

Revision of the Ecodesign Directive

This briefing is one of a series of implementation appraisals produced by the European Parliamentary Research Service (EPRS) on the operation of existing EU legislation in practice. Each briefing focuses on a specific EU law that is likely to be amended or reviewed, as envisaged in the European Commission's annual work programme. Implementation appraisals aim at providing a succinct overview of publicly available material on the implementation, application and effectiveness to date of specific EU law, drawing on input from EU institutions and bodies, as well as external organisations. They are provided by the Ex-Post Evaluation Unit of the EPRS to assist parliamentary committees in their consideration of new European Commission proposals, once tabled.

SUMMARY

Ecodesign and energy labelling policies play an important role in the decarbonisation of the energy system. Ecodesign bans the least-efficient products from the market, while energy labelling guides consumers towards the most energy efficient products. While the Ecodesign Directive focused largely on energy aspects, its revision became necessary in light of the transition to a circular economy where the use of natural resources is reassessed to maximise their value and minimise their waste. The recently proposed regulation on ecodesign for sustainable products will extend the scope to a wider range of products, strengthen sustainability and circularity criteria, and introduce new information requirements for products. Following the adoption of the regulation, the Ecodesign Directive will be repealed. The new legal framework aims to put in place a harmonised set of rules for sustainable products across all Member States and ensure a level-playing field for businesses.

Background

Improving energy efficiency is a key aspect in the decarbonisation of the energy system. Various EU policies have emphasised this objective over the last decade. [Directive 2012/27/EU](#) on energy efficiency established binding measures to save 20 % of energy consumption by 2020. Moreover, the amended [Directive \(EU\) 2018/2002](#) on energy efficiency requires energy savings of at least 32.5 % by 2030. In light of the new EU objective of 55 % reduction in greenhouse gas emissions by 2030, more efforts are however needed on energy savings. Therefore, the provisions of the amended directive [will also be aligned](#) with the 'Fit for 55' package. Member States will be required to almost double their annual energy savings obligations in the future. In this context, the Ecodesign Regulation along with the complementary [Energy Labelling Regulation](#) are expected to play a significant role. Ecodesign aims at improving the environmental performance of a product by meeting minimum energy efficiency requirements as well as integrating environmental aspects at the stage of product design. Some [80 % of a product's environmental impact](#) is estimated to be determined at the design stage.

The Ecodesign Directive focuses on energy aspects and pays limited attention to non-energy aspects such as material composition and recyclability for instance. Resource efficiency and waste generation have however received increased attention in the context of the [European Green Deal](#) and the transition to a circular economy. As highlighted in the 2020 [circular economy action plan](#)

(CEAP), [global consumption of materials](#) is expected to double in the next 40 years, with annual waste generation projected to increase by 70 % by 2050. The aim of the [transition to a circular economy](#) is to reduce pressure on natural resources, maximise the value of materials and resources and minimise the generation of waste. It is a key element in bringing to life the ambitions of the European Green Deal for a climate-neutral and resource-efficient economy.

Against this background, the circular economy action plan announced the preparation of a [sustainable products initiative](#), aimed at making products fit for a climate neutral, resource efficient and circular economy. It is in this context that the revision of the Ecodesign Directive is being considered. As outlined in the [inception impact assessment](#) and the proposed regulation, the scope of the ecodesign legal framework will be widened beyond energy aspects to a range of criteria (Article 5 of the regulation). The criteria include durability, reusability and upgradability of products, as well as ease of maintenance and repair, energy use and efficiency. Resource use and efficiency, substances of concern and generation of waste are also included. New standards have recently been finalised on [material efficiency](#).

As mentioned above, ecodesign requirements have been set on products to improve their energy efficiency and reduce their impact on the environment. These requirements are set out in [implementing measures](#) (usually regulations) adopted for specific products. Manufacturers must comply with these requirements to place their products on the market. The implementing measures are subject to review in light of technological progress in the product concerned. The European Commission will continue this approach under the proposed regulation and enable product-level rules to be laid down through delegated acts, product by product or for groups of products. The development of these rules will be underpinned by preparatory processes, including stakeholder consultations and impact assessments.

Implementing measures and voluntary agreements

The proposed ecodesign regulation on sustainable products provides a framework based upon which product specific rules will be adopted. The Commission will thus continue the approach followed under the Ecodesign Directive of issuing implementing measures based on impact assessments. Implementing measures contain review clauses, which leads the Commission to evaluate the measures in light of technological progress. This requires the preparation of review studies, with varying timelines depending on the products.

