Please mute your microphone

The meeting will start at **10:00**

Ecodesign for Sustainable Products Regulation

Horizontal Requirements on Reparability

1st stakeholder meeting – 18 November 2025

European Commission

Meeting etiquette

Please indicate “name of organisation + your name”

Keep your audio and video off, unless given the floor

Post your short question in the chat or type “floor” to speak

Agenda

	Session	Time
1	Opening of virtual room and connection of participants	9:45 - 10:00
2	Policy framework and introduction	10:00 - 10:15
3	Overall methodology and initial product scope + Q&A	10:15 – 11:15
	Coffee break	11:15 – 11:30
4	Task 1: methodology and results + Q&A	11:30 - 12:45
	Lunch break	12:45 - 14:00
5	Task 2: methodology and results + Q&A	14:00 - 15:30
	Coffee break	15:30 - 15:45
6	Task 2: overall assessment	15:45 – 16:20
7	Task 3: methodology and preliminary results + Q&A	16:20 - 16:55
	AOB + closing of virtual room	16:55 - 17:00

Policy framework and introduction

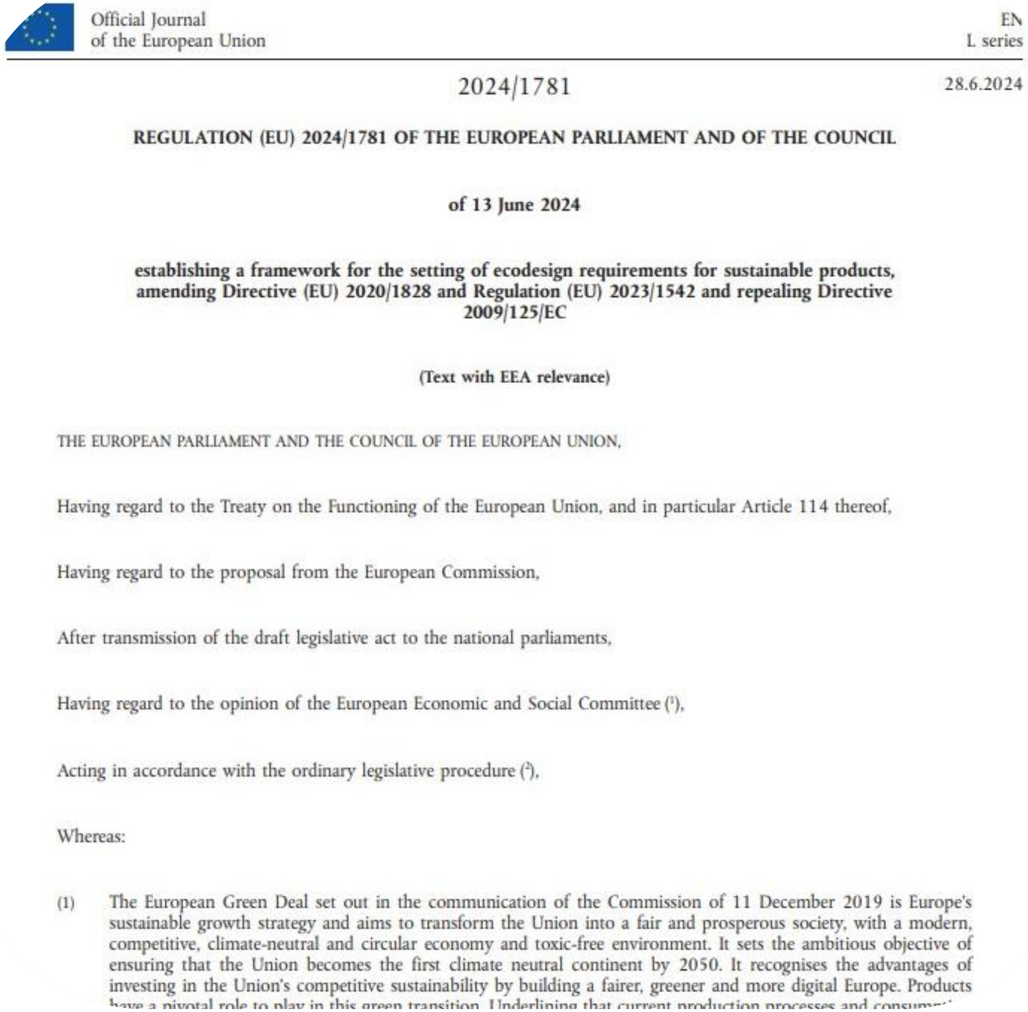
ESPR – Policy framework

Ecodesign for Sustainable Products Regulation (ESPR) enters into force in 2024

→ Allows setting **horizontal requirements**

→ Concerning a specific product aspect

→ Applying to several product groups at once



Official Journal
of the European Union

EN
L series

2024/1781

28.6.2024

REGULATION (EU) 2024/1781 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 13 June 2024

establishing a framework for the setting of ecodesign requirements for sustainable products, amending Directive (EU) 2020/1828 and Regulation (EU) 2023/1542 and repealing Directive 2009/125/EC

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 114 thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

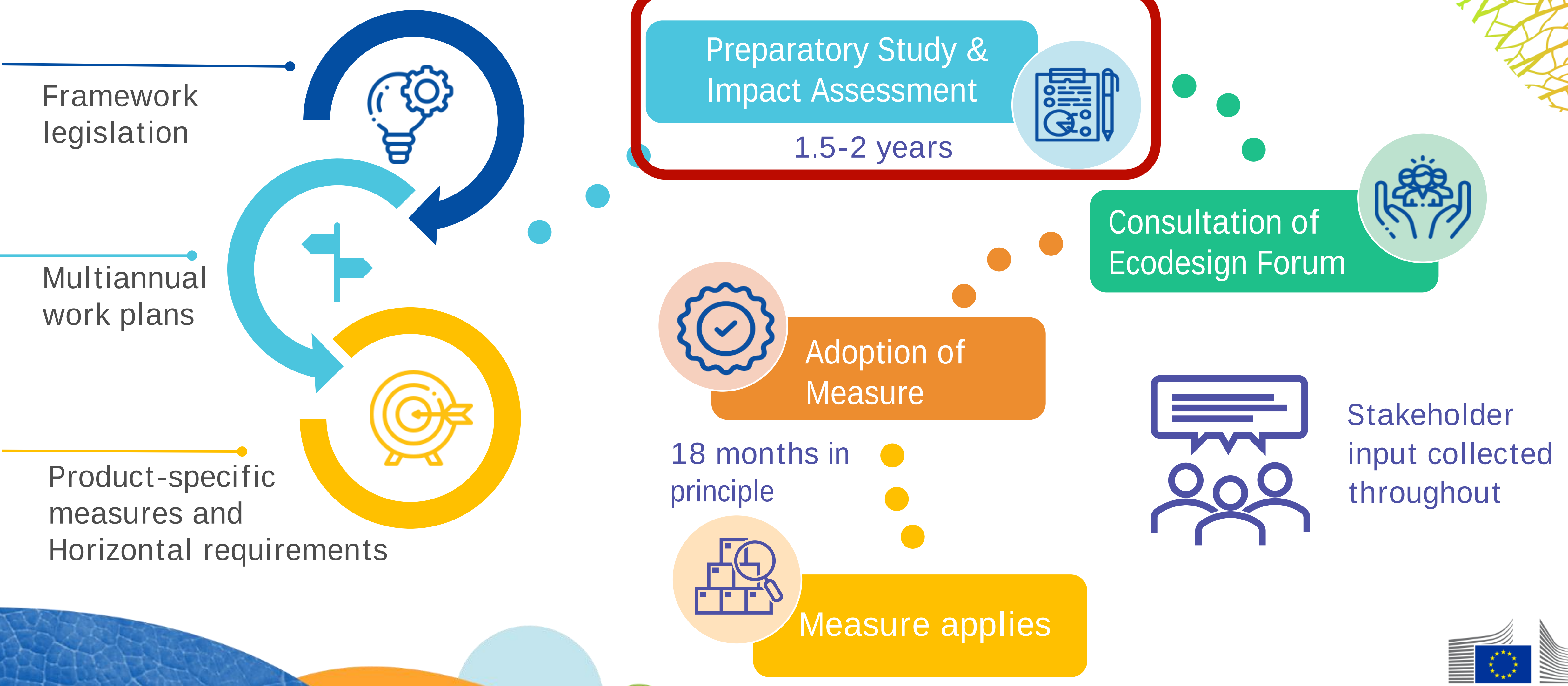
Having regard to the opinion of the European Economic and Social Committee (1),

Acting in accordance with the ordinary legislative procedure (2),

Whereas:

(1) The European Green Deal set out in the communication of the Commission of 11 December 2019 is Europe's sustainable growth strategy and aims to transform the Union into a fair and prosperous society, with a modern, competitive, climate-neutral and circular economy and toxic-free environment. It sets the ambitious objective of ensuring that the Union becomes the first climate neutral continent by 2050. It recognises the advantages of investing in the Union's competitive sustainability by building a fairer, greener and more digital Europe. Products have a pivotal role to play in this green transition. Underlining that current production processes and consum

ESPR – developing ecodesign requirements



ESPR: timeline & milestones

25 April 2024
EP Plenary voted on final ESPR text

May 2024
Final Council endorsement

June 2024
Publication of ESPR in the OJ

18 July 2024
ESPR **entry into force**

October 2024
Establishment of Ecodesign Forum; calls for membership

February 2025
First meeting of the **Ecodesign Forum**

16 April 2025
Adoption of the 1st ESPR **Working Plan** (9m after entry into force)

Mid 2025
Acts on **unsold goods** destruction ban & exemptions (12m after entry into force)

2026
Acts on DPP registry, service providers, data carriers, digital credentials

2026/2027
Adoption of the **first ESPR measures** (e.g. Repairability, textiles)

2027/2028
First product **requirements** start to apply.

New Final products included

Product/Measure	JRC ranking	Lead DG	Market size (EU)	Estimated timeline for adoption
Final products				
Textiles/Apparel	1st	ENV+GROW	175 billion EUR (with footwear, 2021)	2027
Furniture	2nd	ENV (TBC)	140 billion EUR (2021)	2028
Tyres	3rd	ENV+GROW	45 billion EUR (2021)	2027
Mattresses	4th	TBC	10 billion EUR (2022)	2029

Note: Information and Communication Technologies (ICT) are not in the list but they are considered covered through horizontal requirements and some energy-related products.

