Communication COM(2022) 140 of 30 March 2022 **on making sustainable products the norm**

Proposal COM(2022) 142 of 30 March 2022 for a **Regulation establishing** a framework for setting **ecodesign requirements for sustainable products** and repealing Directive 2009/125/EC

Communication COM(2022) 141 of 30 March 2022: **EU Strategy for Sustainable and Circular Textiles**

ECODESIGN OF PRODUCTS

cep**PolicyBrief** No. 10/2022

LONG VERSION

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A. Key elements of the EU Proposal

1 Context and Objectives: "Making Sustainable Products the Norm"

1.1 Targets

- The Commission announced in its Circular Economy Action Plan that it would propose EU requirements for a "sustainable product policy". Through various measures, the current "linear throwaway society" is to be gradually transformed into a circular economy, thus decoupling the use of resources from economic growth. [COM(2020) 98, p. 4 et seq. cep**PolicyBrief** 5/2020]
- A circular economy aims to conserve resources, avoid or reduce waste as much as possible and return materials to the economic cycle, throughout a product's life cycle – design, production, demand, use and waste management ["Circular Economy Principle", Circular Economy Action Plan COM(2015) 614, p. 2–4, see cep**PolicyBrief** 6/2016].
- By means of product design, the Commission aims to
  - minimise their harmful impact on the environment and the climate, and
  - minimise their resource consumption and thus reduce the EU's dependence on imports – e.g. of "primary raw materials" derived from nature, such as oil.
- On 30 March 2022, the Commission presented proposals on "making sustainable products the norm" ["Sustainable Product Initiative", COM(2022) 140, p. 2]. These include EU requirements for
  - the environmentally sustainable design (ecodesign) of potentially almost all products placed on the EU internal market or put into service [Proposal COM(2022) 142 for a Regulation establishing a framework for setting ecodesign requirements and repealing the Ecodesign Directive 2009/125/EC ("Ecodesign Regulation")];
  - sector-specific products with "significant impact on the environment", such as
    - textiles [Communication COM(2021) 141 on the EU Strategy for Sustainable and Circular Textiles ("Textiles Strategy")] and
    - construction products [Proposal COM(2022) 144 for a Regulation laying down harmonised conditions for the marketing of construction products ("Construction Products Regulation"); see cep**Dossier** 3/2022];
  - "energy-related" products based on the current Ecodesign Directive and an "Ecodesign and Energy Labelling Working Plan 2022–2024" ("Working Plan 2022–2024") [Communication C(2022) 2026];
  - extending consumer rights to empower consumers to make environmentally sustainable purchasing decisions [Proposal COM(2022) 143 on empowering consumers for the green transition through better protection against unfair practices and better information; see cep**Dossier** 4/2022].

1.2 Background: Ecodesign Directive 2009/125/EC

- The current Ecodesign Directive [2009/125/EC; see cep**PolicyBrief**]
  - covers "energy-related" products, i.e. [Ecodesign Directive, Art. 2 (1)]
    - products which use energy – e.g. lights, dishwashers, washing machines and vacuum cleaners – and
    - products which have "an impact on energy consumption during use", e.g. windows;
  - establishes ecodesign requirements for the environmentally sound design of specific products and product groups in order to reduce the consumption of energy and natural resources [Ecodesign Directive, Art. 2 (23)];
  - regulates approx. 30 energy-related product groups by way of approx. 50 measures [Working Plan 2022–2024, p. 2];
  - avoids fragmentation of the EU internal market by bringing in uniform EU requirements rather than varying national requirements [Ecodesign Directive, Art. 1 (2)].
- The product-specific ecodesign requirements are not laid down by the Ecodesign Directive itself but in subsequent implementing measures established by the Commission in a comitology procedure, provided that a committee of national experts agrees and neither the Council nor the European Parliament objects [Ecodesign Directive, Art. 2 (3), Art. 15 (1), Art. 19 (3)].
- Until the new Ecodesign Regulation enters into force, ecodesign requirements based on the current Ecodesign Directive and the Working Plan for 2022–2024 will be [Sustainable Product Initiative, p. 9]
  - reviewed for products that are already regulated – e.g. heating and cooling appliances [Working Plan 2022–2024, p. 4];
  - adopted for new products – e.g. smartphones, tablets, solar panels [Working Plan 2022–2024, p. 4].

- Although ecodesign requirements have so far focused on improving energy efficiency, they increasingly regulate other environmental aspects as well [Ecodesign Directive, Art. 15 (6) in conjunction with Annex I]. For example, the Commission is considering assessing the "reparability" of smartphones and tablets and establishing an obligation to indicate this on the product [Working Plan 2022–2024, p. 6].

1.3 Background: Energy Labelling Regulation (EU) 2017/1369

- Energy-related products placed on the market or put into service in the EU internal market must provide product information on energy efficiency and, where applicable, on the consumption of other resources during use ("energy label") so that consumers can choose more efficient products [Energy Labelling Regulation (EU) 2017/1369, Art. 1 (1); see cep**PolicyBrief** 18/2015].
- The energy label indicates the energy efficiency of a product, compared to other products in the same product group, by means of energy efficiency classes, which are divided into a coloured scale from "A" (dark green: "high energy efficiency") to "G" (red: "low energy efficiency") [Energy Labelling Regulation (EU) 2017/1369, Art. 2 No. 19].