The selection of products is included in a working plan, with four working plans adopted to date. The latest, for 2022-2024, covers energy-related products. Until the new regulation enters into force, implementation will continue within the current Ecodesign Directive. The Commission will launch a public consultation on the categories of products to be selected under the first ecodesign for sustainable products regulation working plan by the end of 2022.

Working plans give an indication of forthcoming reviews of ecodesign measures. In 2019, the Commission adopted ten ecodesign regulations, with eight of them being revisions of existing rules. The eight reviews were the first since the adoption of the Ecodesign Directive. These concerned: household refrigerators, light sources, electronic displays, dishwashers, washing machines and washer-dryers, electric motors, external power supplies and power transformers. Before the end of 2024, the Commission is due to present 38 reviews, with another 8 in 2025.

The proposed ecodesign framework regulation extends the scope of Article 5 of the Ecodesign Directive on voluntary agreements. Voluntary agreements are a form of self-regulation where 'business or industry formulate codes of conduct or operating constraints on their own initiative for which they are responsible for enforcing'. (Better Regulation Toolbox, tool 18). These industry-led measures can be used as alternatives to ecodesign regulations. The new Article 17 'lays down what the self-regulation measure should contain, what the industry should submit as evidence to the Commission, and the procedure for the Commission to recognise the self-regulation measure as a valid alternative to a delegated act'. Annex VII provides general criteria applicable to self-regulation measures.

Source: [European Commission](#)

The Ecodesign Directive [was evaluated](#) in its entirety in 2012. Despite the evaluation being ten years old, the Commission [considers its findings relevant](#) and many of the shortcomings identified were examined in the preparation of the new regulation. Another [evaluation](#) was conducted in 2014, with a focus on the Energy Labelling Directive and covering only certain aspects of the Ecodesign Directive. These included effectiveness of ecodesign measures, effectiveness of standardisation processes, and future options for measures applicable to non-energy related products. This evaluation further confirmed many of the findings and trends identified in the 2012 evaluation. The Commission has also published Ecodesign Impact Accounting reports, estimating the cumulative results of the ecodesign and energy labelling policies by [2020](#) and 2030.

The evaluation covered eleven product groups. However, the authors cautioned that the evaluation presented a number of limitations. The timing only allowed for data collection on nine out of the eleven groups.¹ This resulted from the entry into force of the implementing measures only at the end of 2008. In addition, all implementing measures applied to new products and not to existing ones on the market, which in turn limited the effect of the Ecodesign Directive. The evaluators also noted a lack of data following the implementation of the measures; the evaluation therefore relied largely on data that was at least two or three years old.

EU-level evaluations and reports

Evaluation of Ecodesign Directive 125/2009/EU

Relevance

The Ecodesign Directive's main objective was to develop a framework that enhanced the energy efficiency and the environmental performance of products. In 2009, its scope was extended from energy-using products² to energy related products,³ given that the former only accounted for a maximum of 36 % of total environmental impacts. While energy-using products are dependent on energy input (e.g. fossil fuels), the energy-related products have an impact on energy consumption during use (e.g. a window frame impact on insulation). The 2010 [Energy Labelling Directive](#)⁴ complemented the Ecodesign Directive. While ecodesign bans the least-efficient products from the market, energy labelling guides consumers towards the most energy efficient products. In 2010, the scope of the Energy Labelling Directive was also extended to cover energy related products.

The majority of stakeholders considered that the Ecodesign Directive fulfilled its role in removing the least energy efficient products from the market. However, concerns were expressed over a lack of focus on non-energy aspects such as mercury content, noise in air conditioners, raw material consumption, water consumption, for instance. The evaluators however found that preparatory work was ongoing on most of the issues, while some were addressed in the context of other EU legislation.

For instance, ecodesign benchmarks and information provisions did apply to mercury content in lamps; however, beyond this aspect, it was the Directive on [Restriction of Hazardous Substances in Electrical and Electronic Equipment](#) (RoHS), which set the limits on mercury content. Moreover, in the evaluators' view, information provisions on hazardous substances could have been further strengthened; but potential overlaps with another EU framework, [Registration, Evaluation, Authorisation and Restriction of Chemicals](#) (REACH) were to be avoided. In the Commission's view, the absence of certain non-energy aspects needed to also be viewed in the light of policy choices made by the Commission and the Member States. Overall, the evaluators stated that the directive placed significant attention on energy-using products and data collection supported this direction, possibly excluding certain relevant non-energy considerations.

