

Brussels, 3 July 2026

Iron and steel products under the Ecodesign for Sustainable Products Regulation (ESPR): why a strict scope limitation to intermediate products is essential

Executive summary

As major downstream users of steel and iron (e.g. machinery products can contain up to 90% steel), Europe's technology industries recognise that, for the purpose of contributing to circularity, a meaningful exchange of information between the different actors in the value chain is important to improve the product life cycle footprint from design to recycling. However, responsibilities and efforts for providing such data must be shared properly between the different actors in the value chain. The burden of providing such data must be fairly distributed between the different actors and cannot solely fall on the manufacturer. In line with this, Orgalim calls on the European Commission to ensure that the upcoming Delegated Act on iron and steel products under the Ecodesign for Sustainable Products Regulation (ESPR):

1. **Strictly limits the scope to iron and steel intermediate products only and does not extend obligations to final products or manufactured components containing iron or steel**. The proposed new DPP requirements will create significant levels of uncertainty and could overburden downstream users of steel and iron through the envisaged transfer of obligations along the value chain. Responsibilities must remain clearly with those actors who generate and control the data. Downstream manufacturers cannot be held responsible for data that they do not control.
   - → **Annex I** provides a list of open questions, to which Orgalim and its members are seeking urgent answers from the Commission.
   - → **Annex II** presents several real-life product examples from Orgalim industries showing why DPP requirements in final products containing steel or iron would be extremely burdensome, disproportionate, and virtually impossible to implement in practice.
2. **Reduces regulatory burdens and boosts industrial competitiveness by ensuring legal certainty and consistency with other legislation while avoiding unnecessary duplication of efforts, requirements and regulatory obligations**. To this end, we call on the Commission to conduct **a new comprehensive study** to assess how the various regulations affecting the steel sector – such as the ESPR, the EU Emissions Trading System (ETS), the Carbon Border Adjustment Mechanism (CBAM) and the Construction Product Regulation (CPR) – will interact and impact one another, and what will be the cumulative cost, compliance and competitiveness impacts on downstream users of iron and steel.
3. **Deletes the Substances of Concern (SoC) concept from the ESPR. REACH should remain the primary regulatory framework to handle related restrictions.**

Key asks from Europe's technology industries for the upcoming ESPR measure on iron & steel products

1. Strictly limit the scope to iron and steel intermediate products only (i.e. do not extend the obligations to final products or manufactured components containing iron or steel)

We call on the European Commission to strictly limit the scope of the upcoming ESPR Delegated Act to "iron and steel intermediate products" placed on the EU market. The scope of the upcoming ESPR measure must not be extended to final products containing iron or steel (such as CBAM final products, automotive, industrial machinery, clean technologies and appliances) or manufactured components or spare parts made of iron or steel.

We understand that the Commission is considering extending Digital Product Passport (DPP) obligations to final products containing iron or steel, with responsibilities transferred along the value chain. These implications are particularly challenging given the reality of highly complex supply and value chains, where individual components often consist of multiple materials (e.g. different steels combined, plus other inputs) and pass through numerous processing steps and suppliers before becoming a final product. This would require manufacturers to issue a new DPP at every processing stage, including intra-group transactions and spare parts. In practice, every supplier of complex products would be required to develop a specific DPP for each individual product, and each of these individual DPPs could contain a high number of multiple additional DPPs provided upstream in the value chain. In this scenario, a mechanical engineering company would be considered as a steel producer and be subject to DPP requirements, even though its core business is entirely different.

Key reasons:

- **Implementing DPP requirements at final product level can and should not be done as it would:**
  - Create significant uncertainty as well as substantial compliance and liability risks for downstream manufacturers that cannot verify or control upstream data.
  - Be technically unfeasible given current manufacturing systems and complex global supply chains.
  - Require unrealistic levels of traceability and create confidentiality and data availability concerns.
  - Impose disproportionate administrative and IT burdens.
  - Not provide proportional environmental or transparency benefits.
  - Undermine the success and credibility of the entire DPP framework

  Annex I provides a list of open questions, to which Orgalim and its members are seeking urgent answers from the Commission. **Annex II** presents several real-life product examples from Orgalim industries showing why DPP requirements in final products containing steel or iron would be extremely burdensome, disproportionate, and virtually impossible to implement in practice.

- The ESPR Working Plan 2025-2025 identifies iron and steel intermediate products, not final products, as priority products for future ecodesign measures.

- The **JRC preparatory study did not assess the technicalities or economic feasibility** of including final products, as they were not included in its scope and downstream users of iron and steel have had limited opportunity to contribute to consultations at an early stage. It is essential to ensure the meaningful involvement of downstream industry in the ESPR consultation and impact assessment process.

- Regulating steel intermediate products is the only scenario consistent with the **ecodesign "product-by-product" approach.**

- **Classes of performance for final products based only on steel manufacturing characteristics risk misleading consumers on the overall sustainability of a product**. Even for products with high steel content, other characteristics may be more important for defining the product sustainability (such as the use phase efficiency). In some products, steel grade can determine the use phase performance. For example, magnetic steel with higher scrap content may have lower efficiency and higher heat losses.

Key recommendations:

- **Responsibilities must remain firmly with those actors who generate and control the data** (e.g. steel producers) through existing reporting methods, as downstream manufacturers cannot reasonably be held responsible for data that they do not control.

- **Transparency on low-carbon steel content in final products containing iron or steel could be addressed through vertical product-specific ESPR measures,** provided it is accompanied by information on the product's overall sustainability performance, without setting a quota for the use of green steel.

2. Reduce regulatory burden and boost industrial competitiveness by ensuring legal certainty and consistency with other legislation while avoiding unnecessary duplication of efforts, requirements and regulatory obligations

To achieve the Commission's simplification objective of reducing regulatory burden and boosting industrial competitiveness, it is essential to ensure predictability and legal certainty as well as consistency with other EU legislation. Unnecessary and burdensome duplication of efforts and double or triple regulation must be avoided both at horizontal and product levels.

- **Extending the scope to final products** would create overlapping and inconsistent requirements for products falling in the scope of multiple delegated acts, whether at the level of intermediate products or final products. For example, mobile machinery may incorporate several components and materials subject to different regulatory requirements, including steel, aluminum, tyres, lubricants, paints and batteries.

- The proposed carbon footprint requirements for steel risk duplicating existing obligations under the **ETS**.

- ESPR definitions will directly affect the **Industrial Accelerator Act** (IAA). For example, no definition of low carbon steel or aluminium currently exists in EU law. The IAA refers to future definitions that will be set by means of delegated acts adopted under the ESPR and/or the CPR framework.

- The interaction between ESPR and **CBAM** remains unclear. The scope of ESPR should be clearly defined and should not depend on future legislative developments, such as a possible extension of CBAM, to avoid double regulation, inconsistent product definitions and legal uncertainty. In addition, the use of Combined Nomenclature (CN) categories may not adequately reflect differences in steel products, such as alloy composition, production processes and associated emissions. Divergent product classifications under CBAM and ESPR could increase the administrative burden and create confusion.

- The relationship between ESPR and the **Construction Products Regulation** (CPR) also requires clarification. It remains uncertain whether certain steel products will fall under CPR or ESPR depending on their end use, creating risks of duplicate reporting and inconsistent data requirements for the same material. Not all iron and steel are used structurally; CPR covers metallic products for structural use, while non-structural steel is treated as an intermediate product under ESPR, even when it is the same material.

Key recommendations:

- **We call on the Commission to conduct a new comprehensive study to assess how various regulations affecting the steel sector** - such as the ESPR, the EU Emissions Trading System (ETS), the Carbon Border Adjustment Mechanism (CBAM) and the Construction Product Regulation (CPR) - **will interact and impact one another, and what will be the cumulative cost, compliance, and competitiveness impacts on downstream users of iron and steel.**

- **Carbon, as well as environmental footprint methodologies should be harmonised across EU legislation,** including ESPR, CBAM, the Battery Regulation and relevant international standards, to reduce the administrative burden.

