Position paper

Ecodesign for intermediate products

Essential ingredients for a more sustainable economy

ECOS - Environmental Coalition on Standards

ecostandard.org

Contents

Executive summary

Intermediate products are unfinished goods made from steel, cement and chemicals that require further manufacturing or transformation. They are produced by energy-intensive industries and used in almost all sectors, including construction and automotive. **Beyond substantial CO_2 emissions, intermediary product manufacturing has a range of harmful embodied environmental impacts, including** water, land and air pollution, as well as unsustainable use of natural resources. Based on the success of the Ecodesign Directive, and given the failures of industrial policies to date, **applying the Ecodesign for Sustainable Products Regulation (ESPR) to intermediate products is a unique opportunity to ensure we kickstart a deep industrial transformation and accelerate progress towards climate neutrality**. ESPR is the central regulation of the Sustainable Products Initiative (SPI)[1], announced by the European Commission in March 2022, and aimed at making sustainable products the norm in the EU.

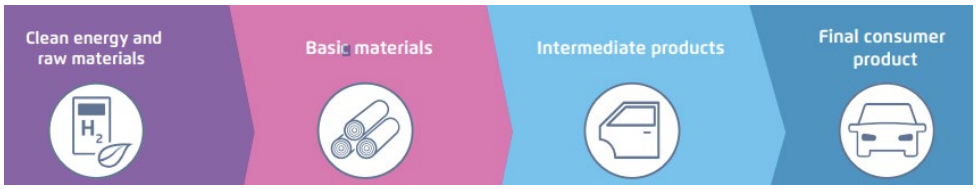

Figure 1: material supply chain (adapted from Agora Energwiende[2])

In summary, **the ESPR should require manufacturers to improve the environmental sustainability of their intermediary products** based on the following recommendations concerning:

- tailored ecodesign requirements;
- ensuring effective implementation of the ESPR; and
- how the ESPR should evolve moving forward to address the sustainability of the entire product value chain.

The recommendations outlined in this paper are necessary conditions for the ESPR to be 'fit-for-intermediates'. On this basis**, ECOS calls on policymakers from the European Commission, Parliament, and Council to embrace the challenges of improving the current legislative proposal** to ensure the impact on the supply of intermediate products is felt this decade across the entire economy. It is crucial to reduce the embodied impacts of intermediates to help make sustainable products the norm.

[1] SPI – About this initiative (European Commission, 2022).

[2] Mobilising the circular economy for energy-intensive materials (Agora Industry, 2022)

Key recommendations for policymakers

Tailored ecodesign requirements

- **Introduce mandatory ecodesign requirements on information and performance** for all relevant product parameters and characteristics, communicated via a robust, accessible, and harmonised B2B Digital Product Passport (DPP) system; underpinned by a *'no-data, no-market'* principle and a clear legal framework for the disclosure of sensitive business information as well as effective market surveillance.
- As part of ecodesign requirements, **adopt Paris-aligned minimum environmental performance requirements** to exclude the worst-performing intermediate products based on CO_2 footprint and mandatory Product Environmental Footprint impacts.
- To maximise long-term ambitions and accelerate the phase-out of highly pollutant, energy-intensive production routes, **establish '2050 classes of performance' to easily communicate the environmental performance of intermediate products and its compatibility with EU and global climate targets for 2050.**
- Introduce **minimum functional performance requirements** concerning inherent intermediate product characteristics that end-products rely on as minimum quality criteria and the resource efficiency of intermediates placed on the market.
- **Set requirements targeting material composition to foster a non-toxic and circular economy** through design principles and restrictions to foster circularity, as well as ensure traceability via relevant information requirements.
- Include mandatory requirements for assessing **ecodesign requirements as a basis for ambitious Green Public Criteria (GPP)** for all product groups.

Ensuring effective implementation of the ESPR

- Ensure a full **lifecycle approach to sustainability from cradle to grave** is adopted for intermediate products to ensure accountability for contribution to value-chain sustainability.
- **Accelerate the foreseen workplan for regulation of intermediate products** based on the significance of environmental impact, coupled with strengthened provisions for stakeholder involvement and timely entry into force of measures to drive industrial transformation.
- **Strengthen the legislative basis for evaluating and setting ambitious requirements on intermediate products** based on a broad approach to technological progress and economic viability, avoiding the relative shortcomings of existing industrial policies.

Evolution of the ESPR for intermediate products

- To support continuous improvement to the sustainability of intermediate products, integrate clear obligations for **regular review of ecodesign requirements**, and develop requirements that oblige manufacturers to leverage strategies for improved sustainability of their intermediate products, such as energy-switching and design optimisation, among others.
- **Greater support for more sustainable business models** with greater social benefits through a stronger mandate for policymakers to introduce enablers and guidance; complemented by mandatory **information and performance requirements on social sustainability,** based on common parameters covering local impacts on health, environment, and skills.

Introduction

Policy context

The European Green Deal (EGD) aims to ensure progress towards a green and digital transition. A number of initiatives aim to realise the ambitions of the EGD, including the current EU Industrial Strategy[3], sectoral product policies such as the Construction Products Regulation (CPR) and the Sustainable Products Initiative (SPI).

The proposed Sustainable Products Initiative (SPI) is the flagship undertaking of the European Commission's Circular Economy Action Plan, and aims **to make sustainable products the norm**, a vision that ECOS strongly supports. The central regulatory action of the SPI is the proposed revision of the Ecodesign Directive as the Ecodesign for Sustainable Products Regulation (ESPR). Consequently, the draft proposal released on 30 March 2022 was labelled as the policy to 'improve EU products' circularity, energy performance and other environmental sustainability aspects'[4]. **This paper will analyse if the ESPR proposal can achieve this and recommend measures to improve the draft regulation focusing on intermediate products.**

Beyond energy-related products

Primarily, the ESPR proposal extends the scope of the Ecodesign Directive beyond 'energy-related products'[5] with a use-stage focus to cover the environmental impacts across the full lifecycle of almost all products[6]. This extension of scope equates to an expansion of coverage in terms of the environmental impacts the legislation can address across the full lifecycle of products within scope. Consequently, **the ESPR will address environmental impacts embedded in the intermediate products used to make end-products in many sectors.**

What are intermediate products?

