



**Date/ Time: Wednesday 29<sup>th</sup> March 2023**

### **Attendees – Project team**

Davide Polverini (GROW; Study Policy Officer), Eirini Passia (ICF; Project Coordinator), Tom Lock (ICF; Project Director), John Clinger (ICF; Technical Lead), Tom Ramsson (ICF; Modelling Lead), Laurent Petithuguenin (ICF; Technical Lead), Abhishek Jathar (ICF, Modeller), Todd Leddy (ICF, Researcher)

### **Minutes**

#### **Introductions**

Introduction to the project and a round table of introductions from the study team and DG GROW.

#### **Setting the scene (DG GROW)**

DG GROW set the scene explaining the steps involved in the review of the existing Ecodesign regulation. The study has two phases: firstly, covering the Technical Review process; secondly, the preparatory study and the consultation forum. The Consultation Forum is expected to take place in the next 12 months. The aim of this stakeholder meeting is to demonstrate that the review study for this regulation has begun and collect feedback.

The scope of the review stems from the previous preparatory study and Article 8 of the Ecodesign Regulation for Servers and Data Storage products. Article 8 lists the items that require analysis within this study. Overall, the requirement is to explore the feasibility to either increase the tightness and the coverage of the regulation or to leave them as they are in light of the analysis conducted during the study.

DG GROW described how challenging it is to put exact dates on when any new regulation will be published. It was estimated that the publication date would not be before Q2 2026. ICF have been tasked to work within the framework of the current Ecodesign Directive 2009/125.

DG GROW raised the aspect of product level vs system level, which is very relevant for servers and data storage products. However, DG GROW stressed that the current regulation (2019/424) is a product specific regulation with two product categories: servers and data storage products.

Digital Europe – Q1) Asked DG GROW if they could expand on the ESPR (Ecodesign for Sustainable Products Regulation) aspects which could be considered for this review? Q2) At a system level, are there any implications from the review of the Energy Efficiency (EE) Directive e.g., for a Data Centre.

DG GROW provided the following responses: A1) ESPR expands the scope and types of requirements which can be enacted by the regulation. ESPR foresees a more specific list on material efficiency (ME), environmental footprint and energy efficiency. For servers, EE and ME parts are well covered. Carbon footprint is not covered, so far. A2) The second question will be addressed via the technical discussion during the rest of the presentation.

#### **Delivery Plan**

ICF presented the delivery plan for the study, which included the role of ICF, the study objectives, the study team, key project milestones, project deliverables, stakeholder involvement and a reminder of the

study website. The first milestone will be in August 2023 when the 1<sup>st</sup> Interim Report (draft phase 1 and draft phase 2) will be published. The 2<sup>nd</sup> Stakeholder meeting will take place shortly after this ( around September 2023). The finalised report is expected to be published in the summer of 2024.

**Technical Analysis – Phase 1 – Review items a–t (split into themes):** [see accompanying slide pack.](#)

**Updating current Ecodesign requirements (Review of items a & b):** ECOS queried whether the test methods underpinning the requirements are going to be reviewed. ICF stated that one of the objectives will be to check if the references to SERT need to be updated and to see if any new versions should be adopted.

**Regulation definitions and scope: (review of items c, e & f):** ICF explained that the study team are aware of the recently updated definitions for integrated APA's. ICF encouraged stakeholders to add viewpoints on this and any potential revisions to the APA definitions. DG GROW reiterated that references to new SERT versions will be included if work on the methodology part of the new version is finalised in time. Techbuyer Europe raised a question on whether other benchmarks besides SERT will be looked at. ICF replied that they are not aware of any other comprehensive benchmarks with regards to server efficiency.

**Performance requirement of Data Storage devices (review of item i):** ICF requested any additional context from stakeholders on the continued impact of Capacity Optimising Methods (COMs). Additionally, how COMs are operating in the market and if there any new COMs that need to be considered. ICF described how the study will also look at the SNIA Emerald Benchmark as the basis of active level performance.

**Processor Power Management Function (review of item g):** Interact mentioned that current research from IEEE shows that when processor power management functions are enabled this can reduce the power consumption by 18–50% for no loss of performance. Intel discussed how older models have greater savings and how scalable CPUs are less impactful when power features enable BIOS levels, whereas pre-generation CPUs are affected by these features. It was suggested that Ecodesign could regulate shipping in “balanced configuration in BIOS” to enable savings.

**Standby–Readiness for Servers (review of item p):** Dell acknowledged that to go into a standby mode, all components would need to save their state. This is not possible without a complete reboot. Even after many years of testing there is a risk of system crashing. Therefore, there has been little incentive to work on this because the risk is too high.

DG GROW explained this item relates to the maximum consumption in idle power state. In the previous preparatory study, there were comments raised late on that there should be more granularity on information provided on the standby state (deep stand by, etc..). Thus, the idea of this item is to consider if anything should be done at a regulatory level or not.

**Parameters Information Requirements (review of item r):** Dell explained that most fans do dynamic fan speed control. However, they discussed that for Dell products once an external system controls the fan speed of a server, the warranty of the server would become void.

DG GROW emphasised that part A of this item would cover the disclosure of information only on parameters related to the cooling. The idea is to see if there is any feasibility/relevance in improving the type of fan speed information provided by manufacturers to the user.

ECOS stated that they currently report the power of servers in a standardised way to allow the measurement of it. Hence, this would help create synergy with the EE Directive. Additionally, ECOS suggested that reporting utilisation would also enable the sever idle coefficient to be reported.

Dell expressed that they would not be able to measure all items that are requested as a product manufacturer because there are requirements will need to be conducted by the operating system.

