15/04/2024

Comments

ON THE REVISION OF THE COMPUTER REGULATION (EU) NO 617/2013

Following the Ecodesign and Energy Labelling Consultation Forum (X03609) on Computers of 19/03/2024, the environmental NGOs and repair actors represented by the Right to Repair Europe coalition, the Coolproducts campaign, ECOS, HOP, the EEB and DUH, hereby submit their views on the proposed refinements.

We consider the review of this regulation drastically overdue and strongly support rapid action to implement a revision of the document that encompasses improved energy-related requirements, ambitious ecodesign requirements relating to material efficiency, and the introduction of an Energy label including energy-related information in combination with repair scoring and durability information.

We appreciate and strongly support many of the following proposals made in the consultation forum meeting. However, we believe several important changes still need to be made to ensure the robustness of the ecodesign and energy labelling requirements.

Firstly, we insist that the cost of repair operations, and particularly the price of spare parts, should be tackled more comprehensively and horizontally.

Secondly, as regards ecodesign requirements:

- **Simplified requirements in off and sleep modes and long and short idle**: there is a need to create requirements for different computer types and increase stringency for laptops.
- **Power management**: Advanced power management features, including presence sensing, are required where hardware exists.
- **Repairability/reusability:**
  - Priority parts lists: Extend unbundling requirements to address the full list of priority parts for repair scoring.

- o Spare part availability/upgradeability: Expand priority parts lists and extend availability requirement to 10 rather than 7 years, ensuring availability to all users of all parts.
  - o Spare part delivery: Ensure all priority parts are delivered in 5 working days.
  - o Tools - skill level - repair environment: Specify all tools requirements at the maximum of basic tools and retain maximum 'skill level/environment' as 'generalist/workshop'.
  - o Serialisation: Transparent information requirements, reduced delays in providing software/firmware to pair parts, and improved wording centred around user authorization.
- **Reliability and robustness**:
  - o Dust ingress: Minimum requirements across all computer types.
  - o Water ingress: A minimum keyboard-exposed water ingress requirement for laptops
  - o Drop test: Include plugged-in drop test configurations and specify a mandatory minimum drop test level.
  - o Battery endurance: Include a second-tier battery endurance requirement two years after the implementation of the first requirement of 1000 cycles with at least 80% remaining capacity.
- **Software/OS**: Strengthen the requirement that any pre-installed software or firmware, including the operating system, provide functionality and security updates for at least 10 years.
- **Data deletion**: The inclusion of a requirement on GUI-accessed secure data deletion functionality via options including encryption key or similar, supported by detailed instructions on implementation and verification.
- **Recyclability**: The enclosure and stand must not use flame retardants and polymers in all plastic-containing parts must be compatible with recycling.
- **Recycled content**: Encourage recycled content targets for plastic-containing parts
- **Information requirements**: Improve access to information on price of spare parts, include the details of exemptions applied and the justification for their application, and provide repair information free of charge.
- **Standardisation of spare parts**: Encourage efforts to use standardised spare parts.

Thirdly, as regards energy labelling requirements:

- **Energy efficiency**:
  - ▪ Active mode benchmarking tool: Review weighting of worklets in home/office profile to make it representative and define classes on a logarithmic scale if focus is on 100% utilisation, including a minimum requirement at the lowest class.
    OR
  - ▪ Dynamic TEC options: Use dynamic TEC as the labelling metric, which should include the energy consumed by integrated displays, including a minimum requirement at the lowest class.
- **On-label durability information**: Remove spill-over resistance from the label and replace it with a mandatory minimum requirement under ecodesign.

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- **Visible link to the list of spare parts prices**
- **Repairability index**:
  - Priority parts: When fans are not present, award the middle rather than the top score.
  - Spare part availability (expansion): Replace with an ecodesign requirement for all parts to be available to users.
  - Spare parts availability (extension): Simplify and expand year ranges.
  - Disassembly depth: Calibrate scores per part based on study results and consider the two worst ports.
  - Fasteners: Revise higher classes to include the condition of requiring no heating or cooling to be removed.
  - Tools: Apply more stringent requirements to keyboards and touchpads. Adapt classification to include product group-specific tools.
  - Spare part serialisation: Where it is applied, include a negative correction factor.
  - Operating system support: Include a scoring specifying ranges of 15,12 and 10 years.
  - Interdependencies: Introduce limiting factors to prevent rewarding incongruous combinations of parameters.
- **Product information sheet & EPREL**: Include the durability results and repairability sub-scores.
- **Remanufactured products**: State in ecodesign requirements that remanufactured products need not be subject to requirements such as the duration of provision of spare parts and include recognition of low material use on the label.

I.   THE PRICE OF SPARE PARTS

Before commenting on the product-specific ecodesign and energy labelling requirements proposed by the Commission on computers, we consider it essential to insist on a point which has been loosely tackled in the ecodesign and energy labelling requirements for mobile phones and tablets, and which is about to be treated the same way in those developed for computers. We insist that simply providing information on the indicative pre-tax prices of spare parts on a free-access website is not enough to tackle the impacts of this issue. We also insist that this issue should be tackled horizontally: ambitious provisions on the price of spare parts should be included in all existing ecodesign resource efficiency requirements at once.

Firstly, we encourage the Commission to **propose criteria for reasonable spare parts prices based on proportionality to product price**. It is generally admitted that a third of the price of the whole product is the psychological threshold over which consumers generally refuse to repair a product[1]. Actually, the price is currently the main barrier to repair as cited by consumers[2]. Nine out of ten consumers therefore expect a repairability score to include this criterion. The French and Belgian repair indices do consider price, and it is one of the most differentiating criteria in the French index, with washing machines scoring between 2,5 and 10 for this criterion. The inter-institutional agreement on the Sustainable Consumption of Goods Directive states that repair operations 'shall be carried out either free of charge or for a reasonable price', and the New Battery Regulation states that spare batteries should be sold at a reasonable and non-discriminatory price'. Tackling the price of spare parts through regulation is no longer optional, it is the explicit will of the co-legislator and is supported by both the repair and environmental communities, and consumers.

At the very least, **the announced pre-tax price should not simply be indicative information but a binding commitment**. Price fluctuations are often used as a justification for the impossibility for manufacturers to commit to a certain price for their spare parts. However, information shared by Fairphone to the Right to Repair Europe coalition indicates that, as concerns their own pricing system, the price changes were marginal. The battery price of Fairphone 2 was halved once due to overstock, and the price of some Fairphone 3 spare parts has been once rounded to the closest .95€ digit. In any case, inflation could be included in the calculation. After all, the main problem is not the price difference compared to the purchase price of the product in the past, but compared to the purchase of a new product at the time of repair.

In addition, **the information on the price of spare parts should be clearly visible on the product**. Whether this is available through the EPREL platform, directly available on the product like a list of ingredients, or accessible through a link/QR code has to be determined through an in-depth consumer study.