Intermediate products are unfinished goods made from materials such as steel, cement and chemicals that require further manufacturing or transformation such as mixing, coating, or assembling to make them suitable as a product for end-users.

Towards ecodesign for intermediate products

While the Ecodesign Directive regulates energy-related end-products destined for consumers and industry, **regulation of intermediate products requires greater adaptation of the current framework.** This adaptation is required due to the embodied nature of environmental impacts and the industrial context in which intermediates are produced, processed, sold, and used. Most notably, the context is characterised by intense and complex material supply chains, lengthy investment cycles related to these supply chains and production technologies, and the business-to-business setting in which they are sold downstream to various sectors. As a result, **the ESPR must deliver an appropriate and robust legal basis**

[3] Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery
[4] European Commission overview of Ecodesign for Sustainable Products
[5] List of energy-efficient products Regulations: by product group (energy labelling and Ecodesign legislation)
[6] Food, feed, and medicinal products are excluded.

for the sustainability of intermediate products, such as steel and cement[7]. Furthermore, implementing the ESPR for intermediate products avoids giving energy-intensive industries (e.g., steel, cement, and chemicals) another free pass on environmental performance requirements.

Why intermediate products?

Intermediate products are present across numerous value chains at the interface between 'Energy-Intensive Industries' (EII), and various sectors or 'industrial ecosystems'. **EII emit 15% of total EU greenhouse gas emissions.** These emissions are, in turn, embodied in intermediate products, and end-products. Beyond CO_2 emissions, intermediate product manufacturing has a wide range of equally substantial embodied environmental impacts such as resource depletion, water use, land-use change, and air pollution. Therefore, intermediate products represent a significant contribution to EU-driven climate change and environmental damage.

The ESPR can effectively tackle the substantial environmental impacts of intermediate products if key elements of the ESPR proposal are maintained, improved, and developed**. This position paper will outline ECOS recommendations for the ESPR to become 'fit-for-intermediates'** and, in doing so, ensure a more sustainable economy.

[7] The European Commission have proposed that Cement will primarily be regulated under the Construction Products Regulation using Ecodesign style requirements, with the ESPR to be used as a fallback option should the CPR fail to deliver sustainability improvements.

1 Ecodesign Regulation for intermediate products

Under the existing and proposed Ecodesign Regulation, only those products that meet a range of legal requirements - ecodesign requirements - can be placed on the market. Under Chapter II of the ESPR proposal, ecodesign requirements cover a range of key product aspects (e.g., durability, reliability, and reusability), as well as performance requirements (art. 6) and information requirements (art.7). **The ESPR legislative proposal is designed to link requirements for information and the obligation of market actors to provide this information with key ecodesign requirements on performance established through Delegated Acts.**

However, the proposed requirements are not yet fit-for-intermediates, given the industrial context in which they are produced. Energy Intensive Industries need to consistently reduce the impact of the materials and intermediate products from this point onwards, but are still typically considered 'Hard to Abate' with productions processes intrinsically linked to envronment impact. Transformation of indusrial scale production facilities will take all the time we have left to reconcicle the climate emergency and the economic value these sectors currently deliver. However, the label of 'hard to abate' is a term associated with a single monolithic change, whereas consistent improvements and innovations are key to realising the maximum potential for decarbonisation as our 2050 deadline rapdily approaches.

A long-term approach to environmental performance improvements is necessary for the ESPR to have sufficient impact Therefore, **ecodesign environmental and functional performance requirements, chemical composition, information, labelling, and green public procurement all warrant amendment in line with EU climate ambition as part of the final ESPR to be adopted in 2023.**

Additionally, under the current proposal, legislators outline the possibility for green public procurement (GPP) criteria go beyond ecodesign requirements through more ambitious minimum requirements as criteria (e.g., criteria for products to achieve a threshold of the best 10% performers). This would allow the regulation to boost demand and create a market for products based on their performance against ecodesign requirements. **This combination of requirements is key to improving the sustainability of supply and the demand for intermediate products.**

Although broad as a legal basis and potential to effectively cover all of these elements, the current ESPR proposal leaves a lot to be determined by the implementation process, and by stakeholders involved, the majority of which are industry representatives that will be regulated by the resulting legislation. Therefore, greater guarantees are needed in terms of the scale and ambition of legal requirements; the level of harmonisation across different product groups in terms of information required; climate goal alignment, labelling and communication, provision of key data, verification of product sustainability; and ensuring that a clear regime for the exchange of sensitive business information is established.

The following recommendations for a tailored Ecodesign Regulation of intermediate products reflect the need to guarantee progress from day one as a new regime of product regulation is applied to the supply chain of many energy-intensive industries and sectors.

Key recommendations for a tailored Ecodesign Regulation of intermediate products

- **Introduce mandatory ecodesign requirements on information and performance** for all relevant product parameters and characteristics, communicated via a robust, accessible, and harmonised B2B Digital Product Passport (DPP) system; underpinned by a '*no-data, no-market*' principle and a clear legal framework for the disclosure of sensitive business information as well as effective market surveillance.
- As part of ecodesign requirements, **adopt Paris-aligned minimum environmental performance requirements** to exclude the worst-performing intermediate products based on CO_2 footprint and core mandatory Product Environmental Footprint impacts.
- To maximise long-term ambitions and accelerate the phase-out of highly pollutant, energy-intensive production routes, **establish '2050 classes of performance' to easily communicate the environmental performance of intermediate products and its compatibility with EU and global climate targets for 2050.**
- Introduce **minimum functional performance requirements** concerning inherent intermediate product characteristics that end-products rely on as minimum quality criteria and the resource efficiency of intermediates placed on the market.
- **Set requirements targeting material composition requirements to foster a non-toxic and circular economy** through design principles, restrictions to foster circularity, and ensure traceability via relevant information requirements.
- Include mandatory requirements for assessing **ecodesign requirements as a basis for ambitious Green Public Criteria (GPP)** for all product groups.