2 Ecodesign Regulation

2.1 Objectives and Regulatory Approach

- The Ecodesign Regulation, as the main instrument of the sustainable product initiative, aims to [Art. 1 (1)]
  - improve the environmental sustainability of products during their life cycle, in particular by way of their design, which dictates 80% of their environmental impact [Sustainable Product Initiative, p. 2];
  - ensure the free movement of goods in the EU internal market.
- Compared to the current Ecodesign Directive, the new Ecodesign Regulation [Art. 1] will
  - cover not only "energy-related products" but also almost all products, and
  - regulate not only primarily energy efficiency but also other product characteristics ("product aspects") – e.g. reparability.
- The Commission may, by means of delegated acts [Ecodesign Regulation, Art. 4 and 66; Art. 290 TFEU], adopt concrete ecodesign requirements for specific products or product groups in the form of "performance requirements" [Ecodesign Regulation, Art. 6] and/or "information requirements" [Ecodesign Regulation, Art. 7].
- A "digital product passport" will provide information about a product [Ecodesign Regulation, Art. 8].
- Products may be placed on the market or put into service in the EU internal market only if
  - they comply with the ecodesign requirements laid down for them [Ecodesign Regulation, Art. 3 (1)], and
  - a digital product passport is available for them [Ecodesign Regulation, Art. 8 (1)].

2.2 Scope and Product Selection

- The Regulation [Ecodesign Regulation, Art. 1 (2)]
  - applies, in principle, to all physical goods, including components and intermediate products, regardless of whether they are produced in the EU or imported;
  - does not apply to only a few product groups, such as food, feed and human and veterinary medicines.
- The Commission is empowered by the EU legislator – European Parliament and Council – to set specific ecodesign requirements for specific products in delegated acts [Ecodesign Regulation, Art. 4 and 66; TFEU, Art. 290].
- The Commission will adopt a working plan for a period of at least three years, setting out a list of product groups for which ecodesign requirements are to be introduced [Ecodesign Regulation, Art. 16 (2)].
- When selecting products to be covered by ecodesign requirements, the Commission will take into account [Ecodesign Regulation, Art. 16 (1)]
  - the potential for achieving the EU's climate, environmental and energy efficiency objectives,
  - the potential for improving product aspects such as reparability [Ecodesign Regulation, Art. 5 (1)] "without entailing disproportionate costs",
  - the distribution of environmental impacts, energy use and waste generation along the value chain, and
  - the volume of sales and trade in the EU.
- The Commission will submit an impact assessment for each product or product group based on the "best available evidence and analyses" [Ecodesign Regulation, Art. 5 (4) (b)].
- The concrete ecodesign requirements for specific products will be developed by the Commission with an expert advisory group ("Ecodesign Forum") composed of representatives of Member States and stakeholders with an interest in the product, such as industry including small and medium-sized enterprises (SMEs) and

craft sectors, trade unions, traders and retailers, importers, environmental protection groups and consumer organisations [Ecodesign Regulation, Art. 17].

- If two or more product groups have "technical similarities", common requirements may be established. [Ecodesign Regulation, Art. 5 (2)]

2.3 Ecodesign Requirements

- The Commission will establish ecodesign requirements, with due consideration for all stages of a product's life cycle, in order to improve the following aspects of the product [Ecodesign Regulation, Art. 5 (1)]:
  - durability, reliability;
  - reusability, upgradeability;
  - reparability, possibility of maintenance and refurbishment;
  - presence of substances of concern;
  - possibility of remanufacturing and recycling;
  - proportion of secondary raw materials recycled from waste ("recycled content");
  - energy and resource efficiency;
  - reduction of the carbon and environmental footprint;
  - expected quantity of waste generation.
- The ecodesign requirements must [Ecodesign Regulation, Art. 5 (5)]
  - have no "significant negative impact" on the functionality of the product,
  - have no "significant negative impact" on the affordability for consumers – taking into account access to second-hand products and durability,
  - have no "disproportionate negative impact" on the competitiveness of businesses,
  - have no "disproportionate administrative burdens" on businesses.

2.3.1 Performance Requirements

- Ecodesign requirements may be established in the form of "performance requirements". These include [Ecodesign Regulation, Art. 6 (1) and (2) in conjunction with Annex I]
  - non-quantitative requirements to improve performance – e.g. a ban on a specific technical solution that adversely affects the product's reparability –, or
  - requirements related to the functional performance of a product – such as durability and reliability of the product or its components, as expressed, for example, through the guaranteed service life of the product, or
  - minimum or maximum levels regarding specific product parameters – such as the recycled content or the use of certain chemical substances.
- The performance requirements for chemical substances must not be based on chemical safety, but must relate to their impact on sustainability and the circular economy principle [Ecodesign Regulation, Art. 6 (3) in conjunction with Annex I].

2.3.2 Information Requirements

- Ecodesign requirements may be established in the form of "information requirements". These include
  - as a minimum, requirements relating to the digital product passport and to "substances of concern" [Ecodesign Regulation, Art. 7 (1) and (2)];
  - "as appropriate," information on
    - the performance of the product – e.g. durability, reparability, use of energy, water and other resources, carbon and environmental footprint and/or the release of microplastics;
    - installation, use, maintenance and repair of the product;
    - handling instructions for disassembly, recycling or disposal at the end of life;
    - "other information" that may influence the handling of the product.
- Information requirements also indicate how the required information is provided, e.g. on the product itself, on the packaging, in the product passport or on a "label" [Ecodesign Regulation, Art. 7 (6)].
  - A label will indicate, for example, a product's class of performance. This aims to make it easier for the customer to compare the respective product characteristics and thus choose the "better performing product" [Ecodesign Regulation, Art. 14 (2)].
  - If, in the case of energy-related products, information on a specific product parameter cannot be provided on the energy label, these product parameters can be shown "if appropriate" by means of another label [Ecodesign Regulation, Art. 14 (3)].

