Verdieping arsaequi.nl/maandblad AA20200793

The new Ecodesign Package: an important step towards a circular economy

Liesbet Van Acker*

During the design phase, 80 % of a product's environmental impact is determined. For this reason, the European Union established a framework, containing the overarching Ecodesign Directive and several product-specific implementing regulations, obliging manufacturers to eco-design their products. This article will discuss and analyse the ecodesign framework in light of the new Ecodesign Package – the ten most recently adopted regulations.

* L. Van Acker is a PhD researcher at the Institute for Consumer, Competition and Market, KU Leuven, Belgium. E-mail: *liesbet.vanacker@kuleuven.be*.

1 Introduction

'Together with smarter energy labels, our ecodesign measures can save European consumers a lot of money, as well as help the EU reduce its greenhouse gas emissions. Ecodesign is therefore a key element in the fight against climate change and a direct contribution to meeting the goals set in the Paris Agreement' – Miguel Arias Cañete, former European Commissioner for Climate Action and Energy on the new Ecodesign Package

On 11 December 2019, the European Union leaped towards a greener future by announcing the European Green Deal.[1] The European Green Deal is the overarching phrase used for all the proposals and ideas the European Commission ('Commission') has to lead Europe towards a union that can tackle environmental – and climate-related – challenges. The Green Deal reconfirmed that a crucial part of this transition is the shift from a linear economy model towards a circular economy. More concretely, this entails a shift from the 'take, make, dispose'-principle to an economy which 'preserves wherever and at the highest level possible the value of resources and materials, to avoid waste and to minimise the environmental impact of the resulting material cycles'.[2] As was planned for in the European Green Deal, the Commission published 'A new Circular Economy Action Plan' ('CE Action Plan') in March 2020.[3]

During the design phase, 80 % of a product's environmental impact is predisposed

Unsurprisingly, a key aspect of a circular model is product design. Product design will determine the use of materials, durability, ease of repair, and recyclability.[4] During the design phase, 80 % of a product's environmental impact is predisposed.[5] Ecodesign was already on the Com-

1 Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: The European Green Deal (COM(2019) 640 final).

2 K. Van Acker, 'Technology for Circular Economy: a New Paradigm for the Way We Use Resources', in: B. Keirsbilck & E. Terryn (ed.), *Consumer Protection in a Circular Economy*, Cambridge: Intersentia 2019, p. 24.

3 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A new Circular Economy Action Plan – For a cleaner and more competitive Europe (COM(2020) 98 final).

4 D. Jepsen, L. Spengler & L. Ausberg, *Delivering Resource-efficient Products – How Ecodesign can drive a circular economy in Europe* (Report European Environmental Bureau), 2015, p. 6.

5 *Ecodesign Your Future – How Ecodesign can help the environment by making products smarter* (Brochure European Commission), p. 3; European Parliament resolution of 31 May 2018 on the implementation of the Ecodesign Directive (2009/125/EC) (2017/2087(INI)), recital U.

mission's radar when the first Ecodesign Directive ('2005 Ecodesign Directive') was adopted in 2005, but for a long time, the Commission only focused on energy-efficiency thresholds. Recently, the Commission took its first steps to include resource-efficiency into the ecodesign framework and adopted ten new implementing regulations (the Ecodesign Package) with a focus on circular economy requirements. This article will discuss this newly adopted Ecodesign Package. What is the legal basis of implementing regulations? What do the regulations entail? How much do they change? Should the Commission take further steps? This article will first address the Ecodesign Directive (Par. 2) because it sets forth the framework for the adoption and regulation of implementing regulations. Second, this article will analyse the ten implementing regulations that form the new Ecodesign Package (Par. 3). Before concluding, this article examines the complementary components to the ecodesign framework (Par. 4).

The Ecodesign Directive provides a framework detailing how to draft, adopt, assess and enforce implementing measures, but refrains from establishing applicable rules on how to design a product which is regulated in the implementing regulation

2 The Ecodesign Directive: the alpha and omega

In 2009, the Ecodesign Directive[6] was adopted, repealing the 2005 Ecodesign Directive. Both documents find their roots in the 'Integrated Product Policy' which, in 2001, aimed to 'strengthen and refocus product-related environmental policies'.[7] Indeed, the Ecodesign Directive's main goal is to 'transform environmental challenges into economic opportunities by fostering sustainable production and consumption'.[8] Interestingly, the Ecodesign Directive has an additional objective: protection of the internal market. If every Member State would adopt ecodesign measures to its own liking, this would create 'barriers to trade and distort competition'.[9] To accomplish these goals, the Ecodesign Directive provides a framework detailing how to draft, adopt, assess and enforce implementing measures, but refrains from establishing applicable rules on how to design a product which is regulated in the implementing regulations. The importance of the Ecodesign Directive has been reaffirmed in the European Green Deal as well as, most recently, in the CE Action Plan.[10]

2.1 Setting the boundaries: the scope of the Ecodesign Directive

The scope of the Ecodesign Directive is limited to 'energy-related products'.[11] This comprises *energy-using* products that use, generate, transfer or measure energy (e.g. boilers and computers) and *energy-impacting* products that only affect energy consumption (e.g. insulation and showerheads).[12] The Ecodesign Directive clarifies that it also covers the parts that are meant to be incorporated into energy-related products (e.g. ventilation units in electric motors).[13] Furthermore, the Directive explicitly excludes means of transport for persons or goods (e.g. cars) from its scope.[14]

