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REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

on the review of the Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment

{SWD(2023) 760 final}

1. INTRODUCTION

This report has been prepared to reflect the outcome of the Commission's general review of Directive 2011/65/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (the 'RoHS Directive') ([1]). It answers the requirement in Article 24(2) of the RoHS Directive for the Commission to carry out a general review of the Directive no later than 22 July 2021, and to present a report to the European Parliament and the Council, accompanied, if appropriate, by a legislative proposal.

Independent consultants supported the collection of information and its assessment, under an evaluation study launched in 2018 and finalised in March 2021([2]). By that time another study was launched to propose options to improve the deficiencies identified in the evaluation study and to assess their possible impacts. As it became apparent during the work that no full impact assessment is necessary, the work shifted to filling data gaps for the evaluation. This second support study was finalised in May 2023 ([3]). Stakeholders were consulted as part of this process, which included an open public consultation and targeted consultations of industry stakeholders and representatives of national administrations. This report reflects the main results of the evaluation carried out by the Commission and supported by those two studies, presented in its entirety in the related staff working document ([4]). On this basis, forward-looking conclusions have been drawn up.

2. BACKGROUND

The 2011 RoHS Directive follows the recast of the earlier Directive from 2002 ([5]), which was the first comprehensive EU legislation on the subject of restricting certain hazardous substances ([6]) in electrical and electronic equipment (EEE). The Directive complements the Directive on waste electrical and electronic equipment (WEEE), which was adopted, and recast, in parallel ([7]). The key objectives of the

([1]) Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, OJ L 174, 1.7.2011, p.88.

([2]) European Commission, Directorate-General for Environment, Support for the evaluation of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment: final report, Publications Office, 2021

([3]) European Commission, Directorate-General for Environment, Study to support the assessment of impacts associated with the general review of Directive 2011/65/EU (RoHS Directive), Publications Office 2023

([4]) SWD(2023)760

([5]) Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment - OJ L 37, 13.2.2003, p.19.

([6]) Currently, 10 substances and substance groups are restricted. These are lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers, bis(2-ethylhexyl) phthalate, benzyl butyl phthalate, dibutyl phthalate, diisobutyl phthalate

([7]) Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE), OJ L 37, 13.2.2003, p. 24 – replaced by Directive

RoHS Directive are: to reduce the amount of hazardous substances in EEE to protect human health and the environment; and to facilitate the environmentally sound recovery and disposal of waste EEE. In particular, even where waste EEE is collected separately and submitted to recycling processes, the content of e.g. the heavy metals and flame retardants concerned would likely pose risks to health and the environment, especially when treated in sub-optimal conditions ([8]). The Directive also aims to ensure the functioning of the internal market ([9]) through harmonisation of Member State legislation ([10]).

The Directive's annexes were amended through delegated acts to amend the list of substance restrictions in Annex II ([11]) and to amend the list of exemptions to them in Annexes III and IV ([12]). Such time-limited exemptions from the substance restrictions can be granted for specific applications under well-defined conditions laid down in Article 5(1)(a), including that substitution is technically not feasible. Where exemptions are granted following an application, they will be included in Annex III or IV. The exemption lists are updated in line with technical progress, while the technical evaluation of the exemption requests is supported by external consultants.

The RoHS Directive was amended notably in 2017 ([13]), as the result of the scope review carried out to give effect to Article 24(1). Since 2019, the RoHS Directive covers all EEE ('open scope'), ranging from household appliances to medical devices. Scope exclusions include military equipment, space equipment, large-scale stationary industrial tools (e.g. printing presses, milling and drilling machines) and fixed installations (e.g. electricity generators). Also exempt are photovoltaic panels.

Besides the key provisions on substance restrictions, the RoHS Directive also includes a number of provisions aimed at enabling the reuse and repair of EEE containing restricted substances, to help promote resource efficiency and circular economy objectives. The 2017 amendment gave particular attention to this, expanding the scope of exemptions from the substance restriction for reused spare parts, which are still necessary for certain used devices due to limited compatibility, provided that they are recovered from EEE under a closed-loop return system ([14]).