Finally, to answer the concern about the EU being a free market where governments cannot intervene in the price of products, we want to remind the Commission about the existence of article 6a of regulation 2015-2120 on electronic communication networks[3] which requires providers to offer the same rates for roaming customers across the EU as they charge locally. We also want to insist again that the political will is there, especially as such regulation is an opportunity to decrease stress on resource consumption whilst also decreasing the financial burden of having access to functioning products for consumers.

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[1] ADEME, 2021, Fonds réparation de la filière équipements électriques et électroniques (available here)
[2] Idem
[3] Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Unio, available here

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Actions:

- Define and propose criteria for reasonable spare parts prices based on proportionality to the product price
- Announced pre-tax price should be a legal cap for manufacturers
- Information on the price of spare parts should be accessible in the most consumer-friendly way, to be determined through a thorough consumer study
- Rules on the price of spare parts should not only apply to computers, but to all the products covered by ecodesign resource efficiency requirements at once

II. COMMENTS ON ECODESIGN POLICY OPTIONS

1. Simplified requirements in off and sleep modes and long and short idle

We support simplifying the requirements from the current approach to avoid the allowances from becoming rapidly outdated. However, the proposed values will exclude many types of computers from the market whilst not being sufficiently ambitious for laptops, the largest market segment.

The California Energy Commission MAEDBs shows that for products registered in 2023/24, there is a significant difference in the sleep and idle powers (see Annex I), which correlates with CPU core count clock speed, external GPU and computer form factor. Figures 1, 2 and 3 (see Annex I) are plotted on a logarithmic scale because power and performance between computer types vary by around 1 to 100 times. This illustrates the inadequacy of a one-size-fits-all approach.

Laptops with integrated graphic cards are the largest market by volume of sales but the proposed requirements would have very little impact on these products. We recommend reducing the requirements for laptops without external graphics cards to:

- Sleep mode: 1W
- Long idle: 3W
- Short idle: 6W

We encourage the study team to determine the performance-related technologies that influence power and develop idle requirements that take these into account. The idle and sleep requirements should be focused on products where the market size and potential energy savings are the greatest, rather than trying to regulate all computer types with a one-size-fits-all approach. Requirements should be set at a level that will ensure that installed external graphics must always be inactive in long idle and sleep, i.e. when there is no image being displayed.

Actions

- Focus idle and sleep requirements on product types where most impactful (e.g. laptops with integrated graphics) and tighten ambition to ensure that installed external graphics must always be inactive in long idle and sleep.

2. Power management

We support the latency requirements. We recommend the inclusion of a requirement that laptops with integrated webcams have presence detection features enabled as default which disable the screen or sleep immediately when the user is not present - this saves power and increases security.

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Actions

- Where webcams are integrated, require presence detection sleep functionality as default.

3. Repairability/reusability

a) Priority parts lists

Whilst the methodology used to compile the initial priority parts list appears sound (based on functional relevance and fault likelihood), we lament that components were removed from the ecodesign parts list due to pressure from industry stakeholders following claims of reliability trade-offs and technical difficulties. Ecodesign and energy labelling requirements must incentivise manufacturers to design products that are *both* reparable and durable. There are products on the market that can achieve both – Framework laptops, for example. Reducing ambition because there is a technical challenge or a claimed trade-off reinforces unambitious status quo designs of computers and limits the savings that can be accessed through legislative measures. The interaction of repair and durability can be managed in the way requirements are designed and communicated, but parts highlighted as important by repair cafes (as accessible on the Open Repair Alliance laptops page) and other literature should not be discounted without any requirements having been explored and without an open conversation with all stakeholders (not just a subset).

Actions

- The lists of priority parts within ecodesign are insufficient and must be extended to cover all those parts addressed within the energy label repair score to ensure that parts are not unsuitably bundled, which would reinforce barriers to repair and cause problems in applying repair scoring criteria like disassembly depth.

b) Spare part availability

We propose that the availability of all spare parts should be for a minimum of 10 rather than 7 years, especially for desktops which have a longer lifetime. Further, in line with the feedback provided by the Netherlands in the consultation forum meeting, we consider that there is no safety justification for computer spare parts only being made available to professional repairers. If users can replace all parts easily, there should be no barrier set to prevent it from happening and all spare parts must be made available to users, too.

Actions

- We propose a shift in the proposals from restricting part availability to professional repairers, to making all parts available to users.

a) Upgradability of spare parts

Computers are products that users or repair cafes may be interested in upgrading (non-professional repair). Upgrading also can increase lifetime of products because performance can be adapted to technical developments. It is, therefore, important that all spare parts are made available to users and that computers are designed in such a way that relevant parts for upgradability are not soldered/glued and standardized.

b) Spare part delivery

We propose that all spare parts should be delivered within 5 working days (10 days were allowed for webcams without clear reasoning).

c) Tools

We propose that all priority parts be required to be replaceable with no tools or basic tools (rather than giving the option of commercial tools for PSU and webcams).

d) Skill level/repair environment

We support the skill levels of generalists and laymen for specific parts as proposed and recommend against the specification of expert skill levels for computer products, as there is a strong need for improved upgrades and repair. Where generalist skills are specified the most demanding repair environment should be a workshop environment.

Actions

- Specify that the full list of priority parts cannot be assemblies of more than one type of listed priority part, listing the following as priority parts lists:

	Desktops & workstations	Laptops	All-in-one computers
EC proposal	PSU Fan	Screen assembly Battery Keyboard PSU Ports & connectors Base enclosure	Screen assembly Webcam PSU Fan
Additional parts to be included	Ports & connectors Base enclosure Expansion card/graphics card Data storage devices Memory Motherboard CPU	Trackpad Webcam Fan Data storage devices Memory Motherboard CPU	Ports & connectors Base enclosure Expansion card / graphics card Data storage devices Memory Motherboard CPU

- Extend availability requirement to 10 rather than 7 years, ensuring availability to all users of all parts.
- Ensure all priority parts to be delivered in 5 working days.
- Specify all tools requirements at the maximum of basic tools and retain maximum skill level/environment as generalist/workshop.

4. Serialisation

We commend the Commission for directly addressing the issue of parts serialisation in ecodesign. However, an outright ban on serialisation that prevents direct replacement of a spare part would be preferable. The steps required to unlock a product in which a serialised part has been replaced add to the complexity of the repair operation, add costs, and have no demonstrated benefits. Manufacturers justify part pairing for security reasons, claiming that consumers need to be protected from substandard repairs, that potential privacy risks could happen and that repairs can be dangerous. Yet, laptops from various manufacturers have had fingerprint readers for authentication without part pairing for years.

If the proposal presented to the Consultation Forum is to take the place of a definitive ban, we strongly support the following elements:

- The requirement for non-discriminatory access to software, firmware, etc., to ensure full functionality of those parts.

