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Ecodesign and Energy Labelling Working Plan 2022-2024

(2022/C 182/01)

1. Introduction

The energy market tensions in which the EU has found itself in recent months is a stark reminder of the risks and costs that tend to come with extensive reliance on imported fossil fuels, exacerbated by Russia's attack on Ukraine. Energy prices are once again at the centre of political attention, given the very real impact they have on Europe's citizens and business. Yet, it is not Europe's first energy crisis, nor is it likely to be the last unless we increase resilience by stepping up investments in the green transition and, in doing so, putting energy efficiency first ⁽¹⁾. Current decarbonised energy capacities are far from able to satisfy all energy needs and lower energy consumption can make an immediate contribution in these circumstances. Looking into the future, energy savings are an intrinsic part of developing a cost-optimal, resilient energy system capable of providing affordable energy services to all and tackling energy poverty ⁽²⁾. Energy efficiency will also be a core component of the RePowerEU plan that EU leaders have tasked the Commission to present by May.

The EU's ecodesign and energy labelling policies are a key part of this agenda. They are Single Market rules that make it easier and less costly for business, citizens and governments alike to contribute to the clean energy transition and deliver on the EU's energy efficiency and wider 'European Green Deal' objectives, including the Circular Economy agenda. They create business opportunities and increase resilience by setting harmonised rules for 'energy-related products' on aspects such as energy consumption, water consumption, emission levels and material efficiency, they stimulate both demand for and supply of more sustainable products whilst reducing energy user expenditure significantly: estimates indicate that savings in 2021 exceeded EUR 120 billion and could reach the double in 2022 ⁽³⁾.

Within the possibilities of the existing EU ecodesign rules and in synergy with the focus on energy efficiency, this working plan strengthens the focus on the circularity aspects of ecodesign, following the example set in the previous Working Plan⁹ and in line with the Circular Economy Action Plan 2020 ⁽⁴⁾. As such, already before the Ecodesign for Sustainable Products Regulation enters into force and replaces the current Ecodesign Directive, new product-specific requirements on material efficiency aspects can and will be explored. This should result in further improved circularity and overall reduction of environmental and climate footprints of energy-related products, as well as stronger EU resilience.

⁽¹⁾ Commission Recommendation (EU) 2021/1749 of 28 September 2021 on Energy Efficiency First: from principles to practice — Guidelines and examples for its implementation in decision-making in the energy sector and beyond (OJ L 350, 4.10.2021, p. 9).

⁽²⁾ See also COM(2021) 801 - Proposal for a COUNCIL RECOMMENDATION on ensuring a fair transition towards climate neutrality.

⁽³⁾ See Staff Working Document.

⁽⁴⁾ https://ec.europa.eu/environment/strategy/circular-economy-action-plan_it

Both the Ecodesign Directive ⁽⁵⁾ and the Energy Labelling Framework Regulation ⁽⁶⁾ lay down criteria for adopting measures for specific product groups. They also require that priorities are established through regularly updated rolling Working Plans that take stock of progress made and include indicative priorities for new energy-related product groups to be considered.

This plan builds on work done since the adoption of the first Ecodesign Directive and the previous Working Plans (covering the periods 2009-2011 ⁽⁷⁾, 2012-2014 ⁽⁸⁾ and 2016-2019 ⁽⁹⁾), but it also covers the work required under the Energy Labelling Framework Regulation, which sets out deadlines for the rescaling of existing labels, and it takes stock of the progress made with the European Product Registry for Energy Labelling (EPREL). Finally, the plan also covers similar work on tyre labelling although it is based on a specific legal basis ⁽¹⁰⁾.

The Ecodesign for Sustainable Products Regulation adopted at the same time as this working plan will replace the Ecodesign Directive with a Regulation applicable to a broader range of products and make it possible to further expand sustainability requirements for the regulated products. Until this new regulation enters into force, implementation will continue within the current Directive. This document focuses on energy-related products ('ErPs') and lays out the priorities and planning for these. It presents the product-specific and horizontal work involved in implementing, consolidating and further developing this major body of directly applicable EU legislation. In the future, once the Ecodesign for Sustainable Products Regulation (ESPR) has been adopted, work on ErPs will be integrated in broader ESPR Working Plans and remain a prominent focus.

Currently, about 30 'ErP' product groups are regulated through some 50 measures. They apply to billions of products ⁽¹¹⁾ placed on the market each year, and have direct implications for suppliers, retailers, businesses and consumers on a daily basis. About half of the EU total final energy use is consumed in products that are subject to this legislation.

The preparation of the working plan has shown there is still potential for substantial, cost-effective savings from expanding the scope to new ErPs. At the same time a key lesson learned from the implementation of the last working plan is that harvesting the full benefits of this policy area will require a better match between ambition and resources, both for policy implementation at EU level and when it comes to Member States' efforts in market surveillance.