2.4 Digital Product Passport

- The "digital product passport" will provide information about a product in order to [Ecodesign Regulation, Recital 26 and Art. 8– 13]
  - enable consumers to make informed choices, e.g. the purchase of sustainable products,
  - assist economic operators – such as manufacturers, repairers and recyclers – to carry out their activities and fulfil their obligations, and
  - make it easier for authorities to enforce the Ecodesign Regulation.
- The digital product passport aims to improve the traceability of products along the value chain [Ecodesign Regulation Art. 8 (3) (c)], in particular the traceability of all substances of concern throughout the life cycle of the product [Ecodesign Regulation, Art. 7 (5)].
- The requirements for a digital product passport are laid down in delegated acts and include [Ecodesign Regulation, Art. 8 (2) in conjunction with Annex III]
  - information such as user manuals, instructions for use, warnings or safety information;
  - the manner in which the product passport is to be made accessible to customers;
  - all actors who will have access to the information in the digital product passport, such as consumers, importers, traders, repair companies, recyclers;
  - all actors who are permitted to add or update information to the digital product passport or who are allowed to issue a new digital product passport – such as manufacturers, repairers, recyclers and national authorities.
- A digital product passport is linked to a unique product identifier via a data carrier – a barcode or other automatic data capture media – and refers to the product model, batch or item [Ecodesign Regulation, Art. 2 (30) and Art. 9 (1) (b) and (e)].
- Consumers, economic operators and other relevant actors have free access to the digital product passport based on their respective "access rights" [Ecodesign Regulation, Art. 10 (b)].

3 Textile Strategy

- Textiles in the EU are the fourth largest source of negative impacts on climate and the environment and third highest source of water and land use. About 11 kilograms of textiles per person are discarded every year in the EU. [Textile Strategy, p. 1]
- Clothing comprises 81% and thus the highest proportion of EU textile consumption, followed by home textiles – such as bed linen – mattresses and carpets, and medical equipment. In addition, textiles are used in buildings, for example for insulation products, and in vehicles. [Textile Strategy, p. 1]
- The clothing sector is characterised by a "linear economic model" and, by contrast with a circular economy, has low rates of reuse, repair and fibre-to-fibre recycling. The quantity of clothing that is of inferior quality and lower price, and often therefore worn for shorter periods ("fast fashion"), continues to increase. [Textile Strategy, p. 1]
- The Commission initially wants to regulate products "with the highest potential" for sustainability, which includes clothing and home textiles, carpets and mattresses [Textile Strategy, p. 4].
- Based on an impact assessment, the Commission wants to set binding ecodesign requirements for textiles which will influence product design. These aim to [Textile Strategy, p. 4 and 6]
  - give textiles a longer life span so that consumers no longer discard them due to quality defects such as poor colour fastness;
  - ensure that textiles are largely made of recycled fibres and can be reused and repaired;
  - facilitate fibre-to-fibre recycling by avoiding textile materials that are difficult to recycle and contain different fibres or substances of concern;
  - reduce the release of microplastics into the environment.

- A digital product passport is to be introduced for textiles. This will contain "clear, structured and accessible" information in order to [Textile Strategy, p. 5.]
  - help consumers make "better choices" with regard to the sustainability of textiles, and
  - enable companies along the value chain to share information – e.g. information for recyclers about substances of concern or fibre composition provided by manufacturers.
- The digital product passport must be aligned with the applicable Textile Labelling Regulation [(EU) No 1007/2011]. This stipulates that textiles must carry information on their fibre composition and on "non-textile parts of animal origin" – e.g. buttons made of mother-of-pearl.

B. Legal and political context

1 Legislative Procedure

30 March 2022	Adoption by the Commission
Open	Adoption by the European Parliament and the Council, publication in the Official Journal of the European Union, entry into force

2 Options for Influencing the Political Process

Directorates General:	DG Environment
Committees of the European Parliament:	Environment, Public Health and Food Safety (ENVI, leading), Rapporteur: Simona Bonafè (S&D Group, IT)
Federal Ministries:	Economy and Climate (leading)
Committees of the German Bundestag:	Economic Affairs and Climate (leading)
Decision-making mode in the Council:	Qualified majority (acceptance by 55% of Member States which make up 65% of the EU population)

3 Formalities

Legal competence:	Art. 114 TFEU (Internal Market)
Form of legislative competence:	Shared competence (Art. 4 (2) TFEU)
Procedure:	Art. 294 TFEU (ordinary legislative procedure)

C. Assessment

1 Economic Impact Assessment

1.1 Ecodesign Regulation

1.1.1 Objectives and Regulatory Approach

Sustainable and, in particular, circular product design will, in principle, mean that products can be used for longer and recycled better. If this reduces the demand for new products, it will also reduce the use of materials and the consumption of resources and consequently the EU's dependence on raw material imports. In the long term, decoupling economic growth from resource use is necessary to protect biodiversity[1] and to reduce emissions of greenhouse gases, other environmental pollutants and waste[2].