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- The proposed text stating that "On a free access website of the manufacturer… a description of the procedure for the notification and authorization of the intended replacement of serialised parts <u>by the owner of the device</u> has to be provided." Only user authorization should be necessary for new parts to be accepted (authorization of the OEM should not be necessary).
- The statement that the manufacturer "may only require to have received a notification and authorization of the intended part <u>by the owner of the device</u>." (or by a professional repairer with the written consent of the owner).

However, we believe there are some important issues remaining to be resolved:

- **Declaration of exemptions**: Manufacturers must be required to clearly declare when an exemption to the parts serialisation requirements has been applied. This documentation should specify the part the exemption is applied to, the extent of the serialisation restriction in the event of parts replacement, and details of the safety or data security issue that justifies the exemption. This information should be made publicly available on a free access website to everyone.
- **Validity of justifications:** The boundaries of what are considered valid justifications for safety / data security issues should be clearly defined within the regulation.
    - **User authorization:** Where the exemption is applied, as it is the user who is authorizing the part, any software or firmware tools should be made available to end users, not just restricted to professional repairers. So the statement "…non-discriminatory access for professional repairer and, where applicable, end users to any software tools, firmware…" should be changed to refer only to end users.
- **Potential for delays:** There is no reason why 3 working days are necessary for access to software/firmware tools to be provided via an automated process, and therefore we ask that this be changed to a maximum of 6 hours to safeguard the likelihood of repair.

Actions

- Specify that manufacturers must clearly and publicly declare (to consumers) when an exemption to the parts serialisation requirements has been applied including documentation detailing the part the exemption is required to, the extent of the serialisation restriction in the event of parts replacement, and the safety or data security issue that justifies the exemption.
- Clarify the boundaries of what are considered valid justifications for safety / data security issues should be clearly defined within the regulation.
- Edit the text to specify "non-discriminatory access **for end users** to any software tools, firmware or similar…needed to ensure the full functionality".
- Edit the text to specify "Manufacturers… shall provide access to the software tools, firmware or similar auxiliary means within **6 hours** after receiving the request.

5. Reliability and robustness

We support ecodesign requirements on reliability and robustness for mobile computers on resistance to accidental drops, protection from dust ingress and water spillage, resistance of keys against abrasion, battery endurance (in cycles), and battery management. However, we suggest the following improvements to the approach:

- **Drop testing:** We believe it is possible to both include drop test classes on the energy label and set a minimum requirement under ecodesign. Therefore we propose specification of a mandatory minimum drop test level based on available testing data (whilst retaining drop testing in the label), and inclusion of more representative test scenarios in which the laptop is plugged into the charger to account for drops representative of actual use.
- **Ingress protection:** Protection from dust ingress should also be applied to desktop and all-in-one computers. A keyboard-exposed option for spills should be included for laptops and a minimum requirement for dust ingress across all computer types.
- **Battery endurance in cycles:** A second tier requirement, two years after the implementation of the first requirement of 1200 cycles with at least 80% remaining capacity, should be added. It will be important to define the level of charge voltage and the depth to which discharges are allowed by the battery management system in order for the number of cycles to be determined in a consistent way.
- **Battery management:** Setting a factory pre-set maximum charge level will extend the endurance of the battery but there is insufficient evidence to determine if 80% is the optimal value for user satisfaction or endurance. Therefore we recommend that more flexibility is given to the manufacturer to set the default threshold between 60-80%, which could increase endurance further and account for changes to battery chemistry. An information requirement will be necessary to ensure the potential for battery lifetime extension as a result of these settings is communicated to the user.

Actions

- Apply mandatory minimum dust ingress requirements across all computer types.
- Include a mandatory minimum keyboard-exposed water ingress requirement for laptops.
- Include plugged-in drop test configurations and specify a mandatory minimum drop test level.
- Include a second-tier battery endurance requirement of 1200 cycles with at least 80% remaining capacity two years after the implementation of the first requirement, clearly specifying charge-discharge voltages and discharge depth.
- Specify the default maximum charge threshold as between 60-80% and include an information requirement to communicate to the user the potential for battery lifetime extension due to these settings.

6. Software / OS

We support the specification of mandatory ecodesign requirements on software updates and operating system support but consider that the wording of the requirements on OS support is insufficient for a mandatory measure. "Allowing" for functionality and security updates on pre-installed OS is the status quo in the market, regardless of any time period. It is unlikely that any computer would *not* permit OS updates, and therefore this requirement does not achieve any change.

The requirements must specify that the pre-installed OS present on the computer *shall receive* functionality and security updates for at least a specified number of years from the date of last placement on the market. This is important to ensure that the "part" of the computer that is the operating system is of good quality and has the longevity necessary to avoid premature software obsolescence. The slide below from the repair scoring deck shows there is no problem requiring a minimum of 7 years of OS support as all of the operating

systems listed below would currently achieve this level. In fact, we would recommend specifying a minimum of 10 years of operating system support.

Operating System	Years of support	Source
Windows 7	10 years	https://www.microsoft.com/en-us/windows/end-of-support
Windows 8.1	10 years	https://www.microsoft.com/en-us/windows/end-of-support
Windows 10 Home/Pro	10 years	https://learn.microsoft.com/en-us/lifecycle/products/windows-10-home-and-pro
ChromeOS	10 years	https://blog.google/outreach-initiatives/education/automatic-update-extension-chromebook/
macOS	8-10 years	https://www.macworld.com/article/673939/this-is-how-long-macs-and-macbooks-last.html

Actions

- Change the wording to specify that "any software or firmware pre-installed on the computer, **including the operating system,** shall provide functionality and security updates from the date of end of placement on the market to at least 10 years after that date."

7. Data deletion

It was stated in the meeting that many computer products remain unused in consumer homes at the end of their first life. Often this is due to data deletion concerns. To counteract this behaviour, a requirement on data deletion must be included in the regulation.

Actions

Specify a requirement on functionality for secure data deletion:

- that shall be made available for the deletion of data contained in all data storage devices of the product.
- data deletion software function should be accessed via GUI
- function should enable non-user authorised device reset to factory settings and default secure deletion of all personal information via options including encryption key or similar, supported by detailed instructions on how to implement and verify various data sanitisation options based on data sensitivity levels.

8. Recyclability

We support the requirements on marking of plastics heavier than 50g and on halogenated flame retardants being banned from the enclosure including the stand. However, we also recommend the following:

- All flame retardants should be banned, not just halogenated flame retardants.
- Specification of a mandatory requirement that polymers in all plastic-containing parts are compatible with recycling, including that the percentage of additives in the polymer formulation allows for the easy separation of the pure polymer when recycled together.

Actions

- Prohibit the use of all flame retardants in the enclosure and stand.
- Require that polymers in all plastic-containing parts are compatible with recycling, considering current state-of-the-art methods.