Furthermore, certain manufacturers stated that remanufactured products could not meet ecodesign requirements on energy consumption during use. These values were higher than the energy consumption in their production. This meant that over their lifecycles, significant energy savings could be achieved. Exemptions were therefore needed to allow these remanufactured

products (e.g. printers) to be placed on the market. Additionally, the metal sector believed that the issue of recyclability needed to be better addressed in the Commission's preparatory studies.

Lastly, industry stakeholders raised concerns over the development of measures for individual products versus systems of products. For instance, a complex system for heating and cooling integrates various products with different functions. Stakeholders believed that all individual implementing measures needed to be compatible within such a system.

Coherence

The evaluation considered the coherence of the Ecodesign Directive with other EU legislation. However, limited concrete examples were provided to underpin the evaluation's findings. Regarding complementarity between the ecodesign and the energy labelling directives, the ecodesign implementing measures were harmonised with energy labelling requirements. In particular, Article 10(3) of the Energy Labelling Directive stated that the Commission should consider environmental parameters as set out the Ecodesign Directive (Annex I). However, in practice, adoption of measures under the two directives did not always occur at the same time (e.g. fridges, televisions).

Moreover, certain inconsistencies were signalled with respect to other EU legislation addressing environmental concerns such as the: [Waste from Electrical and Electronic Equipment Directive](#) (WEEE), RoHS, REACH, [Energy Performance of Buildings Directive](#) (EPBD) and the [Construction Products Regulation](#). In the case of construction products, the industry considered that the framework for ecodesign requirements was already addressed in the Construction Products Regulation and the EPBD ([existing CEN and CENELEC standards](#)). For toxicity issues, the evaluators noted that the Commission's preparatory studies referred to either the RoHS Directive or REACH as instruments that are more suitable. However, the evaluators noted that a risk remained that none of the available instruments could ultimately address toxicity concerns, as [outlined](#) in a report⁵ for the European Environmental Bureau.

Regarding the WEEE Directive, most stakeholders agreed that the interface between the two directives was unclear. For instance, while implementing measures for washing machines called for the application of the WEEE on recyclability,⁶ stakeholders considered that ecodesign requirements were better suited. However, for the development of measures on certain products (e.g. mercury in domestic lamps) complementarity was possible between the RoHS and Ecodesign Directive. Information requirements on the mercury content in lamps were set under the latter while the limit values were set under the former.

Effectiveness

Eleven product groups⁷ were considered in the evaluation, of which five are treated below. The selection below includes those products with a large energy consumption at the time of the evaluation. The experts used impact assessment and preparatory studies conducted by the Commission as a baseline to evaluate the impact of the directive. The evaluation however did not assess the methodology behind the preparatory studies. The implementing measures in force covered a small fraction of energy consumption in households (14 %) with the largest consumption expected from heating (84 %). In 2010 for many products, the requirements set in the implementing measures had not come into effect, or had reached only the first stage of implementation.

While it was too early to evaluate the full effects of the directive, the evaluation showed a move towards improved energy efficiency for all the products. Improved energy efficiency was most relevant in relation to refrigerators, freezers, washing machines, dishwashers and televisions. Improvements in cooking and water heating were lower, which the evaluators correlated with an absence of implementing measures (e.g. boilers and water heaters).

- Electric motors: [Electric motors](#) convert electric energy into mechanical energy and are used in industrial production processes in the EU. The ecodesign requirements favoured

switching to variable speed drive technology, as the majority were running at full speed irrespective of how much electricity was needed. Various voluntary agreements preceded the EU measures, including the 1988 agreement with the European Committee of Manufacturers of Electrical Machines and Power Electronics, which covered 36 manufacturers (80 % of total EU production). This incentivised the manufacturing industry to move towards more efficient motors. The authors argued that the ecodesign rules significantly accelerated the phase-out of the less efficient motors. By 2020, [40 % of motors](#) were equipped with variable speed drive. New [ecodesign requirements](#) apply since July 2021, replacing the previous ones, covering a much broader range of electric motors.