In order to achieve these goals and reduce the harmful impact that products have on the environment, their sustainable and, in particular, circular design is a key starting point. Right from the outset, products can be designed to be more durable, more easily repaired – e.g. by screwing components together rather than gluing or soldering them – and in such a way as to allow high-quality recycled material to be obtained from them – e.g. by

[1] Reichert, G. / Schwind, S. / De Petris, A. / Jousseaume, M. (2020), Biodiversity Strategy 2030, cep**PolicyBrief**.
[2] Schwind, S. / Reichert, G. (2021), Zero Pollution Action Plan, cep**PolicyBrief** 20/2021.

dispensing with substances or mixtures of substances that hinder recycling. This reduces the effort and cost of repair and recycling. In this way, sustainably designed products become a cost-effective alternative to buying a new product and manufacturing it from primary raw materials, which in turn reduces overall resource consumption.

However, growing product diversity and the product characteristics to be taken into account present a challenge when it comes to establishing mandatory ecodesign requirements under the new Ecodesign Regulation. This is because requirements have to be precisely adapted to a specific product and its desired functions which leads to a risk that some of the sustainability objectives thereby pursued may come into conflict with one another. For example, plastic packaging consisting of several manually inseparable materials ("composites") requires an energy-intensive process ("chemical recycling") to turn it into high-quality plastic recyclate. At the same time, composites are many times thinner and lighter than packaging made from a single type of plastic. Thus, improving recyclability can result in greater use of materials.[3] Similarly, improving the reparability of a product by designing it to have easily replaceable parts may require more material to be used.[4] This in turn increases both the consumption of materials and resources in the manufacturing phase of a product and the amount of waste generated in the disposal phase of a product, when according to the "waste hierarchy" under EU waste legislation, avoiding waste should actually be a priority.[5] Overall, ecodesign requirements for various products and product characteristics may have both positive and negative impacts on the environmental footprint of these products at different stages of their respective life cycles, or even contradictory impacts depending on the various sustainability goals.

1.1.2 Scope and Product Selection

Against this backdrop, when selecting the products to be regulated and defining the concrete ecodesign requirements, it will be crucial, within the framework of multi-annual work programmes, to carry out a product-specific assessment and weigh up the advantages and disadvantages of the individual ecodesign requirements in a life-cycle analysis. On the one hand, the environmental impact of products must be determined and evaluated as a whole in order to determine which options are advantageous from a sustainability point of view and to avoid "ecological trade-offs" where possible. On the other hand, the Commission proposal rightly provides that the impact of ecodesign requirements on other aspects, such as the functionality of the product, its affordability for consumers, as well as on competitiveness and the administrative burden for businesses, must also be considered. However, such life-cycle analyses are a major undertaking because they require data collection and modelling to be as comprehensive as possible. In addition, some parameters are unknown and the "gaps" have to be filled by "carefully selected" assumptions.[6]

In this context, it is rightly envisaged that the Commission, with the aid of the Ecodesign Forum acting in a purely advisory capacity, will take into account the experience of all relevant actors – manufacturers, wholesalers and retailers, repairers, waste collection and sorting companies, recyclers, representatives of Member States and non-governmental organisations such as environmental groups. It is important to recognise, however, that it is simply not possible to model all the effects and trade-offs of ecodesign requirements along the value chain, as well as potential effects on other product groups, and consequently any assessment and consideration of the potential impact of the ecodesign requirements is likely to be approximate at best.

In addition, sufficient human and financial capacity must be made available for defining all the ecodesign requirements. Existing capacity is already insufficient to implement the original product regulations envisaged under the currently applicable Ecodesign Directive. Although the Ecodesign Directive only covers energy-related product types and fewer potential product aspects, the Commission has already had to stop work on several

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[3] Umweltbundesamt (2019), Aufkommen und Verwertung von Verpackungsabfällen in Deutschland im Jahr 2017, Abschlussbericht, Texte 139/2019, p. 94; on this see also Voßwinkel, J. S. / Reichert, G. / Schwind, S. / Jousseaume, M. (2020), Kreislauforientierte Kunststoffwirtschaft für Non-Food-Verpackungen, cep**Studie**, p. 51.

[4] Prendeville, S. M. / O'Connor, F. / Bocken, N. M. / Bakker, C. (2017), Uncovering ecodesign dilemmas: A path to business model innovation. Journal of cleaner production 143, p. 6.

[5] The "EU waste hierarchy" stipulates that waste should first be (1) prevented, then (2) prepared for reuse, and only then (3) recycled or (4) recovered in some other way, and finally (5) disposed of. Directive 2008/98/EC of 19 November 2008 on waste and repealing certain Directives ("Waste Framework Directive"), Art. 4; see **cepPolicyBrief** 3/2016.

[6] Bauer, B. / Watson, D. / Gylling, A. / Remmen, A. / Lysemose, M. H. / Hohenthal , C. / Jönbrink, A. (2018), Potential Ecodesign Requirements for Textiles and Furniture, Nordic Council of Ministers, ("Bauer et al. (2018), Potential Ecodesign Requirements for Textiles and Furniture"), p. 41.

products due to limited staff resources.[7] Horizontal measures covering various product groups may reduce the effort involved in setting ecodesign requirements. However, regulating product groups will increase the risk of requirements being adopted that are inappropriate for the individual products themselves. If this interferes fundamentally with product design, it may have an unintended negative impact on the manufacture of individual products.

The requirements of the Ecodesign Directive apply to all products placed on the market or put into service in the EU internal market, regardless of where they are produced. As this also includes imports, a level playing field exists within the EU. It is a major challenge for authorities to monitor all regulated products in the EU single market. The proposed introduction of the digital product passport has the potential to facilitate the work of market surveillance authorities.

