

DRAFT MINUTES
4TH STAKEHOLDER MEETING OF THE
ECODESIGN PREPARATORY STUDY FOR PRODUCT SPECIFIC MEASURES ON SCARCE,
ENVIRONMENTALLY RELEVANT AND CRITICAL RAW MATERIALS AND ON RECYCLED
CONTENT
PHYSICAL AND VIRTUAL WEBEX MEETING
TUESDAY 01 JULY 2025, 09:45 – 13:45 (BRUSSELS TIME)

Participants: See “Attendance List” in Annex.

The slide presentations can be downloaded from www.ecodesignmaterials.eu/documents

1. WELCOME

The Commission and the Consultants welcomed the participants, explaining the courtesy rules of the meeting, and presented the agenda.

The Commission staff and the project team present at the meeting introduced themselves.

Agenda:

1. Welcome, Jan Viegand, Viegand Maagøe
2. Background and aim, Davide Polverini, DG GROW
3. Study introduction, Davide Polverini and Jan Viegand
4. Summary of comments for IE, PCs and the main report, Jan Viegand
5. Q&A
6. Phase 2: Product study Refrigerating appliances, Leo Wierda, VHK
7. Q&A
8. Phase 2: Product study Washing machines, Antoine Durand, Fraunhofer ISI
9. Q&A

Pause

10. Phase 2: Product study Electric motors, Jana Hack, Fraunhofer ISI
11. Q&A
12. Methods for verification of recycled content, Davide Polverini
13. Q&A
14. Next steps
15. AOB, Closure

2. BACKGROUND AND AIM, DAVIDE POLVERINI, DG GROW

- Today we will be presenting the results from the Phase 2 mini-analyses at the product-specific level for refrigerating appliances, washing machines and electric motors.
- This study stems from the last Ecodesign working plan – i.e. the old plan. The approach was to inspect and analyse the feasibility of imposing these requirements at the product specific level. The new working plan for the ESPR has now been published. Hopefully,

this study will inform not only the individual product regulations but also future developments under the ESPR.

- The deadline for adopting possible measures under Ecodesign is the end of 2026. The work carried out within this study is meant to complement the ongoing review and preparatory studies being developed for these three products. The analysis today is not meant to be conclusive. There will be still room to check and comment on the preliminary results discussed today.

3. STUDY INTRODUCTION, DAVIDE POLVERINI AND JAN VIEGAND

The Commission and the Consultant introduced the project objectives, phases, project team, project timeline and opportunities for stakeholder engagement.

4. SUMMARY OF COMMENTS FOR IE, PCs AND THE MAIN REPORT, JAN VIEGAND

The Consultant provided a brief summary of the stakeholder comments received after the 3rd stakeholder meeting (25th April 2025) for information.

5. Q&A

Umicore: they are a recycler of non-ferrous metals, mostly critical raw materials (CRM). They have the impression that the Phase 2 results are mainly based on the recycling of polymers, while recycling CRM has other needs and characteristics. Umicore believes there needs to be targets on quality of recycling, to make sure everything ends up in the value chain. They want to avoid sub-optimal material flows and instead have recycled content targets, and for the recycled materials to end up in products with recycled content targets.

Plastics Recyclers Europe: design for disassembly and regulation of design doesn't reflect the recycling process. Products and equipment is shredded, unless it is valued – then it is disassembled. The focus should be on selection of right materials to increase the quality of the recycled materials.

Schneider Electric: asked for clarification from the Commission - can you clarify if the intention would be to limit the scope of any eventual measures on CRM/recycled content/recyclability to the five products examined in these mini studies, or is it possible that these or similar requirements could be applied to a broader scope of products? In other words, does this mean you are considering both product specific measures to be added in ongoing review process and/or a horizontal measure across several products?

The Commission answered that the conclusions from the study are meant to inform the five specific product studies potentially resulting in requirements. There is no other direct application of the findings, but obviously the results can be background for other studies launched under the ESPR. In particular, the ESPR working plan foresees possible horizontal requirements on recycled content and recyclability for electronics after further studies.

6. PHASE 2: Product study Refrigerating appliances, Leo Wierda, VHK

The Consultants provided a brief summary of the product mini-study on refrigerating appliances.

7. Q&A

CLC/WG12: due to the food contact requirement, putting a requirement on the minimum recycled plastic content is not feasible. From the economic point of view, do you have an estimation for recycling – what will it cost to increase the amount of pure stream plastic?