Recommendations explained

1.1 Mandatory ecodesign performance and information requirements

To guarantee that ecodesign requirements on performance address all parameters relevant to intermediate product sustainability, policymakers should establish mandatory performance parameters for implementing regulation.

The draft proposal includes a list of relevant parameters under Annex I. However, there is no defined set of mandatory parameters for intermediate products. Consequently, deciding if parameters are appropriate or relevant to regulate will be passed to stakeholders involved in the implementation process. While stakeholder involvement is a strength of the inclusive approach of the current ecodesign implementing process, energy-intensive industry dominance of this process may lead to patchy and inconsistent regulation of performance characteristics, despite clear relevance to driving sustainability improvements. Policymakers should avoid setting only minimal ecodesign requirements for information and performance by ensuring that mandatory product performance parameters are subjected to minimum requirements as part of implementing legislation. Including mandatory ecodesign requirements for performance as part of the ESPR text will strengthen the mandate of policymakers to set rules and

ensure that parameters such as durability, use of recycled content, and environmental performance beyond CO_2, such as resource depletion and impacts on biodiversity are not overlooked.

The same issues exist for the information component of the ecodesign requirements of the proposal. Although the current information requirements under Chapter II of the ESPR proposal is comprehensive as a starting point, if, based on the conditions outlined within the Procedure for defining performance requirements (Annex II) there is substantial scope for the ommission of requirements for key information. In the current proposal, the logic of the procedure prefers to defer establishing requirements, rather than for solutions to be found to supply information in response to necessary information requirements. Therefore, the ESPR should specify and mandate information requirements for intermediate products to prevent information gaps. In addition, these information requirements should explicitly cover core mandatory performance parameters even if they are not yet subject to performance requirements and guarantee that the information needs of Business-to-Business (B2B) intermediate product value chains will be fulfilled. In particular, mandatory information requirements should include information on the production process, material composition or characteristics not subject to minimum requirements but useful to support more sustainable decision making. For example, information specifying if fossil fuels were used in production or on the exact chemical composition of a material. In parallel, solutions to satisfying information requirements can be developed in cooperation with stakeholders involved in the implementation process.

1.2 Paris-aligned environmental performance requirements for intermediate products

The power of the Ecodesign Directive to improve product sustainability lies in minimum environmental performance requirements that exclude the worst-performing products from the market. Minimum performance requirements also shift both supply and demand to more sustainable products. Therefore, environmental performance requirements should be an inherent element of ecodesign requirements for all intermediate products.

Moreover, ecodesign performance requirements should be based on EU aims for industrial and economy-wide decarbonisation from the beginning, with a clear regulatory framework that fosters increasingly stringent requirements as we move to a climate-neutral and resource-efficient economy. Therefore, the ESPR should guarantee the introduction of the Paris Agreement-aligned minimum environmental performance requirements for the CO_2 footprint of an intermediate product. Securing this alignment long-term means introducing a sequence of performance thresholds along a timeline that delivers a significant and proportionate contribution to 2030 and 2050 climate goals. Setting a 'regulatory roadmap' of long-term environmental performance requirements for intermediate products, which are ratcheted over time, will provide the predictability required for investments in the industrial transformation according to a trajectory that meets society's environmental goals.

Integration of planetary boundaries

Planetary boundaries are quantified limits that signal the level of risk of generating large-scale abrupt or irreversible environmental changes. Of the nine planetary boundaries[8], Climate Change based on the quantified presence of CO_2 in the atmosphere is the most familiar and already subject to the Paris Agreement, but the impacts of intermediate and all other products span far beyond CO_2 in terms of

[8] Stockholm Resilience Centre

resource extraction and consumption. Beyond climate change as a key planetary boundary, land-system change, biosphere integrity, ozone depletion, acidification, and water use have their own upper limits that sustainable product regulators must integrate.

Following the proposed integration of Paris-aligned performance requirements to address climate change, other such guiding limits should be established to regulate other environmental performance indicators using the EU Product Environmental Footprint as a common method for measuring performance. In practice, this existing list of indicators should be explicitly included in Annex I. Therefore, each piece of implementing legislation can already consider including information or even performance requirements for environmental impact indicators crucial to global sustainability.

1.3 2050 performance classes for CO_2

As per the current Ecodesign Directive, the proposed ESPR enables the Commission to set (via implementing acts) performance classes as part of ecodesign information requirements. Where established, these are used to assess and compare the relative performance of products in the market.

With a clear focus on decarbonising energy-intensive industries through the regulation of intermediate products, CO_2 classes of performance for high-impact intermediate products should be Paris-aligned from entry into force. For intermediate products, the top class represents a stringent threshold aligned with climate neutrality, and the lowest classes represent the poorest performing production and supply on the market. Therefore, to maximise long-term ambitions and accelerate the phase-out of highly pollutant, energy-intensive production routes, policymakers should establish provisions for '2050 classes of performance' for intermediate products in parallel to the current approach to energy-related products. This requirement should be included as a specific criterion for intermediate product classes of performance across Articles 7, 14, and in particular article 57[9] to designate the top performance classes to be Paris-aligned. Such a performance scale will provide a long-term and consistent range against which to evaluate and compare product performance, without overlooking the substantial impact that intermediate products have. For producers, this will reward the frontrunners and incentivise long-term improvements to achieve the highest performance classes, while not diluting competition based on sustainability.

Moreover, a 2050-aligned scale would still accommodate the ratcheting of minimum performance requirements and exclusion of worst-performing products over time. However, per the current Ecodesign Directive, the lowest performance classes would then be earmarked for phase-out under the next iteration of the corresponding implementing legislation, putting pressure on a large portion of the industry to make necessary changes to their production processes.