The scope of the Ecodesign Directive is one of the most contentious parts of the Directive. The 2005 Ecodesign Directive was limited to energy-using products, thus excluding energy-impacting products.[15] However, already since the adoption of the 2005 Ecodesign Directive, there have been calls to expand the scope to all products. When the 2009 Ecodesign Directive was adopted, this possibility was introduced in article 21, stating that 'the Commission shall assess, notably, the appropriateness of extending the scope of the Directive to non-energy-related products'.[16] This assessment took place in 2012, but the resulting study concluded that the extension was not appropriate due to a lack of experience in the (i) methodology, (ii) extended scope and (iii) approach for non-energy-related products and that the Commission should first focus on a better implementation of the Ecodesign Directive.[17] Nonetheless, calls to expand the scope of the Directive beyond energy-related products continued.[18] Most recently, the Commission corroborated its ambition to 'make the ecodesign framework applicable to the broadest possible range of products'.[19]

6 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 ('Ecodesign Directive') (*OJ* 2009, L 285).
7 Green Paper on Integrated Product Policy (COM(2001) 68 final), p. 3.
8 Commission Staff Working Document accompanying the Proposal for a Directive of the European Parliament and of the Council establishing a framework for the setting of ecodesign requirements for energy related products (COM(2008) 399 final), p. 15.
9 Ecodesign Directive, recital 2; A. Michel, 'The Design and Production Stage: Ecodesign Requirements', in: Keirsbilck & Terryn 2019, p. 66.
10 The Green Deal, p. 7; The new CE Action Plan, p. 6-7.
11 Ecodesign Directive, art. 1(1).
12 Michel 2019, p. 67.
13 Ecodesign Directive, art. 2.
14 Ecodesign Directive, art. 1(3).
15 Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products (*OJ* 2005, L 191), art. 1(1).
16 Ecodesign Directive, art. 21.
17 Centre for Strategy and Evaluation Services, *Evaluation of the Ecodesign Directive (2009/125/EC) Final Report* (Report), 2012, p. 159-220; Michel 2019, p. 67-68.
18 For example: European Parliament Resolution of 31 May 2018 on the implementation of the Ecodesign Directive (2009/125/EC) (2017/2087(INI)), pt. 30; EESC Opinion of 27 April 2016 on the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Closing the loop – An EU action plan for the circular economy – COM(2015) 614 final (NAT/676-EESC-2016-00042-00-01-AC-TRA), pt. 4.1.2.
19 The new CE Action Plan, p. 6.

Foto: smumcu/123RF

2.2 Inside the boundaries: the implementing measures

As stated before, the Ecodesign Directive does not lay out the rules for the design of products; it establishes a framework to adopt implementing measures that outline specific, product-design requirements. More specifically, the Ecodesign Directive regulates three different aspects of the implementing measures: (i) the products that the Commission can regulate; (ii) the limitations on the content of the implementing measures; and (iii) the procedure for adoption.

2.2.1 Which products can be regulated?

All energy-relating products fall within the scope of the Directive, but only for a certain category of products can implementing measures be approved. Those products have to adhere to three conditions. First, they have to represent a sufficient volume of sales, namely, more than 200,000 units a year distributed within the European Union. Second, the product needs to have a significant environmental impact during its life cycle. Lastly, the product 'presents significant potential for improvement in terms of its environmental impact without entailing excessive costs'.[20] To assess this last requirement, the Commission takes into account other relevant European legislation, failure of market forces and a wide disparity between the environmental performance of the products available.[21] The equivocal and broad wording of these conditions – with the word 'significant' taking the cake – has led to implementing measures that almost uniquely target energy-efficiency, also because of the ease to measure it.[22]

2.2.2 Are there limits to the content of the implementing measures?

Besides requirements for the products, the Ecodesign Directive also provides the criteria the implementing measures have to fulfill. Summarised, the implementing measures cannot (i) have a significant negative impact on the functionality of the product; (ii) affect health, safety and the environment adversely; (iii) have a significant negative impact on consumers, in particular as regards the affordabil-

20 Ecodesign Directive, art. 15(2).
21 Ecodesign Directive, art. 15(2)(c).
22 Michel 2019, p. 76.
23 Ecodesign Directive, art. 15(5).
24 Ecodesign Directive, art. 3(25) and (26).
25 'New energy efficiency labels explained', European Commission 11 March 2019, fact sheet MEMO/19/1596 (*https://ec.europa.eu/commission/presscorner/detail/en/MEMO_19_1596*, last accessed on 6 May 2020), *in fine*.
26 'The new ecodesign measures explained', European Commission 1 October 2019, questions and

ity and the life cycle cost of the product; (iv) have a significant negative impact on the industry's competitiveness; (v) have the consequence of imposing proprietary technology (i.a. patented technology, copyrighted technology and technology subject to trade secrets) on manufacturers; and (vi) impose excessive administrative burdens on manufacturers.[23]

Taking into account these requirements, the Commission can adopt implementing measures setting out mandatory requirements for the design of energy-related products. These thresholds are composed of generic requirements or specific requirements. Generic requirements are 'based on the ecological profile as a whole without set limit values' while specific requirements are 'quantified and measurable ecodesign requirements'.[24] For instance, an implementing measure demanding producers to make batteries removable qualifies as a generic requirement. On the other hand, a limit on how much energy that battery uses would be a specific requirement.