2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), OJ L 197, 24.7.2012, p. 38–71.

([8]) Recital 7 of Directive 2011/65/EU.

([9]) Recital 2 of the RoHS Directive reads: 'The disparities between the laws or administrative measures adopted by the Member States regarding the restriction of the use of hazardous substances in electrical and electronic equipment (EEE) could create barriers to trade and distort competition in the Union and may thereby have a direct impact on the establishment and functioning of the internal market. It therefore appears necessary to lay down rules in this field and to contribute to the protection of human health and the environmentally sound recovery and disposal of waste EEE'.

([10]) The RoHS Directive is also relevant for the European Economic Area (EEA).

([11]) In 2015, four plasticizers of the group of phthalates were added to the list – Commission Delegated Directive (EU) 2015/863 of 31 March 2015, OJ L 137, 4.6.2015, p. 10.

([12]) see consolidated version of the Directive 2011/65/EU – M1-M80 (except M29 and M37)

([13]) Directive (EU) 2017/2102 of the European Parliament and of the Council of 15 November 2017 amending Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment, OJ L 305, 21.11.2017, p.8.

([14]) Corresponds to the communication COM/2015/0614

3. POLICY INTERACTION

In addition to the WEEE Directive, the RoHS Directive interacts with a number of other EU policies and legislation. The RoHS Directive contributes to the objectives of the Circular Economy Action Plan (CEAP) under the umbrella of the European Green Deal ([15])([16]) among others by exempting spare parts from the substance restrictions. The Directive facilitates the recovery of critical raw materials targeted by the Commission's recent proposal for a Regulation establishing a framework for ensuring a secure and sustainable supply of critical raw materials ([17]), by aiming to support non-contaminated waste streams.

It has strong links to chemicals legislation like the Regulation of Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH Regulation) ([18]) and the Regulation of persistent organic pollutants (POPs Regulation) ([19]). It also links to the chemicals strategy for sustainability ([20]), which aims to achieve a safe and sustainable-by-design approach and non-toxic material cycles, including EEE.

The RoHS Directive regulates products and thus is a product legislation, which contains harmonised provisions concerning the conformity assessment and the market surveillance. Ecodesign requirements for specific EEE established under the framework of the Ecodesign Directive ([21])([22]) are closely linked to the substance restrictions under the RoHS Directive.

4. FINDINGS OF THE EVALUATION

The evaluation followed the European Commission's Better Regulation guidelines ([23]) and considered the evaluation criteria of relevance, effectiveness, efficiency, coherence, and EU added value.

4.1. Effectiveness

It has been difficult to quantify the Directive's direct impact on the reduction of hazardous substances in electrical and electronic equipment placed on the EU

([15]) COM(2020) 98 final.

([16]) COM(2019) 640 final

([17]) COM(2023) 160 final.

([18]) Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), OJ L 396, 30.12.2006, p. 1.

([19]) Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants (POPs), OJ L 158, 30.4.2004, p. 7.

([20]) COM(2020) 667 final.

([21]) 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.

([22]) Proposal for a regulation of the European Parliament and of the Council establishing a framework for setting ecodesign requirements for sustainable products and repealing Directive 2009/125/EC, COM(2022) 142 final.

([23]) Better Regulation: guidelines and toolbox – November 2021.

market. One reason for this is that several initiatives and legislative acts have an effect on the amount of hazardous substances in EEE. The support study estimated that the introduction of the RoHS Directive may have reduced restricted substances in EEE between 2003 and 2016 by roughly two thirds. While this estimation was made under certain conditions and did not cover all substances currently in Annex II to the Directive, it can nevertheless be stated that the RoHS Directive helped to reduce the relative amount **of hazardous substances in EEE** placed on the EU market.