1.1.3 Ecodesign Requirements

Environmental Impact of Products

While the current Ecodesign Directive primarily sets ecodesign requirements for quantifiable measurements – such as energy consumption – the Ecodesign Regulation will also set qualitative requirements. In the case of requirements such as reparability, different results may be obtained depending on the methodology chosen for the assessment. The Commission will define the methods for this "where appropriate, based on the nature of the product". The experience gained from establishing the ecodesign requirements under the Ecodesign Directive will also be taken into account. Building on this, the Commission will develop "new methods or tools where appropriate".[8] Comparing the various environmental impacts of different products is often difficult and does not provide any information about handling at the point of use. A product is not automatically more environmentally friendly just because it is easier to repair since enhanced reparability can also mean greater use of material. Although enhanced reparability may extend service life and thus reduce the need for new products, this will only be the case if consumers actually assert their right to repair.[9]

Extending the use of a device could have an impact on the ability to innovate and thus slow down technological progress. The speed with which innovations spread through the market will also be reduced by a longer product life. This may be counteracted by modular product design, which is where a technical product is built in such a way that all components can be easily replaced by consumers themselves or by a repair service provider. Thus, during repair, not only can defective product components be replaced by functional ones but also, where appropriate, by newer and more efficient new developments. This would allow lower resource consumption without hindering innovation. However, a modular design is limited by the fact that products or product components cannot always be designed to be more efficient whilst also retaining their compatibility with the original products.

Finally, diverse ecodesign requirements may also be contradictory by reference to the various sustainability goals. In order to produce more durable products, it may be necessary to use substances which, based on the technologies currently in use, make recycling difficult or impossible. When it comes to recyclability, it is not only the product design that is important but also the recycling technology used. Thus, the recyclability of a product can be increased both by way of product design and by way of technical innovations in the recycling sector. In addition, ecodesign requirements may result in trade-offs being made between a product's durability and its recyclability. On the one hand, it may be appropriate to dispense with certain substances – e.g. varnishes for waterproofing – so that a product can be recycled. On the other hand, such substances can significantly extend the life of a product. The Commission must disclose such trade-offs when setting ecodesign requirements for specific products, and use life-cycle analyses for a transparent investigation and assessment of which requirement, on the whole, brings the greatest benefit to "environmental sustainability".

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7 Another reason for abandoning the original plan to regulate the ecodesign of specific products was that the potential for energy savings was lower than initially expected. Examples of discontinued work include electric kettles, compressors and hand dryers; see European Commission (2020), Communication C(2020) 2026 of 30 March 2022, Work Programme for Ecodesign and Energy Labelling 2022–2024 ("Work Programme 2022–2024"), p. 5.

8 Ecodesign Regulation, Recital 19.

9 On this, Stockebrandt, P. / Schwind, S. / Reichert, G. (2022), A European "Right to Repair", cep**Input** 5/2022 , p. 17 et seq.

Presence of Substances of Concern

While the aim of EU chemicals legislation is to ensure in particular the safe management of chemicals, including substances of concern[10], eco-design requirements are intended to make products more sustainable and circular. In view of these diverging objectives of the different regulatory regimes, regulatory duplication should be avoided.

EU chemicals legislation consists of about 40 legal acts centring around the Regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals [(EC) No 1907/2006 (REACH Regulation)] and the Regulation on Classification, Labelling and Packaging of Substances and Mixtures [(EC) No 1272/2008 (CLP Regulation)].[11] Certain substances are also regulated separately as they pose a particular danger to health or the environment. The Commission criticises the fact that the complexity of the assessment procedures for chemicals is already leading to "inconsistencies, delays in procedures, inefficient use of resources and unnecessary effort". Chemical safety assessments fall under various pieces of legislation and can be carried out at different times by different EU agencies – such as the European Chemicals Agency or European Environment Agency. In addition, various methods are used to assess chemicals and there is sometimes a lack of clarity about what information is already available about the chemicals.[12]

Moreover, a blanket exclusion of substances is not always justified. Directing consideration solely at the intrinsic properties of chemical substances when determining measures does have the advantage that tests will be faster and less complex, and will provide unambiguous results. However, it will also have unintended socio-economic consequences if a general restriction of chemicals has an unforeseen detrimental effect on the manufacture of products – e.g. because the chemicals are essential for product manufacture and an alternative is either unavailable or much more expensive. In addition, a general exclusion of certain chemicals could impede the ability to innovate.

The additional exclusion of chemicals under the ecodesign requirements increases red tape. The EU should avoid duplicate regulations that increase the administrative burden and may, in the worst case, even contradict each other. Where substances that impede recycling are banned under the ecodesign requirement, then – as signalled by the Commission – these substances should, indeed, not already be covered by existing legislation.

Recyclates

EU-wide uniform obligations for minimum quantities of recyclates in products create a level playing field in the EU internal market. However, it is also necessary to ensure that companies have the same de facto access to the corresponding recyclates in the EU internal market. Otherwise, companies with less access to the recyclates in question due to their location may suffer a competitive disadvantage.[13] In addition, it is important to ascertain whether the recycled materials are already used in other material cycles. Otherwise, other products may unintentionally be deprived of resources if the latter are channelled into a new product group.