- **Consultant:** the results presented are for the entire supply chain. They are preliminary estimates, but we can try to gather more information on the costs part.

Some recyclers don't have the time to go through disassembly, and simply shred everything. Why would marking the types of plastic change this practice?

- **Consultant:** this is somewhat of an ambiguous situation. On the one hand, recyclers say that they shred everything and post-separation works fine. On the other hand, we notice they are still interested in information to facilitate the separation of components. It would be good if stakeholders could clarify this in your comments. There is an understanding that with more automation of the recycling process, this will require markings with the type of plastic.

CLC/WG12: Appliance and equipment manufacturers can work on implementing technologies and improvements to increase the possibilities of design for recycling, e.g. reducing plastics, but a big bottleneck remains: the recycling techniques used by recyclers. Any regulation would have to keep this in mind: the balance between what is available on the market in terms of recycled plastics to produce a product, and actions taken to increase the availability of recycled plastic on the market.

CEFIC: First, you say “WEEE” already takes care of certain substances (→ studies on washing machines, fridges). So, case closed, right? (→ *See studies on Household Washing Machines and Household Washer-Dryers.*) But then you say you are not happy with the *threshold*. It would then seem logical to “revise WEEE” rather than experiment with setting stricter and conflicting values in the brand-new and untested ESPR legislation ... Threshold for example on halogenated flame retardants (HFRs).

- **Consultant:** asks to provide these statements and questions in written comment, to clarify what is meant exactly.

BSEF: flags that household washing machines are a different product, the WEEE Directive is similar, and is missing from this report. It would be worth adding this reference. They refer to their comment in the online meeting chat: BSEF are surprised to read in the report that there is uncertainty about how recyclers can recognise these parts (with BFRs) and if they have time to identify and remove them'. Recyclers such as CoolRec/Renewi, and EC consultants, Fraunhofer IZM have confirmed density sorting techniques are available for BFRs, and this is a simple and cost effective method for electronic equipment. BSEF would suggest changing the recommendation from 'Maybe' to 'No' for restriction of HFRs, and refer to the WEEE Directive, which has been done for washing machines.

Electrolux: asked whether PU foam is excluded from the calculation of plastic content? Several refrigerator components obtained through injection moulding are subject to food

contact. The use of recycled plastic in those parts is technically feasible but not economically affordable. Can those parts be excluded from the calculation of the recycled content?

- **Consultant:** PU foam is not included in the calculation.
- **Commission:** on your second question: this is a possibility we can consider.

Umicore: remark on CRM recycling – silver and gold are working well, other CRM tends to give bad results. The economics should be set first. A good suggestion in the report: improving the removability of parts containing CRM is very important. The separation of those parts from the appliance is important. There is a reason too why silver and gold are more important: their abiotic depletion potential is high. We should focus on these metals.

- **Consultant:** asks to confirm if it is already economically viable to process all CRM. It would be interesting for the consultants to have information on what is economically viable.

Umicore: our market drivers are indeed precious metals. We will allocate our costs mainly on these metals, and then we get the less valuable materials ‘for free’. The cost modelling process is important.

BSEF: question on the life cycle assessment (LCA) – what is the source you are using for the numbers in the LCA?

- **Consultant:** It’s the EcoReport Tool, version 1.7 (that is why those values are not explicitly mentioned in the report).

APPLiA: The slides are appreciated as they will support the ongoing review of the study. Since the study reports were only circulated 13 days ago, our review process is still underway. Some initial considerations were already provided following the third SH meeting. While the recommendations in the PO tables are understood, certain contradictions have been noted — for example, the suggestion to label and mark specific components, despite evidence that such practices are not currently implemented at recycling sites. A thorough impact assessment is recommended to evaluate the feasibility of these measures during the recycling phase. Further input will be provided at a later stage.

- **Consultant:** it is always a question of what type of recycling you see for the future. Maybe a marking now will not have an effect, and in 20 years it might. The question should always be: what do we see for manufacturing and recycling in about 20 years time?

BSH: why were bio-circular plastics not considered in your study?

- **Consultant:** not intentionally excluded. This was mini-review study, so the scope was limited. Written comments on bio-circular plastics would be welcome.
- **Commission:** it is also a matter of prioritisation.
- **Consultant:** This was also due to restrictions in the EcoReport Tool. There is no dataset on bio-based materials.