In the case of steel, this could help phase out the Blast Furnace-Basic Oxygen Furnace (BF-BOF) route producing the most energy and emissions-intensive steel as this production route, according to a 2050-aligned performance scale with evenly distributed classes of performance, would likely place the BF-BOF in the very bottom classes. Consequently, regular updates to the performance scale would also be needed to deliver continuous progress.

[9] Article 7 – Information Requirements, Article 14 – Labels, and Article 57 – Member State Incentives

1.4 Minimum functional performance requirements for sustainable intermediate products

Functional performance requirements are already integrated into the existing Ecodesign Directive for energy-related products, where key functionality parameters such as rinse efficiency for washing machines or debris pick-up for vacuum cleaners are combined with energy consumption and other aspects to deliver the energy-efficiency index rating for a given product, so there is a clear precedent for the use of functionality for ecodesign regulatory measures.

Therefore, the ESPR should also be operationalised to establish minimum functional performance requirements to improve the general quality, resource efficiency, durability and reliability of products placed on the EU market. ECOS welcomes the inclusion under Annex I (a) of functionality-related requirements such as durability and reliability as part of a wide-reaching set of parameters.

Still, the current set of candidate performance parameters does not directly target the inherent functional characteristics of intermediate products, which are key to lifecycle sustainability and the demands of end-users of the products. Consequently, a broader range of functional performance parameters should be identified for each group of intermediate products subjected to a minimum functional performance level, with corresponding performance information required as part of core mandatory information requirements.

In addition to ecodesign requirements and performance parameters already proposed, minimum functional performance requirements based on the material characteristics would directly improve the environmental sustainability of intermediate products by reducing resource depletion, slowing down material cycles, and reducing EU demand for virgin intermediate products supply. Furthermore, despite concerns, the significant economic value of innovative and highly performant intermediate products sold domestically and exported globally should offset any adverse effects of reduced production and consumption of new intermediate products.

Furthermore, for intermediate products, performance parameters can be used as both a baseline quality check on products and a basis for cross-checking the environmental footprint for a given level of functional performance. Moreover, by examining a range of functionality characteristics key to application in downstream sectors, the delivery of minimum or higher functional performance levels can be cross-checked with the environmental footprint of a product (e.g., CO_2 against strength[10]). Such a ratio will help ensure no trade-off between product functionality in pursuit of environmental sustainability or achieving an aggregated durability rating, and provide a key basis for more sustainable decision-making by comparing environmental impacts against the minimum (or specified) level functionality.

[10] Towards a green EU construction products policy (ECOS, 2020)

Example - Functional performance characteristics of steel

Below is a list of relevant functional performance parameters against which minimum requirements could be established depending upon the type of intermediate product and the typical application environment(s) or intended use(s) (e.g., automotive, or electrical).

- Elongation
- Weldability
- Sections and tolerances
- Bendability
- Bonding strength
- Shear force
- Stress ratio
- Water tightness
- Initial resistance to friction
- Strength at elevated temperature
- Tensile yield strength
- Tensile strength
- Fatigue
- Cyclic load performance
- Durability
- Deflected tensile strength
- Relaxation
- Modulus for elasticity
- Surface geometry
- Ratio actual/nominal value of yield strength

1.5 Material composition requirements toward a non-toxic and circular economy

With the expansion of the ecodesign framework to go beyond only energy-related products and look at the full lifecycle of almost all products, addressing material barriers to sustainability is crucial. Therefore, the ESPR should support EU policy aims of doubling the use of circular products and materials by 2030, and facilitating the non-toxic design of products, as well as non-toxic material cycles.

Substances of concern and toxic-free design

Beyond environmental sustainability alone, the ESPR should mandate the development of new requirements focusing on the use and presence of chemicals, taking into account wider societal concerns. This could help, for example, drive innovation towards safer alternatives (namely non-chemical, design-based solutions) and eliminate the use of hazardous chemicals as part of global value chains.

Regarding material composition and the presence of problematic substances, including material contaminants and hazardous substances, existing legal requirements under REACH[11] and CLP[12] focus on providing information on the presence of substances and substance-specific restrictions. These restrictions concern chemical safety and are not necessarily focused on achieving optimum product and material cycles in a circular economy. Therefore, the ESPR is the optimal legislative tool to combat the presence of substances that are detrimental to the sustainability of products.

ECOS welcomes the inclusion of candidate ecodesign requirements targeting the *presence of substances of concern* completed by a procedure for assessing substitution potential based on adverse effects on human health, but this remains a potential requirement with no guarantees. Instead, addressing

[11] EU regulation for the Registration, Evaluation, Authorisation and restriction of CHemicals.
[12] EU regulation for the Classification, Labelling and Packaging of substances and mixtures.

substances of concern should be included in a core mandatory set of requirements for intermediate products to ensure that toxic-free design is addressed without delay, including information requirements.

Reduce barriers to circularity

The composition of intermediate products lays the basis for circularity in the uptake and supply of suitable secondary materials. ECOS, therefore, welcomes proposals under Annex I (d), (e), and (f) that target the effects of using substances that are detrimental to reuse and that impact the ease and quality of recycling and, more directly, the use of (certain) substances on their own, as constituents of substances, or in mixtures.

By analysing these three elements, the ESPR proposal lays a comprehensive legal basis for assessing the material composition of intermediate products and the removal of substances of concern from material cycles throughout the economy. These product parameters should therefore be made mandatory for all intermediate products to guarantee barriers to circularity are addressed in implementation; otherwise, there will be the possibility to delay action based on a lack of willingness for producers to foster circularity at the detriment to their linear economy business model.

In practice, based on these product parameters, implementing legislation under the new ESPR for each intermediate product group would require analysis of the intrinsic relationship between material choice for different applications and other performance parameters (e.g., durability and reliability, as well as circularity).