Intermediate products included

Product/Measure	JRC ranking	Lead DG	Market size (EU)	Estimated timeline for adoption
Final products				
Iron & Steel	1st	GROW	152 billion EUR (2023)	2026
Aluminium	4th	GROW	40 billion EUR (2019)	2028

Energy-related products included

Energy-related products	Lead DG	Ecodesign requirements	Energy label	Indicative timeline
Low temperature emitters	ENER	No	Yes	Adoption: 2026
Displays	ENER	Yes	Yes	Adoption: 2027
EV chargers	GROW	tbd	tbd	Adoption: 2028
Household dishwashers	ENV	Yes	Yes	Adoption: 2026
Household washing machines and household washer-dryers	ENV	Yes	Yes	Adoption: 2026
Professional laundry	ENV	Yes	tbd	Adoption: 2026
Professional dishwashers	ENV	Yes	tbd	Adoption: 2026
Electric motors and variable speed drives	ENER	Yes	No	Adoption: 2028
Refrigerating appliances (including Household fridges and freezers)	ENER	Yes	Yes	Adoption: 2028
Refrigerating appliances with a sales function	ENER	Yes	Yes	Adoption: 2028
Light sources and (only for ecodesign) separate control gears	ENER	Yes	Yes	Adoption: 2029

Energy-related products (ctd.)

Energy-related products	Lead DG	Ecodesign requirements	Energy label	Indicative timeline
Welding equipment	GROW (?)	Yes	No	Adoption: end 2030
Mobile phones and tablets	GROW	Yes	Yes	Adoption: end 2030
Local space heaters	ENER	Yes	Yes	**Energy label**: adoption in 2026 **Ecodesign requirement**s: Adoption mid 2030
Tumble dryers	ENER	Yes	Yes	Adoption: end 2030
Standby and off mode consumption	ENER	Yes	No	Adoption: end 2030

Transition regime (ESPR Article 79) – to be finalised under the Ecodesign Directive

external power supplies, photovoltaic panels, space and combination heaters, water heaters, solid fuel local space heaters, air conditioners including air-to-air heat pumps and comfort fans, solid fuel boilers, air heating and cooling products, ventilation units, vacuum cleaners, cooking appliances, water pumps, circulators, computers, servers and data storage products, power transformers, professional refrigeration equipment, imaging equipment.

Horizontal measures included

Product/Measure	JRC ranking	Lead DG	Market size (EU)	Estimated timeline for adoption
Horizontal requirements				
Repairability (including scoring)	N/A	ENV	N/A	2027
Recycled content and recyclability of electrical and electronic equipment	N/A	ENV (+GROW TBC)	N/A	2029

Repair and Repairability

"one or more actions carried out to return a defective product or waste to a condition where it fulfils its intended purpose"

Product reparability scoring system specifically for smartphones and slate tablets

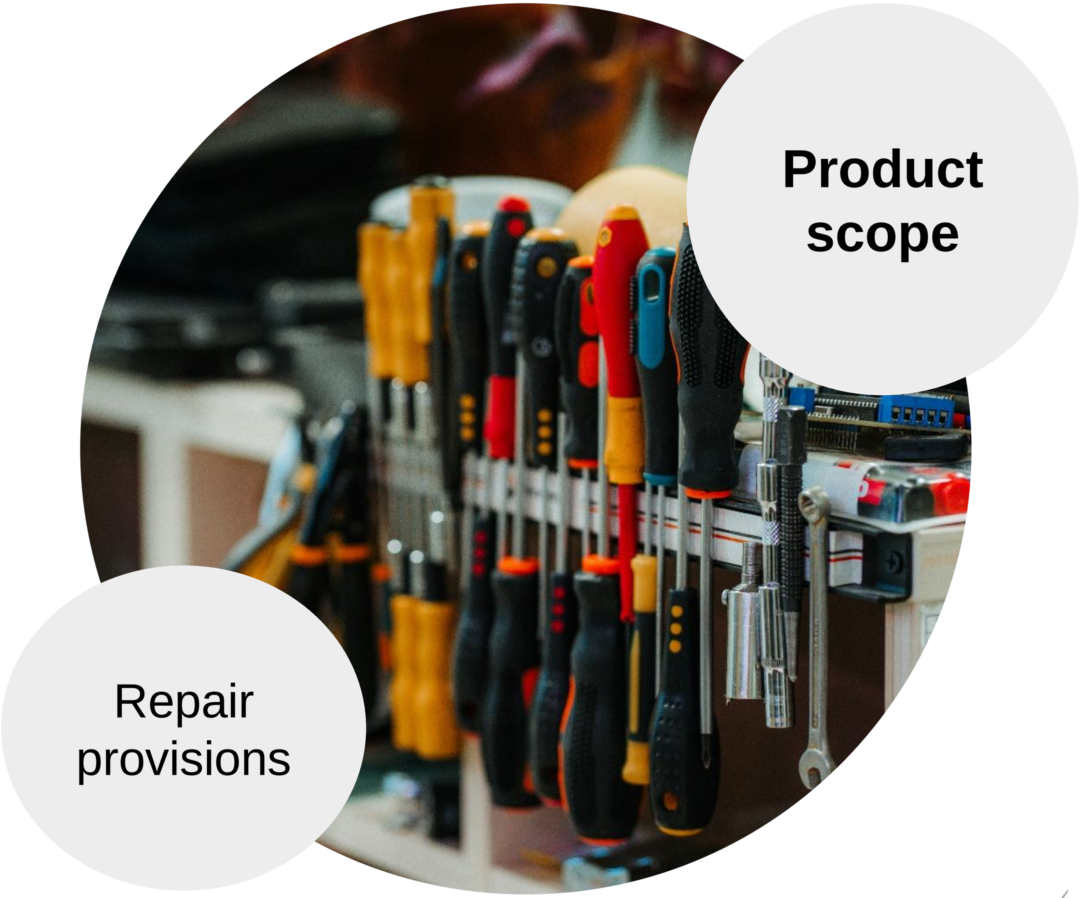
Product relevance scoping study for a Reparability Scoping System

Work on repairability for selected product groups such as laptops and imaging equipment

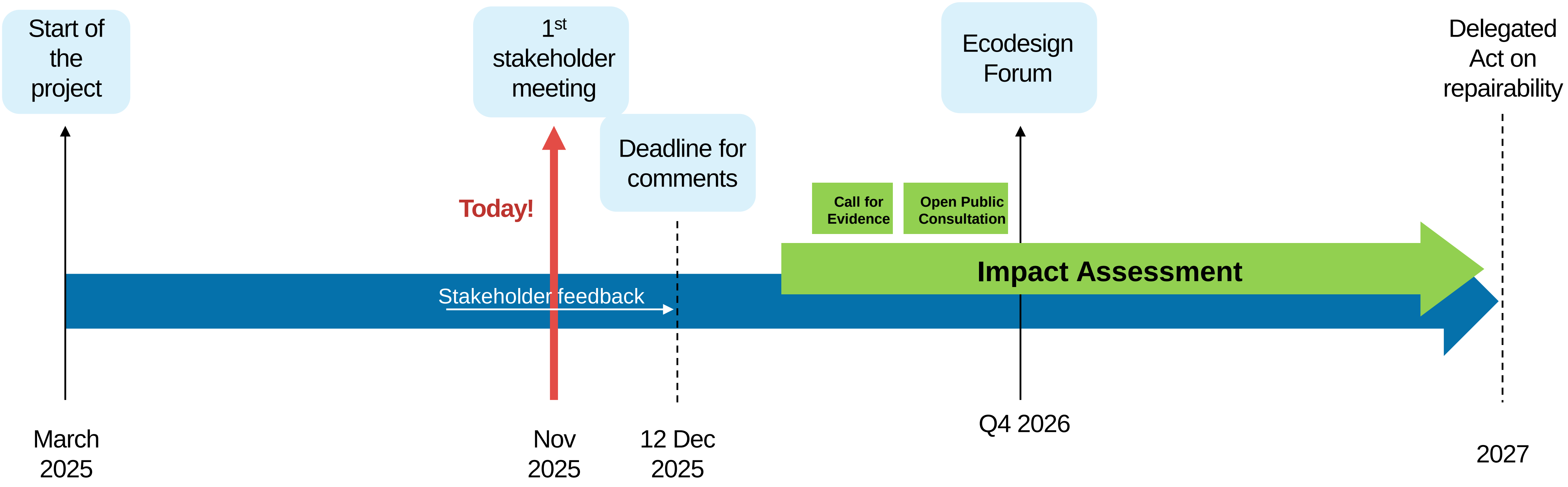
Aim of the study

- Analyse the potential for horizontal ecodesign requirements on product repairability including a repairability scoring system under ESPR.

- Consider technical, economic, environmental, market and user aspects of product repairability, developing possible design options for potential ecodesign requirements.