9. Recycled content

Besides requirements on recyclability of plastics, we also recommend setting minimum post-consumer recycled (PCR) content targets for plastic containing parts e.g. for the casing or fan of stationary computers and additionally for keyboards and trackpad of portable computers. Recycled content must come from PCR material only and exclude techniques of chemical recovery such as pyrolysis and gasification. In addition, secondary materials such as iron, copper, aluminum, gold, silver and platinum are already on the market for computers, and recycled content targets for these materials should be considered, too.

Actions

- Set minimum post-consumer recycled (PCR) content targets for plastic-containing parts.

10. Information requirements

We support the information requirements, the minimum availability of spare parts, and their price. However, we recommend that technical documentation and free-access websites include the details of exemptions applied and the justification for their application. Further, all repair information should be provided free of charge.

Actions

- Include a requirement that in technical documentation and on free-access websites, the details of exemptions applied and the justification for their application are included.

11. Standardisation of spare parts

A better development of standardized parts for devices is required to allow a more efficient use of resources. As suggested in a report from the PROMPT project, 'Standardisation of parts and/or their interfaces might improve the access to spare parts and thus enhance repairability. Also, when a part is standardised, the costs per part are likely to decrease through economies of scale. In general, it is recommended to standardise parts which have the same function across all manufacturers, however, don't have a significant distinguishing performance and don't have an aesthetic need'[4]. The standardisation of parts such as external power supplies / AC Adaptors, batteries, storage drives, ports and connectors, fans and heat sinks could ensure that they can be used in several devices. The use of standardised wear/spare parts in different devices also supports the long-term availability of these parts, so that replacement is ensured in the event of a defect. In addition, the subsequent upgradeability of devices with newly developed wear parts would be supported. Standardisation should be developed as far as possible within manufacturers' product lines, but also across manufacturers.

Article 8 of the implementing regulation on mobile phones and tablets (Commission Regulation (EU) 2023/1670), its review clause, already provides that the revision of the said regulation should assess "(e) the appropriateness of defining a standardised battery that could be used interchangeably across a range of mobile phones and slate tablets".

Actions

- The Commission should require the development of standards for external power supplies / AC Adaptors, batteries, storage drives, ports and connectors, fans and heat sinks.

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[4] Ruud Balkenende e.a., *Premature Obsolescence Multi-Stakeholder Product Testing Program Deliverable 4.3: Design for physical durability, diagnosis, maintenance, and repair* (2022) (available here), p.30.

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III. COMMENTS ON ENERGY LABELLING POLICY OPTIONS

1. Energy efficiency in active mode

Based on the analysis as presented, and without access to the test data, it was not possible to assess the proposals and results with sufficient confidence. We are still undertaking alternative analysis and intend to provide more comments later.

a) Profiles

The range of worklets (4 worklets for home/office and 8 worklets for professional profile) appears broadly appropriate for the use profiles developed. However, worklet selection should be driven by the representativeness of the typical user, not distinguishability. It is necessary to assess the correct weighting for each worklet under the home/office profile to reflect its representativeness in an average use case. In particular, the presentation showed that seven of the 14 worklets operate at 100% CPU utilisation in single or multithreaded processes. This is likely to be unrepresentative of normal use. There is, therefore, a need to apply weightings to adjust this.

b) Labelling of computer families

The issue of how to label families of computers with different configurations in a way that is useful to the consumer and can be enforced by MSAs is still unresolved. It is unclear how the regulatory definition of a model can be applied to product families. Without answering this question, providing comments on how best to label configurations is very difficult.

c) Labelling scale

It is not possible to comment on the distribution of computers in the labelling classes until the worklet weightings or TEC approach have been determined. A linear scaling of active efficiency, especially at high utilisation, could result in a high population of products reaching class A too quickly. Historically, efficiency at high utilisation has improved by approximatively 30% between CPU generations[5]. The home/office profile is weighted towards high utilisation and the professional profile operates at 100% utilisation exclusively. Efficiency improvement over time should be examined to account for future learning curves when requirements are set. If the focus on 100% utilization is retained, the labelling classes should be presented using a logarithmic scale. A linear scale is only appropriate if a TEC or lower utilisation profile is used.

Actions

- Define worklet weightings based on (shared) analysis of how these would change the relative rankings of the computers and representativeness of the profile.
- Provide and consult upon a solution for how families of computers with different configurations can be labelled.
- If the focus on 100% utilisation is retained define classes on a logarithmic scale accounting for efficiency learning curves, particularly at the same price point, and for the same power envelope.
- The Commission should provide certainty on how the Energy Labelling Regulation definition of a 'model' which 'shares same technical characteristics relevant for the label' will be applied to families of computers when the parts, performance and efficiency differ between configurations.

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[5] CPU Monkey, CPU performance per watt (efficiency) - (available [here](#))

- We request the Commission provide more information about how the test method will be maintained and who will develop the maintenance procedures.

2. Dynamic TEC options

A dynamic TEC approach has the potential to be a more appropriate metric for the label than active efficiency. This could be balanced such that the overall CPU utilisation is more representative of normal use and thus more informative to the consumer. In the event of a TEC-based approach, it is essential that the TEC approach includes the energy arising from an integrated display since these will almost always be used. For laptops, the screen could represent up to 50% of the energy consumed[6]. Without its inclusion, the value provided could mislead consumers.

As energy efficiency is unlikely to be a major factor in a computer purchase, we support a mandatory requirement on active efficiency/TEC. Only this way the consumption of energy by computers will decrease. However, the analysis as presented to date is insufficient to assess whether this is possible or to recommend an appropriate MEPS (Minimum Energy Performance Standards) level.

Actions

- Compare relative efficiency of computers using active efficiency and TEC approaches.
- Compare the relative efficiency of computers including and excluding the integrated display power.
- Carry out a sensitivity analysis on TEC hours of use.
- Assess the possibility of mandatory requirements and labelling requirements based on TEC considering computer performance, change over time and other important factors.

3. On-label durability information

We support the proposal to include drop resistance class, battery durability (complete cycles) and repairability class on the label. However, we prefer that spill-over resistance be addressed as a minimum requirement within ecodesign rather than as an icon on the label, as there are only two options (resistance present or not), making its inclusion in the label not clearly justified.

Actions

- Remove spill-over resistance from the label and instead include a mandatory minimum requirement under ecodesign.

4. Visible link to the list of spare parts prices

Information on the price of spare parts is essential for consumers to identify the most repairable products on the market. This information should be more directly visible on the label or anywhere else. It would be unrealistic to require this information to be directly accessible on the label, as the list would be long and difficult to display. However, a link leading to a free access website where the up-to-date list of available spare parts and their associated price is available could be a sensible option. If this is considered as entering into competition with the EPREL QR code, this information could be more clearly displayed somewhere else on the product.

Consumer organisations should be consulted on the best way to make this information easily and clearly accessible to consumers.