Reducing hazardous substances in EEE is intended to contribute to the objective of **protecting human health**. In particular, workers in the WEEE treatment sector are at risk of exposure to the listed hazardous substances. By reducing hazardous substances per EEE in that waste stream, waste management processes overall have become safer for workers in the sector. This impact was, however, also partially a result of measures to protect the health and safety of workers in the EU.

Lowering the amount of hazardous substances in EEE also has positive effects on the environment **by reducing the risk of these substances being emitted into the environment.** In addition, the substance restrictions also lower the risk of detrimental environmental and health effects resulting from WEEE that is not properly collected and treated. This is relevant when considering that the average collection rate of WEEE in the EU was 45.9 % in 2020 ([24]).

The substitution of hazardous substances also contributed to a higher uptake of recycled material, as 'clean' secondary material is more likely to meet product requirements.

The use of cables and spare parts containing hazardous substances is still allowed, under certain conditions. Cables and spare parts can be used in equipment placed on the market before it came within the scope of the Directive. Also, under certain conditions, recovered spare parts can be used in EEE placed on the market 10 years after the equipment came within the Directive's scope. Additionally, it is possible to use spare parts containing hazardous substances for devices that still depend on them by granting a time-limited exemption under Annexes III or IV, as appropriate. This also contributes to using resources as efficiently as possible and to avoiding a premature end of life for electrical and electronic equipment. In this respect, the Directive has been effective in **contributing to the objectives of a circular economy**.

However, the total reduction of hazardous substances in WEEE is partially offset by the **increasing volume of WEEE generated in Europe**, resulting in a current annual growth rate of the WEEE stream of 2% ([25]). The evaluation support study also found that while more and more electrified equipment (e.g. in the smart home sector) is placed on the market, the average lifespan of EEE has decreased.

([24]) https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Waste_statistics_-_electrical_and_electronic_equipment&oldid=556612; measured as the weight of WEEE collected relative to the average weight of electronic equipment put on the market in the three preceding years, i.e. 2017-2019

([25]) COM(2019) 640 final.

4.2. Efficiency

The RoHS Directive has **led to environmental and health benefits**, such as reducing risk to the environment and human health from hazardous substances in EEE. There have also been economic benefits, as the Directive has created legal certainty for all stakeholders and established a level playing field for EEE businesses in the internal market. In addition, the RoHS Directive has **prompted investments in finding substitutes for hazardous substances.** In many cases this led to the development of alternatives, and so had a positive effect on beneficial innovation.

Nevertheless, the implementation of the RoHS Directive is naturally also linked to costs for stakeholders. These consist of compliance costs relating to information requirements, compliance costs relating to engineering costs, and enforcement & implementation costs. The costs are strongly depending on the situation of economic operators and hence the available data do not allow a reliable estimation of the costs.

The main driver for **compliance costs relating to information requirements** is managing information in the supply chain and following the conformity assessment procedure. This includes collecting information, providing technical documentation and maintaining an IT system. Most of the compliance costs relevant for RoHS obligations stem from general requirements for placing products on the market which are also relevant under other product legislation applicable for EEE (e.g. the Low Voltage Directive ([26])). However, these costs are affected by changes in the Directive, such as adding new substances to the list of restricted substances.

A cost driver can arise for companies, which still require **time-limited exemptions**. Such costs arise from preparing the application, gathering the relevant information in accordance with Annex V to the RoHS Directive and from providing further evidence during the evaluation. However, once granted, an exemption under RoHS is **valid for all economic operators** and thus the costs are not borne by each company relying on the exemption.

Investments in the form of developing and validating substitutes or technical alternatives were needed when restrictions came into force. The same applies for new restrictions. Those **compliance costs relating to re-design and engineering** occurred mainly around 2003 with the first RoHS Directive, again in 2011, when the scope was expanded, and lastly in 2015, when the four plasticizers were added to the list of restricted substances, even though many companies are constantly striving to develop new designs.