Instead of imposing a mandatory quota for recycled material, the use of recyclates can also be increased by using the instrument of "extended producer responsibility" or by pricing primary raw materials. "Extended producer responsibility" is a way for Member States to promote circular product design.[14] In order to promote re-use and recycling and prevent waste, Member States may adopt various measures requiring producers to take responsibility for their products beyond the use phase.[15] In this context, there is also the possibility of imposing financial contributions which put a price on product aspects such as "durability, reparability, reusability and recyclability as well as the presence of hazardous substances" (so-called eco-modulation).[16]

This could involve a tax on the primary raw materials whose use is to be reduced. As long as this tax is roughly the same in all Member States, or at least based on the same criteria, it could have a systematic steering effect of increasing the recycled content of products. In addition, the tax could initially be charged at a low level and increased annually, allowing the supply of and demand for recyclates to increase concurrently. Initially,

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10 Sustainable Product Initiative, p. 10.
11 European Commission (2020), Communication COM(2020) 667 of 14 October 2020, Chemicals Strategy for Sustainability – Towards a Toxic-Free Environment ("Chemicals Strategy"), p. 9.
12 Ibid., p. 14 et seq.
13 Voßwinkel, J. S. / Reichert, G. / Schwind, S. / Jousseaume, M. (2020), Kreislauforientierte Kunststoffwirtschaft für Non-Food-Verpackungen, cep**Studie**, p. 50.
14 Waste Framework Directive, Art. 8.
15 Ibid., Art. 3 No. 21.
16 Ibid., Art. 8a (4) (b).

companies – especially those producing in EU Member States with a low recycling rate or with comparatively poor access to recyclates – would, due to the gradual increase in the tax, not be greatly affected by the fact that there would not yet be enough high-quality recyclates available. In addition, recycling companies would have planning security for their investments in necessary recycling technologies because, as a result of the tax, they can assume that the demand for high-quality recyclates will increase in the future. By contrast with a mandatory recyclate quota, a tax on primary raw materials would also have the advantage of allowing companies to decide for themselves, on a decentralised and case-by-case basis, which products should contain recyclates and which should continue to use primary raw materials because the advantages outweigh the costs of the tax.[17]

If the Commission wants to increase the quantity of recyclates by using regulatory obligations, it should investigate the availability of sufficient recyclates in an impact assessment and take this into account in the delegated act for the ecodesign requirement. Simply imposing an obligation for higher recycled content in a product will not necessarily mean that a sufficient quantity and quality of recycled material will be available in the EU internal market at the right time.

1.1.4 Information Requirements and Digital Product Passport

In principle, digital product passports may support and accelerate the creation of a circular economy as a result of the information provided: Transparency along the value chain may provide repairers or recyclers with relevant information on the proper handling of the product, which even today is often lacking.

At the same time, the creation and use of the digital product passport should not involve too much bureaucracy. Small and medium-sized enterprises (SMEs) must also be able to handle the effort involved. If intermediate products also require a product passport, IT solutions must be found to ensure that all the information is contained in the final product passport. With complex products, the supply chain involves many different actors. A manual check of all data is both very time-consuming and unnecessary.

What the Commission's proposal leaves open is how changes to the product itself, made for example by repair companies, will be dealt with. It is doubtful whether small businesses, such as private repairers, will have the capacity to record all relevant information in the product passport. In addition, products may be modified by the consumer in a way that could affect recycling. In this case, the accuracy of the data beyond the time of purchase may not be guaranteed at all. Responsibility for the provision of accurate data should be properly clarified.

Furthermore, it must be clear which data relates to which actor along the value chain. If the digital product passport makes it too complicated or confusing to obtain the relevant information, people may choose not to use it. What matters here is the pre-selection of relevant information and the presentation. It needs to be clarified how different actors along the value chain obtain the information that is relevant to them – for example, information that is relevant for high-quality recycling may not be relevant to the consumer.

A digital product passport can also provide consumers with the necessary information for making an informed purchasing decision. About 93% of Europeans are familiar with the energy consumption labelling of the Ecodesign Directive and the Energy Labelling Regulation (“Energy Label”).[18] Overall, the proportion of the population that makes its purchasing decisions based on environmental labels varies between 3% and 60%, with the Energy Label achieving 60%. The high proportion is explained by the fact that here the decision in favour of a product means real financial savings for the customer, in addition to the environmental aspects.[19] In principle, such labelling may be useful as it means the customer can easily find out about specific product characteristics. The Commission must ensure that it remains easy for the customer to obtain information about the different aspects despite the variety of different information requirements proposed by the Commission. Furthermore, the product passport not only offers the opportunity for transparency along the value chain but can also improve communication between companies and consumers. Instructions on care and use can be provided more easily, and other information relevant to the company and product can also be passed on.

[17] Voßwinkel, J. S. / Reichert, G. / Schwind, S. / Jousseaume, M. (2020), Kreislauforientierte Kunststoffwirtschaft für Non-Food-Verpackungen, cep**Studie**, p. 50.
[18] Working Plan 2022–2024, p. 4.
[19] Bauer et al. (2018) Potential Ecodesign Requirements for Textiles and Furniture, p. 46.

1.2 Textile Strategy

1.2.1 Environmental Impact of Textiles

Relevant for evaluating the Commission's textile strategy is the fact that textiles, especially garments, have major negative externalities during their life cycle. Producing one tonne of textiles can cause, depending on the fibres used, between 15–35 tonnes of greenhouse gases (GHG) to be emitted across all phases of the life cycle. In comparison, the GHG emissions from the production of one tonne of plastic is about 3.5 tonnes. Furthermore, the production of fibres requires intensive land use, which in turn leads to soil degradation and loss of biodiversity. At the same time, both renewable resources – such as natural fibres – and non-renewable resources – such as petroleum for the production of synthetic fibres – are used. The production phase gives rise to, among other things, air and water pollution including the release of harmful substances and microplastics. In the transport phase, packaging and textile waste accumulates as a result of unsold goods. The use phase is also harmful to the environment as a result of, among other things, the microplastics released. At the end of the life cycle, in the waste phase, e.g. landfilling or incineration of waste occurs, along with the release of pollutants into air and water.[20]