For example, in the case of steel, a relevant requirement on material composition would likely be limits on copper contamination for different material streams. Limits to copper would, in turn, limit adverse effects on steel product performance and their circularity performance in terms of suitability for reuse or high-quality recycling, decreasing their environmental performance.

Figure 2 below shows varying levels of copper contamination at each stage of the lifecycle across different forms and sectoral applications, from blue to gold. The knock-on effects of unwanted substances such as copper can be substantial across several lifecycles, and similar issues exist across different material streams. Therefore, EU policymakers should prioritise addressing material barriers to circularity alongside functional performance requirements to decontaminate cross-sectoral material cycles to eliminate problematic substances.

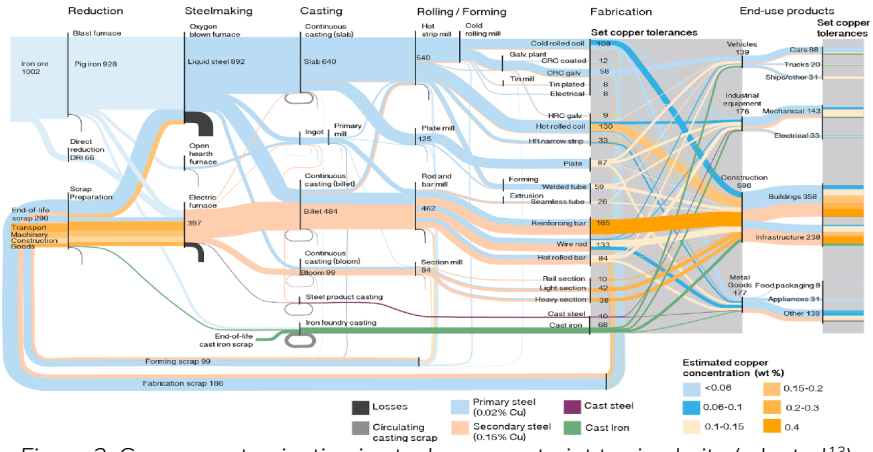

Figure 2: Copper contamination in steel as a constraint to circularity (adapted[13])

[13] Katrin E. Daehn, André Cabrera Serrenho, and Julian M. Allwood Environmental Science & Technology 2017 51 (11), 6599-6606 DOI: 10.1021/acs.est.7b00997 (Available here)

The same logic can be applied to substances within cement that are subject to limits of total content and leaching limits that vary across the EU. In this case, harmonising substance limit values would foster the uptake of alternative low-carbon cements using secondary materials by aligning national requirements, while still protecting at a level that protects human health .

1.6 Green public procurement criteria for sustainable products

Green public procurement (GPP) can have substantial benefits if implemented effectively[14] by public authorities due to the economic value of public procurement (14% of EU GDP in 2013[15]), most notably for construction and infrastructure, where GPP represents approximately 30% of the market value[16].

EU GPP criteria developed to date target other products and services that public procurers use, including electronics, transport, and catering services[17]. Linking product performance to ecodesign requirements and a sizable GPP demand will be essential to build the business case for producers to go beyond minimum requirements, increase competition based on sustainability, and accelerate the transition to sustainable products as the new norm.

Concretely, the ESPR should, at a minimum, introduce mandatory GPP requirements on intermediate products. Mandatory GPP would therefore apply to the use of steel and cement in any large public building (housing), infrastructure (energy), or transport (roads or vehicles) projects. If policymakers set effective environmental performance requirements, mandatory GPP requirements would represent a direct greening of demand. As per the current ESPR proposal, this could be implemented as separate legislation.

ECOS welcomes this possibility for the European Commission to *establish requirements applicable to public contracts*[18] through Delegated Acts but stresses the need to mandate assessment of GPP potential according to relevant parameters[19] for every product group in the implementation process. Furthermore, GGP requirements should be strengthened by including a mandatory requirement for using relevant GPP by the EU Member States, set above the legal baseline. Intermediate products often used for construction, infrastructure, energy, and mobility applications would therefore likely be subject to the development of such requirements, providing a much-needed boost to demand for more environmentally sustainable intermediates.

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[14] GPP Benefits (European Commission)

[15] Public procurement GDP value https://ec.europa.eu/environment/gpp/pdf/report_gpp_office_buildings.pdf (p.8)

[16] Ibid.

[17] EU GPP Criteria homepage (accessed June 2022).

[18] Includes implementation, monitoring, and reporting of those requirements by the Member States

[19] (a) the value and volume of public contracts relevant to a product group, (b) the need to ensure sufficient demand for environmentally sustainable products, and (c) the economic feasibility for authorities to purchase more sustainable products on a mandatory basis.

1.7 Establishing a system for information, labelling, and communication of Intermediate product characteristics

Industrial value chains remain behind in terms of providing complete, intelligible, and comparable information on the characteristics or performance of their products in a way that steers more sustainable decision-making. Data scarcity has consistently be used as means to delay the creation of a clear and quantified framework for limiting the numerous environmental impacts of energy-intensive industries. Establishing an intermediate product framework for information, labelling, and communication under the ESPR would therefore be an invaluable contribution and signal an acceleration of progress on product sustainability already this decade. In this regard, harmonisation, trust, and availability of data and information are all prerequisites of an ESPR framework that incentivises and requires improvements to intermediate product sustainability.

Harmonised product information and labelling

Beyond requirements for information alone and implementing a performance scale for quick evaluation and comparisons of product CO_2 footprint, policymakers should ensure that all product information is comprehensive, reliable, and intelligible for all upstream environmental impacts and performance levels. To deliver this, harmonising how product data is generated and communicated in different contexts is essential.

The ESPR must therefore lay the basis for harmonised and detailed product information to be supplied to downstream users and policymakers. In addition to legislative requirements of this nature, the use of standards will be important to underpin such a harmonised system of product information and labelling.