3. Delete the Substances of Concern (SoC) concept from the ESPR and REACH should remain the primary regulatory framework to handle related restrictions

Key recommendations:

- **The Substances of Concern (SoCs) concept should be deleted from the ESPR.**

- **The REACH Regulation should remain the primary regulatory framework to handle related restrictions.**

As the most established and practicable framework for such information flows, the framework of the REACH Regulation, in particular its Article 33(1) in conjunction with the REACH Candidate List, is well understood by economic operators and provides a harmonised basis for communicating information on substances in articles across the value chain. A lack of harmonisation of requirements across value chains would create significant implementation challenges, particularly where the same or similar components are used across multiple product categories.

In addition, in the context of the JRC study on the ESPR measure for steel and iron, **we fully support the proposal to introduce a potential exemption from the reporting requirements for SoCs under Article 2(27)(b),** given the low exposure risk.

ANNEX I – List of open questions

The proposed new DPP requirements will create significant levels of uncertainty and risk to overburden downstream users of steel through the envisaged transfer of obligations along the value chain. To address these open issues, Orgalim and its member are seeking urgent answers from the European Commission to the below list of questions:

1. How are manufacturers of final products containing steel or iron expected to fulfil compliance obligations related to DPPs for intermediate steel products, in the absence of an ESPR Delegated Act covering their product group?

2. How are manufacturers of final products that are subject to multiple DPP requirements under the ESPR or other regulations - where the scope, data requirements, and implementation details differ - expected to comply with the obligations related to the DPP?

3. Where will the legal basis and detailed reporting requirements for these downstream products be established, if no delegated acts are envisaged for them in the current ESPR Working Plan (2025-2030)?

4. Which specific information must downstream manufacturers track or request from their steel suppliers to ensure that upstream DPP information is correctly received, retained and passed on?

5. When would these obligations become mandatory for downstream products?

6. Will downstream manufacturers be required to comply as soon as DPPs for intermediate steel products become mandatory? Or only once product-specific delegated acts for the downstream products are eventually adopted (potentially after 2030)?

7. Additionally, the JRC study on iron and steel states that "*responsibility for the DPP is transferred each time a product is introduced to the EU market in a new form*." This raises a fundamental question. Does this imply that manufacturers of components or final products containing steel will temporarily bear some form of DPP responsibility even before their own product group is regulated under the ESPR? If so, further clarification is needed on:
    - What exactly would downstream manufacturers be required to do in practice in the absence of a legally defined DPP content structure for their products?
    - Where can stakeholders find further guidance on how the Commission intends this transitional responsibility to function?
    - Would downstream operators be obligated to create a new DPP, or only to retain/transfer upstream DPP links, or something else?
    - What downstream users would be required to do when the data contained in their supplier's DPP is likely to be inaccurate? Which company is responsible for the content of the DPP in such situations?

8. If final products are included in the scope, how will it be ensured that consumers are not misled by transparency on the carbon intensity of steel in final products, given that this is likely to be only one of several factors determining the product's overall sustainability?

9. How will the possible future DPPs (and connected requirements) under the revised New Legislative Framework (NLF) interact with the DPPs under the ESPR?

10. How does the Commission assess the EU's capacity to produce green steel, given that neither upstream nor downstream markets are currently sufficiently mature to regulate steel content in final products? The availability of low carbon steel in Europe remains limited, while investments in new Electric Arc Furnace (EAF) infrastructure are still uncertain. At the same time, downstream market do not show significant customer demand for information on low carbon steel content in final products. Broadening the scope to include final products therefore risks creating disproportionate costs and market distortions, including potential impacts on pricing and competitiveness.

ANNEX II – Orgalim examples showing why implementing Digital Product Passport (DPP) requirements in final products containing iron or steel would be extremely burdensome, disproportionate and virtually impossible to implement in practice

Please note this Annex II was updated since its original publication in July 2026. In November 2026, example number six was added.

You will find below concrete examples from the following members of Orgalim:

1. Association ZVEI, representing Germany's electro and digital industry
2. Association CEMA, representing European agricultural machinery
3. Association EGMF, representing European garden machinery industry
4. Company John Crane, a Smiths company - examples of mechanical seals
5. Company Bekaert - example of wire products
6. Company Everllence SE - example of large-scale engine manufacturing (e.g. marine, power station & turbocharger)

Example 1 from the Association ZVEI, representing Germany's electro and digital industry

- **Name of the company or association:** ZVEI
- **Name:** Electronic products
- **Explanations of why implementing DPP requirements on your final product containing iron or steel will be extremely burdensome or virtually impossible to implement in practice:**

Electrical products such as low-voltage protection devices are **highly complex, multi-component products** consisting of a wide variety of materials including iron and steel, copper, plastics, electronic components, and coatings.

1. Complexity of product structure

A typical device may include:

- Metallic parts (housing elements, springs, screws, contacts, frame structures)
- Multiple assemblies (mechanical switching unit, electronic control unit, terminal blocks)
- Hundreds of individual components sourced globally

Each of these components:

- May contain **iron or steel from different batches**
- Is supplied by **multiple Tier-1 and Tier-2 suppliers**
- Is often **not traceable to raw material level today**

2. Lack of batch-level traceability in current supply chains

Current industry processes:

- Do **not track individual steel batches per component**
- Focus on **functional and quality specifications,** not material origin traceability
- Use **interchangeable parts across multiple product variants**

Example:

- Screws and metal springs are purchased in large volumes and stored in bulk
- During manufacturing, it is **not recorded which exact batch is used in which final product**

Result: Assigning DPPs per batch/component is **not technically feasible**

3. Exponential increase in DPP references

If DPP requirements for iron & steel are applied to final products:

- A single device may contain **200–500 components**
- Many components have:
    - 2–3 suppliers
    - each supplier sourcing from 2–5 raw material suppliers

Estimated DPP references per final product:

200 components × 2 suppliers × 2 material sources = 800+ DPPs per product

In more complex product families or modular systems: **several thousand DPP references per single device**

4. Manufacturing process constraints

- Components are **mixed during production**
- No segregation by material origin or batch
- Products are manufactured in **high-volume, automated lines**

Retrofitting traceability would require:

- Fundamental redesign of manufacturing systems
- Major IT system changes (ERP, MES, PLM)
- Physical segregation of materials → **significant inefficiencies**

5. Product lifecycle and variant complexity

- One product type exists in **many variants and configurations**
- Components are reused across multiple product families

6. Overlapping future DPP obligations

In addition to iron and steel, the same product may fall under future DPP requirements for (among others):

- Electronics
- Plastics
- Batteries (in some devices)

Result: A **single electrical device could require multiple layered DPPs**, further increasing complexity.

Expected number of DPPs

For a typical electrical product:

- Simple device: **500–1,000 DPP references**
- Complex modular device/system: **1,000–5,000+ DPP references**

This number increases significantly with deeper supply chain levels.

Conclusions

Implementing DPP requirements for iron and steel at final product level would:

- Be **technically unfeasible with current manufacturing systems**
- Require **unrealistic traceability levels**
- Lead to **exponential administrative and IT complexity**
- **Not provide proportional environmental or transparency benefits**

Example 2 from the Association CEMA, representing European agricultural machinery

- **Name of the association:** European Agricultural Machinery Association (CEMA)
- **Name and picture of the product:** Agricultural machinery

  Agricultural machinery is highly specialized, safety-critical, and essential for food security, with long life cycles and frequent upgrades, making generic ESPR requirements disproportionate and impractical. Implementing DPPs for "complex" spare parts, components with a large amount of different materials, would create excessive administrative and technical burdens, especially in tracking and transferring data across the value chain. This could also lead to legal uncertainties and liability risks.

  Agricultural machinery is built to order, which means the DPP is not available during the buying decision process and does not support a more sustainable buying decision.

  Sustainability goals such as circularity (repairability, longevity, etc.) are already addressed, and additional horizontal ESPR requirements could create unnecessary barriers and increase costs for manufacturers and farmers without adding value.