**Energy Label (review of items s):** Dell and Intel stated that it is not possible to create an energy label for the many configurations they have. They also question who the label will benefit. DG GROW replied stating that this is a new idea thus feedback is sought. During the first regulation there were efforts to include the intrinsic variability of servers. Therefore, it was decided we make these declarations at two ends of the families/configurations spectrum of servers. The low-end and high-end performance configurations. DG GROW preliminary view is that an energy label that has to be tailored for every configuration would be difficult to impose. The approach of calculating the energy label for the low-end and high-end performance configurations would for instance appear as a suitable one.

Following this, Interact described that they have created a grading system for servers. This calculates a rating based on the SSJ Ops/Watt, using banding A+ to F. It uses SERT and SPEC power to validate this. Furthermore, it would be possible to use machine learning to fill in the gaps of the other SERT worklets. Interact described in detail how data centre operators have used this information to help with reaching decarbonisation goals. They stated that the energy performance between the minimum and maximum performing products can range between 70–80%. Therefore, their label helps the end-user choose a more efficient product.

The German Environment Agency and TechBuyer Europe expressed that the label would be useful. In particular for IT procurement and reporting. IBM argued that the usefulness of a label comes before a product is bought, however, it is “how” this information is communicated that could be an issue. DG GROW stated that the label information could be displayed via the EU’s EPREL database, as it is done for other product groups. Information could also be provided via the Product Information Sheet.

ECOS felt that an energy label is restrictive in what information it contains. It was suggested that it may be more useful to provide this information separately. They discussed how an energy label could be provided by a machine learning algorithm, if the regulation states how this should be carried out.

DG GROW explained that due to the highly customised nature of servers, they may not be suitable for the Energy Label. The study team requested feedback on whether a tighter scope might focus which servers are labelled.

**Material Efficiency (review of items d, j, l):** Digital Europe expressed doubts about material efficiency. They queried if the information about Critical Raw Materials (CRM) is useful to recyclers. Techbuyer Europe stated it would be good to capture this information, because this will support future reporting and assist current/future recycling efforts. It was also discussed how the development of technologies (such as pyrolysis and bioleaching which increase the number of materials that can be recovered simultaneously), has meant that recycling processes have become more efficient. Thus, meaning more CRMs from the server and data storage products can be reused. Cisco highlighted that there could be issues when the products get upgraded, because the original information provided will no longer be accurate. Cisco inquired if the regulation would demand that information need to be updated after every upgrade to the product. Techbuyer Europe suggested that it would be helpful to have a banding of material contents.

DG GROW clarified some details on the aspects of material efficiency. It was mentioned that in the first regulation, material efficiency requirements were introduced by the regulation. The Commission have requested ICF analyse the transition towards a language that is similar to the pending smartphones regulation.

DG GROW state there is a standardisation request from the Commission which calls for product specific standards on material efficiency. The goal is to have everything aligned: the product specific standard and the requirements in the regulation. During the last study, stakeholders requested that we explore whether the requirements of the regulation could be imposed on the circular economy aspects of networking equipment, and if this could be done in a standardised way for all networking products. DG GROW

requested feedback on the possibility of whether there could be a horizontal material efficiency requirement for networking equipment.

Juniper Networks felt like this was a bolt on approach. Juniper are concerned that material efficiency measures could be missed. In response to DG GROW's request on networking equipment they mentioned that there should be energy efficiency requirements for networking equipment.

**Operating Conditions (Review of items h, k):** DigitalEurope raised the question of whether we are looking at ASHRAE Requirement level A5 or A6. ICF provided a reply that the A1 class is generally accepted as the standard which Data Centres are typically designed around. Following this, Kao Data provided context around the thermal guidelines within the ASHRAE 9.9 standard. They anticipate a further version of the ASHRAE standard to be published soon.

**System Performance Considerations (Review of item m):** The German Environment Agency described how there are other metric tools to consider for server performance, such as: year/year renewable energy factor (REF); Water Using Effectiveness (WUE); and the cooling efficiency ratio (CER). Kao Data described how WUE is coming to the forefront, however, it is geographically limited. All three are being considered by the Climate Neutral Pact. The German Environment Agency stated that PUE is a useful parameter, but it should not be considered in isolation. Only together with the other indicators (CER, WUE, REF) can we get a whole picture.

**Liquid Cooling Systems and Solutions (Review of item n):** ECOS stated liquid cooling is one of the beneficial factors for more heat re-use in servers and should be considered. Kao Data raised awareness that ASHRAE have published fluid and liquid temperature guidelines for liquid cooling with temperature classes. DG GROW raised that the possibility to apply liquid cooling is very feasible but wanted to understand if this was a niche market.

**Waste Heat Recovery Systems and Solutions (Review of item o):** ECOS stated that there could be synergies between waste heat and the EE Directive. ICF explained that from a system level, they are trying to understand this, in order to inform regulators.

**Direct Current Power Supply for Servers (Review of item q):** AMD explained how the finalised scope and timing of SERT V3 release is not yet finalised. The DC power servers are likely to be in scope, but this is not guaranteed.

**Other Topics** – No comments raised.

## AOB

Intel asked for clarification on when the regulation will be published. DG GROW reiterated that taking the pending smartphone regulation as a guide, it is unlikely the updated regulation will be published before Q2 2026.

## Closing statement

DG GROW shared their appreciation for everyone that attended the meeting today. They encouraged all attendees to participate and follow the process for this regulation. DG GROW wanted to know if any of the manufacturers who attended the session could help the project team to engage with recyclers. DG GROW are looking to expand the audience of the review study. ICF closed the presentation, requesting that all attendees complete both the [qualitative questionnaire](#) by **28th April 2023**, and the quantitative questionnaire by **12th May 2023**. Presentation slides and meeting minutes are uploaded on the study [website](#).