The provisions on market surveillance are central to the Directive's implementation and enforcement. Market surveillance is strengthened by the framework of the Market Surveillance Regulation ([27]). Effects of that Regulation include making

([26]) Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits, OJ L 96, 29.3.2014, p. 357–374

([27]) Regulation (EU) 2019/1020 of the European Parliament and of the Council of 20 June 2019 on market surveillance and compliance of products and amending Directive 2004/42/EC and Regulations (EC) No 765/2008 and (EU) No 305/2011, OJ L 169, 25.6.2019, p. 1–44

RoHS subject to the European Product Compliance Network and establishing an administrative cooperation group to harmonise enforcement across countries. For Member States, **enforcement costs** are higher than **implementation costs**. Implementation costs mainly arise from the fact that many Member States have to transpose amendments of the annexes by individual delegated directives. From 2012 to December 2022, around 80 Commission delegated directives were adopted, above all concerning exemptions under Annexes III and IV. The frequent need of transposition creates an administrative burden for some Member States.

Regarding enforcement costs, Member States have different resources, strategies and use different measures to check compliance with the RoHS Directive. The verification of the CE marking obligations and of the presence and validity of the technical documentation was identified as the least burdensome and most economical way. Only a fraction of EEE that come onto the market can be inspected for compliance with the RoHS substance restriction requirements. Estimations have suggested a non-compliance rate in the range of 23-28% of inspected EEE, although due to a lack of information there are still many unanswered questions.

The evaluation identified several factors where the **exemption process** lacks transparency and efficiency, and identified areas with potential to improve this process. In particular, stakeholders pointed to a perceived lack of clarity concerning Article 5(1)(a), which lays down the criteria for granting, renewing or revoking exemptions.

To meet this concern and improve transparency, an exemption methodology, application form and guidance document were drawn up and published on the dedicated Commission website ([28]). Stakeholder consultation takes place in the process of assessing an exemption request, respective information is made publicly available, and draft delegated acts are open for public feedback according to the Better Regulation guidelines.

Another weak point in the procedure is the duration of the exemption process from the application date until the adoption of the delegated directive. On average, the evaluation of exemptions and the related decision making takes more than 24 months, and more than 60 exemption requests are pending (status December 2022).

Several factors are relevant here. Firstly, the technical complexity and level of detail have increased over the years as exemptions became more specific. Instead of focusing on larger and general application areas, exemptions came to focus on specific applications, where substitution is not easily applicable, and thus were split into sub-exemptions. Secondly, different EEE categories (in line with Annex I to the Directive) may be relevant for one exemption entry (i.e., one specific application) with different expiry dates. This multiplies the number of applications and evaluations. Thirdly, Article 5(1)(a) requires amendments to be adopted by means of individual delegated directives, which significantly increases the administrative work. The fourth factor concerns the availability of resources for managing the process related to exemption requests. This is relevant not only for the Commission, but also for applicants: preparing an application and, where necessary, providing

([28]) Documents are available on the Commission's RoHS website: https://environment.ec.europa.eu/topics/waste-and-recycling/rohs-directive_en

additional information during the assessment process has resource implications, while insufficiently documented applications prolong the process.

The evaluation also found that in exempted applications there is less potential to further reduce the presence of certain hazardous substances compared to when a restriction was newly introduced. This implies that the benefit of narrowing the scope of an exemption, in terms of amount of substances avoided, is in general smaller than was initially the case. Furthermore, not all but many exemptions are now practically relevant for a limited number of companies.

In addition, it is increasingly difficult to thoroughly assess the technical information provided by the applicant. This is due to the increasing complexity and decreasing participation by stakeholders in the process, in particular, competing companies or NGOs. This can lead to one-sided input to the evaluations and affect its scientific robustness. Relying on external consultants for technical support has certain advantages, but often means changing interlocutors, generating a risk of loss of continuity. In addition, the work can be hampered by contractual arrangements to respond flexibly to changes (e.g. by withdrawn exemption requests).