Timeline of the study



Aim of the meeting

To discuss results from Task 1 and Task 2 on product scope for repairability requirements

- Focus on methodology and general assessment, avoiding long discussions on individual product groups
- Comments on specific products are welcome in writing by December 12th

Overall methodology

ESPR and Working Plan 2025-2030

*(15) In order to **maximise the effectiveness** of ecodesign requirements and to efficiently improve the environmental sustainability of products, it should also be possible to set one or more horizontal ecodesign requirements for a **wider range of product groups**, such as electronic appliances or textiles. Horizontal ecodesign requirements should be established where the **technical similarities** of product groups allow their environmental sustainability to be improved based on the same requirements. It is important that horizontal requirements be developed in particular concerning durability and **repairability**.*

Art.5(7): *Where two or more product groups display one or more similarities allowing a product aspect to be effectively improved based on **common information requirements or performance requirements**, horizontal ecodesign requirements may be set for those product groups ('horizontal ecodesign requirements'). When considering whether to set horizontal ecodesign requirements, the Commission shall also take into account the positive effects of those requirements towards reaching the objectives of this Regulation, in particular the ability to cover a wide range of product groups in the same delegated act.*

*WP: The scope, to be refined during the preparatory study, could include products such as **consumer electronics and small household appliances**.*

Provision Horizontality

Low

Low homogeneity, some common parts/materials

- Lightweight design
- SoC restriction / info
- Carbon/ Material Footprint
- Recycled Content
- Micro-/ Nano-plastic release

Medium

Some common parts/functions/materials

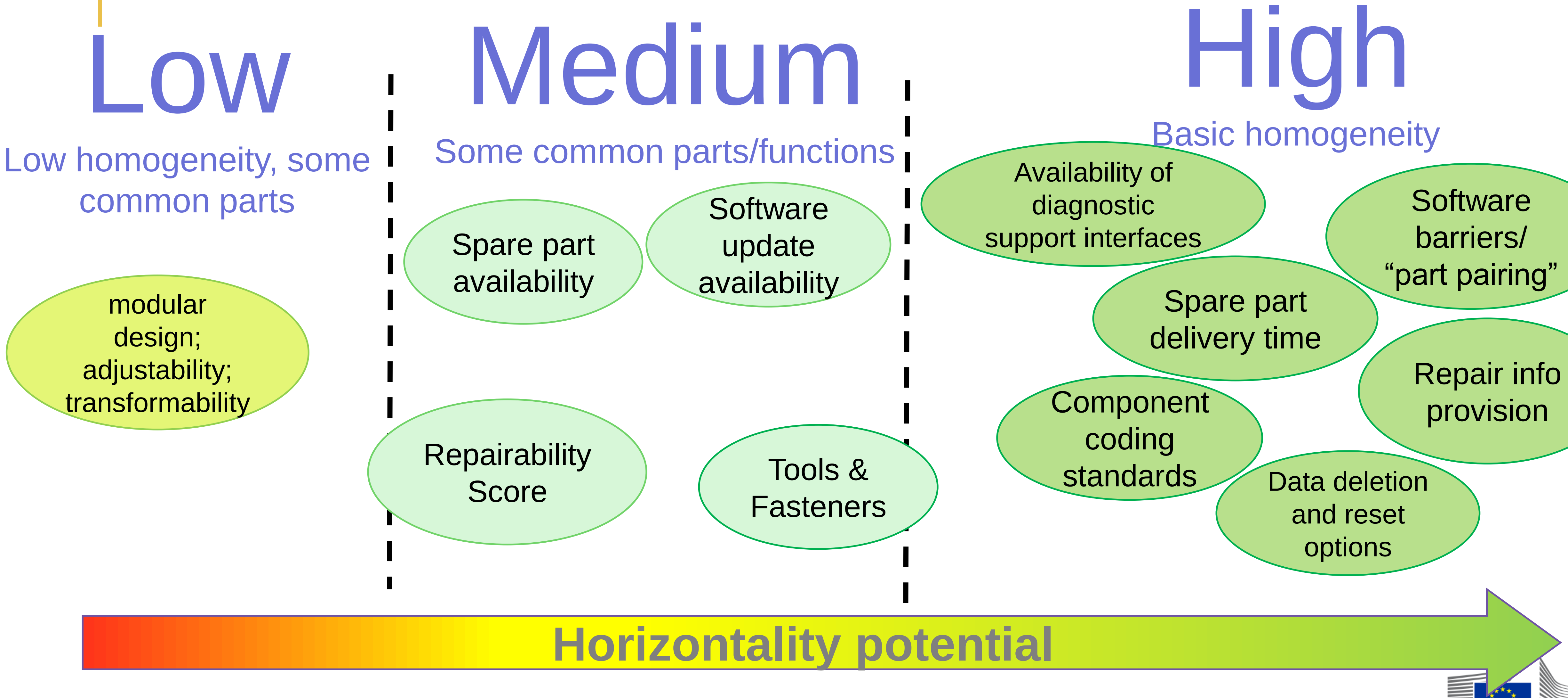
- Software updates
- Spare part avail
- Recyclability Score
- Repairability Score
- Tools & Fasteners
- Material Separability

High

Basic homogeneity

- Repair info availability
- Software barriers
- Minimum guarantee

Repairability - Horizontality potential



Repairability - Horizontality potential

Medium

Many common parts/functions/materials

Group A= 3 years
Group B= 5 years
Group C= 10 years

Spare part availability

Group A= commercial/removable
Group B= provided/removable
Group C= basic/reusable

Tools & Fasteners

High

Component agnostic

Spare part availability

All = 3 years

Tools & Fasteners

All = commercial tools / removable fasteners

How to define provisions for horizontal reqs

	Provision levels (examples)			Product levels (examples)	
3	• General RRU (spare parts, repair info, software barriers) • General recyclability (separate key materials)	↑ Scope coverage	• Common circularity parameters • Different priority parts/functions • Challenging regulatory process	Consumer electronics	3
2	• Specific RRU (Reparability Scoring) • Specific Recyclability (Recyclability Scoring) • Ease of Remanufacturing/ Refurbishment provisions		• Some common priority parts / circularity parameters • Accommodates some general & specific provisions • Not same functionality, but user behavior	Audio equipment	2
1	• “Washing machine washing efficiency”, “vacuum cleaner dust pick-up”, “textile fabric smoothness”, “bed mattress loss of firmness”		• Same functionality and user profile/behavior • Similar key parts/circularity parameters • Short “horizontality”; lower efficiency	Technical similarity ↓ Headphones, headsets, earbuds	1

Example: ecodesign for off mode, standby mode, and networked standby energy consumption

Energy consumption requirements specified by and tailored to:

- Modes (off, standby, network standby)
- Presence of certain components (display vs no display)
- Function: provision or not of reactivation function
- Functionality: HiNA vs non-HiNA products
- Power management: appropriate period for intended use (e.g. coffee machines)
- List of specific product groups/families in the Annexes
- Tiered/phase-in requirements

Horizontal Measure provision **examples**

High Level ("General") provisions across product scope, <u>for example</u>:

- *"Reparability* information shall be made available to independent professional repairers."
- *"Spare* parts (those required) shall be delivered within 5 working days after having received the order."
- *"Software* shall not be used to impede the replacement of a spare part with another compatible one."

Medium Level ("Specific") provisions, <u>for example</u>:

- *"OEMs* shall make available to professional repairers at least the following spare parts [...], including required fasteners, for the duration of years indicated below, counting from the date of end of placement on the market:"

Product group	Spare parts	Years of availability
Headphones / Earbuds	battery, cable, foam pads, rubber tips, *[...]*	5 years
Audio Speakers (standalone)	Battery, cable, voice coil, level controls / buttons, *[...]*	7 years
Digital cameras	Battery, lenses, storage unit, buttons, display, *[...]*	9 years
...	...	...

Overall study method

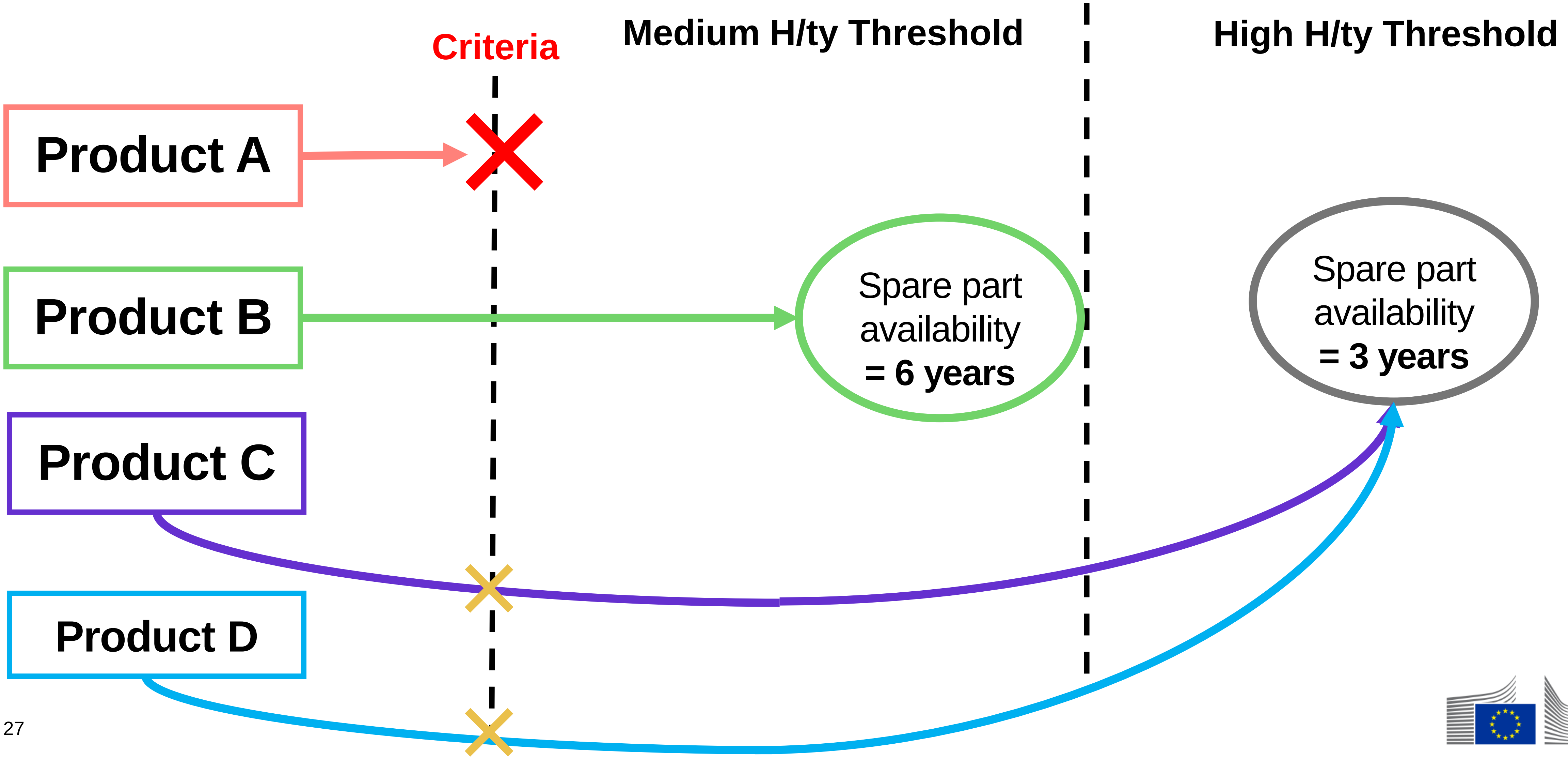
Product Scope Definition

PHASE I		
Task 1: Quickscan	**Task 2: Scope Definition**	**Task 3: Product Analysis**
Criteria	**Criteria**	
C1: Existing coverage by EU regulations C2: Market relevance C3: Technical complexity C4: Negligible non-use-phase	C5: Independent/end-user relevance C6: Failure frequency and complexity C7: Expected vs actual lifetime disparity C8: Repairability potential	Product group definitions Existing legislation Test standards and other initiatives Market aspects Technology aspects User aspects