2. Estimated impacts of the policies

The latest Ecodesign Impact Accounting report ⁽¹²⁾ estimates that the cumulative effect of EU rules on ecodesign and energy labelling in 2020 reduced EU primary energy demand by 7 % or 1 037 TWh/year (ca. 170 Mt CO₂ equivalent GHG reduction), including some 16 bcm of gas. Energy savings from the measures currently in place will increase substantially in coming years, notably thanks to stock turnover, with an average exceeding 1 500 TWh/year over the period 2021-2030. Over 60 % of the energy savings in 2020 came from the residential sector, 24 % from the tertiary sector and 10 % from the industry sector. The EU rules in 2020 delivered energy consumer benefits to the tune of EUR 60 billion/year (ca. 0,4 % of the EU GDP) – EUR 210/year per household. Similarly, compared to a no-policy scenario, additional business revenues of some EUR 21 billion/year were generated in 2020 and are estimated to grow to EUR 29 billion/year by 2030. This corresponds to an increase of over 320 000 direct new jobs in 2020 (430 000 by 2030). These estimates are based on energy price levels before the price spikes in 2021 (see staff working document for details).

⁽⁵⁾ Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products (OJ L 285, 31.10.2009, p. 10).

⁽⁶⁾ Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU (OJ L 198, 28.7.2017, p. 1).

⁽⁷⁾ COM(2008)0660 final.

⁽⁸⁾ SWD(2012) 434 final.

⁽⁹⁾ COM(2016) 773 final.

⁽¹⁰⁾ Regulation (EU) 2020/740 of the European Parliament and of the Council of 25 May 2020 on the labelling of tyres with respect to fuel efficiency and other parameters, amending Regulation (EU) 2017/1369 and repealing Regulation (EC) No 1222/2009 (OJ L 177, 5.6.2020, p. 1).

⁽¹¹⁾ In 2020, it is estimated that ca. 3 billion products subject to measures were sold in EU27, of which 1.5 billion light sources, 880 million electronics products, 350 million tyres and 240 million other products.

⁽¹²⁾ Ecodesign Impact Accounting ('EIA') report 2020: <https://data.europa.eu/doi/10.2833/72143>

The EIA makes use of Eurostat data, including Energy Balance sheets (nrg_bal_c) and disaggregated final energy consumption in households - quantities (nrg_d_hhq).

More generally, a recent study by the IEA ⁽¹³⁾ showed that in countries with long-running policies, appliances are now typically consuming 30 % less energy than they would have otherwise. The longest operating programmes, such as those in the US and the EU, are estimated to deliver annual cuts of around 15 % of total electricity use (which for the EU programme is about as much as the total present EU production from wind energy, or 2-3 times that of solar panels).

A Eurobarometer survey has shown that the vast majority of EU consumers (93 %) recognize the energy label and 79 % are influenced by it when buying appliances ⁽¹⁴⁾. Recent scientific research ⁽¹⁵⁾ confirms that graded labels like the EU energy label have a higher effect on consumer behaviour than alternative designs.

3. State of play and lessons learned from previous working plans

An overview of the measures in place is available online ⁽¹⁶⁾. As of 1 March 2022, Ecodesign Regulations are in force for 29 product groups, whereas Energy Labelling Regulations apply for 15 product groups. Voluntary Agreements by industry have been recognised for Game Consoles and Imaging Equipment. An older agreement on Complex Set Top Boxes was terminated in 2020 by the parties due to decreasing market share of the products concerned (such products remain subject to horizontal rules on standby and off-mode power consumption ⁽¹⁷⁾).

Accompanying this working plan is a detailed status for the progress made with the priorities and work identified in the last working plan from 2016 ⁽¹⁸⁾. A lot has been accomplished, including the modernization of energy labels for key consumer products light fridges, washing machines, TVs and light sources and the adoption of ecodesign requirements for several products ranging from servers to electric motors. However, about 40 % is still ongoing and will be rolled over to the current planning period. Among the concluded work streams many have not led to adoption of new rules but have ended because the Commission has decided to discontinue work or at least not to pursue legislation for now, either because detailed investigations showed that potentials were smaller or harder to exploit than initially thought or because other priorities prevailed in the context of limited staff resources - or a combination of these two. Windows, hand dryers, compressor packages and electric kettles are all examples of such discontinued workstreams representing potentials that are either limited or complex to exploit and which it has not been possible to pursue with the administrative resources available.

The need for regularly reviewing and adapting existing rules, to ensure they remain relevant, effective and fit for purpose in the light of market and technological developments, is a fundamental principle of Better Regulation. In recognition of this fact, all ecodesign and energy labelling regulations as well as the framework legislation contain specific review clauses with legal deadlines for the Commission to present reviews or to adopt revised regulations. To avoid unnecessary delays, the Commission henceforth will adopt individual measures for specific product groups whenever they are ready, unless exceptional circumstances warrant otherwise ⁽¹⁹⁾.