  Considering the above-mentioned points, "complex objects", including agricultural machinery, as well as spare parts and their components, should be excluded from the scope of ESPR and its related DPP requirements.

  For example, the following shows a self-propelled combine harvester equipped with a grain header, designed to harvest grain crops by cutting, threshing, cleaning, and collecting the grain in a single operation. Typically, these combine harvesters can reach dimensions of up to an overall length of 11 meters; width of 6 meters; height of 4 meters; header width up to 18,6 m; an operating weight up to 11,200 kg and over 60 tons of grain per hour.

  These machines have long life cycles, often exceeding 20 years, and are subject to regular maintenance, repair, and technological upgrades. They are essential for the productivity and resilience of the agricultural sector, directly impacting food security and rural economies.

The following images include visual elements that have been modified, anonymised, and/or generated using AI to ensure the confidentiality of the companies involved.

Large combine harvesters' components and sub-components (~Tier 1)



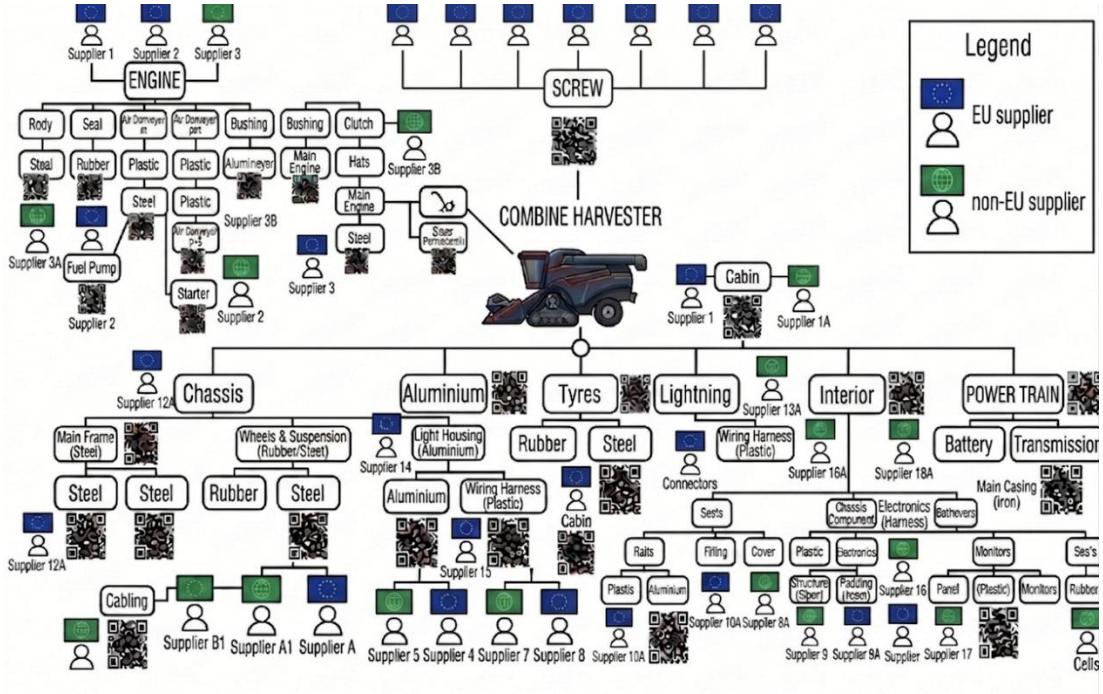
- **Implementing DPP requirements on your final product containing iron or steel will be extremely burdensome or virtually impossible to implement in practice the** because large combine harvester components are structured across a multi-tier (Tier 1–Tier 6) globally distributed supply chain of worldwide suppliers.





This image is provided solely for illustrative purposes to show a subsystem of components and a simplified representation of a supply chain scheme, explaining the different origins of the suppliers involved (which could be up to 5,000). Depending on the agricultural machinery model, the total number of components and sub-components may range from 5.000 to 16.000 parts, while steel, iron, and aluminum components may account for approximately 45% to 80% of the total. The illustration shows that a combine harvester would require a DPP composed of a very high number of individual data points across its components and sub-components, where a single DPP for a specific "spare part" can contain over 200 DPP-relevant positions and components.

Different supplier origins worldwide are involved and redundancy is implemented to ensure continuity in the supply of components



This image is provided solely for illustrative purposes to show the redundancy implemented to ensure continuity in the supply of components. Complexity increases further when the same component, even a simple "screw", can come from multiple suppliers with different DPPs, resulting in different DPPs for each individual machine.

Illustrative representation of the excessive number of DPPs potentially associated with complex machinery spare parts (i.e. each DPP links to a specific QR code)

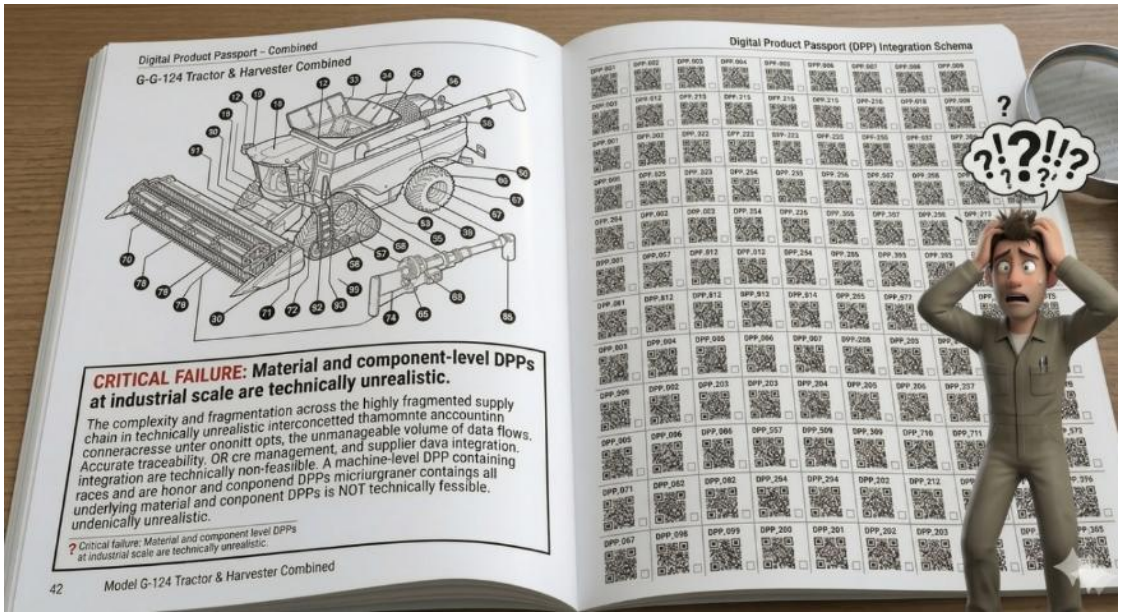


The illustration highlights the very high number of individual components and sub-components within complex agricultural machinery and spare parts that could theoretically require separate DPP identification and traceability mechanisms, with the image representing only a limited subset of the potentially thousands of DPPs involved. Even a significant reduction in the number of required DPPs would not materially address the practical and technical challenges associated with component-level implementation for complex machinery.

Summary of the variables to be considered

- A very high number of components, spare parts, and materials (mainly steel, iron, and aluminium) managed across complex machine structures;
- Machines are highly customised, not mass-produced products (each machine and each component can be different) within a multi-tier global supply chain involving numerous suppliers, subcontractors, SMEs, and non-EU operators with limited digital/DPP capabilities;
- Long machine lifetime requiring frequent servicing, component replacement, and continuous lifecycle data updates;
- Multiple QR codes/data carriers and lack of harmonised standards, interoperability, and traceability systems;
- Limited upstream visibility on recycled content and carbon footprint data, with high risk of incomplete or inconsistent information flows;
- Significant administrative, compliance, IT infrastructure and data management complexity across the supply chain.