2.2.3 What is the procedure to adopt an implementing measure?

To adopt implementing measures, the Commission has to follow a detailed procedure which takes on average 3,5 years.[25] First, the Commission adopts a working plan delineating which (categories of) products it will focus on. This step is followed by preparatory studies, after which the Commission consults the stakeholders on a draft implementing measure. Then, the draft implementing measure undergoes an impact assessment that assesses the environmental, economic and social impact of the measure. Next, the measure has to pass a vote in the regulatory committee with Member States' representatives and receive comments from the European Parliament and Council. Finally, the Commission adopts the implementing measures as regulations applicable in all Member States without transposition into national law.[26]

2.3 Respecting the boundaries: enforcing the implementing measures

As discussed, the Ecodesign Directive regulates the drafting and adoption of implementing measures. During the enforcement phase, the Ecodesign Directive comes back into the picture. Most importantly, the Ecodesign Directive forbids Member States to allow products on their markets if they do not comply with the implementing measures.[27] Consequently, Member States have to appoint an authority to surveil the market.[28] The Ecodesign Directive provides the Member States with several rules and presumptions to assess conformity. Lastly, Member States are obliged to penalise any infringement of the national transposition of the Ecodesign Directive.[29]

The new Ecodesign Package encompasses implementing regulations for ten products. Immediately, one notices that all the regulated products in this package use energy

3 The new Ecodesign Package

On 1 October 2019, the Commission adopted the Ecodesign Package.[30] This Ecodesign Package results from Working Plan 2016-2019,[31] which is preceded by three other waves of implementing measures: Transitional Period 2005-2008[32], Working Plan 2009-2011 and Working Plan 2012-2014.[33] Currently, 32 implementing regulations – regulating specific product groups – are in force.[34]

3.1 The new Ecodesign Package: common features

The new Ecodesign Package encompasses implementing regulations for ten products: household refrigerators, light sources, electronic displays, dishwashers, washing machines and washer-dryers, electric motors, external power supplies, refrigerators with a direct sales function, power transformers and welding equipment.[35] Immediately, one notices that all the regulated products in this package *use* energy – because of two reasons. First, all of these products find their roots as 'priority products' in the Transitional Period from 2005-2008 and the Working Plan 2009-2011 when the 2005 Ecodesign Directive was still in place which excluded energy-impacting products from its scope.[36] Second, energy-using products 'account for a large proportion of consumption of energy and other natural resources in the Community and have high potential for reducing greenhouse gas emission'.[37] Considering the limited

answers QANDA/19/5889 (*https://ec.europa.eu/commission/presscorner/detail/en/QANDA_19_5889*, last accessed on 6 May 2020), *in fine*.

27 Ecodesign Directive, art. 3.

28 Ecodesign Directive, art. 3(2); For example, in the Netherlands the Human Environment and Transport Inspectorate (Inspectie Leefomgeving en Transport) is appointed and in Belgium the Federal Public Service Health, Food Chain Safety and Environment (Federale overheidsdienst Volksgezondheid, Veiligheid van de Voedselketen en Leefmilieu) is appointed.

29 Ecodesign Directive, art. 20; For a detailed assessment of the Ecodesign Directive: Michel 2019.

30 'The new ecodesign measures explained' European Commission 1 October 2019, questions and answers QANDA/19/5889 (*https://ec.europa.eu/commission/presscorner/detail/en/QANDA_19_5889*, last accessed on 6 May 2020).

31 Communication from the Commission – Ecodesign Working Plan 2016-2019 (COM(2016) 773 final).

32 Awaiting the first working plan, only products that were listed in art. 16 (2) of the 2005 Ecodesign Directive were regulated.

33 Communication from the Commission to the Council and the European Parliament – Establishment of the working plan for 2009-2011 under the Ecodesign Directive (COM(2008) 660 final); Commission Staff Working Document – Establishment of the Working Plan 2012-2014 under the Ecodesign Directive (SWD(2012) 434 final).

34 'List of energy efficient products Regulations: by product group', European Commission (*https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-products/list-regulations-product-groups-energy-efficient-products_en*, last accessed on 6 May 2020).

35 'The new ecodesign measures explained', European Commission 1 October 2019, QANDA/19/5889 (*https://ec.europa.eu/commission/presscorner/detail/en/QANDA_19_5889*, last accessed on 6 May 2020).

36 2005 Ecodesign Directive, art. 16; Communication from the Commission to the Council and the European Parliament – Establishment of the working plan for 2009-2011 under the Ecodesign Directive (COM(2008) 660 final), Annex I and II.

37 Working Plan 2009-2011, p. 2.

38 The European Court of Auditors calculated that the Commission succeeds in covering the products with the highest energy-saving potential: European Court of Auditors, *Special Report EU action on Ecodesign and Energy Labelling important contribution to greater energy efficiency reduced by significant delays and non-compliance*, 2020, p. 16.