A key lesson learned is that over time the aggregate effort required for such critical 'maintenance' efforts becomes significant as the scope of the legislation increases (in terms of products and types of requirements), and that this work needs to be better factored in when setting priorities. Otherwise, it will entail delays that have important consequences in terms of foregone benefits. This was a key finding of the audit carried out in 2019 by the European Court of Auditors (ECA) ⁽²⁰⁾. For three selected products, the audit found that the preparatory process took 8, 7 and 6 years respectively, instead of the expected 3.5 years. The 'maintenance' work is therefore a very prominent feature in the working plan. At the same time, the Commission will aim to streamline the process by integrating review studies into 'back-to-back' evaluations/impact assessments, and better align discussions in the Consultation Forum with the general Better Regulation process.

⁽¹³⁾ 'Achievements of Energy Efficiency Appliance and Equipment Standards and Labelling Programs: 2021 update': <https://www.iea-4e.org/projects/eesl-achievements-reports/>

⁽¹⁴⁾ Eurobarometer n.492, May 2019: <https://europa.eu/eurobarometer/surveys/detail/2238>

⁽¹⁵⁾ <https://publications.jrc.ec.europa.eu/repository/handle/JRC127006>

⁽¹⁶⁾ https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign_en

⁽¹⁷⁾ Commission Regulation (EC) No 1275/2008 of 17 December 2008 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment (OJ L 339, 18.12.2008, p. 45).

⁽¹⁸⁾ (SWD(2022) 101).

⁽¹⁹⁾ See also Article 16(4) of Regulation (EU) 2017/1369.

⁽²⁰⁾ Special Report No 01/2020: EU action on Ecodesign and Energy Labelling: important contribution to greater energy efficiency reduced by significant delays and non-compliance (OJ C 18, 20.1.2020, p. 2).

Another key lesson of the last period is the critical role of technical standardisation work for ecodesign and energy labelling. The 2018 ruling ⁽²¹⁾ of the General Court annulling the energy label regulation for vacuum cleaners showed that regulations may be vulnerable to litigation if any doubts arise about test conditions being representative of actual conditions of use. At the same time, a more recent and related ruling ⁽²²⁾ clearly reaffirmed the need for tests also to be accurate and reproducible. Given the diversity of technologies and user behaviour, the timely development of harmonized standards with methods representing a good compromise between these criteria is an inherent and often difficult, resource intensive challenge. The new EU Strategy on Standardisation ⁽²³⁾ proposes a set of actions to render the European standardisation system more functional and agile, put standards back at the core of a resilient, green and digital EU single market and strengthen the global role of the European standardisation system.

4. Product specific priorities in the years ahead

4.1. Reviews of existing measures

The Commission is due to present or adopt 38 reviews before the end of 2024, and another 8 in 2025 which consequently will need to be initiated in advance (cf. list in Staff Working Document). These reviews together constitute significant opportunities for further energy and material efficiency savings: a rough first estimate suggests a potential of at least 170 TWh (ca. 600 petajoule (PJ), or the heat demand of ca. 15 million dwellings) of additional use-phase savings, complemented by additional benefits related to material efficiency/circular economy but they will also represent a major effort and dominate the work carried out under the current working plan.

The Commission intends to prioritise work on reviews in three main groups, based on the following justifications:

- Heating and cooling appliances; in the context of the Renovation Wave, the Council has called on the Commission to 'accelerate the ongoing work on heating and cooling appliances by rescaling energy labels as soon as possible' ⁽²⁴⁾. This work will indeed be a critical contribution to the decarbonisation of buildings and the Zero Pollution action plan ⁽²⁵⁾ as part of the overall Green Deal objectives, and these products are those with the highest energy consumption of all regulated products.
- Other product groups with energy labels up for rescaling ⁽²⁶⁾; consumers need to be able to continue trusting the EU Energy label as a relevant and up-to-date tool for guiding the choices; timely rescaling and updating the remaining 'old' energy labels is therefore important, and also necessary to take full advantage of the new features offered by EPREL.
- Concluding certain other reviews that represent significant additional savings potential in terms of energy or material savings, that are long overdue, or where particular circumstances imply a clear or urgent need for revisions (e.g. water pumps, fans, external power supplies).

4.2. New measures initiated under previous working plans to be completed

Previous working plans have identified products for which ecodesign and energy labelling measures seemed most promising, based on scoping studies and preliminary estimates. Some of these workstreams are still ongoing and carried over to the current working plan due to the expected additional benefits.

Work has advanced significantly with assessing the feasibility of ecodesign requirements and an energy labelling scheme for mobile phones and tablets. The requirements would be affecting energy efficiency as well as material efficiency (durability, reparability, upgradability and recycling) aspects. The regulations are expected to be adopted before the end of 2022.

Likewise, work is well advanced to assess the feasibility of ecodesign requirements and energy labelling for solar photovoltaic modules, inverters and systems, including possible requirements on carbon footprint.

⁽²¹⁾ Judgement of the General Court of 8 November 2018 in Case T-544/13 RENV.

⁽²²⁾ Judgement of the General Court of 8 December 2021 in Case T-127/19.

⁽²³⁾ COM(2022) 31 final, 2 February 2022.