Further to the exemption process, the process of **reviewing and amending the list of restricted substances** was identified to lack transparency and predictability for stakeholders. The RoHS Directive does not contain any procedural requirements in this respect other than the obligation to consult interested parties. A methodology for the substance restriction was prepared by external consultants and published as part of a support study ([29]). In addition, it was found to be resource- and time-intensive to obtain all relevant data on the substance and corresponding EEE throughout its life cycle and to assess different conflicting data. The scientific robustness of the current process is in need of improvement, in particular through more central sourcing of information and assessment.

4.3. Coherence

As regards the RoHS Directive's 'external coherence' (i.e. its consistency with other relevant rules), the evaluation found potential and observed overlap between the substance restrictions under the RoHS Directive and those under the REACH Regulation. The consistency with the Ecodesign Directive and the POPs Regulation was also considered problematic. These pieces of legislation all contain mechanisms to restrict or affect the presence of certain substances in EEE or their related material streams.

Under the REACH Regulation, the most relevant and comparable mechanisms here are the 'restrictions' and 'authorisations' processes. While there are important differences due to the different nature and motivation of the legislation ([30]), these processes can be compared to and correspond in the broadest sense to, respectively,

([29]) Study to support the review of the list of restricted substances and to assess a new exemption request under RoHS 2 (Pack 15)

([30]) REACH applies to the manufacture, placing on the market and use of substances on their own, in mixtures or in articles and to the placing of the market of mixtures and does not apply to waste. The RoHS Directive can restrict substances used specifically in the electric and electronic equipment as laid out in categories in Annex I of the Directive with the aim of contributing to protect human health and the environment, including the environmentally sound recovery and disposal of waste.

the substance restriction process and the exemption process under the RoHS Directive. Differences in the methodology between the respective REACH and RoHS processes can complicate the coordination to align decisions under both pieces of legislation.

Further issues of coherence to other pieces of legislation were identified regarding the content of the restrictions and exemptions under the RoHS Directive. Provisions were found to differ in terms of maximum concentration values, scope of the legislation, deviations for spare parts, exemptions, expiry dates and documentation requirements. For example, the maximum concentration values in Annex II no longer correspond to values set in other pieces of legislation (e.g. polybrominated biphenyl ethers). Another example of inconsistency stems from the provisions concerning spare parts. These provisions, which were introduced due to the specific character of the RoHS Directive, brought in an approach to this issue that is different from, or less prominent than in, other chemicals legislation.

However, when considering in more depth many general claims made by stakeholders, most concerns find an answer in legislative and non-legislative documents, even if these are not formulated in a sufficiently comprehensible and transparent manner and the concerns expressed often relate only to individual areas without their broader impact being substantiated.

4.4. EU added value

The recast of the RoHS Directive in 2011 built on the prior harmonisation achieved and boosted the EU added value. When the RoHS Directive was first adopted in 2002, it created a level playing field and helped remove disparities between regulations introduced by some Member States prior to that regarding the use of hazardous substances in electrical and electronic equipment. Moreover, the harmonised legal framework across the EU supports innovation and the use of substitutes and alternatives to replace the use of hazardous substances in EEE.

All Member States have adopted legislation which transposes the RoHS Directive into national law. The recast of the Directive in 2011 introduced uniform application of general provisions regarding implementation (e.g. CE marking and declaration of conformity), in line with the New Legislative Framework (NLF) ([31]). Harmonised requirements on EEE under the RoHS Directive, in combination with harmonised rules under legislation on numerous products, thus help to establish and maintain **a level playing field for EEE** and in turn improving the functioning of the internal market. The evaluation of the NLF ([32]) supports this finding by confirming that the NLF has not only supported a level playing field but also the consistency and coherence of EU harmonisation legislation.