Conclusions



Applying a highly granular Digital Product Passport (DPP) to materials, components, and spare parts in complex objects like agricultural machinery would create disproportionate technical, operational, and administrative complexity across a fragmented multi-tier global supply chain, making traceability and lifecycle data management impractical at an industrial scale.

Given the long machine lifetime, frequent component replacements, limited upstream data visibility, and lack of harmonised systems, such an approach would provide limited added value for machine lifecycle management, marginal environmental benefits, and little practical value for end users, while significantly increasing bureaucracy resulting in a higher risk of inconsistent information, and user confusion.

Examples 3 from the Association EGMF, representing European garden machinery industry

- **Name of the association:** EGMF
- **Name of the products**: battery-powered ride-on lawnmowers and handheld outdoor equipment like a blower, especially when considering applying a DPP also for "intermediate products" such as iron, steel and aluminium.

- **Picture**:



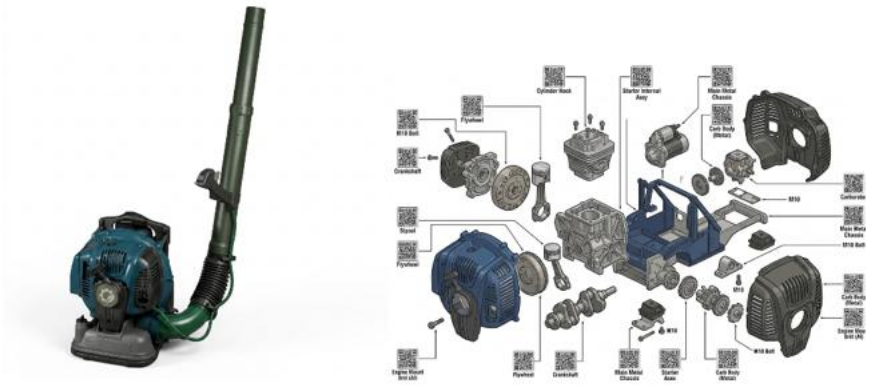
This image is provided for illustrative purposes only, to highlight the potential complexity of DPP requirements considering iron, steel, and aluminium components, as well as specific DPPs for tyres and battery packs. Certain visual elements have been modified, anonymised, and/or AI-generated to ensure the confidentiality of the companies involved.

- **Implementing DPP requirements on your final product containing iron or steel will be extremely burdensome or virtually impossible to implement in practice** because a typical battery ride-on lawnmower could count:
  - around 500 components are made of steel and aluminium, including tyres and batteries;
  - components are sourced across multiple supply chain tiers (Tier 1, Tier 2, Tier 3, etc.), creating additional challenges in terms of traceability and data collection;
  - the supply chain could involve approximately **150 suppliers**, of which nearly 25% are located outside the EU.

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- **Name of the product:** leaf blower

- **Picture:**



This image is provided for illustrative purposes only, to highlight the potential number of DPPs required, considering only some iron, steel, and aluminium components.

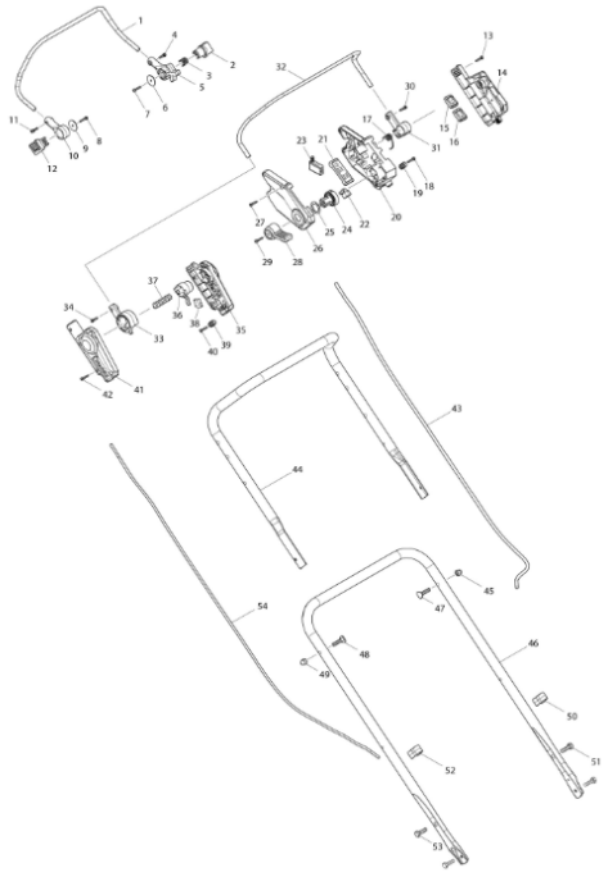
Visual elements have been modified and/or AI-generated to ensure the confidentiality of the companies involved

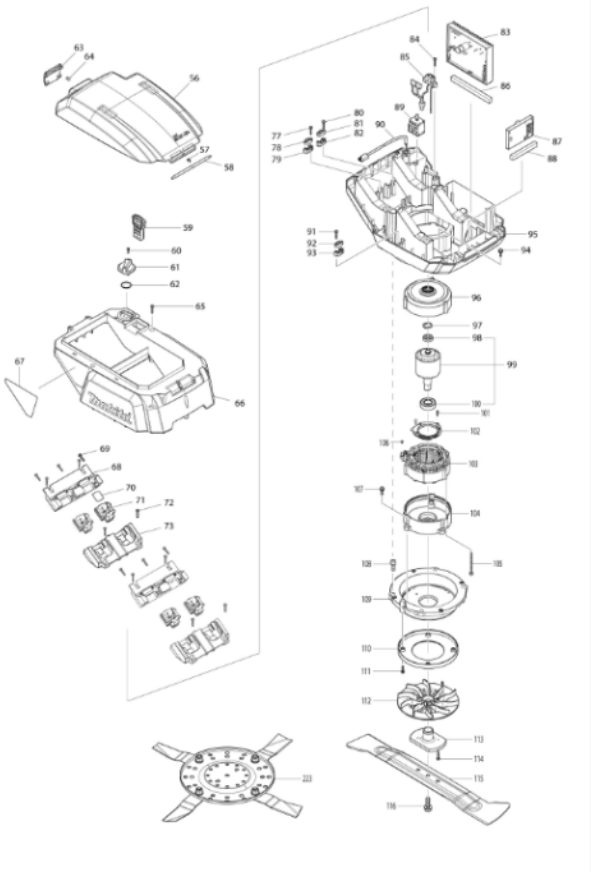
- **Implementing DPP requirements on your final product containing iron or steel will be extremely burdensome or virtually impossible to implement in practice for the following reasons:**
  - The indicative number of components for the machine is approximately 200 parts (mainly Tier 1 components);
  - Around 60% of these parts (i.e. about 120) are made of steel, iron and aluminium;
  - the supply chain involves approximately 100 suppliers, of which around 2% are located outside the EU.