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[6] PC Mag, 2024, Asus Zenbook Duo (UX8406) Review (available [here](#))

Actions

- Add a link to a free-access website where the up-to-date list of available spare parts and their associated prices is available.
- In partnership with consumer organisations, develop an intuitive visual clarifying what information is accessible through the link. If not possible, the mention "Price of spare parts" should be displayed next to the link.
- If the above is considered as not practically achievable, consider information on the price of spare parts on a separate label

5. Repairability index

a) Priority parts

We support the currently proposed list of priority parts, which includes the trackpad separately, and the proposed weighting approach.

- Recalibrating score where no fans or cooling fins present: We recommend when fans and cooling fins are not present, the % weighting on the other priority parts adapts proportionately. Alternatively, a middle rather than top score could be awarded to products that do not contain these parts.
- SSDs & RAM unsoldered: We recommend that clarification is included within the labelling guidance that priority parts cannot be soldered to one another or to other parts.

Actions

- When fans are not present, award the middle rather than the top score.
- Clarify in labelling guidance that priority parts cannot be soldered to one another or other parts.

b) Scoring parameters

In general terms, we support the proposed parameters and in particular the addition of captive fasteners to the fastener classes, but consider that the following refinements should be made:

- **Spare part availability (expansion)**: In line with the Netherlands' comments on the lack of need for differentiation between availability to users and professionals, we propose an ecodesign requirement that all parts are available to users. In this case, the spare parts expansion criterion would no longer be necessary so emphasis could be duly placed on the other criteria in the scoring.
- **Spare part availability (extension)**: We consider that very small improvements are being rewarded in each class and the lack of consistency between parts may cause confusion. We recommend longer availability time durations to reward the truly best performing laptops.
- **Disassembly depth**: The results of the disassembly testing study show that scores for current products fall within the range of C and D classes. For a greater spread in disassembly depth scores, the ranges could be calibrated for each part based on the results of the study (whilst accounting for some level of learning curve due to the incentive of the repair score). Issues observed in the study with priority parts not being separable should be resolved by a mandatory requirement on unbundling in ecodesign requirements linked to a full list of parts reflecting those addressed by the label. On the

issue of the high variability of port disassembly, we support the proposal to consider the two worst ports, rather than only the worst.

- **Fasteners**: We strongly support more stringent fastener requirements on screens and batteries. However, the need to heat or cool adhesives in order for parts to be removed can significantly impact repair time and, therefore, the likelihood of repair. The specification of higher-scoring fastening classes that require no heating or cooling is already included in the draft M-ICT 4 standard for smartphones currently being developed by ETSI. We propose that this is considered in labelling fastener classes as follows:

  For screen and battery:
  - **1 point**: reusable
  - **3 points**: reusable *and requiring no heating or cooling to be removed*
  - **5 points**: captive reusable / none, *and requiring no heating or cooling to be removed*

  For all other parts:
  - **1 point**: removable
  - **2 points**: resupplied
  - **3 points**: reusable
  - **4 points**: reusable *and requiring no heating or cooling to be removed*
  - **5 points**: captive reusable / none, *and requiring no heating or cooling to be removed*

- **Tools**: We strongly support the more stringent requirements on tools erquired for screen and battery replacement, but we recommend that these are also applied to keyboards and touchpads as there are laptop designs already available (Framework) in which the keyboard and touchpad can be replaced without tools. Further, we propose an additional tool class to include product group-specific tools which are not proprietary and are necessary for repairing, preparing for re-use or upgrading products produced by at least two different manufacturers.

- **Spare parts price**: If it is not possible in this iteration for spare parts price to be addressed within the repair score, we strongly support the transparency of a dedicated spare part price information requirement as described earlier (section I and III.4).

- **Spare part interoperability/serialisation (negative score)**: Considering ecodesign proposals to address this and aligning with the proposal of the Netherlands and Sweden, a negative correction factor should be applied in the repairability score when manufacturers apply the exemption from serialisation requirements. This will encourage using alternative solutions to tackle the security concerns of which manufacturers claim that they necessitate part pairing.

- **Operating system support**: As the ecodesign requirements on this aspect are weakly worded and we are recommending the removal of the criterion on spare part availability (extension), a scoring approach should be included on software update availability as follows:

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- o 5 points: Minimum guaranteed availability of security/corrective updates and functionality updates to the operating system for at least 15 years and separate provision of security/corrective updates and functionality updates.
  - o 3 points: Minimum guaranteed availability of security updates, corrective updates and functionality updates to the operating system for 12 years and separate provision of security/corrective updates and functionality updates.
  - o 1 point: Minimum guaranteed availability of security updates, corrective updates and functionality updates to the operating system for 10 years
- **Parameter interdependencies**: We recommend that the final scoring is reviewed to identify any parameter interdependencies and introduce limiting factors to prevent rewarding incongruous combinations of parameters . Specifically, points should not be awarded for the availability of information on spare parts replacement to consumers if the actual spare parts are not also made available to consumers, and vice versa. Also, points should not be awarded for a low number of disassembly steps for a priority part if the way it is serialised makes the replacement impossible.

Actions

- Spare part availability (expansion): remove this criterion and replace it with an ecodesign requirement for all parts to be available to users.
- Spare parts availability (extension): simplify the requirement to range from 7 years to 12 years without distinction between parts.
- Disassembly depth: Consider calibrating scores for each part based on the results of the study plus learning curves. Take into account the two worst ports, rather than only the worst.
- Fasteners: Revise scorings. For screen and battery: 1 point: reusable, 3 points: reusable *and requiring no heating or cooling to be removed,* 5 points: tethered reusable / none, *and requiring no heating or cooling to be removed*. For all other parts the upper two classes would be changed to include the text *"and requiring no heating or cooling to be removed"*
- Tools: Apply more stringent requirements not only to screen and battery but also to keyboards and touchpads. Adapt tool classification to include product group-specific tools which are not proprietary and are necessary for repairing products produced by at least two different manufacturers.
- Spare part serialisation: Where manufacturers apply the exemption from serialisation requirements, a negative correction factor should be applied to the repairability score.
- Operating system support: Include a scoring approach as follows:
  - o 5 points: Minimum guaranteed availability of security/corrective updates and functionality updates to the OS for at least 15 years and separate provision of security/corrective updates and functionality updates.
  - o 3 points: Minimum guaranteed availability of security updates, corrective updates and functionality updates to the OS for 12 years and separate provision of security/corrective updates and functionality updates.
  - o 1 point: Minimum guaranteed availability of security updates, corrective updates and functionality updates to the OS for 10 years

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- Interdependencies: Review the final scoring to identify any parameter interdependencies and introduce limiting factors to prevent rewarding incongruous combinations of parameters.

6. Product information sheet & EPREL

EPREL should contain the ecodesign information requirements. In addition, it should include the performance per worklet, the durability results and the repairability score, including subscores, to enable future reviews to evaluate the status of the market and potential for improvement.