Plastics Recyclers Europe: would like to share that today the technology doesn’t reflect the requirements/suggestions for disassembly. It is the whole system that should change, e.g. also the collection of the equipment for recycling. Our opinion is that we should focus on removing the parts that can contaminate the stream.

- **Commission:** this presents a chicken-and-egg scenario. While innovation is necessary to drive change, it is equally important to ensure that any proposed measures are

feasible and can be effectively implemented. Caution is advised to avoid introducing requirements that may not be actionable in practice. Opportunities for synergies should be explored, particularly in relation to emerging recycling technologies.

8. PHASE 2: Product study Washing machines, Antoine Durand, Fraunhofer ISI

The Consultants provided a brief summary of the product study on washing machines.

9. Q&A

Plastics Recycling Europe: it is necessary to improve quality and quantity of recyclability, otherwise we will not be able to reach the post-consumer recycled (PCR) plastic target. Why are suggested PRC levels for washing machines so high compared to refrigerators?

- **Consultant:** We are dealing with two types of products. One reason we went for high amount of recycled content is: washing machines might be easier than refrigerators, as there is no contact with food, and for inside parts, less aesthetic issues. The largest part made in plastic is the washer tub. Furthermore, we went for PCR and PIR. Some stakeholders reported high recycled plastic content. See more details in the mini-study report.

Plastics Recyclers Europe: in that case: what type of recycled content are you aiming for?

- **Consultant:** not specified. As I mentioned, PCR and PIR possible. When we asked about the sources of recycled plastic in the stakeholder interviews, we were informed that recycled plastic was sourced from automotive and the household appliances sector.

BSH: this study will not have an immediate regulatory impact on our products. It will be used as basis for ESPR – which will then impact producers. As producers we can influence a lot. What is important here, if we are moving towards the use of more recycled material in these products, we also need to develop and accelerate the shift towards better recycling processes. The recycling industry also needs to improve, to deliver that what the producers need to fulfil the requirements with a quality recycled material. It is a shared responsibility for producers and recyclers. It would be fair that we – appliance and equipment manufacturers - also share the burden. We as manufacturers accept requirements, but there should also be requirements applied to recyclers – on quality that should be delivered, especially in the field of plastics. Collaborations can be built across the supply chain, APPLiA is doing this already.

- **Commission:** for potential ESPR/Ecodesign measures, we can set potential minimum requirements for the quality/features of the recycled material. This would obviously depend on the recycling process. We agree that it should be in the measure.

APPLiA: request to have the reports at least one month prior to stakeholder meetings (SHMs). We need more time to have a constructive debate, especially with multiple SHMs. The recycled requirement is very ambitious, we will provide comments in writing too.

- **Commission:** the expected savings numbers are objective and clear. The impact is not big, but we have realistic, modular options.

Electrolux: when referring to plastic mass, are fillers included? This would impact the understanding of the target a lot. We don't have visible components, that is true, but we have

high numbers of components inside. This complexity should be considered. The stability requirements for a washing machine is also important.

- **Consultant:** on fillers – we used the BoM of the main review study and the Eco Report Tool (ERT), we cannot guarantee if filler and polymer were separated. We should have closer look to the ERT. Regarding dismantling: we proposed requirements easing the dismantling but dismantling itself would not be mandatory.
The mini study looked at all parts (and the potentials include accordingly all parts), but it might be an option/a good start to look first at the washer tub.
On the source of data for metal: we considered the default parameters of the ERT and then we corrected some values.

Miele: handheld near infrared (NIR) scanners can identify types of plastics quickly and with higher precision than a moulded label, which will be small due to design restrictions. Have you or someone from the study team made an analysis on how big the market for PiR plastics is? We should be careful not to overestimate the potential of it. We know that PCM are scarce.

- **Commission:** as a general comment, we agree that, should the Commission go for proposing requirements on recycled content for any (plastic) material, an analysis on the material flows and the availability would certainly be helpful for a thorough understanding of the market.

CLC/WG12: When defining PCR, the ISO's PCR definition that has been adopted or the new PCR definition proposed by CEN/TC 249 has been used?

- **Consultant:** we didn't carry out a plastics market assessment. This is another level, not in the scope of this mini-study.