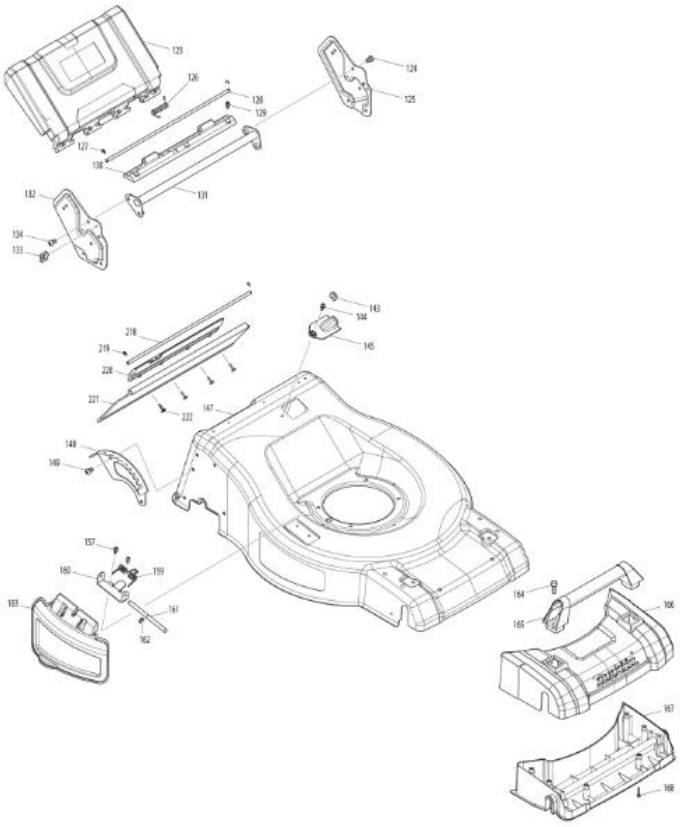
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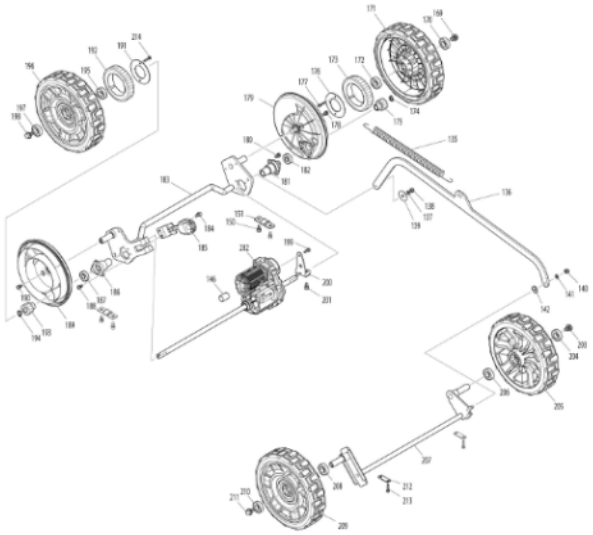
- **Name of the organisation**: Company Makita, member of EGMF
- **Name of the product**: Makita Lawn Mower, DLM532
- **Picture**:

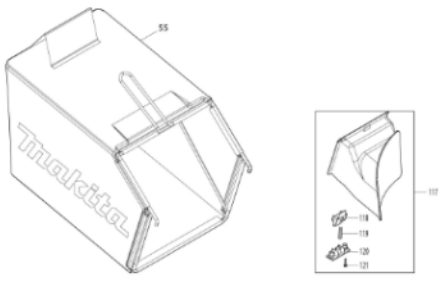












- **Implementing DPP requirements on your final product containing iron or steel will be extremely burdensome or virtually impossible to implement in practice** because a lawn mower provides a useful illustration of the challenge, highlighting how a final DPP would be extremely difficult to implement in practice. A lawn mower contains numerous steel-based components, including the blade, casing, handle, screws, nuts, axles, springs, and elements within the motor and electronics. However, it also incorporates other materials such as aluminium, coatings (e.g. paint), plastics, and electronic components, demonstrating that iron and steel are only one part of a highly integrated product system.

  For example, this lawn mower contains 283 components; please see above the exploded diagram of the lawn mower. The complexity of a final product DPP can quickly escalate when sub-assemblies are broken down further: a wiring loom may include multiple connectors and terminals, a circuit board may contain dozens of individual electronic components, and a motor will contain separate casing, bearings, and critical raw materials. Many of the iron and steel elements, particularly standard parts such as screws, nuts, and springs, are sourced from multiple Tier 1 suppliers, who themselves rely on Tier 2 and Tier 3 suppliers for raw materials. For instance, screws used in the same product may originate from suppliers A, B, and C, each of whom sources steel from different producers (X, Y, Z), creating a highly fragmented and multi-origin supply chain. As a result, even a single component type could be linked to multiple upstream DPPs, meaning that when scaled across all 283 components, this could translate into thousands of potential upstream DPPs.

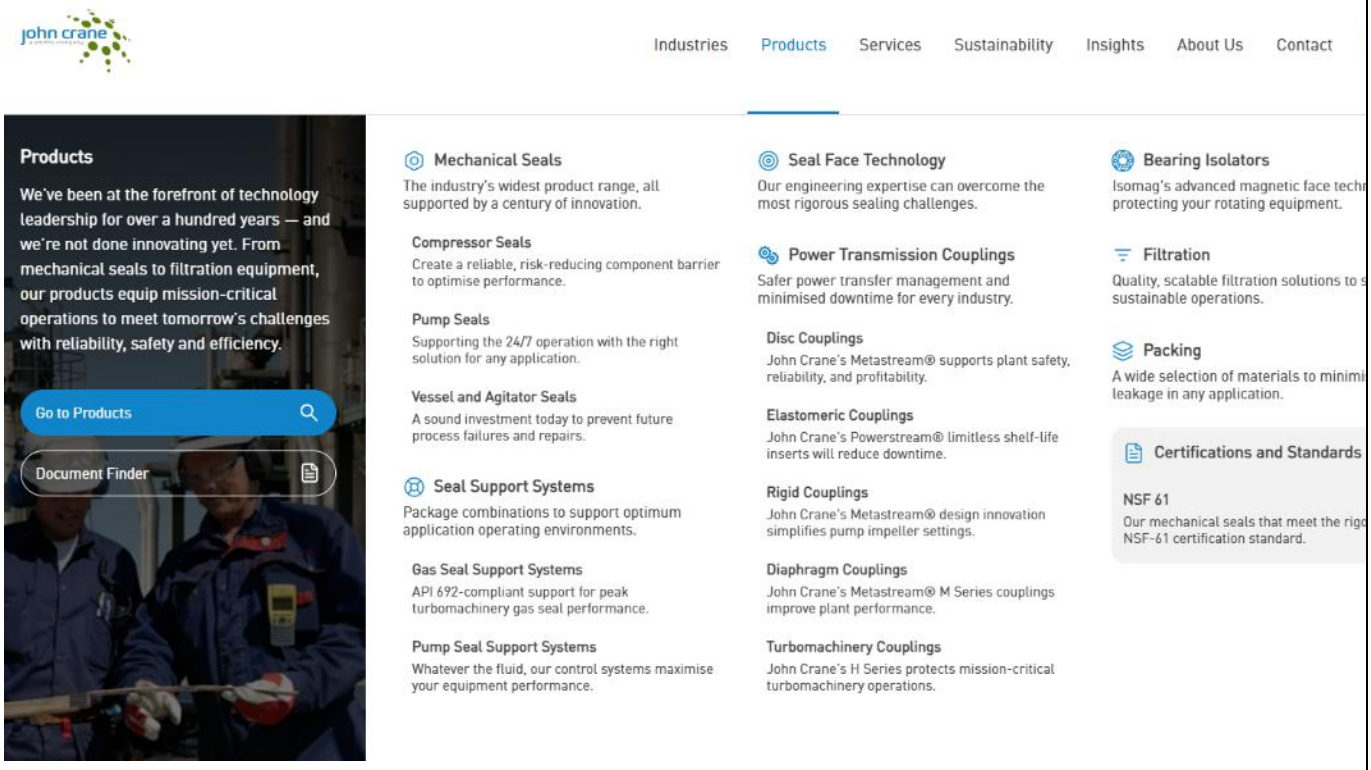
  If each of these material flows requires a DPP, the volume of data that must be collected, verified, and maintained by the final product manufacturer increases significantly, creating substantial challenges for traceability, data integration, and compliance systems. At this level of complexity, implementing and maintaining a coherent and reliable DPP at final product level becomes disproportionately burdensome and may not be feasible in practice.

Conclusions

These three examples from the European garden machinery industry **(**EGMF) demonstrate the considerable efforts required to collect, validate, maintain and update the information necessary for a complete Digital Product Passport across the entire value chain, especially when intermediate components and battery systems are included within the scope.

