



POSITION PAPER

PEFCR: An opportunity or a bureaucratic burden for the apparel & footwear industry?

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Sustainability and circularity are key concepts in the transformation of our European industries. In this context, the European Commission launched a call five years ago to develop Product Environmental Footprint Category Rules (PEFCR) for Apparel & Footwear.

An external consultant was awarded this assignment and presented the final result — PEFCR v3.1 — on the 25th of June 2025 in Brussels. This version outlines a proposed common methodology to measure and compare the environmental impact of apparel & footwear products.

The ambition behind the system is valid: transparency, substantiated claims, and incentives for more sustainable design.

However, moving from theory to practice, the current approach proves too complex, overly bureaucratic, and insufficiently aligned with the realities of production and use in the sector.

To turn this well-intended measure into a practical tool, adjustments are needed — with attention to proportionality, sectoral capacity, and practical applicability.

1. Product categorisation: the problem of the ‘average product’

The PEFCR divides textile products into ten main categories (and three for footwear). Within these categories, products are treated as if they were homogeneous, whereas in reality, there are major differences in composition, structure, use, and lifespan.

The result is the creation of an **artificial model of an "average product"** — an abstract approach that rarely reflects how products are actually designed, used, or maintained.

An alternative would be to define a **concrete reference product per category** (e.g. a standard cotton T-shirt), and assess other products against that benchmark — as is commonly done in CO₂ footprinting.

But even this raises questions: given the immense variation in products, applications, and markets (from fast fashion to PPE), it remains doubtful whether such reference products can ever be truly representative or useful for the entire sector.

What’s missing is a **more flexible and contextual approach**, that enables meaningful comparisons without falling into oversimplification or unusable averages.

2. Life Cycle Assessment (LCA): a meaningful depth or data overload?

The PEFCR system treats all product components almost equally, regardless of their share in weight or environmental impact. This means even minor items such as labels, threads, buttons, or reinforcements must be fully included in the life cycle analysis – even when they represent less than 5% of the product's weight.

Example: a simple polo shirt with knitted main fabric, three buttons, a woven brand label, a care label, an RFID tag, fusible interlining for the placket and collar, knitted collar, knitted sleeve hem, shoulder tape, contrast stitching, and overlock thread could easily require more than ten individual LCA calculations – even though these accessories only account for a fraction of the total environmental impact.

This approach leads to an unbalanced time and cost burden, without significant gains in accuracy. A proportional approach – with threshold values focused on the main components – would make the system far more workable.

3. Chemical impact: a weak spot in the model

Textile processing involves intensive use of chemicals – especially in dyeing, coating, finishing, and impregnation processes. The exact composition of these chemicals is often a trade secret or insufficiently disclosed. Moreover, the behavior of these substances during washing, drying, re-impregnation, and degradation is hard to predict.

The result: calculations for chemical-related impact categories within the PEFCR model are not only **unreliable or speculative**, but they may also create a false sense of safety. Products may receive a favorable environmental score while critical information on toxicity or ecotoxicity is missing.

A credible alternative is to align with existing systems such as **ZDHC, OEKO-TEX®, or Bluesign®**, which do have clear standards and demand transparency around chemical safety. Without such links, chemical-related claims within the PEF remain incomplete and potentially misleading.

4. Impact weighting: does it reflect the real environmental challenges?

To arrive at a single final score, the PEFCR assigns weights to various environmental effects (such as climate change, water use, toxicity, fine particulate matter, etc.).

However, it is unclear whether these weights truly reflect the **key environmental pressure points** in textile production. For instance, research by Glimpact suggests that:

- More than 75% of the impact is not related to CO₂ emissions
- 90% of the impact occurs during raw material production and specific production steps
- Labels like "organic cotton" do not necessarily result in lower impact
- **Fine particulate matter** surprisingly ranks as the most heavily weighted impact category

These findings seem misaligned with sectoral realities and show that **the current model offers little room for nuance or reflection of where the actual environmental issues lie.**

For example: the impact of microplastics/fibers on water, air, and soil is not accounted for in the PEF calculations.

5. Use & durability: models detached from real-life practice

The PEFCR uses a standardized number of “wear sessions” per product category, adjusted by factors for durability (“intrinsic durability multiplier”, IDM) and repairability (“repairability multiplier”, RM). In theory, this makes sense, but in practice these corrections are limited, weakly substantiated, and insufficiently adapted to product type, intended use, or regional variation.