39 Every working plan incorporates the priority products of the previous one, creating an evermore expanding set of priority products.
40 Working Plan 2016-2019, p. 3.
41 Working Plan 2016-2019, p. 2-3.
42 Commission Regulation (EC) No 643/2009 of 22 July 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for household refrigerating appliances (*OJ* 2009, L 191/53), Annex II.
43 Commission Regulation (EU) 2019/2019 of 1 October 2019 laying down ecodesign requirements for refrigerating appliances pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulation (EC) No 643/2009 (*OJ* 2019, L 315/187), Annex II.
44 For instance, vacuum cleaners should at least last 500 hours: Commission Regulation (EU) No 666/2013 of 8 July 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for vacuum cleaners, Annex II, pt. 8.
45 'Europe paves way for right to repair', *EEB* 15 January 2019 (*https://eeb.org/europe-paves-way-for-right-to-repair/*, last accessed on 15 May 2020).
46 See E. Terryn, 'A right to repair? Towards sustainable remedies in consumer law', in: Keirsbilck & Terryn 2019, p. 147.
47 Loi n° 2020-105 du 10 février 2020 relative à la lutte contre le gaspillage et à l'économie circulaire (1) *www.legifrance.gouv.fr/eli/loi/2020/2/10/TREP1902395L/jo/texte*, art. 16. In general, France is a pioneer concerning the right to repair. The French Consumer Code introduces an obligation to have spare parts available during 5 years after the placing on the market for a range of products and from 2022, the spare parts have to be available within 15 days.
48 B. Keirsbilck, E. Terryn, A. Michel & I. Alogna, *Sustainable Consumption and Consumer Protection Legislation – How can sustainable consumption and longer lifetime of products be promoted through consumer protection legislation?*, Luxembourg: European Parliament 2020, p. 13-14 and 18.
49 New CE Action Plan, p. 8.
50 European Court of Auditors, *The EU's response to the "dieselgate" scandal* (Briefing Paper), 2019, p. 12-14.
51 E.g. Commission Regulation (EU) 2019/1781 of 1 October 2019 laying down ecodesign requirements for electric motors and variable speed drives pursuant to Directive 2009/125/EC of the European Parliament and of the Council (*OJ* 2019, L 272/74), art. 7.

resources and time of the Commission, it is indeed most efficient to first address the products with a substantial impact.[38] Although the regulated products were first prioritised in other working plans,[39] every regulation of the new Ecodesign Package is drafted under the umbrella of Working Plan 2016-2019. This ambitious Working Plan estimates to annually save by 2030 energy 'comparable to the annual primary energy consumption of Sweden, which is also equivalent to reducing CO_2 emissions by approximately 100 million tonnes per year'.[40]

Most importantly, the Working Plan 2016-2019 introduces a shift in focus from energy-saving requirements to requirements that take into account all the aspects of a circular economy. This means that the implementing measures under this Working plan will incorporate requirements focused on efficient use of resources, durability, repairability, reusability and recyclability.[41] A perfect example is the new regulation on household refrigerators. In 2009, manufacturers of household refrigerators only had to adhere to energy-saving requirements. This was the case for generic requirements (e.g. 'household refrigerating appliances with a storage volume below ten liters shall automatically enter in an operating condition with a power consumption of 0,00 Watt after no more than 1 hour when empty') and specific thresholds (e.g. the Energy Efficiency Index needs to be below 55 from 1 July 2010 onwards).[42] Besides tightening the energy-efficiency requirements, the new regulation introduces requirements, amongst others, on the availability of spare parts, access to repair and maintenance information and information requirements.[43] The Commission sporadically introduced resource-efficiency requirements in implementing measures before the new Ecodesign Package,[44] but this is the first time the Commission applies an overarching approach.

One resource-efficiency requirement of the Ecodesign Package has received special attention from environmental organisations: repairability. Several organisations have perceived the introduction of obligations on the availability of spare parts and repair manuals as a first step towards a right to repair for the consumer.[45] While general European consumer law does not introduce the right to repair as of yet,[46] this Ecodesign Package makes it more manageable to opt for repair instead of replacement – albeit for a very limited group of products. This focus on repairability fits within a wider trend of Member States introducing repairability-focused measures, even surpassing the measures introduced by the Commission. For example, early 2020, France adopted a circular economy law containing – amongst a host of measures empowering repairability – an obligation to communicate the index of repairability for electrical and electronic equipment.[47] While Member States are taking the lead,[48] the European Commission has stated in its new CE Action Plan that it 'will work towards establishing a new "right to repair"'.[49]

Several organisations have perceived the introduction of obligations on the availability of spare parts and repair manuals as a first step towards a right to repair for the consumer

Secondly, this Ecodesign Package is the first wave of implementing ecodesign measures that tackle another upcoming, fundamental ecodesign problem: circumvention. In 2015, the European Union was faced with – what has become known as – the Dieselgate scandal. Volkswagen had sold diesel cars with software that could uncover when they were being tested and changed their performance correspondingly to improve results.[50] Partly due to this scandal, the Commission realised that it needed to prevent similar software or devices from being developed and used for the products under the ecodesign framework. Especially because the ecodesign measures can only be properly enforced hand in hand with reliable testing. Thus, the Commission included in every regulation of the new Ecodesign Package (except the external power supplier regulation) a clause prohibiting to 'place on the market products designed to be able to detect they are being tested and to react specifically by automatically altering their performance during the test with the aim of reaching a more favorable level for any of the parameters'.[51]