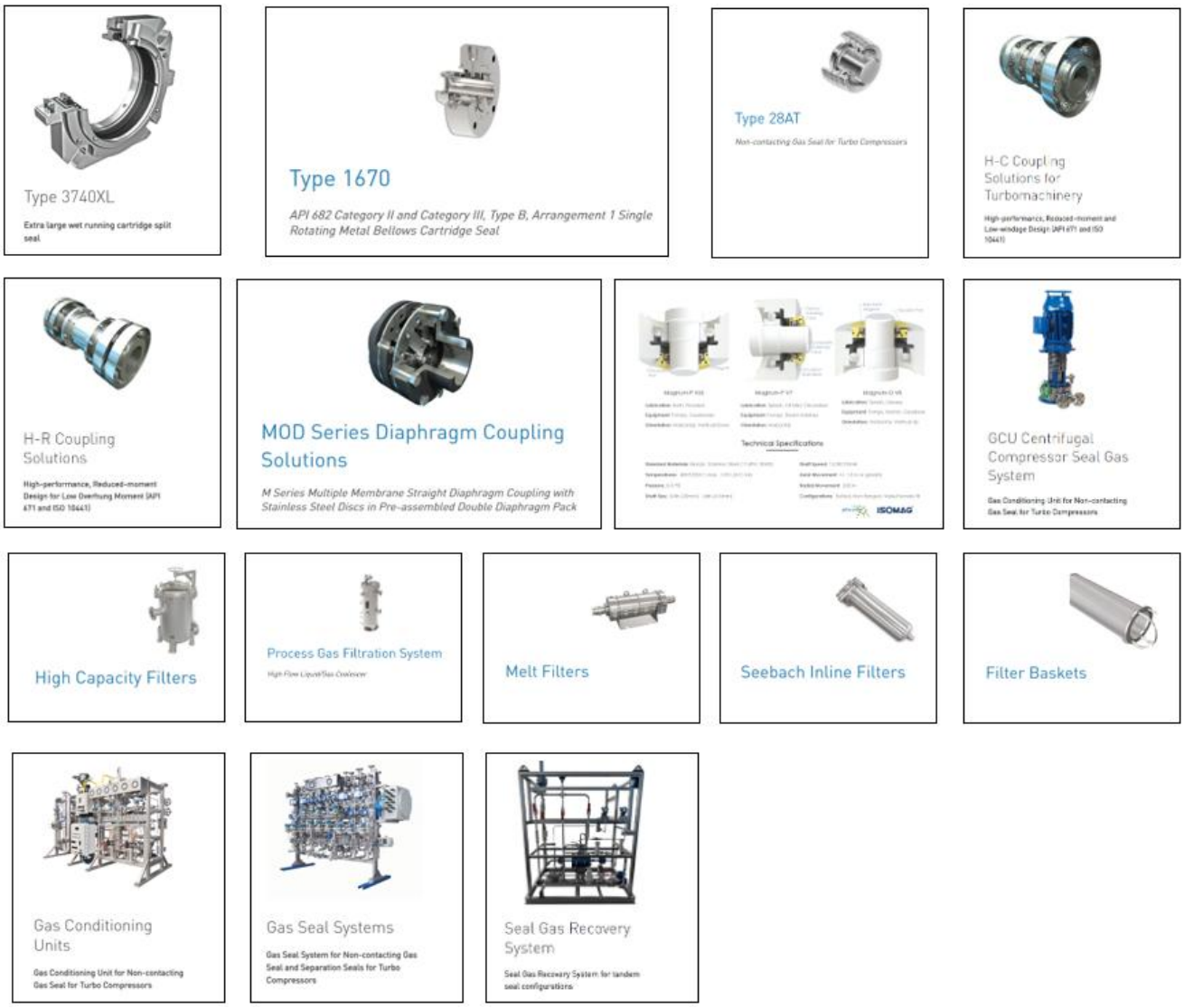
Example 4 from the company John Crane – a Smiths company

- **Name of the company**: John Crane – a Smiths company
- **Pictures of the products:** See below screenshot and comments



NOTE: You can go to the public facing website www.johncrane.com and see photos for all of the above products. Some examples are shown below:





- When trying to scope **Digital Product Passports (DPPs)** for John Crane mechanical seals and sealing systems, the key driver is not just "contains steel," but how many distinct regulated materials / components fall under EU ESPR + delegated acts. Steel is only one trigger.

1. Steel alone → typically one DPP baseline scenario

If you assume:

- Predominantly steel construction (casings, springs, faces carriers, hardware)
- Steel is treated under future ESPR or Construction/Industrial materials categories

Then at minimum: one DPP per product (or per SKU/variant) for the finished seal system.

Because:

- DPPs are expected to be product-level, not raw-material level
- Steel content is captured as material composition within the product passport, not requiring multiple DPPs just because multiple steel parts exist

2. Realistic mechanical seal composition → 3–6 data modules inside one DPP (not multiple passports)

A typical John Crane seal includes:

- Stainless steels / alloy steels
- Tungsten carbide or silicon carbide faces
- Elastomers (FKM, EPDM, etc.)
- Graphite / carbon components
- Possible coatings (Cr, Ni, etc.)

These do NOT create multiple DPPs
They create:
➢ Multiple material disclosures within one DPP

3. When the count of DPPs increases

You would expect multiple DPPs (not just one) only if:

A. Products are placed separately on the EU market

Example:
- Cartridge Seal ⟶ 1 DPP
- Support system (API Plan system, piping, skid) ⟶ 1 DPP
- Auxiliary components (heat exchangers, reservoirs) ⟶ additional DPPs

➢ In a sealing system package: 3–10 DPPs total is plausible depending on how it's sold and scoped

B. Different product categories fall under different ESPR rules

Future delegated acts may split:
- Metals
- Industrial equipment
- Pumps / rotating equipment
- Elastomer-containing products (if PFAS restrictions tie in)

👉 If regulations apply differently:
You could need separate DPPs per regulated product category

C. Remanufactured or service parts enter scope

John Crane business model includes:
- Replacement seal kits
  - Refurbished seals

👉 These may require:
Separate DPP instances or lifecycle-linked updates

4. Practical expectation for John Crane today

Conservative estimate (current planning level):

Scenario	Expected DPP count
Single seal SKU	**1 DPP**
Seal + support system package	**3–6 DPPs**
Full plant sealing solution scope	**5–15 DPPs**

5. Key takeaways:

- Steel content alone does NOT drive multiple DPPs
  - It simply ensures the product is very likely in scope
- The number of DPPs depends on:
  - How products are marketed (bundled vs separate)
  - Future ESPR category definitions
  - Lifecycle/service model

6. What matters more than DPP count (i.e., the challenges):

- Material breakdown (BoM to substance level)
- Traceability across supply chain
- Linking repair/refurbishment cycles

Knowing the above, requiring a Digital Product Passport (DPP) for mechanical seals and sealing systems - simply because they contain steel or iron - would create a compliance obligation that is disproportionate, operationally unworkable, and unlikely to achieve the intended regulatory outcomes in practice.

1. Extreme product complexity and configuration variability

Mechanical seals are not standardised "mass products." They are:

- Highly engineered, application-specific assemblies
- Configured for specific pumps, compressors, and operating conditions
- Frequently customised at the component and material level

A single "product line" can result in:

- Thousands of permutations (materials, geometries, coatings, elastomers)

👉 Requiring a separate DPP per configuration would create:

  - An explosion of passport records
  - A compliance system that is administratively unmanageable

2. Multi-material, multi-supplier assemblies

Although seals "contain steel," they typically also include:

- Carbides (e.g; tungsten carbide, silicon carbide)
- Elastomers (often proprietary blends)
- Graphite/carbon components
- Coatings and surface treatments

Each component:

- Comes from different global and/or local (country specific) suppliers
- Has independent material disclosures and confidentiality constraints

👉 A DPP requirement would force:

  - Deep, supplier-by-supplier data aggregation
  - Disclosure of sensitive formulation data that suppliers may not be legally able to share

This creates a systemic bottleneck across the supply chain, not just a manufacturer-level challenge.