Action

- Include the durability results and repairability score, including subscores, in the EPREL information.

IV. REMANUFACTURED PRODUCTS

It should be specifically stated in the legislation that remanufactured products need not be subject to requirements such as the duration of provision of spare parts. Further, the energy label should somehow recognise the additional environmental credentials of such products to encourage a stronger remanufacturing market in Europe.

Action

- Ecodesign requirements: state that remanufactured products need not be subject to requirements such as the duration of provision of spare parts.
- On energy label: Include a means of recognising the improved environmental credentials (reduced materials use) of these products.

For more information, please reach out to Mathieu Rama (mathieu.rama@ecostandard.org)

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ANNEX I – ENERGY EFFICIENCY OF SLEEP, SHORT IDLE AND LONG IDLE MODES - CALIFORNIA ENERGY COMMISSION, 2024

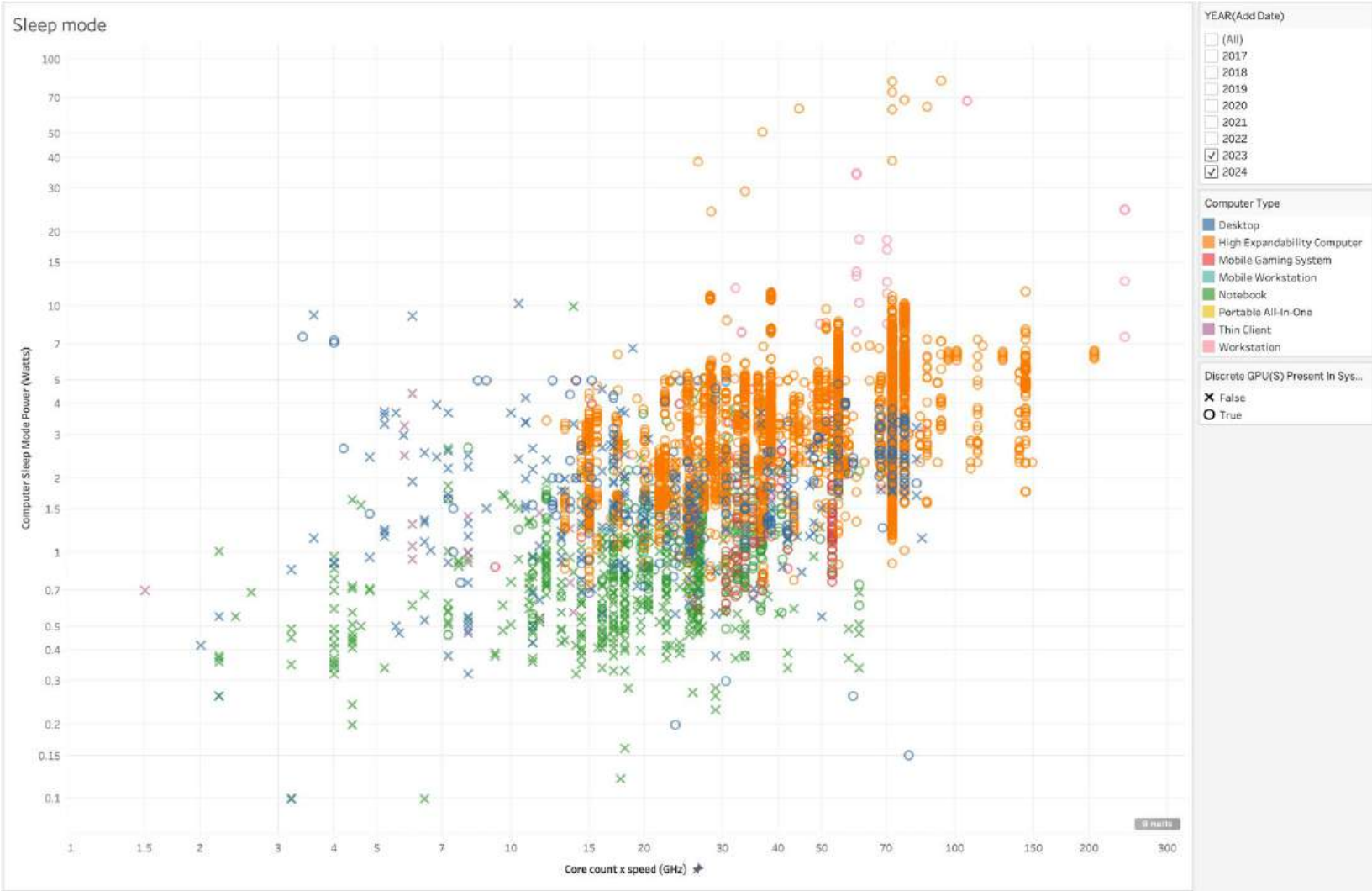**Figure 1: Sleep mode distribution from MAEDBs (California Energy Commission, 2024)**