PHASE II					
Task 4: Design Options			**Task 5: Policy Scenarios (incl. RSS)**		
Objective	**Design Option**	**Hrz/ty**	**Ambition**	**Policy Scenario**	**Env. Assessment**
Repair info transparency	Minimum requirement to provide disassembly instructions	3	Low	*Full info to independent professionals*	X1% of devices expected to be affected by Y1% lifetime extension
			Medium	*Full info to independent. prof, some to end-users*	X2% of devices expected to be affected by Y2% lifetime extension
			High	*Full info to prof and end-users.*	X3% of devices expected to be affected by Y3% lifetime extension
Product disassembly feasible by non-OEM market actors	Minimum requirement for ability to disassembly with certain tools	2	Low	*All priority parts removable with commercially available tools*	X1% of devices expected to be affected by Y1% lifetime extension
			Medium	*Some priority parts removable with commercially available tools, others with basic*	X2% of devices expected to be affected by Y2% lifetime extension
			High	*All priority parts removable with basic tools*	X3% of devices expected to be affected by Y3% lifetime extension
Info on relative reparability	Reparability scoring system/index	1	(varies on the basis of the above minimum requirements)		

Product – Provision Attribution

Mixed approach - Example



Summary

Use of mixed horizontality approach and criteria ("tests") allows for:

- Upholding the concept of "horizontal requirements" while accounting for product specificities

- Prioritising product groups most relevant for specific analysis and medium-level horizontality provisions

- Feeding Phase II with evidence towards proposing appropriate thresholds

- Contributing to the justification for the policy intervention

Q&A

Coffee break – We’ll resume at 11:30

Initial product scope and Task 1: Quick Scan

Initial Product Scope (1/3)

Product family	Product groups	
Consumer electronics		
Electronic Displays	Televisions	Monitors
	Digital signage displays	Interactive whiteboards
Audio/video devices	Video players/recorders	Video projectors/beamers
	Videoconferencing systems	Complex set-top boxes
	Digital cameras	
Audio equipment	Speakers (loud, wireless, smart, soundbars)	Audio systems (hi-fi, stand-alone, players, amplifiers, radios, tuners, receivers)
	MP3 players	
Accessories and peripherals	Peripherals/Accessories (including docking stations, gaming, presenters)	External drives (hard drives, memory stick)
	Power banks, hubs	
Personal ICT equipment	Desktop PCs, workstations	Game consoles
	Notebooks/Laptops	Smartphones
	e-book readers, note-taking tablets	
Imaging equipment	Printers	Copiers
	Scanners	Facsimile (fax) machines
	3D printers	Multi-functional printers
Wearable ICT devices	Smartwatches, fitness trackers	Earphones and earbuds
	Headphones, headsets (including VR)	Electronic cigarettes
Home/office network equipment	Home network equipment	Office network equipment
	Home NAS	Base stations

Initial Product Scope (2/3)

Product family	Product groups	
Light means of transport		
Light means of transport	Electric scooters	Electric bicycles
Small household appliances		
Small-scale cooking	Mini ovens	Microwave ovens
	Electric steamers	Electric grills
	Air fryers	Other small-scale cooking (rice cookers, deep fryers, multi-cookers, pressure cookers, sous-vide)
	Raclette makers	Waffle makers
Kitchen (non-cooking)	Coffee machines	Electric kettles
	Toasters	Blenders, mixers, juice makers, food processors
	Electric knives	Equipment for opening/sealing containers
Personal care devices	Hair dryers	Hair stylers
	Hand dryers	Electric shavers, clippers, epilators
	Electric Toothbrushes	Consumer skin care devices
Other small household appliances	Electric Irons	Vacuum cleaners
	Air purifiers	Digital scales (incl. smart)
	Smart thermometers	Paper shredders

Initial Product Scope (3/3)

Product family	Product groups	
Other energy-related products in the Ecodesign and Energy Labelling WP 2022-2024		
Heaters and air conditioners	Local Space Heaters	Solid fuel local space heaters
	Space and combination heaters	Water heaters/storage tanks + solar devices
	Air conditioners	Solid fuel boilers
	Air heating/cooling products	Ventilation units
	Industrial fans	
Refrigerating appliances	Professional refrigeration	Refrigerating appliances (including household)
	Refrigerating appliances with a sales function	
Light sources	Light sources	
Power equipment	External Power Supplies	Servers and data storage products
	Circulators	Power transformers
Other energy-related products	Welding equipment	Household dishwashers
	Household washing machines and washer-dryers	Tumble dryers
	Water pumps	Electric motors and VSD

Task 1 - Objectives

Horizontal ecodesign requirements are expected to offer benefits in terms of **policy-making efficiency**, but could be associated with **challenges**, if the selected scope is too heterogeneous.

The **selection of scope** is thus a critical step for horizontal requirements.

Task 1 aims at carrying out a **first screening** to determine the appropriateness of a product scope

Task 1 Quickscan - Criteria

Means of assessment

- Published regulations
- Working Plans, Reviews

Definitive cut-off

Criterion 1: **Regulatory coverage**

may be covered by overarching provisions

Criterion 2: **Market relevance**

Means of assessment

- Statistics, industry reports
- Market sales and forecasts

Quick scan

Means of assessment

- Product characteristics

Criterion 3: **Technical complexity**

Definitive cut-off

Criterion 4: **Low relevance of non-use phases**

may be covered by overarching provisions

Means of assessment

- Published LCA/CF studies (journal articles, industry websites, other

Criterion 1: Regulatory coverage

Filters out those products for which repairability has **already been regulated**, or for which repairability measures have been considered, even if not adopted in the end.

A gap analysis was carried out to check whether ecodesign criteria have been set **after 2016**.

Products cut at this stage will **not** be analysed further.

Criterion 1: Regulatory coverage (Example)

Product Group	Disassembly Design (Tools, Fasteners)	Spare part availability			Spare deliver time	Repair Info avail	Software updates avail
		Parts	Target Audience	Duration			
Smartphones and tablets (EU)2023/1670	X	Batteries, front-facing camera assembly, rear-facing camera assembly, external audio connectors, external charging ports, mechanical buttons, main microphones, speakers, hinge assembly, mechanical display folding mechanism	prof repairers	Min 7 years	5 days	X	X
		Batteries, back cover or back cover assembly, protective foil for foldable displays, display assembly, charger, SIM tray and memory card tray	prof repairers and end-users	Min 7 years	5 days		

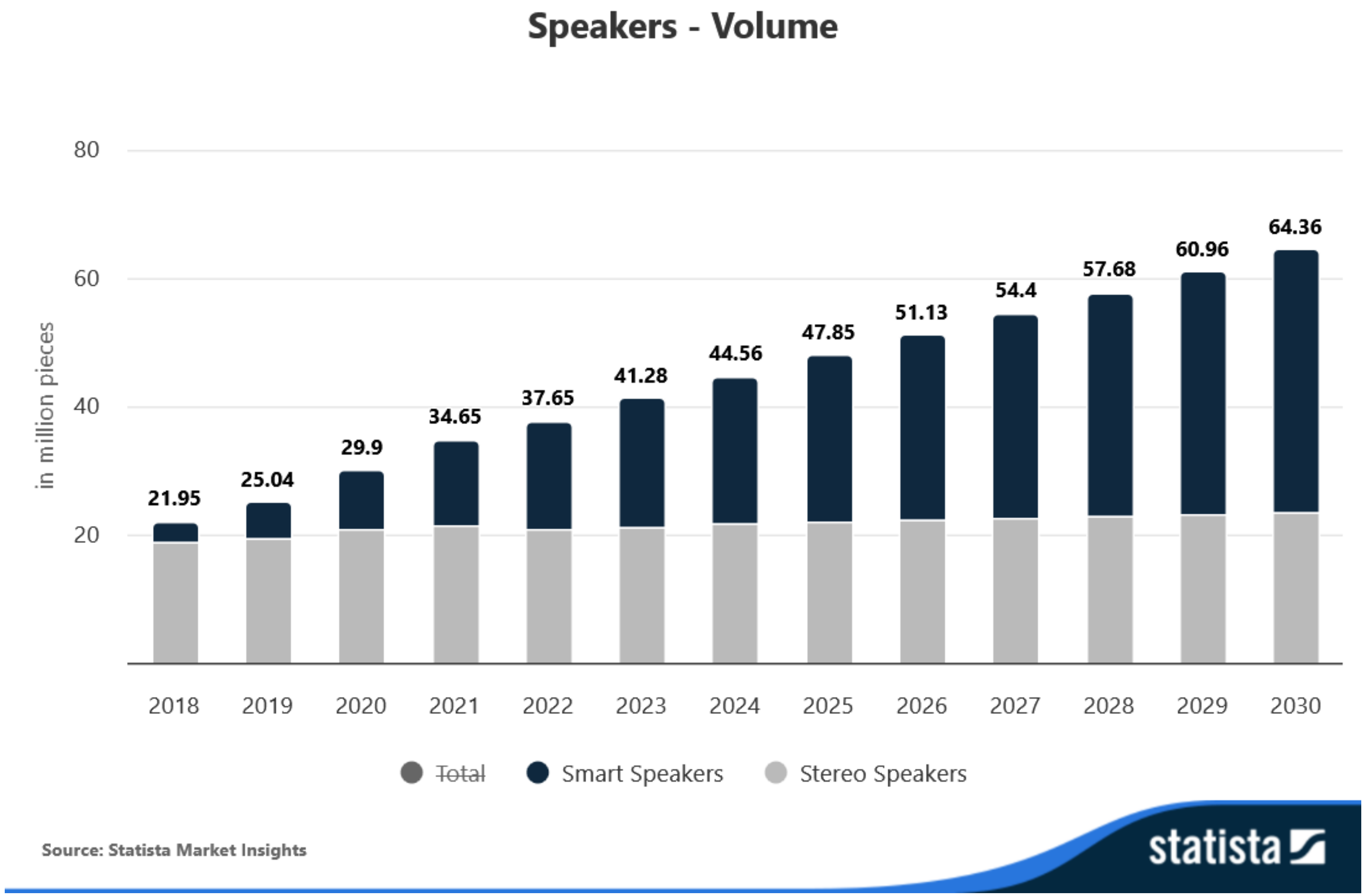
Criterion 2: Market relevance

Screens out product groups with **low market penetration**, relatively low sales and market trends of **obsolescence**.