3. Lifecycle reality: repair, reconfiguration and reuse

Unlike consumer goods, mechanical seals are:

- Routinely disassembled, repaired, refurbished, and reassembled
- Upgraded with replacement components over time
- Managed as part of a service lifecycle, not a fixed product lifecycle

👉 In practice:

  - The "product" does not remain static
  - The original configuration could become obsolete after first service

A DPP tied to a fixed product identity would:

- Become immediately outdated
- Require constant reissuance or updating across lifecycle events

This creates a compliance model that is not aligned with industrial maintenance reality.

4. Integration into larger systems (no clear product boundary)

Mechanical seals are not standalone end-use products. They are:

- Integrated into pumps, compressors, and process systems
- Further integrated into industrial plants (e.g;chemical, refining, energy, pulp and paper, pharmaceutical, etc.)

👉 This raises a fundamental regulatory question:

Should the DPP apply to:

  - The seal?
  - The pump?
  - The entire system?

Without a clear boundary:

- DPP requirements risk duplication or fragmentation
- Data becomes inconsistent across system levels

5. Disproportionate burden versus environmental benefit

The policy intent behind DPPs is to:

- Improve transparency
- Enable circularity

- Support material recovery

However, for mechanical seals:

- Steel content is already:
  - Well-characterised
  - Fully recyclable within existing industrial systems
- The mass of seals relative to industrial equipment is small
- They are typically handled in controlled industrial waste streams

👉 Therefore:

- The marginal benefit of a DPP is minimal
- The compliance burden is highly disproportionate

6. Data availability and legacy equipment constraints

Much of the installed base:

- Predates modern digital traceability systems
- Lacks complete material documentation

👉 Imposing DPP requirements retroactively would:

- Require reverse engineering or assumptions
- Introduce data quality and liability risks

7. Global Supply Chain and Jurisdictional Mismatch

Mechanical seals are:

- Designed, manufactured, and assembled across multiple jurisdictions
- Supplied into global industrial markets

A DPP requirement tied to EU regulation would:

- Require non-EU suppliers to generate EU-specific data structures
- Create misalignment with existing global standards (e.g., IHM, REACH declarations)

👉 This leads to:

- Redundant reporting systems
- Increased risk of inconsistent or conflicting data

Conclusions

From a regulatory perspective, applying DPP requirements to mechanical seals on the basis of steel or iron content would:

- Fail the proportionality principle (high burden, low benefit)
- Be difficult to enforce consistently, given product variability and lifecycle changes
- Create significant supply chain friction, including confidentiality and data availability issues
- Risk undermining the credibility of the DPP framework by introducing requirements that cannot be implemented reliably

A more effective approach would be to:

- Apply DPP requirements at the level of finished equipment (e.g., pumps, systems)
- Or focus on high-impact material streams, not complex industrial subcomponents

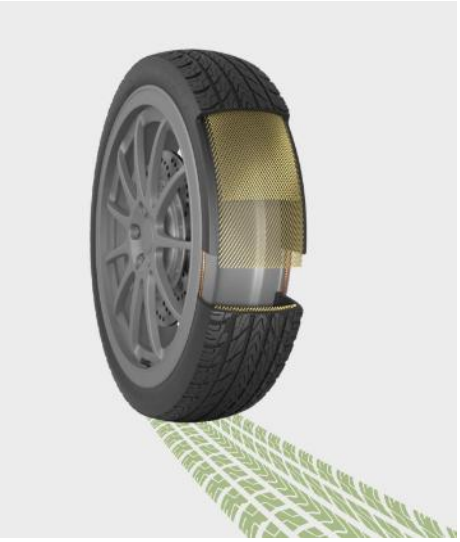
Example 5 from the company Bekaert

- **Name of the company**: Bekaert, member of the Belgian Association AGORIA
- **Products**: Wire products
- **Implementing DPP requirements on your final product containing iron or steel will be extremely burdensome or virtually impossible to implement in practice** because it will require data management and other implementations which medium size companies, like Bekaert, consider highly complex today.
- **Why is it so complex?**
  - A smart data eco system including all our suppliers and customers does not exist.
  - There is no standardised definition of the parameters of our products across the current eco system.
  - A DPP oriented data management is not available in medium size companies (including our suppliers).
  - There is no standardised, trusted, common data sharing tool in place.
  - There is no adequate data privacy definition existing and implemented.

Conclusions

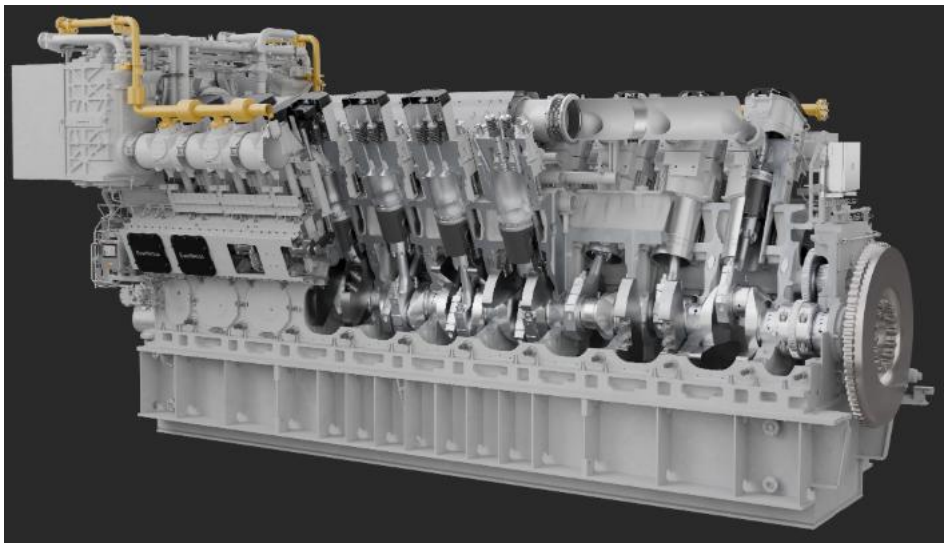
Every supplier of complex products would be required to develop a specific DPP for each individual product. Each of these individual DPPs could contain a high number of DPPs provided upstream in the value chain.

- We support the definition of a simple DPP for intermediate steel products as discussed in the first stakeholder meeting:
  - Intermediate products only should be in scope: requirements should apply only to in-scope steel intermediate products placed on the EU market, whether EU-produced or imported products. Final products should remain out of scope.
- **Product example:** Wire for tyre reinforcement



