Cefic[1] calculated an **80% turnover loss** for electronic products and components if the PFAS restriction is implemented as planned.

Beyond this landscape of **disrupted supply chains, product shortages, increased costs, potential job losses, and environmental harm** through regrettable substitution, the chances of developing a thriving green and digital economy are at stake.

[1] Johansen, B., Louro, B., Kukla, I., Pattle, G., Denmark, J., Stone, C., Diez, M., Martin, C., Jenssen, O., Hughes, C., Butcher, E., Griffiths, M. (2023) Economic Analysis of the Impacts of the Chemicals Strategy for Sustainability, Ricardo, Ref. ED14790; see Cefic contribution to PFAS public consultation

Critical applications for the Twin transition at risk

Due to short transition period and no proposed derogations for electronics, the current proposal would have enormous impact with limited benefits to health and environment[2]. Disruption of strategic value chains (e.g. semiconductors, battery cell production, network infrastructure, data centres etc.) will make it impossible to achieve EU objectives on Green Deal, Circular economy, Right to Repair, Chips act etc. as illustrated by the three following examples.

- **EU Green Deal & Lithium-ion batteries**

  Companies have successfully substituted PFAS in several battery applications but PFAS is without alternative to date for the lithium-ion battery cathode binder material. PFAS binder comprises only a small portion of the composite electrode but its unique properties play an important role in battery performance. Many academic-level and lab-scale investigations are currently looking at replacing PFAS as the cathode binder material but remain at this stage small scale research. Performant lithium-ion battery cells and modules are crucial for the large-scale deployment of electric vehicles needed to meet the EU climate goals.

- **Digital Decade & Mobile TelCo network infrastructure**

  PFAS in the form of fluoropolymers is used in radio frequency related parts of mobile telecom network infrastructure equipment (radio units, printed circuit boards, antennas..). They are essential for the performance and energy efficiency of the high power RF signal carrying part of mobile telecom NIE. 12 years at minimum will be required to complete the substitution in the portfolio if no barriers are encountered but there may be impacts on the development/roll-out of the next generation (more circular, more energy efficient) 5G/6G equipment.

- **EU Ecodesign/Right to Repair & premature obsolescence of products**

  Without a derogation, spare parts for electronic products may become unavailable immediately from the compliance enforcement date. If these electronic products stop functioning, premature obsolescence and replacement with new electronic products may be the only option and generate unnecessary amount of e-waste. The absence of a spare parts derogation would also prevent companies from complying with the proposed Right to Repair Directive. The PFAS restriction will also affect

[2] According to a study from the US Chamber of Commerce, in a scenario where the U.S. replaces trade with the EU with alternative trading partners because of the disruption caused by the PFAS ban, the estimated combined emissions are estimated to nearly double, from 43.0 million to 76.4 million tonnes of carbon dioxide equivalent.

second-hand sales and refurbishment of product currently on the market.

Our recommendation for a safe and sustainable transition to PFAS-free electronics

What would a safe and sustainable transition to PFAS-free electronic look like? To facilitate the widespread adoption of PFAS-free electronic our sector needs at minimum:

- A **five-year derogation** (in addition to the generally applicable 18-month transition period called for in the proposal) for electronics suppliers and manufacturers to gather accurate data and complete the redesign, testing, certification, and production steps.
- **Before the end of this derogation**, the **Commission should review the latest scientific information and status of alternative materials and processes and extend the derogation for a specific subset of uses** accordingly. Companies must be able to feed into this review to ensure that the latest information on uses and alternatives is considered. This additional requested time will enable crucial research and development, supply chain adaptation, product redesign, certification and conformity testing.

In particular, the following derogations should be added to the PFAS restriction in REACH:

- **Spare parts for repair** of finished consumer and business-to-business electronic equipment already placed on the market,
- **Re-supply of articles** already placed on the market (pre-owned products).
- **Specific uses** as described in DIGITALEUROPE's contribution to the public consultation

These derogations are critical to help achieve EU goals of avoiding premature obsolescence and compliance with laws promoting product longevity. The concepts of "right to repair" and allowing the resale of pre-owned products have been broadly incorporated into other EU substance and REACH restrictions.

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About DIGITALEUROPE

DIGITALEUROPE is the leading trade association representing digitally transforming industries in Europe. We stand for a regulatory environment that enables European businesses and citizens to prosper from digital technologies. We wish Europe to grow, attract, and sustain the world's best digital talents and technology companies. Together with our members, we shape the industry policy positions on all relevant legislative matters and contribute to the development and implementation of relevant EU policies, as well as international policies that have an impact on Europe's digital economy. Our membership represents over 45,000 businesses who operate and invest in Europe. It includes 106 corporations which are global leaders in their field of activity, as well as 41 national trade associations from across Europe.

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National Trade Associations

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Estonia: ITL
Finland: TIF
France: AFNUM, SECIMAVI, numeum
Germany: bitkom, ZVEI
Greece: SEPE
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