⁽²⁴⁾ https://ec.europa.eu/energy/sites/ener/files/eu_renovation_wave_strategy.pdf

⁽²⁵⁾ COM(2021) 400 final, 12 May 2021.

⁽²⁶⁾ Tumble dryers, ventilation units, domestic cooking appliances.

Regarding imaging equipment, the Commission has assessed the revision of the Voluntary Agreement proposed by representatives of the sector and concludes that accepting this revision would not achieve the objectives considered in the Circular Economy Action Plan (CEAP), and cannot be considered compliant with the guidelines on self-regulatory instruments in particular regarding the possible re-use of consumables ⁽²⁷⁾. As announced in the CEAP, the Commission will launch the preparation of regulatory measures for this product group.

The Commission is continuing horizontal work on ICT products as announced in the 2016-2019 Working Plan through a dedicated ICT study ⁽²⁸⁾. The first part provided evidence for the preparatory study completed ahead of the present working plan on the performance and the potential savings of several ICT product groups ⁽²⁹⁾. The second part will address overall energy consumption of ICT products (including due to their connectivity and data transmission), material efficiency and behavioural aspects with a view of identifying the most efficient ways of regulating them where appropriate. The assessment should consider the pace of technological developments in each product group category.

In parallel, the Commission is continuing work on Energy Smart Appliances to develop the potential for demand side flexibility in the residential or service sectors. Since the main issue identified in previous studies was interoperability, the Commission intends to foster coherent development on the market and adherence of industry to open standards through a voluntary approach ⁽³⁰⁾. This work has links to several other strands of action, including some that will be addressed in more detail in the forthcoming Digitalisation of Energy Action Plan ⁽³¹⁾.

4.3. Specific tasks required under tyre labelling

Under the Tyre Labelling Regulation, the Commission is required to carry out a number of specific tasks, including to:

- adopt a Delegated Act introducing new information requirements for retreaded tyres by June 2022 provided that a suitable testing method is available. However, a method is not yet available but work is underway to establish one. Retreading represents important savings potentials for savings of on oil and other materials;
- adopt a Delegated Act on labelling for abrasion/mileage provided that a suitable testing method is available, contributing to wider CEAP action on micro-plastics. However, a method is not yet available but work is underway to establish one;
- coordinate work related to inter-laboratory alignment of testing under the tyre labelling regulation, which also has important implications for EU legislation on CO₂ emissions of light vehicles and heavy-duty vehicles. The latest report was published in December 2021 ⁽³²⁾.
- Although the review of the Regulation is foreseen by 2025, industry has signaled a need to advance it as the rescaling, originally proposed by the Commission but not retained by Parliament and Council in the last review, is now clearly needed.

4.4. Indicative list of new energy-related product groups to be studied

This Working Plan has been prepared following a detailed preparatory study with a screening of numerous potential areas of effort and extensive consultations of citizens and stakeholders. More details are available in the accompanying staff document.

A list of the 31 most promising candidates for further work (including products already studied in the past but not regulated so far) identified in the preparatory study. Together these represent, based on the preliminary estimates, new potential use phase savings in 2030 in the order of 1 000 PJ, or 278 TWh, i.e. ca. 2 % of EU primary energy use in 2020 ⁽³³⁾. The estimated potential related to embedded energy in materials is of the same order of magnitude (and highly dependent on the assumptions regarding the scope and stringency of horizontal measures on durability but

⁽²⁷⁾ Commission Recommendation (EU) 2016/2125 of 30 November 2016 on guidelines for self-regulation measures concluded by industry under Directive 2009/125/EC of the European Parliament and of the Council (OJ L 329, 3.12.2016, p. 109).

⁽²⁸⁾ <https://susproc.jrc.ec.europa.eu/product-bureau//product-groups/522/home>

⁽²⁹⁾ For example on enterprise network equipment, small network equipment for home and office use, interconnected home audio and video.

⁽³⁰⁾ <https://ses.jrc.ec.europa.eu/development-of-policy-proposals-for-energy-smart-appliances>

⁽³¹⁾ https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13141-Digitalising-the-energy-sector-EU-action-plan_en

⁽³²⁾ https://ec.europa.eu/info/sites/default/files/energy_climate_change_environment/standards_tools_and_labels/documents/egla_report_2021_final.pdf

⁽³³⁾ Note that these savings are not to be cumulated with figures given in the Working Plan 2016-19 for the same year.

also associated with other benefits). Importantly, the impact will increase over time with the gradual replacement of the stock of products with units meeting the new requirements. Starting from the set of 31 products, a more limited list (given in the table below) was identified, with products on which the Commission envisages initiating exploratory studies. Priority was given to those products which have the highest potential for energy and/or material efficiency, and at the same time scored well on other criteria and where stakeholder feedback did not cast significant doubts about the prospects for success, as set out below.