For example, a T-shirt is modeled for 30 to 75 wears. That is often too low for high-quality garments and too high for fast fashion. Climate, washing habits, wardrobe management, and individual consumption styles are not factored in – even though they have a significant influence on actual impact.

Moreover, the model lacks an educational function: it does not show consumers or buyers how reuse, careful handling, or repair could reduce impact. Questions like “What if I wear this garment 100 times instead of 30?” are not posed – let alone answered.

An approach that better reflects context and product characteristics – for example through dynamic or regionally adapted use models – would not only improve reliability but also increase awareness around sustainable use.

6. Lack of proportionality

The PEFCR system treats all product components nearly equally, regardless of their share in weight or environmental impact. Even small details such as labels, threads, buttons, or reinforcements must be fully included in the life cycle analysis — even if they represent less than 5% of the total product weight.

For example, a basic polo shirt with knitted main fabric, three buttons, a woven brand label, care label, RFID tag, fusible interlining for the placket, knitted collar, knitted sleeve cuff, shoulder

tape, contrast stitching, and overlock thread could easily require more than ten separate LCI calculations — even though these accessories contribute minimally to the total impact.

This creates an unbalanced cost and workload burden without meaningful gains in accuracy. A proportional approach — using thresholds and focusing on primary elements — would make the system more manageable.

7. Risk of greenwashing or misinterpretation

A single “environmental score” gives an illusion of objectivity but masks the complexity of real environmental impact. There is a real risk that companies will use this score for marketing purposes without being transparent about the underlying assumptions.

The core question becomes: how accurate are PEF scores, really?

They are based on hundreds of assumptions related to materials, use, transport, behavior, and processing — in a complex model that is rarely fully transparent. Even LCA experts acknowledge that “it’s too complex to reliably assess the accuracy of these figures.”

Transparency about the source, limitations, and interpretation of the score is therefore essential — if we want to prevent this tool from fueling greenwashing rather than encouraging sustainable choices.

8. Limited usability for SMEs and niche producers

For small and medium-sized textile companies, the requirements of the PEFCR are virtually unattainable without expensive consultants, specialized software, or external support. This risks creating exclusion or unfair competition — particularly for companies that often produce locally, innovate faster, or operate circularly at a smaller scale.

A workable alternative would be to use an **eco-design checklist**, inspired by the Design for X approach (lifecycle thinking) and the 10 R-strategies of circularity (Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Recover).

Such a checklist offers businesses a practical tool to independently assess the environmental impact and circularity of their products — without getting lost in expensive or opaque LCA procedures. It makes eco-design more accessible and actionable for a broader part of the sector.

9. Static approach in a rapidly evolving sector

Textile innovations (e.g. mono-materials, new coatings, recycling-ready products, or advanced

recycling techniques) are evolving rapidly. The PEFCR system **is not flexible enough** to keep up.

Why not? Because the databases and impact models used are updated slowly, and new materials or processes are often only recognized after several years. Moreover, the calculation model itself is not dynamic and focuses solely on the individual product, without any mechanism to account for systemic innovation (like circular business models).

The result: innovative, more sustainable alternatives are not recognized — or only much later — within the model, which leads to their benefits being undervalued.

10. Missing link with eco-design

A striking omission in the current PEFCR methodology is the absence of a clear link to eco-design (i.e., minimizing environmental impact over the full life cycle) and to the 10 R-strategies of circularity: Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Recover.

The PEFCR is primarily focused on measuring environmental impact through LCA at product level, without a mechanism to systematically value design intentions or circular features. This means that products designed for longer use, reuse, repair, or material loops receive no direct recognition in the score — unless these features happen to reduce the LCA results. As a result, **circular strategies remain invisible or underappreciated in the model.**

For example:

- Detachable or mono-material products that facilitate recycling are not explicitly valued;
- Modular, repairable, or reversible designs are not rewarded unless indirectly via the limited "Repairability Multiplier";
- Leasing or return systems with proven life extension are excluded from systemic assessment.