Figure 2: Short idle distribution from MAEDBs (California Energy Commission, 2024)
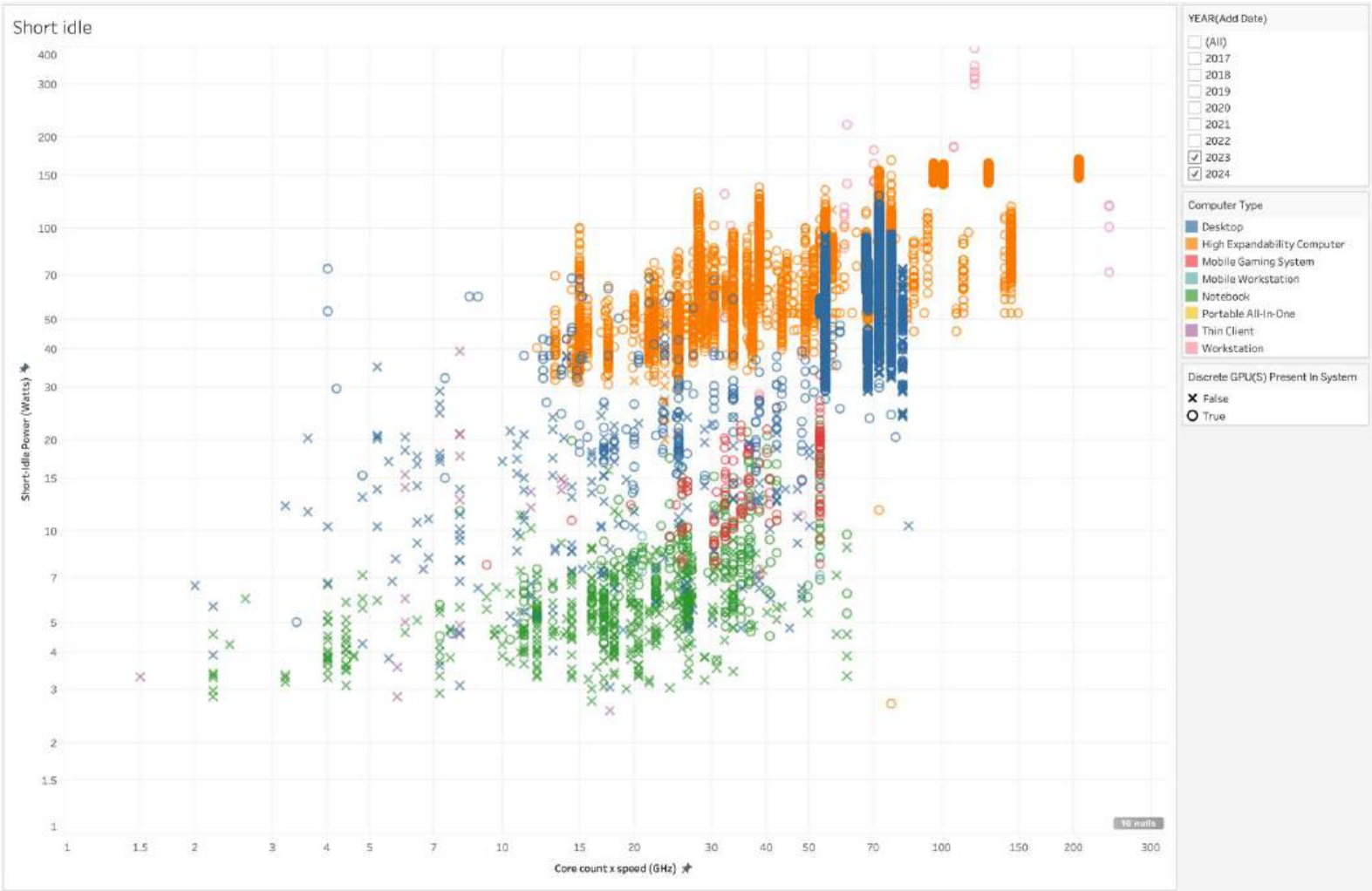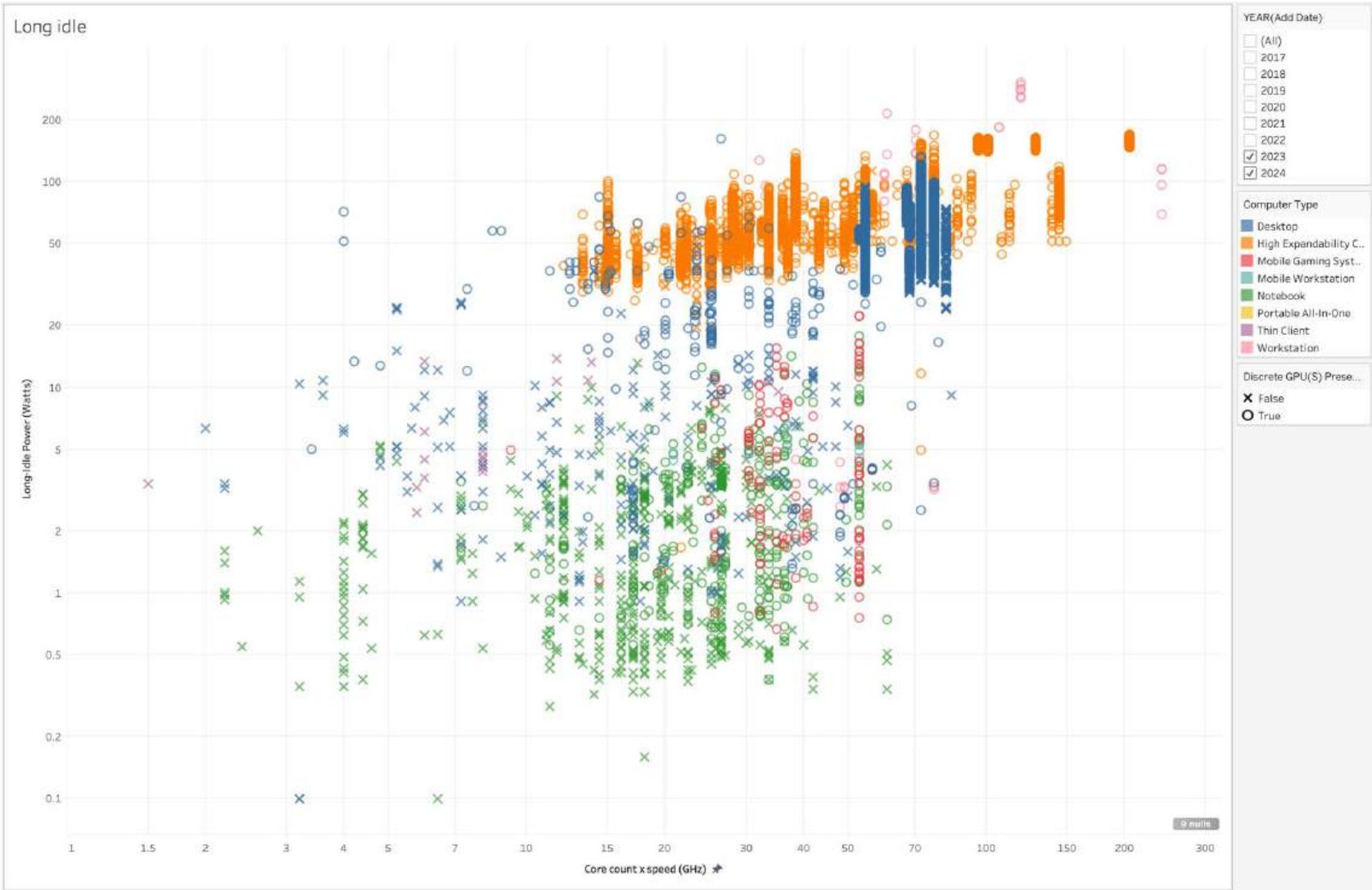
Figure 3: Long idle distribution from MAEDBs (California Energy Commission, 2024)

ANNEX II – SUMMARY OF ACTIONS

Policy	Topic	Action
ED	Price of spare parts	• Define and propose criteria for reasonable spare parts prices based on proportionality to product price • Announced pre-tax price should be a legal cap for manufacturers • Information on the price of spare parts should be accessible in the most consumer-friendly way, to be determined through a thorough consumer study • Rules on price of spare parts should not only apply to computers, but to all the products covered by ecodesign resource efficiency requirements at once
ED	Simplified requirements in off and sleep modes and long and short idle	• Focus idle and sleep requirements on product types where most impactful (e.g. laptops with integrated graphics) and tighten ambition to ensure that installed external graphics must always be inactive in long idle and sleep.
ED	Power management	• Where webcams are integrated, require presence detection sleep functionality as default.
ED	Priority parts lists	Extend priority parts lists and specify that the full list of priority parts cannot be assemblies of more than one type of listed priority part. • For desktops and all in ones include : Ports & connectors, Base enclosure, Expansion card / graphics card, Data storage devices, Memory, Motherboard, CPU • For laptops include: Trackpad, Webcam, Fan, Data storage devices, Memory, Motherboard, CPU
ED	Spare part availability	Extend availability requirement to 10 rather than 7 years, ensuring availability to all users of all parts.
ED	Spare part delivery	Ensure all priority parts to be delivered in 5 working days.
ED	Tools / skill level / repair environment	Specify all tools requirements at the maximum of basic tools and retain maximum skill level/environment as generalist/workshop.
ED	Serialization	• Specify that manufacturers must clearly and publicly declare (to consumers) when an exemption to the parts serialization requirements has been applied including documentation detailing the part the exemption is required to, the extent of the serialization restriction in the event of parts replacement, and the safety or data security issue that justifies the exemption.