The recast Directive and later changes to extend the scope, facilitated further harmonisation of rules for equipment which have not been in the scope before, like medical devices. This has led to higher protection of the environment and health in the EU. Another aspect is, that the RoHS Directive was introduced together with the WEEE Directive, which sets rules for the collection, treatment, recycling and

([31]) New Legislative Framework, consisting of Regulation (EC) 765/2008, Decision 768/2008 and Regulation (EU) 2019/1020

([32]) SWD(2022) 365 final

disposal of WEEE to contribute to a sustainable production and consumption. Both legislative acts interact effectively with each other; separating them from each other at national and EU level would certainly have led to a less coherent situation.

4.5. Relevance

In general, the RoHS Directive **continues to respond to the needs** reflected in its objectives, namely to protect human health and the environment and to promote environmentally sound recovery and disposal of WEEE. The substance restrictions set up via the Directive are an important factor in the design of eco-friendly EEE and are moreover easily comprehensible to everyone, also because many entries simply cover substance groups instead of having a long and exhaustive list of specific substance compounds (e.g. lead and all lead compounds are covered by the entry 'lead').

The relevance of the RoHS Directive may have contributed to it considerably influencing the development of regulatory frameworks regarding hazardous substances in EEE in **third countries**. Multinational companies have often opted to apply one standard to streamline procedures and save costs across their global production. Thus, the first harmonised standard ([33]), implementing the restrictions under the RoHS Directive, became the basis for the relevant international standard ([34]). Since then, more and more jurisdictions have been adopting legislation similar to the RoHS Directive, which helps trade in such equipment.

The Directive's relevance has even been strengthened in the context of EU policy developments that have occurred since its inception. These include:

- the objectives of the 2020 CEAP and its focus on electrical and electronic equipment, in the context of the increased focus on secondary raw materials.

- The chemicals strategy for sustainability that aims at a safe and sustainable-by-design approach and non-toxic material cycles, including EEE.

- the recovery of critical raw materials from WEEE. Here, the material flow is predestined for the recovery of these substances, as long as other, potentially hazardous substances do not contaminate the waste stream and prevent their economic recovery.

Further relevance of the provisions is becoming clear, when considering the increasing use of EEE in people's daily lives. The amount of electrical and electronic equipment put on the market in the EU rose from 7.6 million tonnes in 2012 to a peak of 12.4 million tonnes in 2020. The increase in EEE volumes emphasises the need to lower the environmental impact at product level, of which the avoidance of hazardous substances is a crucial part.

Another factor to be taken into account when considering the Directive's relevance is the time span between placing EEE on the market and the end-of-life stage of

([33]) EN 50581:2012 – Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

([34]) IEC 63000:2018 – Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

such equipment. By the time the EEE placed on the market today will become WEEE, the ambitions for recycling will have risen and progress in scientific knowledge of potential hazardous substances could prevent recycling or at least increase the price of recycling of waste streams containing these substances.

Other factors may impact the RoHS Directive's relevance. If the **list of restricted substances** is not regularly reviewed and amended, the Directive will lose part of its relevance, even though restrictions regarding substances in EEE could also be included under other pieces of chemicals legislation such as the REACH Regulation. In general, also incentives other than regulatory measures can support reducing the amount of hazardous substances in EEE. This is relevant for new potentially hazardous substances or for applications which have been exempted so far. For example, public procurement requirements or modulation of fees for extended producer responsibility under the WEEE Directive can contribute to substitution of those substances.