1.2.2 Extension of Life

Against this background, it is understandable that the Commission sees a longer service life and thus longer use as the “most effective way” to reduce the environmental impact.[21] Recycling textiles does reduce resource use in terms of the utilisation of primary materials but, for example, even recycled cotton has to be spun, woven and dyed again before it can be made into a finished cotton garment. In addition, the recycling process itself also requires energy. Nevertheless, from an environmental point of view, it is better to use recyclates than primary raw materials.[22] A significantly longer lifespan can be achieved if consumers use clothing for longer, resell their clothing privately or donate it to second-hand shops. Due to “cheap, fast fashion”, however, there is virtually no incentive to purchase second-hand clothing in Germany, for example. It is estimated that 1–2% of used textiles are resold in Germany. In addition, clothing is sold privately via online platforms. These products are not yet part of the used textile collection because they have not yet become waste. Exact data on the proportion of private sales is currently unavailable.[23]

Longer use is in the spirit of a circular economy and the EU waste hierarchy. It may, however, give rise to a conflict of objectives: textile recycling companies principally make money from the high revenues generated from recycling high-value goods. If lower-quality clothing is worn for longer and disposed of later, companies will no longer be able to cross-subsidise the recycling of low-quality fast fashion.[24]

1.2.3 Recycling of Textiles and the Use of Recycled Materials

Used textiles can be recycled mechanically or chemically. Chemical recycling is one method of fibre-to-fibre recycling in which textiles can be reused and still retain comparatively good quality. In this process, the fibres are reduced to their basic components, which can then be re-spun into new fibres. The process is currently still in the development phase and is only available for synthetic fibres – such as polyester.

Currently, the main method of textile recycling is “mechanical recycling”. Some mechanical recycling processes allow for fibre-to-fibre recycling, but this usually degrades the quality of the textiles (“down-cycling”).[25] One possibility is to convert the textiles into industrial wipes, which involves cutting the used cotton textiles to size. These wipes are for use in industry and are not sold for private use. Another possibility is to produce new textile fibres by way of shredding. These can be used for roof insulation, in the manufacture of mattresses, or in the automotive industry as floor or car-boot lining.[26]

It is estimated that 1% of collected textile waste is recycled using fibre-to-fibre technologies – both mechanical and chemical. Currently, it is a challenge to collect enough used textiles for fibre-to-fibre recycling that are

[20] European Environment Agency (2019), Textiles and the environment in a circular economy, Eionet Report – ETC/WMGE 2019/6, p. 18 et seq.
[21] Textile Strategy, p. 3.
[22] Bauer et al. (2018) , Potential Ecodesign Requirements for Textiles and Furniture, p. 42.
[23] Umweltbundesamt (2022), Evaluation von Abfallströmen zur Fortentwicklung der Kreislaufwirtschaft, p. 309.
[24] bsve (2020), Bedarf, Konsum, Wiederverwendung und Verwertung von Bekleidung und Textilien in Deutschland, p. 17.
[25] European Commission (2021), Circular Economy Perspective in the EU Textile Sector, Joint Research Centre (JRC) Technical Reports, (“JRC Technical Reports (2021), Circular Economy Perspective in the EU Textile Sector”), p. 74.
[26] Umweltbundesamt (2022), Evaluation von Abfallströmen zur Fortentwicklung der Kreislaufwirtschaft, p. 311.

capable of being recycled without limiting their reuse – such as in the automotive industry or for insulation. A major part of the recyclates currently used in clothing come from recycled PET bottles, which are converted into polyester fibre.[27]

The Commission's proposal, to increase recyclability by avoiding different material compositions and the corresponding use of "mono-materials", will basically facilitate recycling. Small amounts (1–2%) of other materials can impair both mechanical and chemical recycling processes and usually result in "down-cycling". Even if chemical recycling can be used to recycle the textiles in question, their exact composition must be identified.[28] Under the current Textile Labelling Regulation, fibres that make up less than 10% of the total weight do not have to be declared.[29] Better labelling of the precise composition of the materials used – e.g. via the proposed digital product passport – may facilitate recycling.

However, the use of mono-materials also shortens the life of textiles: cotton-polyester blends are more durable than pure cotton textiles. Thus, particularly in the case of textiles with a longer service life, such as bed linen, which is rarely replaced for reasons of personal preference such as a change in fashion or style, a longer lifespan may be more desirable than high recyclability.[30] In this regard, the Commission should use life-cycle analysis to ensure that the different ecodesign requirements do not contradict each other and that, overall, they result in a smaller environmental footprint.

The circularity of textiles will also be improved by ensuring a minimum content of recycled fibres. In principle, a mandatory minimum content may increase the demand for recyclates, which should also increase the collection of used textiles and the development of recycling technologies. This may likewise incentivise product designers to ensure the best possible level of recyclability so that high-quality recyclates can be recovered from the waste materials. However, the use of recycled materials can both impair the function of the clothing and shorten its lifespan – at least where textiles have not been chemically recycled. A life-cycle analysis should take account of such trade-offs so that they can be avoided when setting ecodesign requirements. One possibility would be to use recycled materials for fast fashion, as these are already designed for a short service life. In the case of textiles that are disposed of primarily because they have reached the end of their technical durability – such as bed linen or towels –, on the other hand, longevity of the product should be the primary consideration.[31]

1.2.4 Use Phase

Ultimately, the implementation of a circular economy depends largely on consumers. New garments are often purchased not because of defects in the old clothes, but due to the emergence of new fashion trends – and, in the end, even the most durable garments cannot prevent this from happening.