In addition, the framework is highly linear: analysis ends at the point of disposal, without any incentive for closed-loop systems. Business models based on services, returns, or product-as-a-service solutions are barely considered — even though these are key to the EU's circular economy and climate goals.

Finally, the PEFCR is blind to design strategies that delay or reduce consumption altogether (like 'refuse' and 'rethink') — despite the fact that these could offer the greatest impact reduction. **By focusing on an individual product and its direct impact, the system misses the broader picture of sustainable design and system change.**

If Europe is serious about circular textile systems, then the PEFCR framework must evolve. A future-ready version would:

- Integrate eco-design principles alongside LCA,

- Explicitly recognize and reward circular design strategies,
- Create space for system innovation rather than hiding it.

Without this link, the PEFCR risks becoming an outdated, linear instrument — and it misses the opportunity to steer designers, brands, and producers toward the circular economy envisioned by Europe.

11. Leasing and return systems: invisible in the PEFCR methodology

In large parts of the professional textile market — including workwear and PPE — leasing and return systems have been the norm for years. These models combine delivery, cleaning, repair, and take-back in a closed loop. They are demonstrably more effective in extending lifespan, ensuring quality and hygiene, and reducing waste streams.

Yet the PEFCR methodology barely accounts for these models. The system assumes a linear product logic in which each garment is evaluated individually from production to disposal — with no space for service-based reuse or multi-cycle use.

Specifically:

- No recognition is given to reuse or reconditioning within closed-loop systems;
- Assumptions about product lifespan are based on consumer models and ignore professionally managed use;
- Logistics investments in return, sorting, and repair are invisible in the impact score;
- Circular business models such as clothing-as-a-service or multi-cycle PPE use receive no positive weighting.

For companies that invest in these models, this means their circular efforts are not acknowledged — even though such models often result in lower real environmental impact than classic ownership.

This is a fundamental flaw. **By excluding innovative and professional use models, the PEFCR risks pushing the market in a direction opposite to the EU's own circular goals.**

If the PEFCR wants to stay relevant to the professional textile sector, it must be urgently expanded with mechanisms to recognize and value circular services — not only in product design, but also in organized systems for use and take-back.

12. Governance and representation: a question of legitimacy

A structural issue in the development of the PEFCR is its governance model. The process was largely steered by a limited group of paying, voting members, while non-paying participants had

no voting rights. This stands in stark contrast to the open, consensus-driven approach used in European standardization via bodies like CEN.

Such a model concentrates decision-making power in the hands of a small group — often parties with the resources to influence outcomes — while many relevant voices remain unheard. This includes SMEs, sustainability experts, circular business model innovators, and civil society organizations. As a result, both the credibility and quality of the system are undermined.

For a methodology that aims to shape the future of environmental policy and consumer trust, legitimacy is essential. Only a transparent and inclusive process can ensure that the PEFCR truly reflects the realities and diversity of the European textile sector — ideally through CEN, based on consensus with all relevant stakeholders, as is customary for European standards.

13. Unbalanced and non-transparent impact weighting

The weights assigned to the different environmental effects that make up the composite score lack transparency. There is no publicly available methodological justification for how these priorities were determined, and the process does not sufficiently consider sector-specific environmental profiles — such as water use in cotton, chemical toxicity in finishing, or microplastic release from synthetics.

This lack of transparency undermines confidence in the score. An alternative approach could be to display the top three impact categories separately, or to allow communication by impact domain depending on product type.

14. No structural feedback or revision mechanisms

The current PEFCR structure offers no formal route for users to report practical issues or propose structural improvements. There is no interactive mechanism for iteration or continuous improvement based on the experiences of companies, researchers, or auditors in the field.

A future-proof system requires some form of user evaluation, sector consultation, or community-based review. This is especially important in a context of rapid innovation and increasing policy integration. Without feedback loops from practice, the system risks becoming more and more detached from reality.

15. Limited usability for consumer behavior and behavioral change

One important potential of an environmental score is its ability to influence behavior — such as

encouraging longer use, less frequent washing, or reuse. However, the PEFCR offers no room for variation in consumer behavior, and thus no educational effect.

Modeling a garment based on a fixed number of wear sessions is too rigid. Impact communication should ideally connect to context-specific behavior and help consumers make better-informed choices. Think of messages like:

“If you wear this garment 100 times instead of 30, you cut your impact in half.”