In this regard, harmonised European standards should be developed as part of ecodesign product-specific regulations to ensure the information is reliable and generated in a common format. Therefore, the European Commission should integrate the development of missing test standards required to measure performance against the forthcoming ecodesign requirements. The need for standards should be anticipated alongside confirmation of the workplan to avoid barriers to regulating performance parameters relevant to improving sustainability. For example, standards that will support the supply of information for the Digital Product Passport will need to be in place for this tool to be utilised as a part of implementing legislation - otherwise we risk legislative inconsistencies.

Furthermore, for intermediate products, businesses typically look deeper into product information. To make the most sustainable decisions, market actors will require information on relative performance across various parameters (e.g., durability or resource efficiency) and not just on the CO_2 of their products. This could be delivered through amendments to Articles 7 and 14 to indicate how well the product performs in comparison to others in the same product category, available through relevant product documentation and information systems to be established.

Where labelling of intermediate products exists (e.g., for professional consumers), policymakers should set requirements based on the ISO standard 14024:2018, which lays out principles and procedures for 'Type I' environmental labelling systems,[20] all of which will be relevant to align with SPI requirements as part of upcoming initiatives on claims such as Empowering Consumers for the Green Transition and Substantiating Green Claims.

[20] https://www.iso.org/standard/72458.html
Selection of product categories, product categories, environmental criteria, and product function characteristics, and for assessing and demonstrating compliance.

Verifying product sustainability

Verifying product sustainability is key to creating trust in the market for sustainable intermediate products by ensuring that meeting and surpassing requirements results in tangible economic and environmental benefits for market actors and civil society.

Therefore, verifying performance and product information through effective market surveillance is crucial. At the same time, self-declaration of conformity has demonstrated weaknesses in the past, relating to the completeness and reliability of product data and information. Consequently, for a stricter compliance regime to be effective, Member States and the EU must ensure a higher level of enforcement and improve proactive market surveillance actions.

Enforcement measures should ensure a significant deterrent to future non-compliance, be proportionate (in terms of market share and severity of failure to meet requirements) and ideally be consistent across the Member States (for example, by the definition of minimum penalties at EU level). In addition, intermediate products produced in the EU and abroad require compliance checks at distribution points within the EU or at major import hubs to ensure an even playing field between domestic and non-EU produced intermediate products.

Standards can play a key role in delivering this harmoniously and cost-effectively. Using robust standards, product information can be more easily verified through certification processes by the EU Member States and third parties. Where harmonised standards are not available or insufficient, developing technical specifications adopted by the European Commission should be an option to avoid industry standards acting as a barrier to environmental regulatory requirements.

In the case of many intermediate products distributed across a range of complex supply chains, physical and digital product certificates and documentation still play a key role in passing verifiable information down the value chain. To facilitate the creation and validation of such certificates, a digital system could be established as part of the DPP and Product Dataspaces. Combined, the abovementioned measures will ensure accurate, reliable, and properly disclosed data, facilitating compliance verification and declaration of conformity.

No data, no market

Policymakers should reinforce mandatory environmental data and information requirements with a 'no data-no market' principle that prevents market access where information requirements are not satisfied. In addition, implementing this principle will require information de facto for placing a product on the market, as well as help avoid loopholes for not providing information that exist in the current text. The proposed Digital Product Passport tool and the corresponding system for sharing and exchanging product details could provide a starting point to reduce the direct burden on national authorities to validate product data disclosure and availability via a common EU protocol that validates compliance.

However, the form of implementing the digital product ecosystem is still under development. The legal basis should be future-proof and support the effective use of the DPP within this ecosystem for the foreseeable future. Furthermore, an effective digitalised marketplace for sustainable intermediate products will make it much easier for downstream demand sectors to source better inputs for products or assets. Requiring data on a mandatory basis will, therefore, only improve the efficiency of the Single Market for intermediate products by ensuring that no barriers to trade exist due to a lack of data.

Confidential Business Information

Comprehensive information requirements outlined above require disclosure of Confidential Business Information (CBI). CBI has long been noted as an impediment to environmental performance requirements for industrial production processes (whiching intermediate products such as steel and cement)[21]. CBI barriers to communicating detailed intermediate product information throughout the value chain will hinder the implementation and compliance with relevant requirements.

Policymakers should solve this issue and lay down implementation requirements in the ESPR framework to ensure producers disclose intermediate product information while avoiding legitimate CBI infringements. A secure and distributed information system in the form of a *product dataspace or product information system* has been tabled by Commissioner Breton to improve the *quality, relevance and availability* of information required as part of the DPP[22]. ECOS supports this system to facilitate the required disclosure from industrial producers to finally end the roadblock of data and information needed to assess the sustainability of intermediate products and corresponding value chains.

2 Effective ESPR implementation for intermediate products

Effective implementation is key to apply the ecodesign approach in a way that will directly improve intermediate product sustainability, starting with designing, and producing products smarter[23] in a way that can tackle up to 80% of a product's environmental impact[24]. For policymakers, this means laying a reasonable legal basis in the core text of the ESPR for effectively implementing **ecodesign requirements** for intermediate products that are suitable for addressing the market conditions in whichh market actors from Energy Intensive Industries operate.

In addition, this means effectively covering critical performance parameters for sustainability associated with the entire product lifecycle and tackling the substantial environmental impacts of raw material acquisition in the case of intermediate products. Finally, effective implementation also requires a robust and participatory implementation process laid out by the core text of the ESPR, whichh the following recommendations focus on.

[21] EEB Open Letter to European Commission on CBI in the Sevilla Process
[22] Euractiv interview with Commission Thierry Breton concerning Circular Economy Action Plan (2020)
[23] Applying Ecodesign principles to plastics (ECOS, 2020)
[24] Ecodesign your future: How ecodesign can help the environment by making products smarter

Key recommendations for the effective implementation of ESPR for intermediate products

- Ensure a full **lifecycle approach to sustainability from cradle to grave** is adopted for intermediate products to ensure accountability for contribution to value-chain sustainability.
- **Accelerate the foreseen workplan for regulation of intermediate products** based on the significance of environmental impact, coupled with strengthened provisions for stakeholder involvement and timely entry into force of measures to drive industrial transformation.
- **Strengthen the legislative basis for evaluating and setting ambitious requirements on intermediate products** in the face of heavy industry conservatism based on a broad approach to technological progress and economic viability, avoiding the relative shortcomings of existing industrial policies.