Product group	Energy saving potential 2030 (related to use phase or material efficiency)	Considerations ⁽¹⁾
Low temperature emitters (radiators, convectors..)	170 petajoule (PJ) (use phase)	Highest energy saving potential, important for Renovation Wave/building decarbonisation
Professional laundry appliances	33 PJ (use phase)	Studied in the past ⁽²⁾ and now considered more mature in view of progress in technical standardisation
Professional dishwashers	20 PJ (use phase)	Studied in the past ⁽²⁾ and now considered more mature in view of progress in technical standardisation
Universal External Power Supplies (EPS)	12-27 PJ (embedded)	Link to Common Charger initiative, will be done as part of review of existing EPS regulation ⁽⁴⁾
Electric vehicle chargers	11 PJ (use phase)	After 2030 the potential savings increase, to in 2050 almost 76 PJ annually. Hence, it is reasonable to consider setting requirements before large volumes of potentially inefficient chargers are installed.

⁽¹⁾ Please refer to staff working document for more details.

⁽²⁾ Mentioned first in the 2012 Working Plan.

⁽³⁾ Ibid

⁽⁴⁾ Despite external power supplies are already regulated, 'universal' ones are indicated as a new product group, because of the relevance and specificity of the analysis needed to derive the necessary criteria/features. See information on the ongoing review at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13351-External-power-supplies-ecodesign-&-information-requirements-review_en

5. Horizontal aspects

5.1. Contribution to the circular economy

While energy efficiency has naturally been the core focus of ecodesign work for energy-related products, other aspects have increasingly been considered and integrated over time, especially since the first Circular Economy Action Plan ⁽³⁴⁾. In addition to certain existing requirements on durability, several measures adopted in 2019 ⁽³⁵⁾ include new circular economy elements with requirements on reparability, recyclability, ease of end-of-life disassembly and reuse (cf. examples in the accompanying Commission Staff Working Document).

In parallel, following the Commissions' standardisation request M/543 ⁽³⁶⁾ the European Committee for Standardisation and the European Committee for Electrical Standardisation (CEN-CENELEC) has finalised horizontal standards on material efficiency aspects for energy-related products. These include horizontal standards ⁽³⁷⁾ on durability, recyclability, ability to repair, reuse and upgrade, recycled contents etc. They can be the basis for developing product-specific material efficiency standards for energy-related products.

⁽³⁴⁾ COM (2015) 614.

⁽³⁵⁾ https://ec.europa.eu/commission/presscorner/detail/en/IP_19_5895

⁽³⁶⁾ <https://ec.europa.eu/growth/tools-databases/mandates/index.cfm?fuseaction=search.detail&id=564>

⁽³⁷⁾ https://standards.cenelec.eu/dyn/www/f?p=205:32:0:::FSP_ORG_ID,FSP_LANG_ID:2240017.25&cs=10B7B067C C7107748A52C1C034BB4CFD3

Based on the standard on the ability to repair, reuse and upgrade (EN 45554) the Commission's Joint Research Centre has developed a repair score system. The Commission is exploring the potential of introducing it for relevant products, possibly as information on the energy label for specific products such as smart phones and tablets. This work is ground breaking and is likely to influence industry practices globally for the better.

In addition, the Methodology of Ecodesign for Energy-related Products (MEErP – cf. in Annex) is currently being revised to introduce a more systematic way of covering circular economy aspects when performing preparatory or review studies on specific product groups.

In the upcoming work, the trend towards increased emphasis on circular economy will continue by integrating relevant requirements based on the experiences gathered so far, in particular with the implementation of the 2019 measures. Such requirements would be supported by improvements in the methodology and possibilities for standardisation, and they should contribute to the transition to the new legislative framework on Ecodesign for Sustainable Products.

Looking ahead, the Commission will also further assess the possibility and appropriateness of establishing more product-specific requirements on the following aspects:

Typology of requirement	Energy saving potential 2030 (related to use or material efficiency)
Recycled content	1 60PJ (material content)
Durability, firmware and software	At least 175-1 052PJ (material content)
Scarce, environmentally relevant and critical raw materials	High resource potential

The requirements are theoretically applicable to all energy related products; dedicated preparatory studies will be needed to help identifying the product categories that are most relevant for potential regulatory approaches.

5.2. Standardisation work

Enforcing ecodesign requirements or labelling of products based on their respective characteristics requires clear definitions of how performance is defined and can be tested for any given product. To this end, harmonised technical standards defining suitable test methods can help manufacturers – if they apply the methods therein - enjoy 'presumption of conformity' for demonstrating compliance with legal requirements. Technical standardization work is a vital but often overlooked part of implementation, and the recent experience demonstrates the importance of initiating this work as early as possible in parallel with the preparation of the new or revised regulations. Standardisation requests can be finalised and adopted only once the corresponding ecodesign or labelling regulations are adopted. Ideally, their elaboration starts prior to that, so that they can be completed in a timely manner upon adoption of the regulations in view of the ca. 27 months typically required for the development of a standard itself. The overall process tends to take significantly longer, including also the prior adoption of the standardisation request and the subsequent assessment and approval of the standards for referencing the Official Journal. Where harmonized European standards covering all relevant aspects are not available at the time of adoption, the implementing measures may have to incorporate transitional methods.