The lifespan of textiles is influenced by many different factors. Product design may be able to prolong it, but it cannot influence consumer behaviour in the use phase. Thus, washing too often and too hot can damage the textiles, not to mention increasing water and energy consumption.[32] The use of tumble dryers can also shorten product lifespan.[33] In this regard, the digital product passport may provide a way of communicating with the customer. More detailed information than is currently possible on textile labels may make it easier for consumers to extend the life of textiles through their own actions. By providing general tips as well as information specifically tailored to the product, a digital product passport will enable people to support the goal.

[27] JRC Technical Report (2021), Circular Economy Perspective in the EU Textile Sector, S. 74–77.
[28] Bauer et al. (2018) , Potential Ecodesign Requirements for Textiles and Furniture, p. 33.
[29] Textile Labelling Regulation EU(2011) 1007, Art. 13 in conjunction with Annex IV.
[30] Bauer et al. (2018) , Potential Ecodesign Requirements for Textiles and Furniture, p. 33.
[31] Ibid., p. 30.
[32] Umweltbundesamt (2022), Evaluation von Abfallströmen zur Fortentwicklung der Kreislaufwirtschaft, p. 327.
[33] Bauer et al. (2018) , Potential Ecodesign Requirements for Textiles and Furniture, p. 34.

2 Legal Assessment

2.1 Legislative Competence

Unproblematic. The EU can set uniform EU-wide ecodesign requirements for products in order to ensure the free movement of goods in the EU internal market and to prevent its fragmentation and the distortion of competition caused by national requirements [Art. 26 and 114 TFEU]. In addition, the EU can adopt environmental measures for the "prudent and rational" use of natural resources and for waste management [Art. 192 TFEU].

2.2 Subsidiarity

Unproblematic. Uniform ecodesign requirements for all products placed on the market or put into service in the EU internal market can only be adopted at EU level [Art. 5 (3) TEU].

D. Conclusion

Sustainable and, in particular, circular product design is a key starting point for reducing the use of materials and resources in products, and for reducing the harmful environmental impact of products. However, growing product diversity and the product characteristics to be taken into account, present a challenge when it comes to establishing mandatory ecodesign requirements under the new Ecodesign Regulation. This is because requirements have to be precisely adapted to a specific product and its desired functions which leads to a risk that some of the sustainability objectives thereby pursued may come into conflict with one another. Against this backdrop, when selecting the products to be regulated and defining the concrete ecodesign requirements, it will be crucial, within the framework of multi-annual work programmes, to carry out a product-specific assessment and weigh up the advantages and disadvantages of the individual ecodesign requirements as part of a life-cycle analysis. In this context, it is rightly envisaged that the Commission, with the aid of the Ecodesign Forum, acting in a purely advisory capacity, will take into account the experience of all relevant actors. It is important to recognise, however, that it is simply not possible to model all the effects and trade-offs of eco-design requirements along the value chain as well as potential effects on other product groups.

While the current Ecodesign Directive primarily sets ecodesign requirements for quantifiable measurements – such as energy consumption – the Ecodesign Regulation will also set qualitative requirements. In the case of requirements such as reparability, different results may be obtained depending on the methodology chosen for the assessment. Comparing the various environmental impacts of different products is often difficult and does not provide any information about handling at the point of use. Extending the use of a device could also have an impact on the ability to innovate and thus slow down technological progress. The speed with which innovations spread through the market will also be reduced by a longer product life.

The additional exclusion of chemicals under the ecodesign requirements increases red tape. The EU should avoid duplicate regulations that increase the administrative burden and may, in the worst case, even contradict each other. Where substances that impede recycling are banned under the ecodesign requirement, then – as signalled by the Commission – these substances should, indeed, not already be covered by existing legislation.

EU-wide uniform obligations for minimum quantities of recyclates in products create a level playing field in the EU internal market. Instead of imposing a mandatory quota for recycled material, the use of recyclates can also be increased by pricing primary raw materials. If the Commission wants to increase the quantity of recyclates by using regulatory obligations, it should investigate the availability of sufficient recyclates in an impact assessment and take this into account in the corresponding legislative proposal.

Digital product passports may provide repairers or recyclers with relevant information on the proper handling of the product, which even today is often lacking. At the same time, the creation and use of the digital product passport should not involve too much bureaucracy. Small and medium-sized enterprises (SMEs) must also be able to handle the extra paperwork involved. Furthermore, it must be defined which data relates to which actor along the value chain. If the digital product passport makes it too complicated or complex to obtain the relevant information, people may choose not to use it. A digital product passport can also provide consumers with the necessary information for making an informed purchasing decision.

The Commission must use life-cycle analysis to ensure that the planned ecodesign requirements for textiles do not contradict each other. A longer service life is the most effective way to reduce the environmental impact. At the same time, the Commission's proposal to increase recyclability by avoiding different material compositions and the corresponding use of "mono-materials", will basically facilitate recycling. However, the use of mono-

materials will also shorten the life of textiles. Accordingly, especially in the case of durable textiles, a longer service life may be more desirable than a high level of recyclability. The circularity of textiles can also be improved by ensuring a minimum content of recycled fibres. However, the use of recycled materials can both impair the function of the clothing and shorten its lifespan. A life-cycle analysis should take account of such trade-offs so that they can be avoided when setting ecodesign requirements.

Ultimately, the implementation of a circular economy depends largely on consumers. By providing general tips as well as information specifically tailored to the product, a digital product passport will enable consumers to extend the life of textiles through their own actions.