- Domestic refrigerators and freezers: From 1959 to 1970, the average consumption of a [domestic refrigeration](#) unit was 839 kWh/year, decreasing to 292 kWh/year by 2005. The Commission found this to be the result of voluntary agreements, [energy labelling](#) and minimum energy efficiency requirements. As early as 2010, the market was made up of A to A++ ranked models (96 %). The ecodesign requirements further accelerated the removal of the least energy efficient models from the market. By 2020, the Commission [estimated](#) that the annual electricity consumption had reached 181 kWh/unit, as a result of the energy efficiency directives and ecodesign/energy labelling policies. New [ecodesign requirements](#) apply since March 2021, replacing the previous ones, including, for the first time, requirements on reparability and recyclability. A new A to G scale applies for fridges, dishwashers, washing machines and televisions (more clarity for consumers).
- Circulators in buildings: [Circulators](#) are used for pumping water in central heating systems of buildings. In 2005, energy efficient circulators, such as speed-controlled circulators, represented only 20 % of all circulators in the EU market. The adoption of a voluntary agreement led by [Europump](#) – representing the industry – that same year led 13 companies (95 % of the market) to adopt the technology by 2011. By 2010, class A circulators accounted for almost 30 % of the market. Since 2013, only A+ and A++ classes were allowed, as a direct result of the implementation of the Ecodesign Directive. Since 2015, most A+ and lower-ranked circulators were phased out.
- Television: The [television](#) sector is characterised by rapid technological change. At the time the ecodesign requirements were prepared, light-emitting diode (LED) based technology was considered a niche market. However, the evaluators found that the Commission had not anticipated the rapid development and uptake of this technology. By the time of the evaluation, LED-backlit liquid crystal display (LCD) and regular LCD televisions covered almost 100 % of the market. However, the directive accelerated the removal of cheap, inefficient television sets from the market. New [ecodesign requirements](#) apply since March 2021, which set minimum requirements adapted to today's modern technologies and include criteria for improved reparability of spare parts. The rules also apply to several other types of electronic displays such as computer monitors.
- Tertiary lighting: At the time of the evaluation, [lighting](#) for public streets was dominated by high-intensity discharge lamps (HIDs) and for offices by linear fluorescent lamps (LFL). Long implementation deadlines for these products prevented the evaluators from fully assessing the impact of the ecodesign rules. However, they confirmed a trend towards more energy efficient products such as LED lighting products. In 2020, the Commission [assessed](#) the sector as characterised by 53 % LFL, 16 % HID, with the remainder including other types, e.g. LED lighting products. The Commission estimated that LED would replace LFL and HID lamps in the long term, as also anticipated in the evaluation. Reduction of mercury content in lamps was also prioritised under the ecodesign requirements. Phasing out of the LFL and compact fluorescent lamps (CFL) containing mercury was equally mandated under the RoHS Regulation. In December 2021, the Commission adopted [new rules](#) ending the use of mercury in

lamps. In addition, new [ecodesign requirements](#) apply to the tertiary lighting sector since September 2021.

Effects on industry and market

While the evaluation could not provide a quantification of all the costs of implementation for industry, certain observations were possible. Costs to the industry varied considerably from product to product. An important factor in reducing them was the time allotted to manufacturers before the entry into force of stricter requirements. Unit production costs were expected to decrease once market shares and volumes of the new products grew. Small and medium-sized enterprises (SMEs) reported higher costs related to administrative and information provision. Importers did not report significant adverse effects.

Regarding prices for household appliances, the evaluation found that the introduction of mandatory standards on energy efficiency had not negatively affected the price of products at the consumer level, as some of the preparatory studies had anticipated. However, the evaluation found that the use of the 'least lifecycle cost' criterion,⁸ which protected consumers from additional costs over product lifecycles, might have led to requirements set below the performance of the average product on the market.

Regarding the impact on innovation, the evaluators considered the directive facilitated the adoption of energy efficient technology as well as the development of new technology. However, the delays in adopting certain implementing measures varied between six and seven years. Thus, the measures risked being defined on outdated data and failed to relate to recent market and technological developments. In addition, stakeholders considered that advanced benchmarks did not have a significant impact, given that the best available technologies were known to the industry. However, they may have not been accessible, due to intellectual property constraints or to high investment costs.

Efficiency

This section focuses on an assessment of the development and application of implementing measures on the ground. The evaluation considered the following aspects: i) selection of products, ii) development of measures, iii) implementation of measures on the ground, and iv) role of voluntary agreements.

Certain issues were highlighted regarding the **selection process**, particularly the definition of products and the use of volume sales as selection criteria. Stakeholders considered that the use of the [Eurostat PRODCOM](#) database was inadequate for the identification of products. They believed that the sales volume of 200 000 units was an 'arbitrary' and 'static' number, which could not respond to market trends. More than half of the stakeholders (52 %) considered the selection criteria to be adequate, while 20 % considered them inadequate. Overall, all stakeholders groups believed that they benefited from comparable involvement in the procedure. Environmental groups called for an assessment of the impact of the measures on the environment and the market for consumers and manufacturers alike.