New standardisation requests need to be written for most if not all new or revised regulations under development. Requests have recently been made, or are currently under development, for lighting, electronic displays, commercial refrigeration and household refrigeration. Draft standards have been developed for several other product groups based on older mandates.

5.3. The European Product Registry for Energy Labelling (EPREL)

The European Product Registry for Energy Labelling (EPREL) is a database set up and operated by the Commission. As of 1 January 2019, suppliers (manufacturers, importers or authorised representatives) have had a legal obligation to register any products subject to energy labelling rules in EPREL before placing them on the European market.

In accordance with the legislation, EPREL serves the following purposes:

- to provide the public with information about products placed on the market and their energy labels, and Product Information Sheets;
- to support market surveillance authorities in carrying out their tasks under the energy (and tyre) labelling legislation, including enforcement thereof;
- to provide the Commission with up-to-date energy efficiency information for products for reviewing energy labels.

Following the recent March 2022 'beta version' launch of its public interface ⁽³⁸⁾, information from EPREL will increasingly also support the implementation of other Green Deal policies. Indeed, EPREL data are henceforth the natural starting point for any assessments of which energy label classes are the 'two highest significantly populated' classes, or higher classes, for any given product. This is a criterion now used to operationalize several EU policies, including in relation to public incentives ⁽³⁹⁾, sustainable private sector investments ⁽⁴⁰⁾, green public procurement ⁽⁴¹⁾ and reduced VAT rates for certain energy-labelled products that meet specific energy label and, where applicable, low particulate emission criteria ⁽⁴²⁾.

EPREL also provides features that facilitate compliance by suppliers and retailers. Suppliers can choose to rely on the built-in label generator to obtain graphic label images in compliant formats based on the declared values for product performance and characteristics. Retailers can reference EPREL, including through application programming interfaces (APIs), when displaying labels or product information sheets online, thereby minimizing the effort of presenting up-to-date, coherent and multi-lingual information.

Although EPREL is in operation, there are important functionalities that need to be addressed in 2022 to fulfil the above-mentioned objectives. These include:

- A dedicated web portal that will be the single access point, providing targeted information for citizens, national authorities, suppliers, dealers and policy makers (Q2/Q3).
- Improving the user interface and tools available to market surveillance authorities to better streamline their activities (Q3).
- Transforming the structure of the technical documentation to streamline registration activity by suppliers and facilitate analysis thereof by compliance authorities (Q1 to Q3).
- Start implementation of revised regulations for some product groups and possibly adding new ones (PVs, smartphones/tablets) (Q4).

In addition, it will be necessary to consider the conditions for, and modalities of, granting access to EPREL or some of its features to operators and possibly authorities from specific third countries, notably those that are part of the customs union or the Energy Community. The concrete modalities and implications of such developments will however have to be carefully analysed, prepared, and - eventually - rolled out and cannot be done in the very short term.

5.4. Market surveillance and support to economic operators

Effective market surveillance is key to ensure that rules are properly enforced, that the expected benefits materialise, that the level playing field for businesses is secured, that reliable product information is supplied to consumers, and that the framework is trusted by citizens, regulators and businesses alike.

⁽³⁸⁾ <https://eprel.ec.europa.eu>

⁽³⁹⁾ See Article 7(2) of Regulation (EU)2017/1369.

⁽⁴⁰⁾ See EU Taxonomy for sustainable activities and the EIF Sustainability Guarantee pilot initiative under InvestEU SME window.

⁽⁴¹⁾ See Annex IV to the proposed revision of the Energy Efficiency Directive.

⁽⁴²⁾ See the new point (22) added to Annex III in Directive 2006/112/EC <https://data.consilium.europa.eu/doc/document/ST-14754-2021-INIT/en/pdf>

Market surveillance is a national competence, and data on enforcement and compliance is scarce because there is currently no reporting obligation. Based on available evidence, and as confirmed by the ECA 2020 ecodesign audit, non-compliance is a significant problem. In EU-funded market surveillance projects, it is common to observe high double-digit percentage of products showing compliance issues (both on formal and substance aspects) ⁽⁴³⁾ but these include relatively minor formal non-compliances that can be corrected by voluntary action (e.g. a wrong value in the product information sheet) and not just severe issues like not meeting the minimum ecodesign requirement. Overall, it is estimated that at least 10 % of the potential energy savings delivered by ecodesign and energy labelling are lost due to non-compliance, representing 15.3 Mtoe primary energy annually in 2020 (or 178 TWh) and EUR 6.4 billion annual expenditure for consumers on energy bills (based on 2020 energy price levels). This corresponds to 31 Mt CO_{2,eq} additional emissions per year and entails significant losses of revenue and jobs for industry. These figures suggest that any additions to the modest resources spent by Member States on national market surveillance for ecodesign and energy labelling would be highly cost-effective in terms of the returns generated.