Product groups with sales lower than **2 million units** are cut off, unless sales trends demonstrate sharp increase.

Products cut off **may still be considered** for the potential setting of highly horizontal ESPR requirements on repairability.

Criterion 2: Market relevance (Example)



Criterion 3: Technical similarity

Product group	C3 Result	Justification
Electronic cigarettes (non-single use)	CUT	Failure variability could not be identified, considering that battery removability is considered in the Battery Regulation
External drives (hard drives, memory stick, graphic units)	CUT	Mono-component product. Low repair potential
Power banks	CUT	Mono-component product. Low repair potential

Criterion 4: Low relevance of non-use phases

Considers the expected environmental impacts of a product group during its lifecycle to establish the **relevance of lifetime extension** measures.

Analysis of LCAs available in the literature. Products for which the **use phase** contributes to **90% or more** of the lifecycle impacts

Products cut off **may still be considered** for the potential setting of highly horizontal ESPR requirements on repairability.

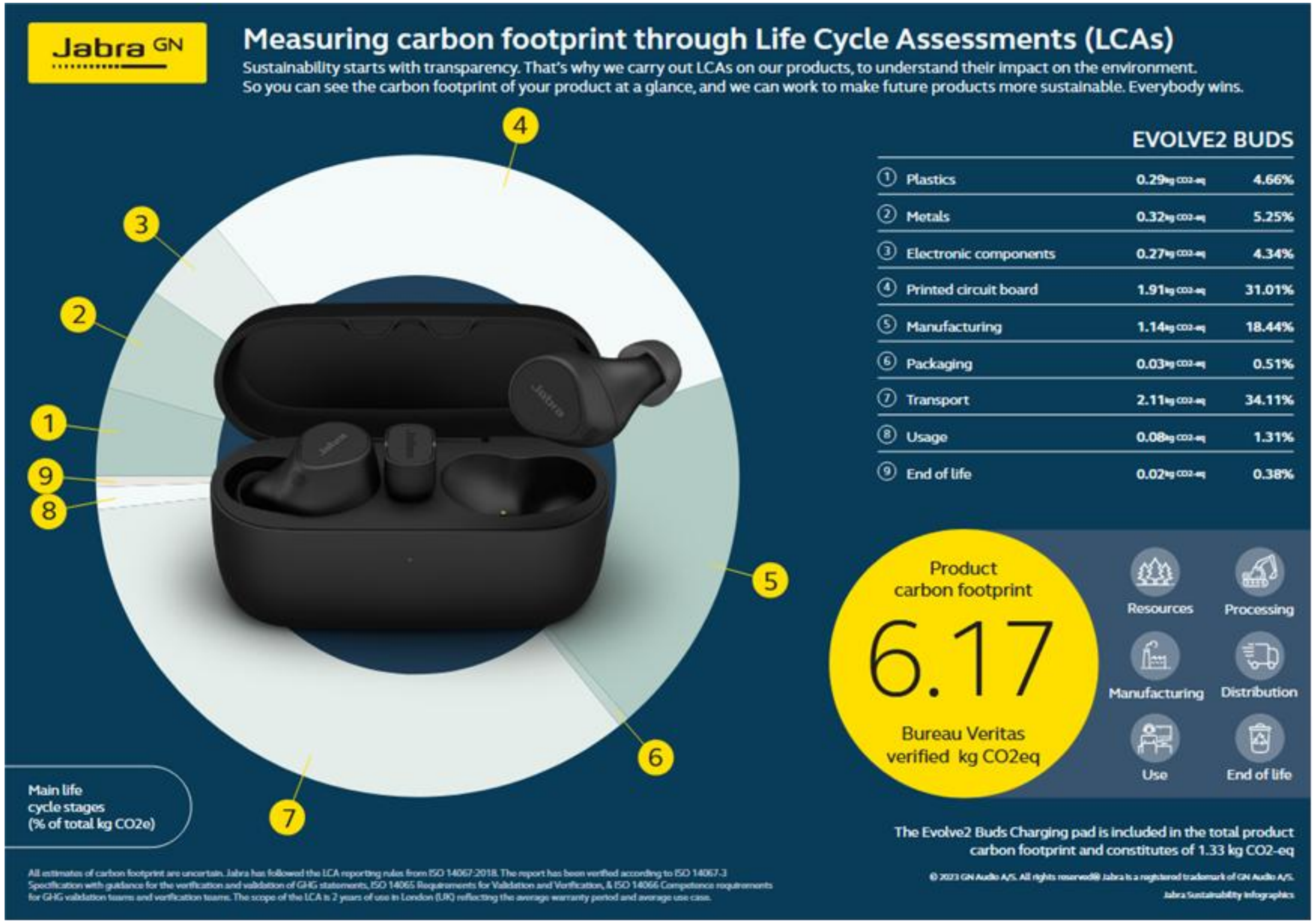
Criterion 4: Low relevance of non-use phases - Disclaimers

Energy efficiency being a more environmentally-beneficial strategy, does not mean some (low) level of repairability should not be pursued without enabling significant lifetime extension.

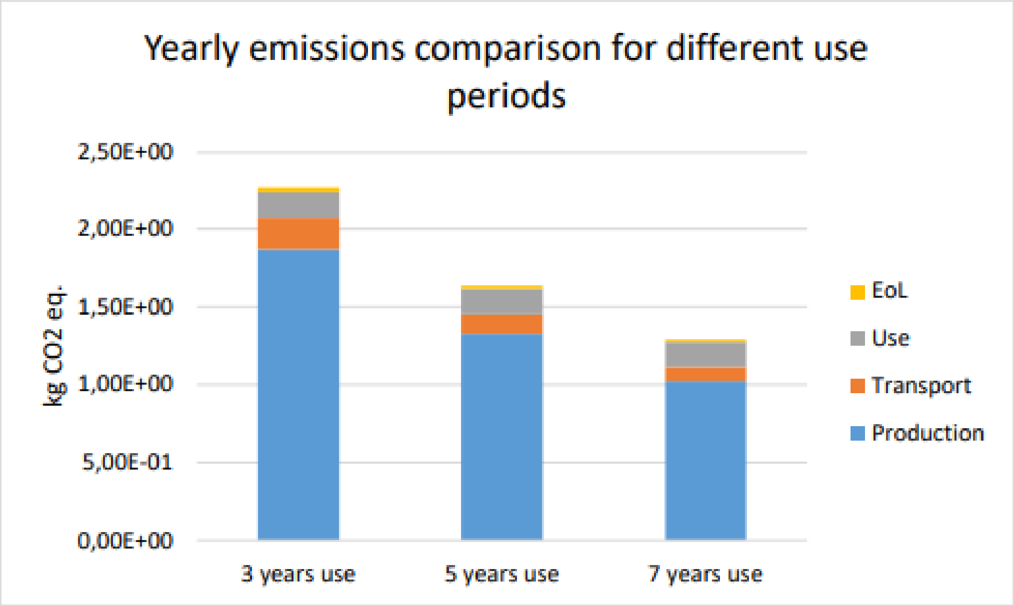
Even if energy efficiency is more environmentally-beneficial strategy, cut-off product groups may not be regulated for energy efficiency either. Therefore, ESPR fills this gap at least from a lifetime perspective.

Full LCA studies were not found for all products, and sometimes, the focus is on climate change (carbon footprint). However, such products may still contribute to other environmental impacts such as e-waste generation.

Criterion 4 Low relevance of non-use phases (Example)



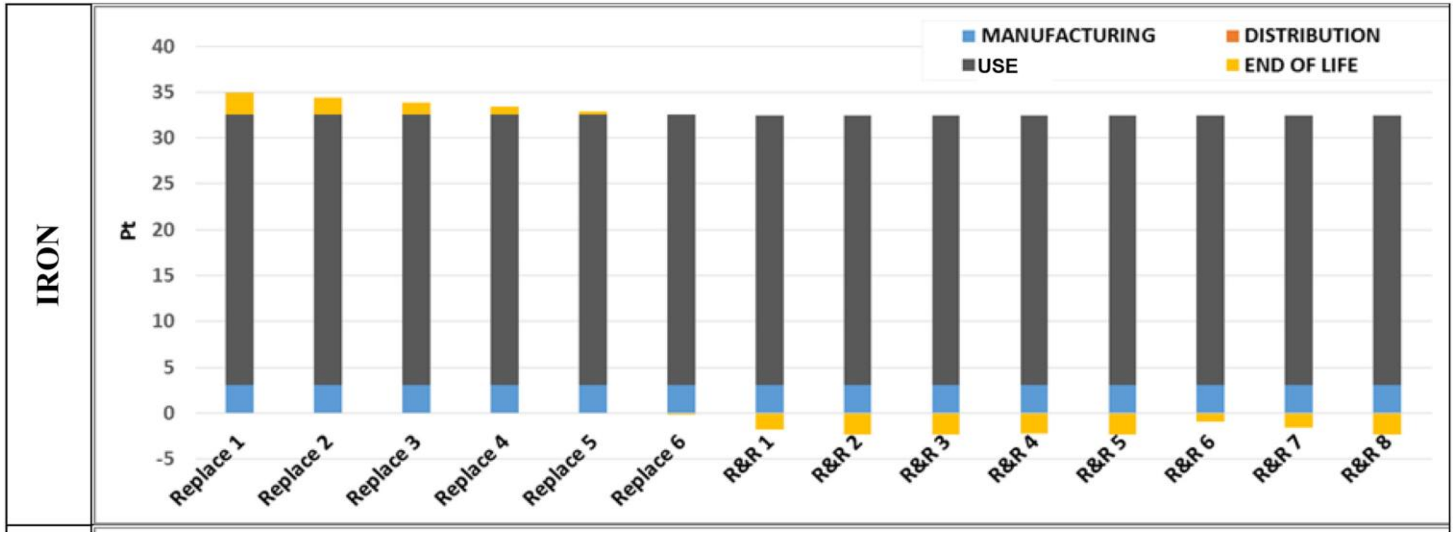
Source: Jabra



Source: Sanchez et al. (2024)