Example 6 from the company Everllence SE

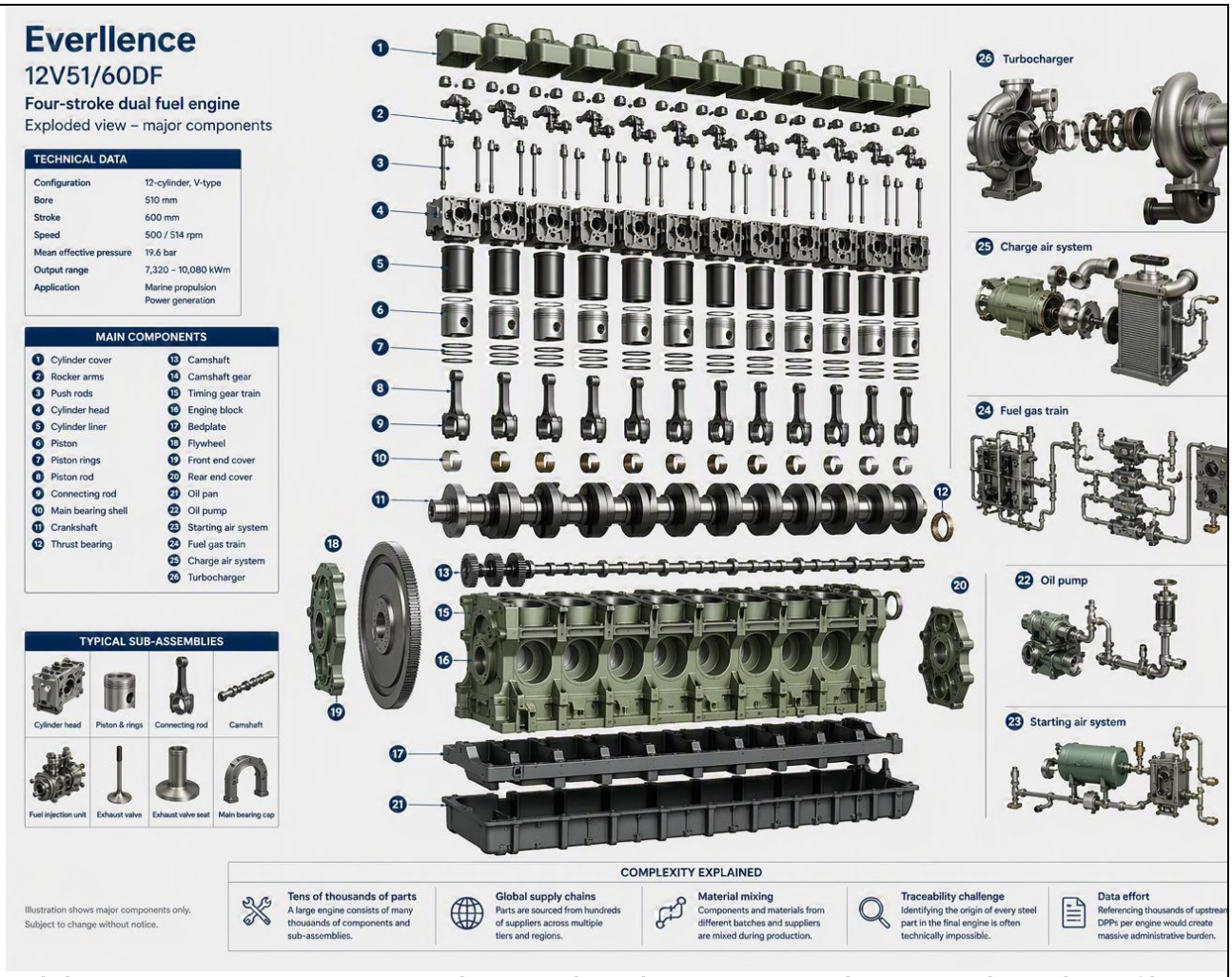
- **Name of the company:** Everllence SE, member of the German Association VDMA
- **Name & picture of the product:** *Large-scale engine manufacturing (e.g. marine, power station & turbocharger)*



This model of an Everllence 18V51/60G is in a technical drawing programme

- **Explanations why having a Digital Product Passport (DPP) on your final product containing steel or iron will be highly challenging or impossible to implement in practice.** And please explain how many DPPs you would expect for a given final product.

  A modern large-scale engine does not consist of a few dozen parts, but of many thousands—and in some cases tens of thousands—of individual components originating from numerous global suppliers. Achieving full traceability of steel and iron content across all tiers of the supply chain would require the collection, verification, and continuous maintenance of data from hundreds of companies and multiple international value chains. For complex industrial capital goods, such a level of transparency is often technically impractical and, in many cases, simply not achievable in a reliable manner.



This image was generated by AI to depict an engine using an exploded view and to give an idea of just how complex the DPP can become for a product as complex as a large engine

1. Complex products are fundamentally different from simple consumer goods

Large-scale engines are not single products — they are systems composed of thousands of components and subassemblies sourced from hundreds of suppliers worldwide.

- A single large engine may contain tens of thousands of individual parts.
- Components are sourced through multiple tiers of suppliers.
- Steel, iron, and aluminium pass through many processing and transformation steps before reaching the final product.
- The complexity of industrial machinery is fundamentally different from that of a battery, tyre, or consumer product.
- Unlike in the automotive sector, there is no mass production—each engine is custom-built and not simply selected from a catalog of standard engines.
- Furthermore, large-scale engine projects—in ships as well as in power plants—are always engineered as projects that include customer-specific peripheral equipment. These are designed specifically for each project and are also sourced from a wide variety of suppliers worldwide.
- Material and substance management systems such as IMDS or CDX, which are used as standard in mass-production supply chains, can therefore not be deployed.

Policy implication: A one-size-fits-all DPP approach is not suitable for complex industrial equipment.

2. Component-level traceability is not how industrial manufacturing works

Manufacturers do not track the exact origin of every individual steel-containing component used in a final engine.

- Identical parts are often sourced from multiple approved suppliers.
- Materials from different steel heats and batches are routinely used in production.
- During assembly, parts are mixed and installed without maintaining batch-specific traceability for every component.
- It is therefore often impossible to determine which individual screw, bolt, bracket, casting, or forging ended up in a specific engine.

Example

- 500 screws are purchased from Supplier A.
- 500 identical screws are purchased from Supplier B.
- 1,000 screws are used across ten engines.

After assembly, there is typically no practical way to determine which individual engine contains which supplier's screw.

Policy implication: DPP requirements should reflect actual industrial traceability practices rather than theoretical traceability concepts.

3. The number of required DPP references becomes unmanageable

Extending DPP obligations to final products containing steel would create an exponential increase in passport references.
For example:

- One engine contains thousands of components.
- Each component can have multiple suppliers.
- Each supplier can have multiple raw-material suppliers.
- Each raw-material supplier may generate separate DPPs.

As a result:

- One final engine could require references to thousands or even tens of thousands of upstream DPPs.
- Every engineering change, supplier change, or material substitution would require updates.
- EU Producers also have to request the relevant data from suppliers in non-EU countries. This further increases the complexity and the efforts.

Policy implication: The administrative effort would be disproportionate to the additional information provided.

4. Data volume does not equal transparency

More data does not automatically result in better sustainability information.

A system that requires thousands of upstream DPP links per engine would:

- Create enormous administrative burdens.
- Increase the risk of incomplete or inaccurate information.
- Depend on data from numerous third parties outside the manufacturer's control.
- Become extremely difficult for authorities, customers, and manufacturers to manage or verify.

Policy implication: Regulation should focus on meaningful, auditable information rather than maximum theoretical data collection.

5. Future DPP requirements could multiply the burden further

For mobile and stationary machinery, future DPP requirements may not be limited to:

- Iron and steel
- Aluminium

but could also extend to:

- Batteries
- Tyres
- Lubricants
- Paints and coatings
- Electronic components
- Other product groups subject to future DPP requirements

This would multiply the number of upstream passports that must be tracked and referenced.

Policy implication: Without clear limits and proportionality, DPP obligations could become technically and administratively unmanageable for manufacturers of complex machinery.

6. Estimated costs

A large international engine manufacturer could face DPP-related **implementation costs in the tens of millions of euros** initially, followed by **several million euros in recurring annual** compliance and maintenance costs.

7. Summary & conclusions

Europe can achieve both sustainability and industrial competitiveness. To do so, Digital Product Passport requirements must be designed around industrial reality. For highly complex products such as large-scale engines, proportionate and feasible traceability requirements will deliver better environmental outcomes than attempting to mandate full component-level transparency across thousands of suppliers and global value chains.

DPP requirements must remain **practical, proportionate, and technically feasible for complex industrial products**.

Large-scale engines are among the most complex products manufactured in Europe. A single engine can contain **tens of thousands of components**, sourced from **hundreds of suppliers** across multiple tiers of global supply chains. Steel and iron materials are transformed through numerous manufacturing steps—including casting, forging, machining, heat treatment, and assembly—before becoming part of the final product.
As a result:

- Material identities are frequently mixed or lost during manufacturing processes.
- Identical components are often sourced from multiple approved suppliers.
- Component-level traceability of every steel-containing part is often not technically achievable.
- A single engine could require references to thousands or even tens of thousands of upstream DPPs.

This would create significant administrative and compliance costs while providing limited additional sustainability value.

Finally, it can be assumed that European companies will experience a further loss or disadvantage of competitiveness compared to non-EU countries as a result, especially due to the rising costs for companies.

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