16. Premature link with legislation

There are signals that the European Commission is considering linking the PEF methodology to legislation on environmental labeling or “green claims”. This is premature, as long as the system has not been methodologically refined in terms of proportionality, applicability, and representation.

Without such adjustments, there is a risk of embedding a still immature instrument into legislation — with major implications for market access, marketing claims, and competition. A moratorium on mandatory implementation, combined with a transition period including sector evaluation, is advisable.

17. Absence of social impact categories

The PEFCR focuses exclusively on measuring environmental impact. Social dimensions such as working conditions, fair wages, human rights, or ethical production remain entirely out of scope. This contradicts the broader sustainability objectives of the European Green Deal, in which social justice is a central pillar.

Sustainability is more than environmental metrics. By not accounting for social impact systems like WRAP, SEDEX, SA8000, or living wage benchmarks, a significant part of the value chain remains invisible. A more balanced approach would also consider social parameters — or at least offer transparency about their absence.

18. The cost and scale of completing a PEF process

Completing a PEF report is not a simple exercise: it involves multiple components and follows a tightly prescribed structure.

Guidance on setting up a PEF study is available in this UNEP manual:

 <https://www.oneplanetnetwork.org/sites/default/files/2024-06/InTex%20-%20Manual%20-%202024.pdf>

Structure of the final report (Annex):

 <https://www.oneplanetnetwork.org/knowledge-centre/resources/annex-1-product-environmental-footprint-report>

To illustrate the scale of the system's impact:

- EU population: approx. 500 million people
- Average textile consumption: 8 kg per person/year $\approx$ 40 garments
- Total market volume: 500 million $\times$ 40 = 20 billion garments/year
- At 40,000 units per model: $20,000,000,000 \div 40,000 = 500,000$ unique models/year (not including fast fashion turnover)

If each of these 500,000 models required an individual PEF report, the workload would be immense: weeks of work per report, external verification, and specialized expertise. The sector simply lacks the capacity to manage this volume. In practice, only a fraction (optimistically 1%) of all products could ever receive a PEF score.

Conclusion: a noble goal — but currently a missed opportunity

The PEFCR aims to bring more transparency and standardization to environmental product communication. But in its current form, the system is too complex, too burdensome, and too disconnected from the sector's reality.

What needs to change or be improved?

- A structural feedback and revision mechanism, so the PEFCR can evolve with practice (see section 14)
- Inclusion of social sustainability parameters, or at least transparency about their absence (see section 17)
- Recognition of circular business models and systemic impact beyond linear product analysis (see sections 9, 10, 11)
- Caution with regulatory linkage, until proportionality, applicability, and representation are structurally addressed (see section 16)
- Transparent communication about uncertainty and model limitations to prevent greenwashing (see section 7)
- Dynamic durability models using real-time data via digital passports or monitoring apps (see sections 10, 15)

- Simple eco-design checklists for SMEs, based on Design for X principles and circular R-strategies (see section 8)
- Use of sectoral databases and templates with independently verified LCI data
- Modular LCA system based on impact zones: work with building blocks such as a base textile module (fibre type, weight), optional modules for finishing and accessories
- Transparency in impact weighting and option to communicate per impact category instead of only via a single score (see section 13)
- Active involvement of producers, brands, SMEs, federations and experts in the revision and governance (see sections 12, 14)
- More realistic assumptions about use and durability — including context-specific behavior and alternative use models such as leasing (see sections 5, 11, 15)
- Integration of existing systems like *BlueSign*, *OEKO-TEX®*, *ZDHC* for chemicals and safety (see sections 3, 17)
- Simplification and proportionality: focus on core elements, avoid overburdening with detail analyses that have limited impact (see section 6)

Without reform, the PEFCR risks becoming a theoretical tool for a narrow group — and misses its broader transformative potential, even hindering innovation and sustainability.

“The foundations are there — now is the time to build, together with the sector, a system that truly works: practical, proportional, and future-oriented.”

Call for collaboration

The PEFCR has the potential to become a shared language for sustainable textile policy in Europe.

But that’s only possible if that language is understandable, workable, and relevant in real-world practice.

As a sector, we are ready to contribute to the next step:

a system that rewards circularity, supports innovation, and remains feasible for all players — big and small.

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