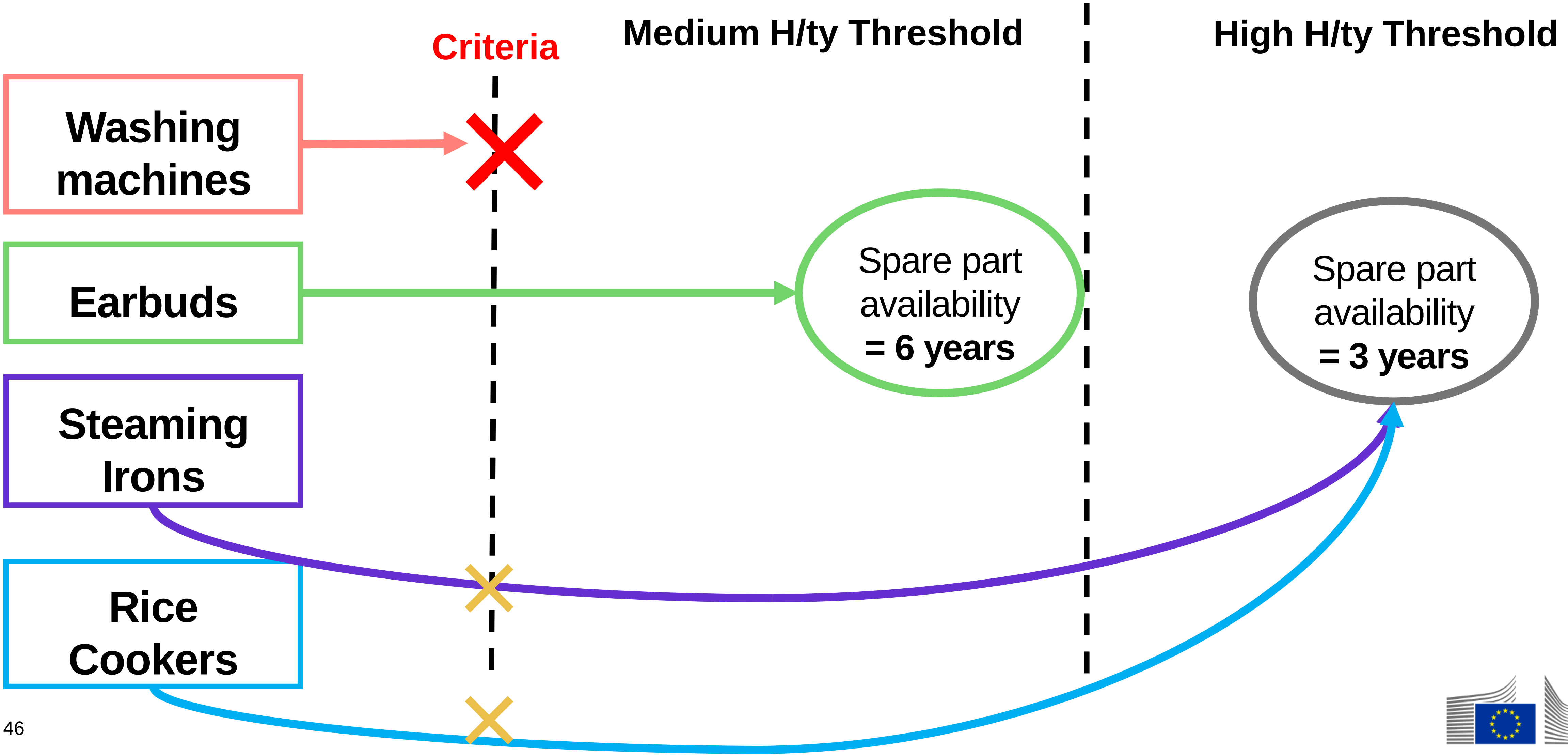
Criterion 4 Low relevance of non-use phases (Example)

LCA results for electric (steaming) irons (ReCiPe end-point LCIA).



Source: Bovea et al. (2020)

Methodological approach - Examples



Q&A

Lunch break – We’ll resume at 14:00

Task 2: Scope Definition

Methodology and results

Task 2 - Objectives

Tests the product groups progressing from Task 1 against repairability relevance (beyond lifetime extension)

The **selection of scope** is thus a critical step for horizontal requirements.

Task 2 aims at carrying out a **qualitative assessment** to determine the final product scope for analysis

Task 2 Scope definition - Criteria

Task 2 Criteria		Type	Means of Assessment / Sources
C5	Ind/ end-user relevance	Definitive cut-off	• Product characteristics • Business models
C6	Failure Frequency	Qualitative Grading system (+, ++ or +++)	• Open Repair Alliance • Big Repair Project UK • IPSOS for JRC • ADEME • Fnac Darty • Other
C7	Expected vs actual lifetime disparity	Qualitative Grading system (+, ++ or +++)	• IPSOS for JRC • Other
C8	Repairability potential	Qualitative Grading system (+, ++ or +++)	• Open Repair Alliance • Fnac Darty • Other

Task 2 – Disclaimers for C6, C7 and C8

The data from sources are expressed in quantitative terms, however the assessment of each criterion is **<u>qualitative</u>**.

A **three-grade (“stars”) system** is proposed, in order to reconcile the benefit of considering multiple choices with the differences in methodological approaches and sample sizes of those sources.

The three-grade system provides **<u>relative</u>** comparison between product groups for the purpose of prioritization.

Criterion 5: Independent professional or end-user relevance

Ecodesign aims at expanding repair scenarios beyond OEM repair.

This criterion accounts for product groups for which these scenarios are not expected.

Product retirement follows technological obsolescence or linked to contractual services

Other cases might include products designed for industrial applications, or those forming part of take-back schemes

Criterion 5: Independent professional or end-user relevance

Product group	C5 Result	Justification
Complex set-top boxes	CUT	Lifetime determined by structural upgrades, new protocols, new internet providers and are sold from retailer to consumer as part of a service by service operators
Home network equipmernt (router, gateway/IoT access)	CUT	
Office network equipment (servers, routers, switches)	CUT	
Home NAS	CUT	

Criterion 6: Failure Frequency

Frequency of failure demonstrated by **failure rates data**, and/or attributed to product characteristics that constitute the need for repair more probable. For example, portable products which are more likely to be exposed to environmental stresses, accidents, drops and shocks.

Component variability in terms of failures also relevant: if failures associated with one component type only, repairability may not be the best lifetime extension strategy.

Products with low failure frequency may still be considered in **overarching provisions**, as frequency may be circumstantial.

Criterion 6: Failure Frequency

Product group	ORA (#logs)	Big Repair Project UK (#logs)	IPSOS (2025) % of non-technical failure experience		ADEME (% products w. problem)		FNAC DARTY Reliability (0-200)		Other sources	C6 Assessment
				Failing components		%				
Earphones / Earbuds		+++	+ (26%)	Audio, software, connectivity, electronics			+++	59		+++
Toasters	++	++	++ (41%)	Internal electronics, external components, mechanical parts	+	21%	++	109	++	++
Hair dryers	++	+	++ (33%)	Internal electronics, external components, mechanical parts	+	17%	+	152		+

Criterion 7: Expected vs actual lifetime disparity

Disparity can measure lifetime extension potential and determine **reparability relevance**, as it can reflect “willingness to repair”. If expected and actual product lifetime coincide, demand for repair may be low.

Products purchase price can also serve as proxy: if price across models within group is very low, expectations on product lifetime may also be low.

Products with low disparity may still be considered for **overarching provisions**.

Criterion 7: Expected vs actual lifetime disparity

Product group	JRC calculations from survey by IPSOS			Other sources	C7 Assessment
		Disparity [%]	Direct Willingness to Repair		
Speakers (loud, wireless, smart)	+++	50.3%	54% - 23%		+++
Electric kettles	++	41.9%	67% - 9%	++	++
Game consoles	+	15.9%	33% - 34%		+

$$\text{Disparity\%} = (L_{exp} - L_{obs}) / L_{obs}$$

Kettles: obs. = 5.30 years, exp 7.52

Q:*"Important reason to consider buying a replacement"* : Technical failure; Software failure / lack of updates; Decreased performance; Lack of compatibility with new features; I prefer to have a new model.

Criterion 8: Repairability potential

Reflection of product repairability status on the market to identify repairability potential. Repairable design/service variations among models of product group to be expected and does not mean group to be cut-off. It rather reflects current dominant designs across the market deem repairability measures relevant.

Data for assessment derive from current levels of **repair success** or established repairability assessments or scores.

Products which demonstrate low repairability potential may still be considered for **overarching provisions**, as the potential may be circumstantial.