All but one regulation will become applicable in 2021.[52] This allows the producers to change their production processes to comply with the new requirements. However, several regulations have included transitional measures to bridge the period from the adoption to the application.[53] While one or two years can be perceived as a short period to adapt the production process, the Commission presages changes. In every implementing regulation – also those outside this Ecodesign Package – the Commission includes indicative benchmarks.[54] These benchmarks are based on the performance of the most environmentally-friendly products on the market. Although these benchmarks are not legally binding, they provide the producers with an insight on the future ecodesign requirements and thus allow producers to plan ahead.[55]

Because technological progress is never-ending, the ecodesign implementation regulations are often outdated before or closely after they are adopted

3.2 The new Ecodesign Package: specific regulations

3.2.1 Reviewed regulations

Because technological progress is never-ending, the ecodesign implementation regulations are often outdated before or closely after they are adopted. To remedy this, the implementing regulations generally include a proposed date for review. Eight of the ten regulations in the new Ecodesign Package govern previously regulated product groups, namely household refrigerators, light sources, electronic displays, dishwashers, washing machines and washer-dryers, electric motors, external power supplies and power transformers. These eight regulations are the first reviews since the adoption of the 2005 Ecodesign Directive.

To review a regulation, the Commission still has to complete the seven adoption steps (supra subparagraph 2.2.3), including an impact study. Contrary to impact studies for new product groups, the impact studies for review can uncover the deficiencies of the previous regulation. Besides the lack of resource-efficiency requirements, the impact assessments of the eight reviewed regulations disclosed three reoccurring issues: outdated energy-efficiency requirements, an outdated scope and consumer-related problems. First, all impact assessments address the outdated energy-efficiency requirements as they 'no longer capture cost-effective energy savings'.[56] For example, for light sources, there is an increase in 'smart' lighting sources. These extra functions – such as having remote control – have an impact on the energy-efficiency, but are not taken into account when calculating the energy usage.[57] Second, several impact assessments indicated that the scope of some directives is outdated. Either the scope was too vague which created uncertainty on the inclusion of products[58] or the scope was clear, but new products should fall within the scope to address the goals of the regulation.[59] For instance, the old regulation for electronic displays is only applicable to televisions and television monitors, but there is an 'increasingly blurred line between television monitors and other display products such as computer monitors'.[60] The question thus arises whether the scope of the regulation covers computer screens. Lastly, a few impact assessments mention consumer-related issues – often relating to the usage of the product after the purchase. For example, the old regulation for washing machines based its requirements on washing programs of 40 and 60 degrees, but research has shown that these programs are used only 17 % of the time. The consumer uses different programs because the regulated programs take too long and suffer from the perception of insufficient rinsing – ironically these characteristics sprout from adhering to the energy requirements.[61] In general, the regulations reflect the changes suggested by the impact assessments. For the sake of clarity, the same examples are used. The new regulation on light sources has considerably expanded its specific energy-efficiency requirements for light sources and more importantly, control gears.[62] Further, the new regulation for electronic displays now applies to monitors and digital signage displays.[63] Lastly, the Commission has allowed washing machine producers to call the '40-60 degrees' program the 'eco-program' to stimulate consumers to use this program.[64]

52 The only exception is the regulation on power transformers because this is an amendment to the previous regulation and not a stand-alone regulation: Commission Regulation (EU) 2019/1783 of 1 October 2019 amending Regulation (EU) No 548/2014 on implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to small, medium and large power transformers (*OJ* 2019, L 272/107), art. 2.

53 E.g. Commission Regulation (EU) 2019/2023 of 1 October 2019 laying down ecodesign requirements for household washing machines and household washer-dryers pursuant to Directive 2009/125/EC of the European Parliament and of the Council, art. 11.

54 For example, the Washing Machines Regulation 2019, Annex V.

55 D. Jepsen et al. 2015, p. 54-55.

56 Commission Staff Working Document Impact Assessment – Accompanying the document Commission Regulation (EU) 2019/2020 laying down ecodesign requirements for light sources and separate control gears pursuant to Directive 2009/125/EC of the European Parliament and of the Council (SWD(2019) 357 final), p. 9.

57 Impact Assessment Light Sources, p. 11.

58 E.g. Commission Staff Working Document Impact Assessment Accompanying the document Commission Regulation (EU) 2019/2019 laying down ecodesign requirements for refrigerating appliances pursuant to Directive 2009/125/EC (SWD(2019) 341 final), p. 12-14.

59 E.g. Commission Staff Working Document Impact Assessment Accompanying the document Commission Regulation (EU) 2019/1781 laying down ecodesign requirements for electric motors and variable speed drives pursuant to Directive 2009/125/EC (SWD(2019) 343 final), p. 7; Commission Staff Working Document Impact Assessment Accompanying the document Commission Regulation laying down ecodesign requirements for external power supplies pursuant to Directive 2009/125/EC (SWD(2019) 345 final), p. 12-14.