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Policy	Topic	Action
		• Clarify the boundaries of what are considered valid justifications for safety / data security issues should be clearly defined within the regulation. • Edit the text to specify "non-discriminatory access for end users to any software tools, firmware or similar…needed to ensure the full functionality". • Edit the text to specify " Manufacturers… shall provide access to the software tools, firmware or similar auxiliary means within 6 hours after having received the request.
ED	Reliability and robustness	• Apply mandatory minimum dust ingress requirements across all computer types. • Include a mandatory minimum keyboard-exposed water ingress requirement for laptops • Include plugged-in drop test configurations and specify a mandatory minimum drop test level. • Include a second tier battery endurance requirement two years after the implementation of the first requirement of 1000 cycles with at least 80% remaining capacity
ED	Software / OS	• Change the wording to specify that "any software or firmware pre-installed on the computer, including the operating system, shall provide functionality and security updates from the date of end of placement on the market to at least 10 years after that date."
ED	Data deletion	Specify a requirement on functionality for secure data deletion: • that shall be made available for the deletion of data contained in all data storage devices of the product. • data deletion software function should be accessed via GUI • function should enable non-user authorised device reset to factory settings and default secure deletion of all personal information via options including encryption key or similar, supported by detailed instructions on how to implement and verify various data sanitisation options based on levels of data sensitivity.
ED	Recyclability	• All flame retardants should be banned, not just halogenated flame retardants. • Specification of a mandatory requirement that polymers in all plastic containing parts are compatible with recycling, including that the percentage of additives in the polymer formulation allows for the easy separation of the pure polymer when recycled together.

Policy	Topic	Action
ED	Information requirements	• Include a requirement that in technical documentation and on free-access websites these include the details of exemptions applied and the justification for their application. • Include a requirement to provide repair information free of charge.
ED	Standardisation of spare parts	• The Commission should require the development of standards for external power supplies / AC Adaptors, batteries, storage drives, ports and connectors, and fan and cooling fins
EL	Energy efficiency in active mode	• Define worklet weightings based on (shared) analysis of how these would change the relative rankings of the computers and representativeness of the profile. • Provide and consult upon a solution for how families of computers with different configurations can be labelled. • If the focus on 100% utilisation is retained define classes on a logarithmic scale accounting for efficiency learning curves, particularly at the same price point, and for the same power envelope. • The Commission should provide certainty on how the Energy Labelling Regulation definition of a 'model' which 'shares same technical characteristics relevant for the label' will be applied to families of computers when the parts, performance and efficiency differ between configurations. • The Commission to provide more information about how the test method will be maintained and who will develop the maintenance procedures.
EL	Dynamic TEC options	• Compare relative efficiency of computers using active efficiency and TEC approaches. • Compare the relative efficiency of computers including and excluding the integrated display power. • Carry out a sensitivity analysis on TEC hours of use. • Assess the possibility of mandatory requirements and labelling requirements based on TEC taking into account computer performance, change over time and other important factors.
EL	On-label durability information	• Remove spill-over resistance from the label and instead include a mandatory minimum requirement under Ecodesign.
EL	Visible link to the list of spare parts prices	• Add a link to a free-access website where the up-to-date list of available spare parts and their associated prices is available.

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Policy	Topic	Action
		• In partnership with consumer organisations, develop an intuitive visual clarifying what information is accessible through the link. If not possible, the mention "Price of spare parts" should be displayed next to the link. • If the above is considered as not practically achievable, consider information on the price of spare parts on a separate label
EL	Reparabilty scoring / priority parts	• When fans are not present award the middle rather than top score. • Clarify in labelling guidance that priority parts cannot be soldered to one another or other parts.
EL	Reparabilty scoring / Scoring parameters / Spare part availability (expansion)	• Remove this criterion and replace it with an ecodesign requirement for all parts to be available to users.
EL	Reparabilty scoring / Scoring parameters / Spare parts availability (extension)	• Simplify the requirement to range from 12 years to 7 years without distinction between parts.
EL	Reparabilty scoring / Scoring parameters / Disassembly depth	Consider calibrating scores for each part based on the results of the study plus learning curves. Take into account the two worst ports, rather than only the worst.
EL	Reparabilty scoring / Scoring parameters / Fasteners	Revise scorings: • For screen and battery: 1 point: reusable, 3 points: reusable and requiring no heating or cooling to be removed, 5 points: tethered reusable / none, and requiring no heating or cooling to be removed. • For all other parts the upper two classes would be changed to include the text "and requiring no heating or cooling to be removed"
EL	Reparabilty scoring / Scoring parameters / Tools	Apply more stringent requirements not only to screen and battery but also to keyboards and touchpads. Adapt tool classification to include product group-specific tools which are not proprietary and are necessary for repairing products produced by at least two different manufacturers.
EL	Reparabilty scoring / Scoring parameters / Spare part serialization	Where manufacturers apply the exemption from serialization requirements, a negative correction factor should be applied in the reparability score.
EL	Reparabilty scoring / Scoring parameters / Operating system support	Include a scoring approach as follows: o 5 points: Minimum guaranteed availability of security/corrective updates and functionality updates to

Policy	Topic	Action
		the OS for at least 15 years and separate provision of security/corrective updates and functionality updates.
		o 3 points: Minimum guaranteed availability of security updates, corrective updates and functionality updates to the OS for 12 years and separate provision of security/corrective updates and functionality updates.
		o 1 point: Minimum guaranteed availability of security updates, corrective updates and functionality updates to the OS for 10 years
EL	Reparabilty scoring / Scoring parameters / Interdependencies:	Review the final scoring to identify any parameter interdependencies and introduce limiting factors to prevent rewarding incongruous combinations of parameters.
EL	Product information sheet & EPREL	Include in EPREL information the durability results and reparability score including subscores.
ED	Remanufactured products	State in Ecodesign requirements that remanufactured products need not be subject to requirements such as the duration of provision of spare parts.
EL	Remanufactured products	Include on the label a means of recognising the improved environmental credentials (reduced materials use) of these products.