Recommendation explained

2.1 Implementing a cradle-to-grave lifecycle approach for intermediate products

Although most environmental impacts occur in the production stage, a complete lifecycle approach is needed to address these impacts and maximise the sustainability of intermediate products. Therefore, relevant parameters impacting environment performance throughout the lifecycle should be addressed simultaneously for maximum impact.
For example, durability as an aggregation of many characteristics can be improved based on the material and intermediate product characteristics, is key to determining an intermediate product's potential lifespan, the greater the durability the longer the product will be useful. Consequently, the demand to produce new intermediate products will be mitigated. Tackling only the production stage would therefore overlook use-stage durability as a determinant of product sustainability, which significantly weaken the potential of ecodesign for intermediate products.

Therefore, ECOS welcomes the Commission's proposal for a lifecycle approach to ecodesign requrirements, but highlights the importance of not losing sight of the extreme environmental hotspots in the production stage, and not allowing producers to pass on the responsibility of sustainability down the value chain, as is largely the case today. Instead, policymakers must target each lifecycle stage, while accounting for all determinants of sustainability. This will mean that producers are accountable for not only their product sustainability but for their contribution to the sustainability of the value chain. This will, consequently better reflect the total impact of their products and their contribution to an unsustainable economy, and not just how they manage their operations. This approach is already being considered in

the context of the Industrial Emissions Directive[25] and should be aligned with product legislation for the delivery of a more joined-up approach of EU policies to industrial transformation and decarbonisation.

2.2 Accelerated workplan, implementation procedure, and stakeholder involvement

For intermediate products, the ESPR should also use the existing implementation process involving the development of a workplan, preparatory study, and Consultation Forum, followed by an Impact Assessment and inter-service consultation. ECOS welcomes the Commission's proposal to establish an 'Ecodesign Forum' as the primary stakeholder group to consult in developing implementing legislation under the ESPR. Still, it should be explicit when and how different interest groups will be involved in the implementation process to ensure no exclusion of civil society by policymakers or industry.

In terms of prioritisation for implementation of the ESPR, this should be dictated by a workplan based on environmental significance and the potential relevance of savings, i.e., the potential to reduce environmental impacts through policy measures and economic importance[26].

The European Commission has already identified iron, steel, and aluminium as intermediate products for the first workplan (2022-24) due to their *high environmental impacts and potential for improvement*[27]. However, the workplan will be decided by a public consultation, with the finalisation of the workplan by the end of 2022, meaning the timing of Entry into Force of the actual intermediate product regulation is uncertain.

As part of calls for the implementation process to be further accelerated for all product groups[28], ECOS calls on the European Commission to guarantee a regulation of intermediate products under the forthcoming workplan in the first wave of priority products, due to the climate urgency to reduce the environmental impacts of energy-intensive industries.

Unfortunately, the current proposal appears open to significant delays. Policymakersneed to amend Annex II (2) to avoid substantial delays to the entry into force of performance requirements based broadly on *time needed to adapt the product design and production processes*[29]. This approach may not be as problematic for consumer products where the time required for improvements to be implemented have shorter lead times in comparison to the transformation of industrial production and supply chains. Still, given the slow progress and conservative strategy of EU-level industry associations, this represents a threat to the short-term impacts of implementing legislation for intermediate products. For example, a sector producing intermediate products may use this clause to justify that an environmental requirement does not enter into force until Carbon Capture Use and Storage (CCUS) comes online for all sectoral installation after 2035. As a result, requirements may be extremely weak or non-existent in the short term.

[25] BATs and a value chain perspective (VITO, 2020)
[26] Preparatory study for the Ecodesign and Energy Labelling Working Plan 2020-2024
[27] Q&A on Sustainable Products Initaitive
[28] ECOS factsheet: Review of the Ecodesign Directive
[29] ESPR Annex – COM (2022)142

2.3 Defining performance requirements

Regarding the procedure for defining performance requirements as outlined in Annex II of the draft proposal, it is also essential for policymakers to avoid potential loopholes or delays in the development of ecodesign requirements for intermediate products based on the slow-moving and conservative attitude of incumbent producers. Instead of focusing predominantly on primary production, they must consider the broad sectoral and economy-wide transformation required to achieve environmental sustainability. While some resistance is expected based on current economic conditions, minimum environmental performance requirements must be focused on sustaining our planet and supporting leaders in this challenge, not keeping business-as-usual.

In this regard, ECOS welcomes the broad scope of analysis on which to base performance requirements. Still, there is a lack of details regarding how economic viability will be weighted in this analysis. In the case of intermediate products, policymakers must overcome barriers related to the costs and feasibility of industrial transformation to deliver ambitious regulation that impacts energy-intensive industries and producers of intermediate products.

Undoubtedly, substantial investments will be required for environmentally sustainable industrial transformation through shifts in production technology, including vertical or horizontal integration by today's primary production-focused firms. In addition, investments should be made to phase out fossil fuel use in producing intermediate products using clean technologies and material innovations rather than continuing with the status quo. Therefore, ecodesign requirements will be an important driver of environmentally sustainable industrial transformation in the near term.

2.4 Evaluating and benchmarking environmental performance

As already outlined, environmental performance determinants differ between intermediate and energy-related products. Consequently, to establish ecodesign requirements for environmental performance, evaluating and benchmarking the performance of intermediate products available on the market will require an approach that assesses the short and long-term viability to reduce corresponding embodied environmental impacts using all available solutions.

Therefore, as part of the preparatory study stage, policymakers should evaluate the environmental sustainability of alternative production and supply routes to foster ambitious and progressively stringent minimum requirements that tackle the systemic sustainability of the sectors overall.