60 Commission Staff Working Document Impact Assessment Accompanying the Document Commission Regulation (EU) 2019/2021 laying down ecodesign requirements for electronic displays pursuant to Directive 2009/125/EC of the European Parliament and of the Council, p. 14.

61 Commission Staff Working Document Impact Assessment Accompanying the document Commission Regulation (EU) 2019/2023 laying down ecodesign requirements for household washing machines and household washer-dryers pursuant to Directive 2009/125/EC (SWD(2019) 349 final), p. 11-13.

62 Commission Regulation (EU) 2019/2020 of 1 October 2019 laying

down ecodesign requirements for light sources and separate control gears pursuant to Directive 2009/125/EC of the European Parliament and of the Council (*OJ* 2019, L 315/209), Annex II.

63 Commission Regulation (EU) 2019/2021 of 1 October 2019 laying down ecodesign requirements for electronic displays pursuant to Directive 2009/125/EC of the European Parliament and of the Council (*OJ* 2019, L 315/241), art. 1.

64 Commission Regulation (EU) 2019/2023 of 1 October 2019 laying down ecodesign requirements for household washing machines and household washer-dryers pursuant to Directive 2009/125/EC of the European Parliament and of the Council (*OJ* 2019, L 315/285), Annex II.

65 Commission Staff Working Document Impact Assessment Accompanying the document Commission Regulation (EU) 2019/2024 laying down ecodesign requirements for refrigerating appliances with a direct sales function pursuant to Directive 2009/125/EC (SWD(2019) 352 final), p. 3.

66 Impact Assessment Commercial Refrigerators, p. 4.

67 Impact Assessment Commercial Refrigerators, p. 5.

68 Commission Regulation (EU) 2019/2024 of 1 October 2019 laying down ecodesign requirements for refrigerating appliances with a direct sales function pursuant to Directive 2009/125/EC of the European Parliament and of the Council (*OJ* 2019, L 315/313), Annex II.

69 Commission Staff Working Document Impact Assessment Accompanying the document Commission Regulation laying down ecodesign requirements for welding equipment pursuant to Directive 2009/125/EC of the European Parliament and of the Council (SWD(2019) 340 final), p. 4.

70 Impact Assessment Welding Equipment, p. 4-5.

71 Impact Assessment Welding Equipment, p. 6.

72 Commission Regulation (EU) 2019/1784 of 1 October 2019 laying down ecodesign requirements for welding equipment pursuant to Directive 2009/125/EC of the European Parliament and of the Council (*OJ* 2019, L 272/121), Annex II.

73 'New rules make household appliances more sustainable', European Commission 1 October 2019, press release IP/19/5895 (*https://ec.europa.eu/commission/presscorner/detail/en/IP_19_5895*, last accessed on 7 May 2020).

74 ECOS, *https://ecostandard.org/* (last accessed on 7 May 2020).

3.2.2 New regulations

The new Ecodesign Package also includes two regulations on previously unregulated product groups: refrigerators with a direct sales function (e.g. the ice-cream refrigerator in a shop) and welding equipment. It is striking that both products are used in a business-to-business relationship – business-to-consumer welding equipment being excluded from the scope – while the rest of the Ecodesign Package mainly regulates business-to-consumer products.

Already in 2004, the Commission marked commercial refrigerators as a priority product. From 2004-2010, the Commission advanced with the legislative process, including a preparatory study, an impact assessment and a formal consultation of the Member States and relevant stakeholders. However, this process never concluded and the Commission had to recommence in 2012.[65] Despite what this slow process might suggest, the ecodesign rules for commercial refrigerators were rather urgent knowing that they consume 50 % more energy than washing machines, 96 % more than dishwashers and 84 % more than tumble dryers which were already regulated.[66] The European stock of commercial refrigerators counted more than 16 million refrigerators in 2013, thus largely exceeding the 200,000 products threshold of article 15 of the Ecodesign Directive.[67] In 2019, as part of the Ecodesign Package, the Commission adopted an implementing regulation setting ecodesign requirements about energy-efficiency, resource-efficiency (e.g. availability of spare parts, access to repair and maintenance information and requirements for dismantling for material recovery and recycling while avoiding pollution) and information requirements.[68]

On the other hand, machine tools and welding equipment only became priority products in 2009 with preparatory studies carried out between 2009-2012.[69] The most prominent difficulty raised by both the preparatory studies and stakeholders was the wide variety of machine tools, some of which were tailor-made for specific user-ends. This led to insurmountable complexity in deciding on, for example, comprehensive energy-efficiency rules. After a short-lived plan to address these problems with self-regulation instead of legislation, the Commission decided to drop machine tools and only include welding equipment in the scope of the draft implementing measure, because welding equipment is a somewhat homogeneous product group.[70] To reach the heat needed to weld, small welding equipment can use power equivalent up to twelve vacuum cleaners, or six powerful microwave ovens.[71] But, contrary to commercial refrigerators, welding equipment is only used for short periods. Similar to the commercial refrigerators regulation, the 2019 welding equipment Regulation includes ecodesign requirements on energy-efficiency requirements, resource-efficiency requirements and information requirements.[72] The Commission opted to be consistent with its intention to address the full life cycle of the products in the new regulations. So instead of starting small and only addressing the energy-efficiency of the new products, these regulations immediately included resource-efficiency and other circular economy requirements.