The Directive's relevance, particularly the relevance of its scope, can also suffer if **scientific and technical progress** is not appropriately considered. For example, 'commercial' photovoltaic panels have been initially excluded from the scope of the Directive so as not to hinder the growth of renewable energies, but as a result there are fewer incentives to develop alternatives free from hazardous substance. Another example is the mechanism of the time-limited exemption system, which does not take into account the ratio between a potential exemption's relevance and scope versus the resources and efforts spent to apply, to evaluate and implement it. As described above, the requests became more and more specific and complex, partly for low quantities of hazardous substances, but the framework for adapting to scientific and technical progress has not changed. An inefficient process can undermine the effectiveness of the system, which is to allow exemptions where necessary, while at the same time supporting efforts to substitute those substances. Not adapting the provisions to a more specific exemption system (e.g. by introducing a principle of proportionality) can delay the process. For example, exemptions for which renewal is requested remain valid until the Commission takes a decision. As a consequence of delays in decision-making, this can lead to a relatively long, *de facto* extension of an exemption, which might be detrimental to frontrunners in the sector and eventually affect the exemption system's relevance for reducing hazardous substances in EEE.

The evaluation found that the **validity periods** for time-limited exemptions and **transition periods in case of expiry** are too short for EEE, which requires long development, testing and validation time (e.g. for certain medical devices). Both periods are currently limited. Time-limited exemptions cannot exceed a seven-year validity period and where an exemption is revoked, a transition period of at least 12 months but no more than 18 months applies.

5. CONCLUSIONS

The RoHS Directive has helped to reduce hazardous substances in electrical and electronic equipment (EEE) in the EU and to protect of human health and the environment at different stages of the value chain.

The evaluation found the RoHS Directive is overall functioning well, despite the shortcomings identified. The Directive restricts the presence of hazardous substances in EEE in a simple way and thus the presence of those in WEEE, and allows at the same time derogations where necessary. By providing a level playing field for producers of electrical and electronic equipment, the Directive has also contributed to the harmonisation and functioning of the internal market. Without the RoHS Directive, the same level of harmonisation could not have been achieved. The RoHS Directive has also become internationally relevant as a global benchmark for reducing hazardous substances in EEE, with potentially significant environmental and health benefits worldwide.

The evaluation highlighted that the processes for deciding on exemptions and updating substance restrictions under the RoHS Directive are to some extent lacking transparency and efficiency, and can be improved in terms of scientific robustness. Some methodological and procedural differences were also identified, among others, between preparatory work for the RoHS substance restriction, on one hand, and for the substance restrictions and authorisations under the REACH Regulation, on the other.

To address these problems and to contribute to overall coherence, the Commission proposes, that responsibility for the **technical assessment** of time-limited exemptions and the process of reviewing the list of restricted substances be re-attributed to the European Chemicals Agency (ECHA). This would represent a change from the current practice, where the Commission is supported by external consultants in charge of providing technical input. Putting ECHA and its technical committees in charge of the technical assessment process given an appropriate transitional period, would increase consistency and effectiveness, particularly by addressing any interaction with other chemicals legislation. The Commission would continue to be responsible for decision-making on possible amendments of the respective Annexes to the Directive, which it would do by means of delegated acts.

The **re-attribution of the assessment tasks to ECHA** would not affect the substantive requirements that are the basis for adopting substance restrictions or corresponding exemptions.

Such re-attribution would strengthen the **principle of 'one substance - one assessment'** established within the framework of the chemicals strategy for sustainability and would lead to more streamlined processes. If the Agency carried out the related assessment, it would be possible to use information and assessments already available or being gathered under other legislative acts relevant to the same substance within the Agency's area of responsibility. This would improve consistency with other chemicals legislation, and thus help meet one of the requirements under the RoHS Directive, namely to be 'coherent with other legislation related to chemicals, in particular Regulation (EC) N° 1907/2006'. The fact that all the future applications for exemptions would be dealt with by ECHA and its scientific committees would also ensure consistency in the recommendations to be decided upon by the Commission, provided that, besides the required appropriate resources, ECHA could extend its expertise in the field of EEE as well as in the end of waste stage of EEE.

Another synergy effect would be the possibility to use established IT tools managed by ECHA to inform stakeholders in a known (i.e. as regards REACH) and modern

way, but also to have a single digital interface for submitting exemption requests and restriction dossiers. In view of these changes, when the tasks are reassigned to ECHA the Commission would provide **guidance** on the exemption requests and the process of reviewing the list of restricted substances.