Criterion 8: Repairability potential

Product group	ORA (event outcome)		FNAC DARTY Repairability (0-200)		Other sources*		C8 Assessment
		% repaired		Score		% repaired	
Speakers (incl. wireless, smart)			+++	45			+++
Headsets, headphones	++	53%	+++	38			++ / +++
Toasters	++	49%	++	75	+++	16%	++

**For toasters: Hansen et al.(2025)*

Q&A

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Coffee break – We'll resume at 15:45

Task 2: Scope definition

Overall assessment

Overall assessment (1/3)

Product group	Criterion 1	Criterion 2*	Criterion 3	Criterion 4*	Criterion 5	Criterion 6	Criterion 7	Criterion 8	C6-C7-C8 assess-ment*	Progresses to Task 3
Consumer electronics										
Video players/recorders	PASS	CUT*	X	X	X	X	X	X	X	✘
Video projectors/beamers	PASS	PASS	PASS	PASS	PASS	++	n.a.	++ / +++	++	✔
Videoconferencing systems	PASS	CUT*	X	X	X	X	X	X	X	✘
Complex set-top boxes	PASS	PASS	PASS	PASS	CUT	X	X	X	X	✘
Digital cameras	PASS	PASS	PASS	PASS	PASS	++	++	++ / +++	++	✔
Speakers (loud, wireless, smart)	PASS	PASS	PASS	PASS	PASS	+	+++	+++	+++	✔
Audio systems (hi-fi standalone, player, amp, vinyl)	PASS	PASS	PASS	PASS	PASS	+++	++	++	++	✔
MP3 players	PASS	CUT*	X	X	X	X	X	X	X	✘
Peripherals (incl. game, presenters)	PASS	PASS	PASS	PASS	PASS	++	++	++	++	✔
External drives (hard drives, memory stick)	PASS	PASS	CUT	X	X	X	X	X	X	✘
Power banks, hubs	PASS	PASS	CUT	X	X	X	X	X	X	✘
Game consoles	PASS	PASS	PASS	PASS	PASS	++	+	++	++	✔
E-book readers / note tablets	PASS	PASS	PASS	PASS	PASS	+	n.a.	n.a.	+	✘
Smartwatches, fitness trackers	PASS	PASS	PASS	PASS	PASS	++	++	++	++	✔
Headsets, headphones (+VR)	PASS	PASS	PASS	PASS	PASS	++	++	++ / +++	++	✔
Earphones and earbuds	PASS	PASS	PASS	PASS	PASS	+++	+++	+++	+++	✔
Electronic cigarettes	PASS	PASS	CUT	X	X	X	X	X	X	✘

Overall assessment (2/3)

Product group	Criterion 1	Criterion 2*	Criterion 3	Criterion 4*	Criterion 5	Criterion 6	Criterion 7	Criterion 8	C6-C7-C8 assess-ment*	Progresses to Task 3
Home network equipment (routers, gateways/IoT access, integrated access)	PASS	PASS	PASS	PASS	CUT	X	X	X	X	✘
Office network equipment (servers, routers, switches)	PASS	PASS	PASS	PASS	CUT	X	X	X	X	✘
Home NAS	PASS	PASS	PASS	PASS	CUT	X	X	X	X	✘
Base stations	PASS	CUT*	X	X	X	X	X	X	X	✘
Light means of transport										
E-kickscooters	PASS	PASS	PASS	PASS	PASS	++	++	++	++	✔
E-bicycles	PASS	PASS	PASS	PASS	PASS	++	++	n.a.	++	✔
Small household appliances										
Mini ovens	PASS	PASS	PASS	CUT*	X	X	X	X	X	✘
Microwave ovens	PASS	PASS	PASS	CUT*	X	X	X	X	X	✘
Electric steamers	PASS	PASS	PASS	CUT*	X	X	X	X	X	✘
Electric grills	PASS	PASS	PASS	CUT*	X	X	X	X	X	✘
Air fryers	PASS	PASS	PASS	PASS	PASS	+	+++	++	++	✔
Other small-scale cooking (rice cookers, deep fryers, multi-cookers, pressure cookers, sous-vide)	PASS	PASS	PASS	CUT*	X	X	X	X	X	✘
Raclette makers	PASS	CUT*	X	X	X	X	X	X	X	✘
Waffle makers	PASS	CUT*	X	X	X	X	X	X	X	✘

Overall assessment (3/3)

Product group	Criterion 1	Criterion 2*	Criterion 3	Criterion 4*	Criterion 5	Criterion 6	Criterion 7	Criterion 8	C6-C7-C8 assess-ment*	Progresses to Task 3
Coffee machines	PASS	PASS	PASS	PASS	PASS	++	+++	++	++	✓
Electric kettles	PASS	PASS	PASS	PASS	PASS	++	++	++	++	✓
Toasters	PASS	PASS	PASS	PASS	PASS	++	++	++	++	✓
Food preparation appliances (blenders, mixers, juice makers and food processors)	PASS	PASS	PASS	PASS	PASS	++	++	++	++	✓
Electric knives	PASS	CUT*	X	X	X	X	X	X	X	✗
Equipment for opening/sealing containers or packages	PASS	CUT*	X	X	X	X	X	X	X	✗
Hair dryers	PASS	PASS	PASS	PASS	PASS	+	++	++	++	✓
Hair stylers	PASS	PASS	PASS	PASS	PASS	++	++	++ / +++	++	✓
Hand dryers	PASS	CUT*	X	X	X	X	X	X		✗
Hair clippers, shavers, epilators	PASS	PASS	PASS	PASS	PASS	+	++	++ / +++	++	✓
Electric toothbrushes	PASS	PASS	PASS	PASS	PASS	++	+	+++	++	✓
Consumer skincare devices	PASS	PASS	PASS	PASS	PASS	n.a.	n.a.	n.a.	n.a.	✗
Electric Irons	PASS	PASS	PASS	CUT*	X	X	X	X	X	✗
Air purifiers	PASS	CUT*	X	X	X	X	X	X	X	✗
Scales (digital/smart)	PASS	PASS	PASS	PASS	PASS	+	n.a.	+++	++	✓
Smart thermometers	PASS	PASS	PASS	PASS	PASS	n.a.	n.a.	n.a.	n.a.	✗
Paper shredders	PASS	CUT*	X	X	X	X	X	X	X	✗

Task 3: Product Analysis

Examples

Task 3 - Objectives

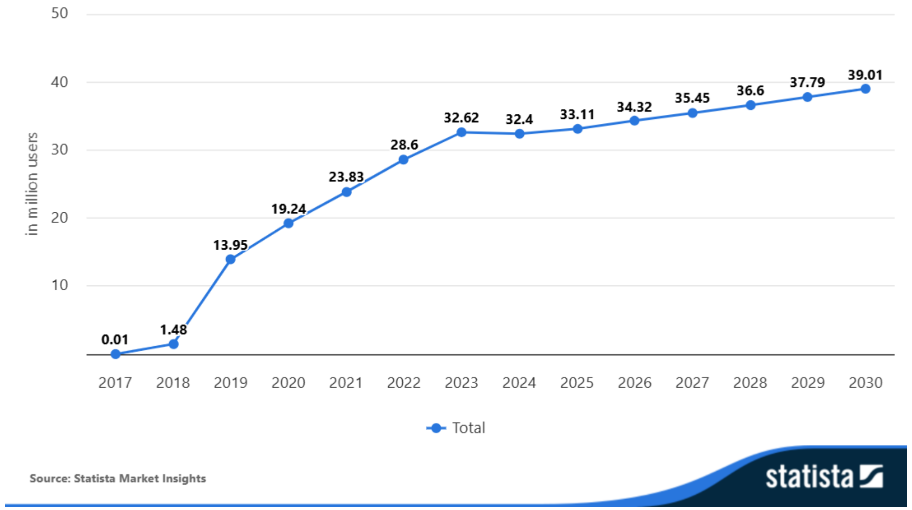
Provides a **description of product groups** progressed, outlining definitions, existing standards or test methods, and market, technical and consumer perception aspects.

This analysis informs the development and attribution of provisions to product groups (and relevant components) which will be proposed in subsequent tasks.

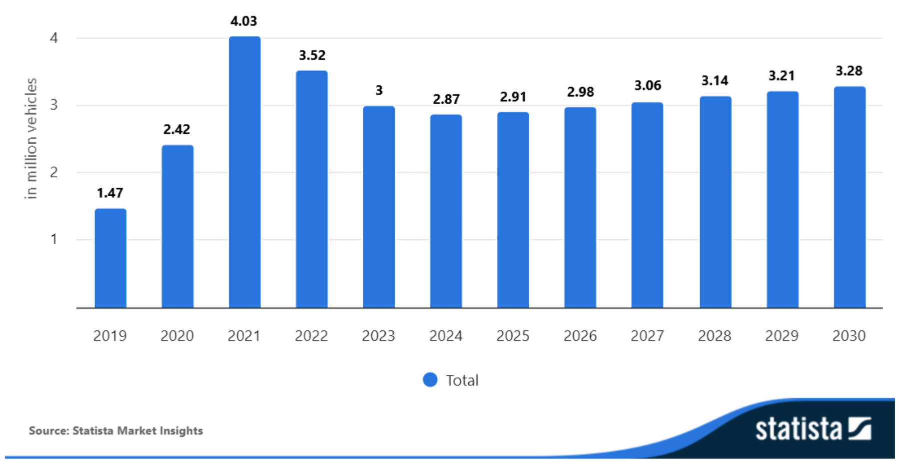
Few explanatory examples: **headphones**, **earphones** and **earbuds**, **smartwatches**, **e-scooters**, **coffee machines** and **food preparation appliances**. The purpose is to inform stakeholders of the structure and content of the analysis in Task 3, also time collecting feedback on the preliminary analysis.