Regarding the **development of measures**, the evaluation noted little use of generic rather than specific requirements. Generic requirements were used when no value limits could be set. For instance, [making batteries removable](#) qualifies as a generic requirement. Manufacturers considered generic requirements problematic, as they hampered assessment of the performance of a product throughout its lifecycle ('ecological profile').

The time necessary for the development of an implementing measure (usually a regulation) ranged from two to five years, excluding the adoption procedure. Manufacturers were entitled to a grace period of three to five years before ensuring compliance with the regulation. In some cases, this amounted to almost a decade before a product became subject to ecodesign rules (e.g. boilers and water heaters). Some of the reasons behind the delays included limited human and financial

resources, absence of data, complexity of products, and absence of relevant standards. Regarding human resources, by way of comparison, staffing levels in relevant departments in the United States (USA) were much higher than in the Commission. The evaluation also found that the absence of relevant data, in particular when measures were due for review, directly influenced the directive's effectiveness. This was generally caused by delays in collection of official statistical data as well as by a lack of systematic data collection on implementation. Lastly, the structure of the product market and the positions taken by the stakeholders across the Member States also contributed to lengthy negotiations.

The evaluation also referred to fast track processes in the USA, where the development of energy efficiency standards in appliances was made through 'negotiated rulemaking' ([US Negotiated Rulemaking Act](#)). In such a procedure, a group was created to include all relevant manufacturers, community/public interest groups, state and local governments. Monthly meetings were held between the group and federal agencies to discuss the overall concept and agreed text before its submission to the Federal Register. This process would take up to a year and could feed into the Federal regulation; however, its result was not binding at Federal level. However, while the evaluation considered the US negotiated rulemaking to be good practice, the evaluators argued that the Ecodesign Directive covered a much broader range of environmental aspects, beyond simple energy aspects, with a larger risk for protracted negotiations.

A consensus emerged among the stakeholders that their involvement in the working plans and preparatory studies is needed at an earlier stage. The broad definitions of products in the working plan did not provide manufacturers with a clear view of the specific product(s) to be covered. In addition, no clear timelines were indicated at this stage. It was felt that products that are part of a system (e.g. construction products) might have also benefited from an earlier technical and regulatory assessment in the working plan (see box).

Insufficient technical expertise, along with limited human resources, were seen as obstacles to the development of high qualitative studies. Non-governmental organisations (NGOs) felt that their input was not considered in the same way as that from industry, even when substantiated by high quality data. Stakeholders also noted a lack of transparency with respect to the preparatory stages of the implementing measures (e.g. impact assessments).

The evaluation also focused on the **implementation of the directive** on the ground with respect to compliance with **conformity assessments** and **market surveillance enforcement**. Manufacturers are required to ensure a product's conformity with ecodesign requirements, while market surveillance public authorities are responsible for monitoring actual compliance with the directive.⁹ Manufacturers can use [harmonised standards](#) developed by European standardisation bodies to evaluate the conformity of their products. In addition, conformity can be assessed on compliance with the European Eco-label ([Regulation \(EC\) 66/2010](#)) and with the [Community eco-management and audit scheme](#) (EMAS). Once a product complies with the ecodesign requirements, a [CE marking](#) can be displayed.

The Commission adopted mandates for standards to cover most of the products where implementing measures were issued. However, differing interpretations on conformity assessments were highlighted between manufacturers and market surveillance authorities, due to divergences on the application of standards. Most stakeholders felt that gaps in standards existed across all product groups and that development of standards needed to be launched earlier in the process. Some Member States did not have laboratories qualified to run the testing of their products and had higher compliance costs; others considered the margin of error too large in the testing itself which, in their view, undermined the entire process. Overall, the cost of testing was considered an issue of concern for effective compliance. Most recently, in the context of the revision of the ecodesign framework, stakeholders [emphasised](#) that stronger enforcement and market surveillance activities (inspections or audits) would be necessary to ensure future implementation of new ecodesign measures. The Commission [noted](#) that the development of standards could take as long as

27 months for a single standard. Therefore, it cautioned that ecodesign implementing measures would have to include transitional methods should standards not be available. In this context, the Commission also highlighted that new [horizontal standards](#) had been finalised on material efficiency, including durability, recyclability, ability to repair, reuse and upgrade, and recycled content.