CEFIC: You say WEEE already takes care of certain substances (→ studies on washing machines, fridges). So, case closed, right? (→ See studies on Household Washing Machines and Household Washer-Dryers). But then you say you are not happy with the threshold (not clear if you mean WEEE or RoHS). It would then seem logical to revise WEEE rather than experiment with setting stricter (and conflicting!) values in the brand-new and untested ESPR legislation. Source to my question (almost same wording in studies on washing machines, fridges): "The WEEE directive already specifies that plastic containing [BFR] have to be removed from any separately collected WEEE. [...] If not already addressed in other EU regulation, the review of the Ecodesign regulation on fridges could consider forbidding the use of [HFR] [...]" / "[BFR] may pollute material in the quantity banned by RoHS - thinking of future restrictions that may get stricter and stricter, they might contaminate plastics recycling" [= thresholds].

BESF: regarding flame retardants, none of these substances should enter the recycled material flows. How will the consultants conducting the review of the household washing machines regulation include the recommendations of today on these substances in the study?

- **Consultant:** in the review study on washing machines, we also have a SoC analysis. These results will be presented in the study and in the stakeholder meeting on washing machines on 8th of July.

10. ELECTRIC MOTORS – FRAUNHOFER ISI

The Consultants provided a brief summary of the special case study on electric motors.

11. Q&A

Umicore: we need to avoid reallocating contents from non-regulated applications to regulated applications. It would be better to have targets for motors instead of recycled contents. Also, REE does not have high recycling impact but we should not conclude from that that it is not useful.

- **Consultant:** indeed, REE recycling might not have the highest recycling impact, but it still makes sense for strategic reasons.

APPLiA: asks for clarifications on the scope. (1) In your slides you didn't include a broad scope of different types of motors. Does this mean that the conclusions being made are only applicable to the types of motors included in your slides, or do they also apply to other types of motors? (2) Will these results feed into the on-going review study on electric motors, and if so, how is this linked the CRM Act?

- **Consultant:** we focused on a few types in this mini-study, but in the main product study, we will broaden the scope of motors.
- **Commission:** the idea here is to explore anything that goes beyond the CRM Act, we want to avoid overlap of regulations.

Daikin Europe N.V.: What is the 85% reference to in the design options for copper? And the CRM Act: we are asking for alignment with various acts, as APPLiA did. 2. Will you also cover electric motors other than the 55kW?

- **Consultant:** The 85% represents the R2 value for recyclability. On selected models: models selected are indicative for the main study, we might go to a broader range in the main study.

Mitsubishi Electric: trying to avoid double regulation in CRMs. In Articles 28 and 29 in the CRM Act, is it possible if a specialist is established to be the sole legal expert for Ecodesign? Is the suggestion that the recyclability requirement will stay in the CRM Act, but the recycled content requirements that will be in the ESPR?

- **Consultant:** in the CRM Act (Articles 28 and 29), threshold values are not mentioned. We believe the findings from this mini-study will also be relevant to help establish these thresholds. Also, not everything will be captured in the CRM Act, there are recommendations that can be set at a product level. That is why we are also looking at these aspects for CRMs.

Schneider Electric: Question on clarifying the scope of the materials in this study. Why copper and REE? Also, where did the base case for recycled content come from? We are questioning the price of recycled copper. We would also like to share data with you on variable speed drives.

- **Consultant:** regarding the scope, some products like steel have been or are explored in other studies. We wanted to look at CRM and REE for strategic reasons, because it hasn't been explored much in other studies. Regarding the bill of materials, technical experts provided data to us; it is a preliminary estimate in any case, we will try to refine this work for the main review study on electric motors. Any comments or input would be welcome.

12. Methods for verification of recycled content, Davide Polverini, DG GROW

The **Commission** supported by a presentation by professor Fabrizio Sarasini, Sapienza University of Rome, presented the methods for verification of recycled content and the planned pilot test using materials from interested stakeholders. Specifically, the research intends to investigate the rheological, thermal, and mechanical properties of injection-moulded specimens produced by incorporating varying proportions of post-consumer polymers into virgin polymer matrices. The testing phase is expected to start around September. Stakeholders interested to participate to this testing phase, in particular by supplying samples of plastic materials/components, are welcome to contact as soon as possible the Commission (D. Polverini).

Next STEPS

The Consultants presented that next steps in the process would be to upload of the slides from today's meeting. They asked that all stakeholders submit comments no later than 30 July, using the commenting form available on the website.

Q&A:

APPLiA: asks for an extension of the deadline for stakeholder feedback to end of August.