Market analysis (e-scooters)

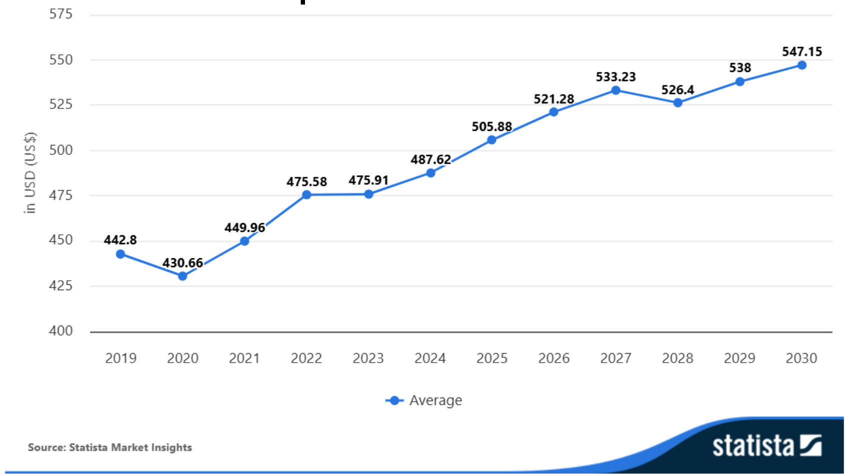
2017-2030 data for users' volume of e-scooters in the EU



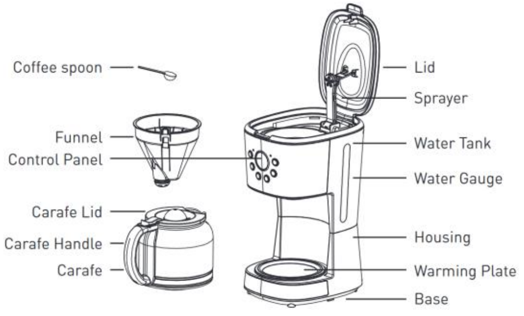
2019-2030 data for market volume of electric kick scooters in the EU

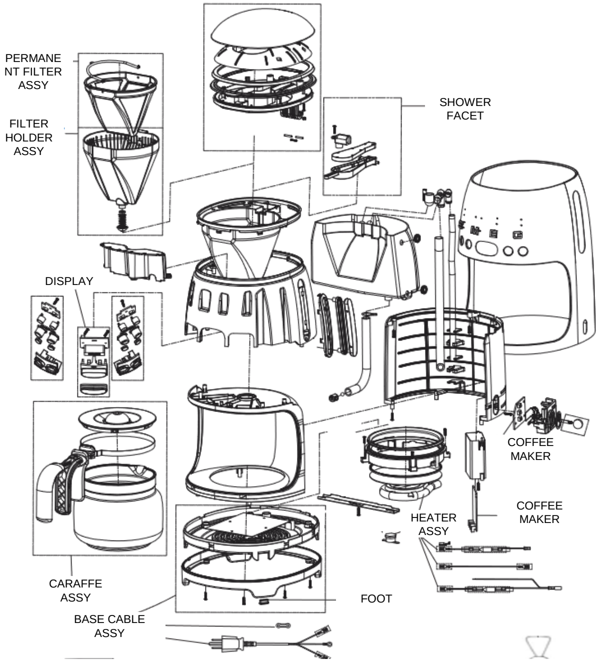


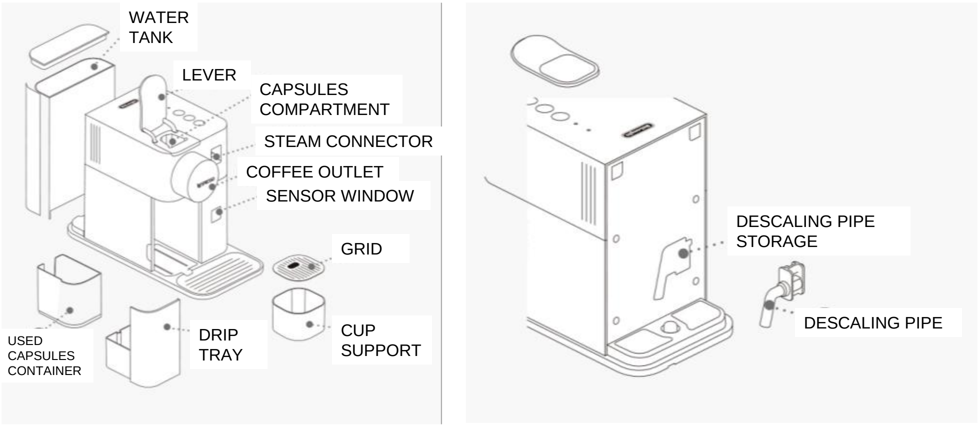
2019-2030 data for unit price of electric kick scooters in the EU



Technical and repair-relate aspects (coffee machines)



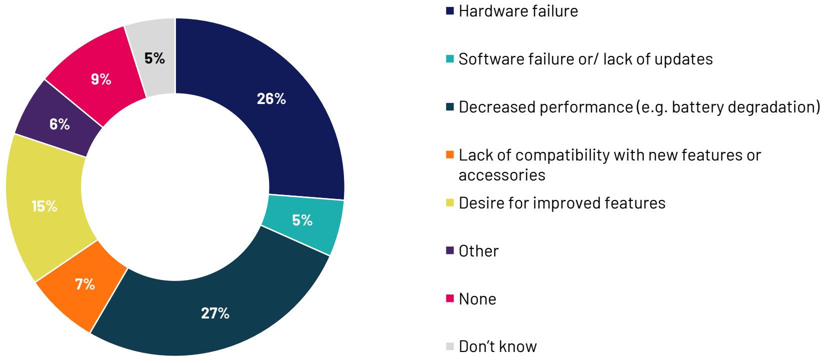




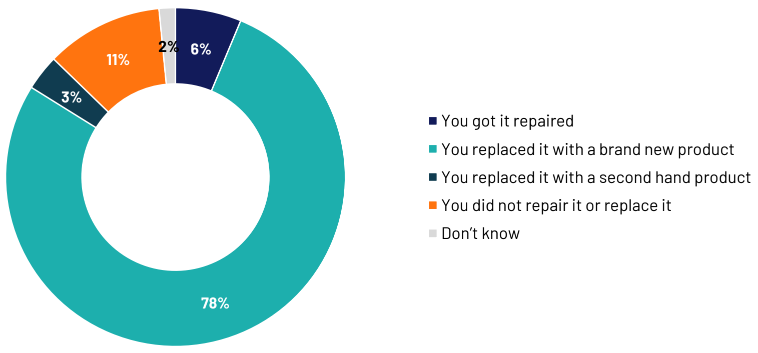
Source: HADEN; SMEG

User perception (earphones/earbuds)

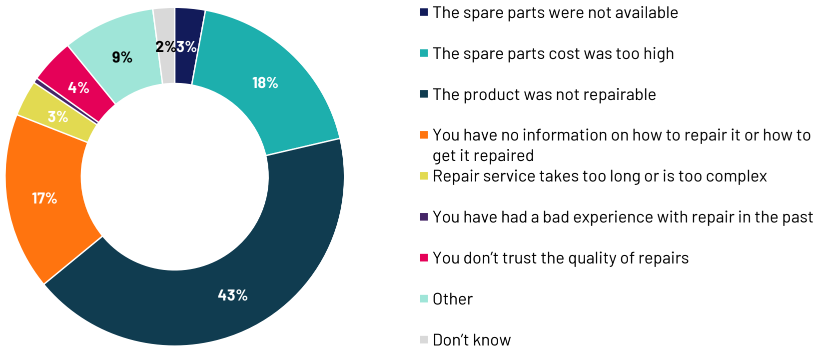
What would be the most important reason for you to consider buying new Earphones/earbuds to replace your current one?



If you had Earphones/earbuds that stopped working properly in the last five years, what did you do?



You said that you had Earphones/earbuds that stopped working properly but you did not get it repaired. What was the main reason?



Next steps

Next steps

- Project documents uploaded in **Documents** dropdown list of project webpage https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/447/documents

- Comments on the draft report to be sent:
  - using the template attached,
  - by the **12th of December** latest
  - to JRC-ESPR-REPAIR@ec.europa.eu

Project development

<table>
<tr><th colspan="3">PHASE I</th><th colspan="6">PHASE II</th></tr>
<tr><th>Task 1:
Quickscan</th><th>Task 2:
Scope Definition</th><th rowspan="2">Task 3:
Product Analysis</th><th colspan="3">Task 4:
Design Options</th><th colspan="3">Task 5:
Policy Scenarios (incl. RSS)</th></tr>
<tr><th>Criteria</th><th>Criteria</th><th>Objective</th><th>Design Option</th><th>Hrz/ty</th><th>Ambition</th><th>Policy Scenario</th><th>Env. Assessment</th></tr>
<tr><td rowspan="7">C1:
Existing coverage by EU regulations

C2:
Market relevance

C3:
Technical complexity

C4:
Negligible non-use-phase</td><td rowspan="7">C5:
Independent/end-user relevance

C6:
Failure frequency and complexity

C7:
Expected vs actual lifetime disparity

C8:
Repairability potential</td><td rowspan="7">Product group definitions

Existing legislation

Test standards and other initiatives

Market aspects

Technology aspects

User aspects</td><td rowspan="3">Repair info transparency</td><td rowspan="3">Minimum requirement to provide disassembly instructions</td><td rowspan="3">3</td><td>Low</td><td>Full info to independent professionals</td><td>X1% of devices expected to be affected by Y1% lifetime extension</td></tr>
<tr><td>Medium</td><td>Full info to independent. prof, some to end-users</td><td>X2% of devices expected to be affected by Y2% lifetime extension</td></tr>
<tr><td>High</td><td>Full info to prof and end-users.</td><td>X3% of devices expected to be affected by Y3% lifetime extension</td></tr>
<tr><td rowspan="3">Product disassembly feasible by non-OEM market actors</td><td rowspan="3">Minimum requirement for ability to disassembly with certain tools</td><td rowspan="3">2</td><td>Low</td><td>All priority parts removable with commercially available tools</td><td>X1% of devices expected to be affected by Y1% lifetime extension</td></tr>
<tr><td>Medium</td><td>Some priority parts removable with commercially available tools, others with basic</td><td>X2% of devices expected to be affected by Y2% lifetime extension</td></tr>
<tr><td>High</td><td>All priority parts removable with basic tools</td><td>X3% of devices expected to be affected by Y3% lifetime extension</td></tr>
<tr><td>Info on relative reparability</td><td>Reparability scoring system/index</td><td>1</td><td colspan="3">(varies on the basis of the above minimum requirements)</td></tr>
</table>

Thank you

JRC-B5-REPAIRSCORE@ec.europa.eu

Slide 3: Photo by ubeyonroad, by Chris Yang, and by Alexander Shatov on Unsplash. Slide 14: mobile phone by Christine Chapman and Printer scanner by Karinarosani from Noun Project (CC BY 3.0). Slide 15: Photo by Erinada Valpurgieva on Unsplash.

European Commission