Regarding market surveillance, most stakeholders agreed that a significant proportion of the products on the market (10-20 %) did not comply with the ecodesign regulations. Some 73 % of respondents considered that the application and enforcement of the directive was not uniform across the EU. Various reasons were given, including: lack of experience with the Ecodesign Directive requirements, lack of testing facilities, high testing costs, 'national interpretation' of the ecodesign rules, insufficient resources for the authorities and low penalties for non-compliance. Most recently, the Commission [noted](#) that non-compliance remained a 'significant problem', with at least 10 % of the potential energy savings lost due to non-compliance. Two product databases have recently become operational allowing the national authorities to exchange information and share results of surveillance. Since 2021, market surveillance authorities report on their activity in the [information and communication system on market surveillance](#) database. Since 2019, suppliers (manufacturers, importers or authorised representatives) also need to register their appliances with the [European product registry for energy labelling](#). Lastly, the proposed ecodesign regulation will require Member States to draw up action plans for market surveillance activities.

Finally, as part of its preparatory process, the Commission assesses existing **voluntary agreements**. In some cases, the evaluators noted, self-regulation could achieve policy objectives faster and allow for adjustments to technological solutions and market trends. However, the majority of Member States did not consider them appropriate instruments. It was felt that the agreements were not strict enough from an environmental perspective and did not lead to quicker results in relation to regulations. In addition, some stakeholders criticised industry's lack of transparency and monitoring of compliance. The industry associations were more supportive of these agreements, yet expressed concerns about the capacity to reach consensus and ensure enforcement. As of March 2022, [ecodesign regulations](#) are in place for 29 product groups and only two [voluntary agreements](#) are recognised: for game consoles and imaging equipment (see box). A voluntary agreement on complex set-top boxes (digital converters for television sets) was terminated in 2020, due to a decreasing market share in these products.

European added value

In terms of the **European added value of the directive**, the majority of stakeholders believed that EU-wide measures were the most appropriate approach, even among those who favoured voluntary agreements. However, this excluded construction products, where the industry felt that differences in climate and use of building materials could not justify adoption of EU measures, instead suggesting tailored measures. The construction industry also supported the use of other EU legislation for the construction sector rather than the Ecodesign Directive, specifically the Construction Products Regulation and the Energy Performance of Buildings Directive.

European Parliament resolutions/Members' written questions

European Parliament resolutions

In its [resolution on a new circular economy action plan](#), the European Parliament noted that EU ecodesign and energy labelling legislation has provided nearly half of the energy efficiency savings committed by 2020. It endorsed the broadening of the scope of the Ecodesign Directive to non-energy related products. It supported the adoption of horizontal sustainability principles and product specific standards for performance. These included standards for durability, reusability,

reparability, non-toxicity, upgradability, recyclability and recycled content. Regarding the sustainable products initiative, the Parliament believed the full cycle of a product needed to be considered, from 'cradle to grave' and that standards should be developed with the involvement of all stakeholders concerned; it thus encouraged the creation of common lifecycle assessment methodologies and improved data collection.

The Parliament invited the Commission to propose binding material and environmental footprint targets, as well as binding targets for recycled content on specific sectors/products. Finally, Parliament supported the introduction of digital product passports to keep track of a product's impact throughout the value chain. Regarding product safety and sustainability, the Parliament called for a harmonisation of inspection rules (minimum number of checks). It also recommended empowering the Commission to monitor and audit the national market surveillance activities.

Selected written questions

[Written question on Product Environmental Footprint \(PEF\)](#) by Carlo Calenda (Italy, Renew), 1 June 2021. The Member acknowledged that the Commission would require companies to substantiate 'green claims' relating to the environmental impact of their products and services. The aim would be to make these claims comparable and verifiable across the EU. However, the Member inquired about the composition of the Commission's group of experts – responsible for the PEF assessment – that involved producers of fast fashion who used synthetic petroleum-based textiles.

[Answer given by Virginijus Sinkevičius on behalf of the European Commission](#): The Commission responded that the PEF rules enabled determination of how a specific product performed in relation to the average product on the market. The calculation of PEF was based on 16 categories of environmental impact. Its role was to reflect these impacts for a specific sector. The Commission confirmed that the apparel sector was represented by a wide variety of associations, to avoid that a single actor influenced the process. Moreover, the process included public consultations on drafts, the use of independent review panels and scrutiny by two Commission expert groups.

[Written question on EU progress in ecodesign and energy labelling](#) by Edina Tóth (Hungary, EPP), 4 February 2020. The Member noted that while the Commission reported regularly on its ecodesign and energy labelling measures, the impact of the measures had been overestimated. The Member referred to a number of cases where non-compliance and delays in implementation were not considered. Moreover, ecodesign impact assessments had often failed to consider the difference between actual and theoretical energy consumption. The Commission was invited to clarify measures it would take to improve the evaluation of its measures and associated reporting. Lastly, the Member inquired about future action to facilitate market surveillance and compliance.