In the coming period, the Commission will step up its support to Member States to contribute to a more effective and uniform application of market surveillance in the field of ecodesign and energy labelling. This will include:

- Continuous improvement of IT tools such as the Information and Communication System for Market Surveillance ⁽⁴⁴⁾ (ICSMS) and EPREL and support to other tools, e.g. those that help address challenges related to market surveillance for e-commerce and new supply chains.
- Technical and logistical support to the Administrative Cooperation Groups (AdCos).
- Financing of joint or concerted actions and campaigns.
- Engage with the Member States at political level on ways to improve market surveillance, including the level of resources they make available.
- Propose new legal provisions that will improve market surveillance, in the framework of the proposed the Ecodesign Regulation (cf. the SPI).
- Other relevant activities, as planned in the European Product Compliance Network (EUPCN) Work Programme for 2021-22, including involvement of customs authorities.

The Commission will also continue to support economic operators' efforts to comply in different ways, e.g. through the operation of functional mailboxes where questions can be addressed, with specific guidance documents, FAQs, information on the Commission website etc. It will also consider providing EU-funding to set up an industry-driven compliance support facility boosting proactive outreach actions and providing timely and targeted assistance to help suppliers and retailers more easily understand and meet their obligations.

5.5. *International aspects and cooperation*

EU policy measures on ecodesign and, in particular, energy labelling, and related technical standards and test procedures for regulated products, have had extensive positive influence in third countries far beyond the EU borders ⁽⁴⁵⁾.

On the one hand, several of the EU's significant trading partners systematically apply the EU's ecodesign and/or labelling rules in the context of their various relations with the EU. This is notably the case in the framework of the EEA, the Customs Union with Turkey and the Energy Community. On the other hand, manufacturers in other major exporting countries anyhow need to meet EU requirements to be able to place goods on the EU market, which in turn may motivate and facilitate the setting of domestic requirements that are fully or partially aligned with the EU's. At the same time, it is important that the EU continues to be compliant with the applicable rules in this regard at the level of the WTO.

⁽⁴³⁾ This was the case e.g. for fridges inspected under the EEPLIANT2 project in 2018-2019. Preliminary results of the EEPLIANT3 project in November 2021 largely confirm this, 75 % of the inspected products having issues with the technical documentation or with online labelling requirements, noting however that the figures may not be fully representative due to the risk-based approach generally used in product sampling.

⁽⁴⁴⁾ https://ec.europa.eu/growth/single-market/goods/building-blocks/information-and-communication-system-market-surveillance_en

⁽⁴⁵⁾ Study on Impacts of the EU's Ecodesign and Energy/Tyre Labelling Legislation on Third Jurisdictions, Waide et al, https://ec.europa.eu/energy/sites/ener/files/documents/201404_ieel_third_jurisdictions.pdf

International cooperation on product efficiency is also a factor in the speed and direction of programme developments around the world. Some third country jurisdictions consider it beneficial to apply similar or identical requirements to take advantage of the considerable work that has already gone into developing the EU rules. At the same time, the EU is far from leading on all accounts or products, so it can also benefit and learn from efforts made elsewhere. Regulatory convergence can also alleviate the compliance and conformity assessment costs faced by EU companies serving both important export markets and the EU market. To promote such mutually beneficial exchanges the Commission will continue to support and participate in well-established international multilateral product policy fora such as the IEA's Energy Efficient End-use Equipment (4E) Technology Collaboration Programme ⁽⁴⁶⁾ and the Super-efficient Equipment and Appliances Deployment (SEAD) Initiative ⁽⁴⁷⁾. Bilateral cooperation will also be pursued in order to accelerate the uptake of eco-design and energy labelling best practices in partner countries and further enhance regulatory convergence globally.

6. Conclusion

The EUs ecodesign and energy labelling programme is one of the world's largest and longest-running appliance programmes, leveraging the power of the single market in the EU and abroad, to the benefit of consumers, businesses and the environment.

Ecodesign/energy labelling delivers a vital and growing contribution to European Green Deal and Fitfor55 objectives and to consumers faced with high energy prices whose bills would otherwise have been much higher: at current price levels, existing policies are estimated to save EU energy users expenditure in excess of EUR 250 bn/year.

Investing in pursuing and strengthening this programme to better match ambitions and resources is also investing in stronger EU resilience to better withstand future energy price crises and challenges to security of supply related to EU dependence on imported fossil fuels. Similarly, the increasing focus on material efficiency, e.g. the recyclability, contributes to increased supply chain resilience in the EU.

Enhancing international cooperation, both at the multilateral and bilateral level, is necessary to accelerate the speed of product energy efficiency programmes uptake around the world and can also help improve regulatory convergence to the benefit of the EU and of partner countries.

The European Product Registry for Energy Labelling, EPREL, provides unprecedented market transparency and opens up new opportunities to empower and engage with EU consumers. It will increasingly also be a practical tool to operationalise recently introduced conditionalities concerning product performance in other EU policies (green taxonomy, Green Public Procurement under the Energy Efficiency Directive, public incentives, VAT Directive).

This policy area still represents substantial potential for delivering additional, highly cost-effective benefits for EU consumers, reduced air pollution, and energy/CO₂ savings that otherwise might have to be delivered by other policies at EU or national level. However, timely reviews of existing rules, support for correct application/enforcement, developing EPREL and exploring regulation of new energy-related products requires substantial efforts.