The positive comments concentrated on the shift towards a circular economy and away from the 'throwaway'-culture. There is a general agreement that this is an unprecedented step towards a circular economy

3.3 Evaluation of the new Ecodesign Package

The new Ecodesign Package was greeted by the Member States, stakeholders and environmental organisations with great enthusiasm.[73] For example, Chloé Fayole, Programme and Strategy Director at ECOS – an organisation defending environmental interests in the development of standards and technical product policies[74] – stated 'with these measures, Europe has just taken a big step towards a more circular economy, which should inspire the rest of the world'.[75] Particularly, the positive comments concentrated on the shift towards a circular economy and away from the 'throwaway'-culture. There is a general agreement that this is an unprecedented step towards a circular economy. Furthermore, the numbers projected by the Commission pose a positive outlook, predicting an energy reduction of

167 TWh per year by 2030. Consequently, consumers would annually save 150 euro on energy bills.[76]

Some shortcomings also need to be addressed, albeit that several deficiencies concern the entire ecodesign framework and not only the new Ecodesign Package. The critiques can be divided into three groups: flaws during the regulatory process, the limited content of the Ecodesign Package and inadequate enforcement. First, as has been mentioned before, the regulatory process for implementing measures is long and burdensome. Although the Commission estimates it takes around three and a half years to adopt an implementing regulation, for several new regulations the process took double that time (e.g. eight years for electronic displays and six years for refrigerators).[77] This was partly due to political reasons,[78] but mainly due to (legal) technical issues. As it was the first time that the Commission reviewed ecodesign regulations, the lack of experience – and existing framework – lead to review studies that had to be redone because they did not provide enough answers.[79] Further, the Commission adheres to a 'package approach' which results in regulations that are ready to be adopted but are held back by other product groups.[80] In the past, several product groups had already reached the required thresholds before the adoption of the ecodesign measure, which is most likely the same case for the new regulations.[81] At first glance, this might seem positive, but producers are less inclined to pursue innovation when the legislative thresholds are already met.

One product group is most notably absent from the new Ecodesign Package: ICT products, including smartphones, laptops and tablets – while these products have one of the largest climate impacts.[82] For example, each year 210,8 million smartphones are sold in the European Union each with an average life span of three years.[83] If that life span is extended by one year, 2.1 million tonnes of CO_2 per year would be saved which is equivalent to taking over a million cars off the roads.[84] For years, environmental organisations and focus groups have tried to convince the Commission to regulate ICT products.[85] But even in the latest Working Plan, the Commission did not include ICT products. Nonetheless, in the new CE Action Plan, the Commission stated that it will adopt 'regulatory measures for electronics and ICT including mobile phones, tablets and laptops under the Ecodesign Directive'.[86]

One product group is most notably absent from the new Ecodesign Package: ICT products, including smartphones, laptops and tablets – while these products have one of the largest climate impacts

Lastly, the final step in the ecodesign process is the market surveillance to ensure only goods complying with the requirements enter the market.[87] This surveillance is entirely the responsibility of the Member States, manufacturers and importers.[88] When the Commission executed tests in the Member States, it found that 'overall, around 10-25 % of products sold on the market were non-compliant, leading to a decrease in energy savings of around 10 %'.[89]

4 Complementary to the ecodesign framework

The ecodesign requirements are part of a bigger picture. Without several other components, such as labelling requirements, voluntary agreements and harmonised standards, the ecodesign framework would never work as well.

4.1 Labelling requirements

The most important legislation with regard to the ecodesign framework is the Energy Labelling Regulation and its delegated acts.[90] Contrary to the ecodesign requirements – which are aimed at manufacturers-, the labelling requirements are in place to empower consumers to make sustainable purchasing choices.[91] Every product within the scope of the energy labelling framework has to showcase a clear and simple indication of the energy efficiency of products. Currently, the Commission uses a comparative scale from A (most efficient) to G (least efficient).[92] Together, the energy labelling framework and the ecodesign framework attempt to push and pull the market towards more environmentally-friendly options: the ecodesign framework

75 'EU to pull plug on wasteful, unrepairable products', *EEB* 1 October 2019 (*https://eeb.org/eu-to-pull-plug-on-wasteful-unrepairable-products/*, last accessed on 7 May 2020).
76 The new ecodesign measures explained, pt. 2.
77 European Court of Auditors 2020, p. 18-19.
78 European Court of Auditors 2020, p. 17.
79 European Court of Auditors 2020, p. 20.
80 'Commission to set out new approach on Ecodesign', European Commission 8 November 2016 (*https://ec.europa.eu/energy/news/commission-set-out-new-approach-ecodesign_en*, last accessed on 7 May 2020); European Court of Auditors 2020, p. 20.
81 European Court of Auditors 2020, p. 21.
82 Coolproducts, *Don't Cost the Earth* (report), 2019, p. 15.
83 Coolproducts 2019, p. 15.
84 Coolproducts 2019, p. 14.
85 BEUC & ANEC, *Consumer associations views on the release of the ecodesign work plan 2016-2019 as well as on related Commission acts,* 2017, p. 4; ECOS, EEB & Coolproducts, *Make Ecodesign & energy labelling a cornerstone of the EU climate & circular economy strategies – Coolproducts campaign recommendations for the new European Commission* (Letter to the Commission), 2019, p. 2.
86 The new CE Action Plan, p. 10.
87 European Court of Auditors, p. 29; DigitalEurope, 'The Future of Ecodesign – How can Ecodesign continue to deliver and provide benefits to the environment, consumers and industry in Europe?', 2019, p. 5-6; B. Keirsbilck et al. 2020, p. 10.
88 Ecodesign Directive, art. 3, 4 and 8.
89 New energy efficiency labels explained, pt. 3.
90 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* 2017, L 198/1).
91 Energy Labelling Regulation, recital 2 and 10.
92 Energy Labelling Regulation, art. 2(19).