The Commission would also update the 2012 '**Frequently Asked Questions' (FAQ) document,** to address the identified need to clarify terminology, including in order to reflect technical and scientific progress, or to remove outdated interpretations.

Given the above and in view of other prioritised initiatives under the CEAP, at this stage this general review of the RoHS Directive, as required by Article 24(2), will **not be accompanied by a revision of the Directive but by a targeted amendment as regards the re-attribution of scientific and technical tasks to ECHA** ([35])**.**

Considerations for a future revision

Acknowledging that not all identified shortcomings could be addressed by the actions described above, it should be highlighted that any future general revision should take into consideration the evaluation findings.

There is potential to **bring provisions up to date** and make them fit for the future. This starts with updating the scope (e.g. reviewing photovoltaic panels) and continues with removing many transitional provisions, which were relevant to introduce the open scope, but which are no longer necessary. In parallel, the expired exemptions and identified administrative burdens related to different EEE categories could be removed from Annexes III and IV.

Although the procedural steps for the two processes would be changed as part of their reattribution to ECHA, the framework for granting exemptions and for assessing new substances remains the same. Nevertheless, the framework would need to be adapted to scientific and technical progress to make it fit for purpose and respond flexibly to technological and market developments. For example, the criteria for deciding on exemptions could take into account in which cases exemptions should expire due to their lack of relevance on the market. Also, the limited options for validity periods or transitional periods for exemptions could be adjusted to allow individual periods based on the specific case. In addition, barriers to an efficient process could be removed.

Another potential measure would be to examine the appropriateness to introduce fees to the time-limited exemption system for applications using restricted hazardous substances.

Also, the RoHS Directive could be strengthened considering that hazardous substances in EEE remain an important subject in view of the **circular economy** and

([35]) Proposal for a Directive of the European Parliament and of the Council amending Directive 2011/65/EU of the European Parliament and of the Council as regards the re-attribution of scientific and technical tasks to the European Chemicals Agency; presented together with Proposal for a Regulation of the European Parliament and of the Council amending Regulations (EC) No 178/2002, (EC) No 401/2009, (EU) 2017/745 and (EU) 2019/1021 of the European Parliament and of the Council as regards the re-attribution of scientific and technical tasks and improving cooperation among Union agencies in the area of chemicals

zero-pollution objectives. The need to assess and possibly restrict certain hazardous substances remains high, e.g. for new substances used in EEE that are contrary to the objectives of the Directive.

At the same time, possibilities should exist to **strengthen the circular economy** for EEE. The RoHS Directive has potential to simplify the provisions on reused spare parts for EEE (e.g. for the use within a specific time-limited period). The uptake of recycled material could be increased by introducing beneficial conditions compared to primary material.

A future revision would also be recommended due to **the interplay with other legislative instruments** currently being revised and potentially leading to adjustments of the RoHS Directive (e.g. the REACH Regulation). However, this is also a reason why now is not the right time for a major overhaul of the Directive.

The presence of hazardous substances in WEEE is highly relevant for the treatment of WEEE, which is addressed under the **WEEE Directive**. This Directive is currently under evaluation and a close coordination between the two legislative acts could offer many positive synergies. For example, the WEEE Directive could further incentivise phasing out of hazardous substances by adapting extended producer responsibilities and vice versa the RoHS Directive could allow temporarily spare parts to support reuse and repairability of certain devices. In addition, the RoHS Directive could help prevent contamination of material streams containing critical raw materials by updating its provisions with regard to the state of technical and scientific progress or by allowing, through the use of time-limited exemptions, hazardous substances in EEE to circulate in a closed-loop system.

In order to set the course and allow sufficient preparatory time for any future developments, the possible future revision of the Directive should consider the legislation's **long-term perspective** and its position within waste, products, environmental and chemicals legislation.