The Commission has, therefore, in the context of the sustainable product policy package, clearly indicated the need to significantly step up resources allocated to implement ecodesign policy as part of a more ambitious sustainable product policy and invites Member States to do the same as regards national market surveillance efforts.

⁽⁴⁶⁾ <https://www.iea-4e.org/>

⁽⁴⁷⁾ <https://www.superefficient.org/>

ANNEX

Methodology for the Ecodesign for Energy-related Products (MEErP)

The Methodology for the Ecodesign of Energy-related Products (MEErP) was developed to provide operational guidance to the European Commission and contractors providing it with technical assistance in performing the preparatory study for the Ecodesign of a product. The full methodology reports and calculation template are available online ⁽¹⁾. The MEErP has evolved over time with the involvement of stakeholders. The administrative and legal stages following the preparatory study are not covered by the MEErP. Nevertheless, the MEErP is designed so that its outputs can be integrated in a European Commission Impact Assessment.

The MEErP is comprised of 7 tasks. The first 4 tasks are to gather data and carry out initial analysis. These address:

- Task 1 - Scope (product definitions, standards and legislation);
- Task 2 – Markets (economic and market analysis, including volumes and prices)
- Task 3 – Users (product demand side, consumer behaviour and local infrastructure);
- Task 4 - Technologies (product supply side, includes Best Available Technology (BAT) and Best Not-yet Available Technology (BNAT));

Apart from providing the inputs for tasks 5 to 7, tasks 1 to 4 have an additional purpose of capacity building. The reports of Tasks 1 to 4 provide policy makers and stakeholders with the background to understand each other's problems and take part in a dialogue.

- Task 5 – Environment & Economics (base case ⁽²⁾ Life Cycle Assessment & Life Cycle Cost);
- Task 6 – Design options (improvement potential);
- Task 7 – Scenarios (Policy, scenario, impact and sensitivity analysis).

Tasks 5 to 7 are intended to provide the analysis whether and, if so, which ecodesign requirements should be set for the energy-related product in question. In task 5 the 'base case' is identified through a synthesis of the results of Tasks 1 to 4. The base case is a conscious abstraction of reality and the point-of-reference for assessing improvement potential and the policy, scenario, impact and sensitivity analysis.

Design options, their consumer Life Cycle Cost consequences, their environmental costs and benefits, the solution with the Least Life Cycle Costs (LLCC) and the BAT are identified in Task 6. The BAT indicates a medium-term target that could be appropriate for promotional measures rather than mandatory minimum requirements. The BNAT indicates long-term possibilities and helps to define the exact scope and definition of possible measures

Under Task 7 the outcomes of the previous tasks are brought together to explore suitable policy means to realise the improvement potential. It creates scenarios with projections until 2050 quantifying the achievable improvements compared to Business as Usual. The outcomes are compared to EU targets and the societal cost of achieving the benefit in another way. The impacts on consumers (purchasing power, societal costs) and industry (employment, profitability, competitiveness, investment level) are estimated, explicitly describing and accounting for the typical design cycle in the product sector. Finally, the robustness of the outcomes is explored through a sensitivity analysis of the main parameters.

It is important for the validity of the assessments and the added value of the legislative proposal flowing from them that the methodology is kept up to date. The current methodology has gradually evolved over time through periodic reviews, involving the input of stakeholders, and leading to periodic adaptations.

⁽¹⁾ Methodology for Ecodesign of Energy-related Products - MEErP 2011 - Methodology Report - Part 1: Methods, <https://ec.europa.eu/docsroom/documents/26525>, Methodology for Ecodesign of Energy-related Products - MEErP 2011 - Methodology Report - Part 2: Environmental policies and data, <https://ec.europa.eu/docsroom/documents/26526>, EcoReport Calculations' template: <https://ec.europa.eu/docsroom/documents/5308/attachments/1/translations>

⁽²⁾ One or more average EU product (s) or a representative product category have to be chosen as the 'Base-case' for the whole of the EU-27

The current version of MEErP has been in use since 2013 ⁽³⁾ and the current version 3.06 of the Ecoreport tool since 2014 ⁽⁴⁾. Work on a review is now underway that will, where necessary, update data used in the analysis and ensure it remains fit for its purpose, in line with recent policy developments. The process of the revision is being managed by the Joint Research Centre and details of the ongoing process and the involvement of stakeholders will be published ⁽⁵⁾.

⁽³⁾ SWD(2012) 434 final: <https://ec.europa.eu/docsroom/documents/9952/attachments/1/translations/en/renditions/pdf>

⁽⁴⁾ Material efficiency study for MEErP (published in December 2013) at: https://ec.europa.eu/growth/industry/sustainability/sustainable-product-policy-ecodesign_en, Ecoreport Tool available at: <https://ec.europa.eu/docsroom/documents/5308/attachments/1/translations>

⁽⁵⁾ <https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/521/home>