- **Commission:** indicates they are bound by procedural aspects of the study. End of August will be too late to deliver the final report. But we can give one week extra (6th August).

Umicore: indicates they understand the logic for polymers, but what about CRM, which are at atomic level? How do you see the verification in such cases?

- **Commission:** the verification study is centred on plastics, because it is much more difficult for metals and similar materials.

Plastics Recycle Europe: we have studied a different method to account for recycled content. We will comment and share our findings.

- **Commission:** confirms they will try to bear this in mind.

CLC WG12: how are you approaching the many components included?

- **Commission:** we can ask for a comparison of the component with the related virgin materials. There can be general trends, and it can be investigated if these trends have a minimum.

13. AOB, CLOSURE

14. End MEETING

The Commission thanked all the participants for their participation and for sending comments in writing on top of what we have discussed today.

Stakeholders and participants will be updated on the meeting minutes and the progress of the report.

The Commission closed the meeting at 13:45.

ANNEX – ATTENDANCE LIST

Please notice that the attendance list is approximate because not all attendees had registered with full name and organisation.

COMMISSION SERVICES
DG GROW
DG ENV
DG JRC
MEMBER STATES
BE
Belgian Ministry for Public Health
DE
DE Umweltbundesamt
DE, UM/BW
IT, ENEA
FR
FR, Ministère de l'Économie, des Finances et de l'Industrie
FI, Ministry of Environment
NL, Rijkswaterstaat on behalf of Ministry of Infrastructure and Water Management
SE Swedish Energy Agency (SE)
SE Swedish EPA
PT Portugal
ORGANISATIONS
AFNOR
Agoria
Alberdingk Boley GmbH
Apple
APPLiA
Arkema
AVL
BASF
BDE Bundesverband der Deutschen Entsorgungs-, Wasser- und Kreislaufwirtschaft e. V.
BEKO
BP
BSEF
BSH Hausgeräte GmbH
CAREL Industries SpA
Cefic
CEMEP/ZVEI
Cisco
CLASP
Compliance & Risks
Copeland Europe GmbH
Covestro
Daikin
Daikin Europe
Danfoss A/S
Danish Environmental Protection Agency
Dell Technologies

Department of Enterprise Trade and Employment
DG GROW Directorate I
DIGITALEUROPE
DK EPA
DUH
ECODESIGN company GmbH
Edelman
EHS Consulting
Electrolux
ENPA
Enterprise Ireland
EPEE
Epson
Eugster / Frismag AG
EuRIC
EuroCommerce
EUROMETAUX
European aluminium
European Power Tool Association
Eurovent
Evonik
Evonik Industries AG
Fraunhofer ISI
Fraunhofer IZM
FreeICT
Friemo
Fujifilm
Fujifilm corporation
Fujifilm Europe GmbH
Grohe AG
Groupe Atlantic
Hitachi Europe
Hitachi High-Tech Corporation
HOBART GmbH
Honda Motor Europe
HP
HP Inc
HPE
ICA
ICF
IEC/TC111 env. stds.
Industrievereinigung Chemiefaser e.V. (IVC)
Intel
International Zinc Association
Jasmine Mirage Cooling
JEMA
KDEM
LANXESS
Lexmark International
Liebherr Hausgeräte
LightingEurope
Miele
NEC Europe
Neste
Nestlé
Norsirk AS
Numatic International Ltd
Ohana

Orgalim
Panasonic Europe BV
PHOENIX CONTACT GmbH & Co.KG
Ricoh Europe
Rockwell Automation
RREUSE
Rud Pedersen Public Affairs
Samfunnsbedriftene
Samsung
SEB
SEC Newgate EU
SEPA
SHARP JAPAN
Siemens
Siemens AG
Sony
Swedish Energy Agency
Systemair
The European Steel Association, EUROFER
Toshiba Europe GmbH
Toyota Motor Europe
Unternehmer Baden-Württemberg
VDE Prüf- und Zertifizierungsinstitut
VDL
VDMA European Office
Verband der Chemischen Industrie Landesverband Nord e.V.
Vestel
VGG Verband der Hersteller von gewerblichen Geschirrspülmaschinen e.V.
VHK
Viegand Maagoe
VITO
Vivo
Vorwerk
Wirtschaftsvereinigung Stahl
Wuppertal Institute for Climate, Environment and Energy
ZVEI