[Answer given by Kadri Simson on behalf of the European Commission](#): The Commission explained that while the impact assessments were not a legal requirement, their methodology would be improved, based on recommendations made by the [European Court of Auditors](#). Moreover, ways to address non-compliance were under examination. The Commission was involved in the development of standards closer to real-life usage, in an effort to address deviations between actual and theoretical consumption. To facilitate cooperation between Member States, the Commission was improving links between two systems, the [Information and Communication System on Market Surveillance](#) and the [European Product Database for Energy Labelling](#).

Other EU institutions and bodies

European Court of Auditors

The European Court of Auditors (Court) [assessed](#) whether EU action on ecodesign and energy labelling was effective in reaching energy efficiency targets and environmental objectives. It focused on the Commission's management of the regulatory process and EU support for effective market surveillance. It analysed three product groups for this purpose, central heating and space

heaters, household refrigeration and electronic displays. It concluded that delays in the regulatory process and non-compliance by manufacturers and retailers reduced the effectiveness of these policies. In 2019, the Commission [estimated](#) that around 10-25 % of products on the market were non-compliant, leading to a decrease in energy savings of around 10 %.

The Court found that the policies covered most products with the highest energy saving potential, but the adoption of product-specific regulations was too lengthy. This reduced the impact of the policy, which could not always reflect technological progress. The Commission's support for market surveillance authorities included: guidance/training, two databases for cross-border information exchange, and financial support for inspections and laboratory testing. Despite these efforts, the Court found wide differences in inspections across the Member States with respect to methods of inspection and testing procedures. While the EU-funded training and guidance was well received by the national authorities, the Court found that none of the national authorities reported changes to their inspections or testing methods.

The Court also assessed the Commission's annual ecodesign impact accounting (EIA) reports. The EIAs develop future projections of the ecodesign and energy labelling policies by 2020 and 2030. The Court considered that the EIAs overestimated the impact of the policies as: i) the EIA did not evaluate results achieved, ii) the EIA assumed that the product-specific regulations were fully complied with, iii) the EIA assumed market surveillance systems presented no shortcomings, iv) the EIA used technical data from manufacturers that did not reflect real-life consumption.

The Court recommended that the Commission:

- Adopt implementing measures when they are ready, rather than as part of a package;
- Assess the markets for new technological trends;
- Develop standard methodology to include circular economy requirements at the stage of preparatory and review studies;
- Apply a standard approach for review studies to avoid the need for additional studies.

European Economic and Social Committee

In its [opinion](#) on the new circular economy action plan, the European Economic and Social Committee (EESC) argued that ecodesign should be expanded to extend product lifespan, facilitate recovery of component parts, with mandatory recycled content and digital tracking. In this effort, the EESC called on national and European standardisation bodies to frame recommendations and harmonised standards to ease the transition to a circular economy. Technical standardisation was particularly significant in [resource-intensive sectors](#) (e.g. steel), as it could serve to classify raw and secondary materials and contribute to awarding green procurement contracts.

In its [opinion](#) on the ecodesign working plan 2016-2019, the EESC stressed that the ecodesign of goods and services needed to go beyond energy considerations. The EESC highlighted durability aspects, ease of maintenance and repair, reusability and recyclability, and digitalisation potential. In its view, the Ecodesign Directive could be used to stimulate circular product design by ruling out designs that prevent the repair of products. Lastly, it favoured labelling requirements that include the life expectancy of products as well as their components.

Stakeholders' positions and academic papers

Stakeholders' positions

In its [position paper](#) on the sustainable products initiative, **APPLiA**, an umbrella organisation representing home appliance manufacturers, cautioned against widening the scope of the Ecodesign Directive to non-energy related products. It favoured instead a 'parallel legislation' that could provide an 'ecodesign-like framework' for non-energy related products, inspired by the ecodesign and energy labelling legislation. It stressed that widening the scope to a large number of different products not connected to each other in terms of 'life cycle, market availability, distribution

channels, and conformity declaration would result in a very complex and probably inefficient legislative instrument'.