Consequently, the implementing process laid down by the ESPR should prevent the use of 'like-for-like' or relative comparisons when setting requirements, which is a defect of the existing EU industrial policy (i.e., Emissions Trading System performance benchmarks) that the ESPR should not replicate. Instead, this would require all production routes for intermediate products to be assessed to develop a common baseline performance.

3 Evolution of the ESPR for intermediate products towards a value chain approach

The current ESPR draft, boosted with the additional recommendations brought forward in this paper, would be a positive step towards making sustainable products the norm. Still, more can be done in the future to help guarantee that is the case. ECOS sees great potential for continuous improvement to regulatory measures concerning the actions of market actors during the implementation phase and the need for greater direct support for more sustainable business models beyond GPP, as already outlined. The following recommendations outline those ideas that should be explored in the coming years to improve ESPR further.

Key recommendations for the evolution of the ecodesign for intermediate products

- To support continuous improvement to the sustainability of intermediate products, integrate clear obligations for a **regular review of ecodesign requirements**, and develop requirements that oblige manufacturers to leverage strategies for improved sustainability of their intermediate products, such as energy-switching and design optimisation, among others.
- **Greater support for more sustainable business models** with greater social benefits through a stronger mandate for policymakers to introduce enablers and guidance; complemented by **mandatory information and performance requirements on social sustainability,** based on common parameters covering local impacts on health, environment, and skills.

Recommendations explained

3.1 Obligations for policymakers and producers

Under Article 21 of the ESPR proposal, the European Commission underpins performance and information requirements with criteria for verifying conformity with said requirements i.e., checking what has been declared or assessed is correct and satisfies legal requirements. Therefore, the ESPR correctly places on manufacturers the burden of demonstrating that products have been designed and manufactured following the conditions in Article 6 via product requirements. However, beyond this, manufacturers are not obliged to implement strategies to continually improve product sustainability.

Policymakers should strengthen the implementation process and ensure that intermediate products are consistently pushed toward sustainability by regularly establishing a mandate to review ecodesign

requirements. The framework should also oblige producers to go beyond the baseline and move closer to delivering truly sustainable products.

3.2 Regular reviews of implementing legislation

In the case of energy-related products, regular updates to performance requirements provide an opportunity to increase performance requirements every 5 - 6 years regularly. However, the current ESPR proposal does not guarantee that regular updates will be made to intermediate product ecodesign requirements via the typical review clause included under Article 7 of the existing implementing legislation of the Ecodesign Directive. Therefore, ECOS proposes introducing a clear mandate for the European Commission to review and update ecodesign requirements for intermediate Products every five years or sooner, based on the impact of existing requirements.

3.3 Delivering continuous improvements to sustainability

2050 classes of performance (see section 1.3) should be coupled with a legislative driver of low-carbon innovation to accelerate progress towards sustainable intermediate products. In conjunction with the current Ecodesign Directive, classes of performance for energy-related products help incentivise continuous by requiring increasingly higher energy efficiency to achieve the desired class of performance. In particular, the rescaling process involving an update to product performance evaluation acts to exclude products performing at levels associated with the two bottom classes, and ensures that the top two classes (A and B) are empty at the revision, meaning that producers are incentivise to deliver products that achieve top-tier performance ratings must improve. However, for the reasons outlined, a different approach is needed to continuously improve the sustainability of intermediate products.

Therefore, policymakers should also oblige producers to pursue a broad range of sustainability strategies such as design optimisation, reuse, resource efficiency, and energy or fuel switching to support continued progress on improving the sustainability of intermediate products, irrespective of industry pressure on policymakers. Such obligation requirements could, for example, oblige suppliers to demonstrate how they have implemented strategies to reduce resource use and GHG emissions based upon realistic assumptions about normal conditions concerning intended use.

Sustainability strategies example – intermediate product design optimisation

If producers were required to demonstrate progress in implementing resource efficiency measures, they could deliver action against this criterion by implementing a *design optimisation* strategy. Implementing design optimisation to reduce material use to deliver the same functionality executed through alternative design and material solutions assessment could reduce material consumption by up to 30% in the case of construction applications.

3.4 Prioritising sustainability obligations for producers

Recommendations for implementing sustainability strategies should be organised according to a climate action hierarchy. In this hierarchy, priority would be given to the sufficiency of existing resources, the efficiency of use, and mitigation actions with specific decarbonisation levers allocated to each hierarchy level. For example, improvements to the energy efficiency of an industrial installation would directly link to the efficiency level, but giving priority to the circular use of resources in support of sufficiency[30]. An action plan to implement these strategies during the implementation period should act as a guideline for producers.

3.5 Greater support for sustainable and circular business models

Beyond integrating ecodesign criteria into GPP policies, tailored support for promising business models is needed. Relevant resource-efficient and circular business models to support includee Product as a Service (PaaS), reverse logistics, and on-demand production. All of these are particularly pertinent to promote as part of contractual agreements between intermediate product suppliers and their clients. Therefore, ECOS welcomes the establishment of the European Circular Business Hub (ECBH). However, more concrete outputs from this hub are needed, including actions to incentivise the implementation of business models oriented toward more sustainable products.

For policymakers to address this gap, the ESPR should detail a strengthened mandate for the ECBH to develop policy enablers and implement a supportive policy framework and behaviour that leads to a change in consumer behaviour and education[31]. Such enablers include tax incentives for recycled materials, support for R&D, product standards, certification, and educational measures for policymakers, such as guidelines on developing effective demand-side measures for specific sectors to complement supply-side actions.

[30] Sufficiency policies are a set of measures and daily practices that avoid the demand for energy, materials, land, water, and other natural resources over the lifecycle of buildings and goods while delivering wellbeing for all within planetary boundaries – Sufficiency and Circularity (EEB, 2021)

[31] EEA: A framework for enabling circular business models https://www.eea.europa.eu/publications/a-framework-for-enabling-circular