pushes non-compliant products out of the market, while the Energy Labelling Regulations pulls the markets to more-environmentally friendly products by enabling the consumer to choose for the product in the most eco-friendly category.[93] Out of the 25 product groups regulated, 14 are regulated by both the energy labelling requirements as the ecodesign requirements.[94]

4.2 Voluntary agreements

Besides legislation, the Commission also supports and empowers industries to self-regulate to become more eco-friendly.[95] This sector-wide agreement can provide producers with an option to determine – in a flexible, broadly-based, technologically robust way – their conditions.[96] Moreover, it lightens the legislative burden on the Commission. On the other hand, opponents emphasise the lack of transparency and the distrust in the compliance checks.[97] Several European organizations, Member States and NGOs agree that these voluntary agreements only complement the legislative process.[98]

Yet, the Commission can abstain from adopting legislation when voluntary agreements 'are expected to achieve the policy objectives more quickly or at lesser expense than mandatory requirements'.[99] For this to happen, the Commission assesses the agreement in line with the requirements outlined in Annex VIII, such as quantified and staged objectives and involvement of civil society. Up until now, the Commission has only recognised three voluntary agreements: game consoles, imaging equipment and complex set-top boxes.[100]

4.3 Harmonised standards

Last, but certainly not least, harmonised standards complement the ecodesign framework. Harmonised standards are 'voluntary technical specifications defining requirements for products, production processes, services or test-methods developed by industry and market actors'.[101] These harmonised standards are especially relevant when assessing the conformity of the products with the ecodesign requirements. When the harmonised standards – that are drafted with the ecodesign thresholds in mind – are applied, the product is presumed to be consistent with the ecodesign requirements.[102]

93 EPEE, *The EU framework for Energy Efficient products' "push and pull effect" on the market* (Factsheet), p. 1.
94 European Court of Auditors 2020, p. 11.
95 Ecodesign Directive, art. 15(3)(b), 17 and Annex VIII.
96 Ecodesign Directive, recital 19; Center for Strategy and Evaluation Services 2012, p. 148-149.
97 Center for Strategy and Evaluation Services 2012, p. 148.
98 ANEC & BEUC, *Greener, better, faster, stronger ecodesign – Consumer organizations' views on the implementation and enforcement of the Ecodesign Directive*, 2017, p. 8.
99 Ecodesign Directive, art. 15(3)(b).
100 'Recognised voluntary agreements under the ecodesign legislation', European Commission (*https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/energy-efficient-products/voluntary-agreements-under-eco-design-legislation_en*, last accessed on 8 May 2020).
101 'European standards', European Commission (*https://ec.europa.eu/growth/single-market/european-standards_en*, last accessed on 8 May 2020); Ecodesign Directive, art. 2(27) and 10.
102 Ecodesign Directive, art. 9(2).

The new Ecodesign Package is a crucial step within the ecodesign framework towards a circular economy

5 Conclusion

The new Ecodesign Package is in many ways a legislative initiative of firsts. Most importantly, the Commission introduced an overarching life cycle approach into the ecodesign framework. For the ten regulated product groups, the Commission now upholds requirements on the use of materials, durability, ease of repair and recyclability. Furthermore, the Commission pioneered rules against circumvention in the ecodesign framework. Lastly, the Commission reviewed regulations for the first time since the adoption of the 2005 Ecodesign Directive.

On the other side, several aspects of the ecodesign framework will have to be improved if the Commission truly wants to reach its goals. First, the regulatory process takes too long resulting in outdated requirements. Second, the Commission projected energy savings of CO_2 emissions by approximately 100 million tonnes annually with the Working Plan 2016-2019. However, in 2020, more than half of the priority products mentioned in the working plan are not yet regulated. For the products that are regulated, the enforcement is rusty: the market surveillance by Member States fails to catch all non-compliant products. Now that resource-efficiency requirements have been introduced, more questions arise about the enforcement of life cycle processes.

Also, a few – more political – questions arise. For example, should the European Union ease the requirements to adopt implementing measures? Should the Commission impose ecodesign requirements on products even when it has negative economic effects? Should the scope of the Ecodesign Directive be expanded to all products? Notwithstanding its imperfections, the ecodesign framework is amongst Europe's most successful policies and the new Ecodesign Package is a crucial step within the ecodesign framework towards a circular economy.