In their September 2021 [position paper](#), **ECOS, EEB and Coolproducts** stressed that, despite the proven record of EU ecodesign and energy labelling policies, chronic delays in implementation have resulted in missed energy savings. They argued that these policies could account for a quarter of the EU's 2020 emissions reduction targets. However, only 25 % of the work planned for 2016-2019 was completed. Some 19 regulations were still expected to be reviewed. They estimated that an implementation of 75 % of the current working plan by 2030 would require the Commission to adopt an average of four regulations per year. They therefore called on the Commission to: i) ensure sufficient human resources for this work, ii) adopt legal measures as soon as ready rather than as a package, and iii) better anticipate technological change.

Academic papers

In an article published in the Journal for Cleaner Production in 2015, the authors [analysed](#) industry attitudes towards ecodesign standards for improved resource efficiency. The analysis focused on views from stakeholders from Nordic countries, as authors considered Nordic industries to be generally positive regarding new legislation. The authors did not cover a broad range of industries, but rather collected insights from experts on EU product legislation. The analysis provided a snapshot of some of the views on possible ecodesign rules on non-energy aspects. Most interviewees were positive regarding rules that improved product durability and facilitated recycling. However, interviewees were less favourable to rules on recycled content, longer consumer guarantees and maximum disassembly times.

Respondents believed durability standards made sense for products such as vacuum cleaners or washing machines, where consumers replaced them only when broken. However, this was less relevant for products characterised by rapid technological change, such as mobile phones or laptop computers. Some respondents highlighted that information requirements on product composition could face intellectual property issues. While some believed that recyclers would benefit from this type of information, others felt that the recyclers had already invested in their facilities and their disassembly practices would not change on this basis. Nevertheless, recyclers could be incentivised to invest in new technologies to allow for the recycling of more materials.

Most interviewees did not favour mandates on recycled content, as they feared possible repercussions along the supply chain. Compliance with rules by third party suppliers was seen as particularly challenging. They noted that several EU legal frameworks already contain requirements on recycling, which had in turn created additional costs (the RoHs Directive, [Waste Shipment Regulation](#) and WEEE Directive). Finally, most interviewees agreed with a ban on certain chemicals that prevent recycling, if alternatives exist at reasonable costs. They were generally positive regarding more policies to promote recycling and agreed a mix of policies was required. However they did not consider the Ecodesign Directive to be the most suitable policy instrument.

The authors concluded that the issue of 'double regulation' was often advanced by the industry in an effort to resist ecodesign requirements related to recycling. While the WEEE Directive regulates collection and recycling, the authors argued that it did not provide strong incentives for design for recycling. Thus, the proposed ecodesign standards would actually be complementary to the existing WEEE provisions. The authors also pointed to insufficient knowledge of recycling processes and argued for pilot projects on future recycling. In addition, they noted fears over the sourcing of materials from recycling facilities leading to more costs in securing the recycled materials. In their view, this could however be addressed by a gradual implementation of the requirements.

MAIN REFERENCES

Centre for Strategy and Evaluation Services, [Evaluation of the Ecodesign Directive \(2009/125/EC\)](#), 2012.
Ecofys, [Evaluation of the Energy Labelling Directive and specific aspects of the Ecodesign Directive](#), 2014.
European Commission, Directorate-General for Energy, [Ecodesign impact accounting annual report 2020: overview and status report](#), Publications Office, 2021.

ENDNOTES

- ¹ When the evaluation was published, three preparatory studies were completed and nine were ongoing.
- ² [Energy-using product](#) refers to a product dependent on energy input (electricity, fossil fuels and renewable energy sources) to work as intended, or a product for the generation, transfer and measurement of such energy.
- ³ [Energy-related product](#) refers to a product/good that has an impact on energy consumption during use, which includes parts intended to be incorporated into energy-related products covered by the directive.
- ⁴ The [Energy Labelling Regulation \(EU\) 2017/1369](#) repealed the Energy Labelling Directive 2010/30/EU.
- ⁵ S. Lawson, [Designing Greener Electronic Products: Building Synergies between EU Product Policy Instruments or Simply Passing the Buck?](#), report for the European Environment Bureau, 2018.
- ⁶ Article 4 of WEEE: 'Member States shall encourage the design and production of electrical and electronic equipment which take into account and facilitate dismantling and recovery, in particular the reuse and recycling of WEEE, their components and materials.'
- ⁷ See overview of product groups on page 92 of the evaluation conducted by the Centre for Strategy and Evaluation Services.
- ⁸ [Lifecycle cost analysis](#): 'calculates the cost savings over the average life of a product at the consumer level by comparing energy savings to possible increases in retail price resulting from an efficiency standard.'
- ⁹ [Regulation \(EC\) 765/2008](#) setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93.

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