

# Introduction

- “the initiative will modify the Directive or a proposal for a new Regulation repealing the Directive will be prepared, to notably encompass end-of-life and sustainability requirements. (... Q4 2020)” 2020 CWP
- Information from
  - Studies and consultation underpinning the assessment and evaluation of the Directive,
  - Studies and consultation carried out in the context of the ‘eco-design’ process,
  - Extensive consultation processes during and following up to the Strategic Action Plan on Batteries,
  - Two specific studies,
    - *Feasibility of measures addressing shortcomings in the current EU batteries framework system,*
    - *Study addressing particular topics on batteries (legal statuses, restrictions, etc).*

# Proposed approaches and measures

- Taken from
  - EU institutions
  - Stakeholders' proposals
  - Technical and scientific publications
- Disclaimer

This document is part of a study which is being prepared for the European Commission. However, the information and views set out in this report are those of the authors and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this initial presentation of results.

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# Batteries Directive 2006/66/EC

## Initial results of the study in support of the assessment of the Batteries Directive

Measure 6: Control and auditing system for recycling of batteries



# RECYCLING

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## Measure 6

# Control and auditing system for recycling of batteries

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# Measure 6 – Control and auditing system for recycling of batteries (I)

## Problem description

- No approval or auditing exists to confirm recycling conditions
- Recycling processes and their efficiency, recycled products and what is accounted for recycling are difficult to compare.
- Difficulties in generating, calculating and reporting data on recycling → challenging task for recyclers and national authorities which results in missing harmonisation of data
- Regulation 493/2012 provides standards for evaluation and data reporting of recycling processes, but still leaves flexibility for interpretation, inconsistencies, uncertainties
- Problems described here apply to recyclers inside and outside the EU.

→ No fair competition between recyclers and no level playing field

## Measure 6 – Control and auditing system for recycling of batteries (IIa)

### Alternative options

#### Baseline

- Current situation without any kind of inspection or auditing to confirm recycling conditions of battery recycling processes inside and outside the EU.
- Missing data, misreporting and poor data quality of data related to recycling (targets).

# Measure 6 – Control and auditing system for recycling of batteries (IIb)

## Alternative options

### General approach – auditing system

When we consider a control and auditing system for battery recycling we have in mind an auditing system similar to the statutory audit of the financial records and statements of a company.

- A legally required check and review of the recycling process and the recycling data
- A certification of the process: efficiency, yields, secondary products, etc.
- A certification of the recycling data (recycling targets) reported to the national authority
- As a result, the audit contributes to improving the confidence in the quality and comparability of the recycling processes and the accuracy and harmonization of the recycling data



## Measure 6 – Control and auditing system for recycling of batteries (IIc)

### Alternative options

#### Option 1: Control and auditing system

- All recycling plants and process steps have to be checked and audited: recycling process and technical conditions (e.g. efficiency, output streams, yields) as well as generation, calculation and reporting of data (fulfillment of minimum targets of each individual plant and recycling process (step); see measure on Changes in calculation methodology of recycling).
- The entire recycling chain (dismantling of battery to final processing of e.g. slag or black mass) has to be audited. In addition to the main process step(s) / plant(s), all up- and downstream process steps must also be checked and audited.
- State-accredited auditors perform controlling and auditing in all MS.
- The auditor checks and finalizes the data for the reporting (incl. calculation of recycling targets) → uniform standard of data of all recyclers and in all MS. (Data on recycling input into the plants could be used to verify/compare MS data on collection of waste (portable) batteries.)

## Measure 6 – Control and auditing system for recycling of batteries (IId)

### Alternative options

#### Option 1: Control and auditing system

- Development of EU-wide identical standards in accordance with new EU regulatory framework on batteries (standards will be based on potentially new recycling efficiencies, material recovery rates and calculation methodology; see other measures on recycling and calculation methodology).
- Accredited auditors with the same training in all MS (regularly update of standards and need to harmonize the audits).
- A revision audit will need to be held every year to check that everything is still complied with (check of yearly data reporting).
- Recyclers in third countries (outside the EU) also have to perform and to proof audit compliance of their activities according to the EU standards.
- Only audited recycling plants are allowed to recycle waste batteries collected in the EU.

# Measure 6 – Control and auditing system for recycling of batteries (IIIa)

## Impacts of the options – initial results

### Environmental impacts

#### Baseline

- Recycling processes of lower and higher quality standards exist side by side throughout the EU, with more or less amounts and higher or lesser quality of secondary products.
- Recycling processes of lower quality do not fully realise the potentials for resource savings and environmental benefits of replacing primary materials by recovering secondary materials.

# Measure 6 – Control and auditing system for recycling of batteries (IIIb)

## Impacts of the options – initial results

### Environmental impacts

#### Options 1: Control and auditing system for recycling of batteries

- Environmental benefits expected: higher overall quality standards of recycling processes can be achieved due to auditing → higher resource savings and environmental benefits from replacement of primary materials by secondary materials. (Effects cannot be quantified)
- Environmental burdens → due to travelling of the auditors.
- Exemplarily: trip to a recycling plant (assumption: 1 person, return flight, Paris to Rome) results in ca. 0.6 tonnes of CO<sub>2eq</sub>
- For comparison: emission reduction from material recovery of secondary Pb when recycling waste Pb-acid batteries. Assumption; input of 5000 t/a waste Pb-acid batteries results in net benefits of ca. 3200 tonnes of CO<sub>2eq</sub> compared to primary production of Pb.

# Measure 6 – Control and auditing system for recycling of batteries (IIIc)

## Impacts of the options – initial results

### Economic impacts

#### Options 1: Control and auditing system for recycling of batteries

- One-time costs for establishing the control and auditing system (development of EU-wide standards and training of auditors). (Commission and MS)
- Regular costs for training of auditors and administrative costs.
- Auditing costs should be covered by recyclers.
- Estimated costs for auditing of a recycling plant: a few daily rates plus travel expenses → ca. 5 000 Euro.
- For comparison, revenues from sales of secondary metal from a recycling plant: assumption; recycling plant for Pb-acid batteries with input of 5 000 t/a; revenues for recovered secondary Pb ca. 5.3 million Euro.
- Administrative costs (national authority and recycler) for data processing and reporting are assumed to be lower and similar/higher compared to the baseline:
  - National authority: less burden due to better data quality and harmonization
  - Recycler: less burden for data management due to support of auditor and new standards, but higher burden for the auditing process

## Measure 6 – Control and auditing system for recycling of batteries (IIId)

### Impacts of the options – initial results

#### Social impacts

#### Options 1: Control and auditing system for recycling of batteries

- Employment effects are neglectable (for auditing of the recycling plants a few full-time jobs will be created in several MS).

# Measure 6 – Control and auditing system for recycling of batteries (IV)

## Comparison of options

| Impact                                   | Baseline | 1: Auditing  |
|--|----------|--|
| Fair competition between recyclers       | No<br>/  | Yes<br>++  |
| Harmonized data reporting                | No<br>/  | Yes<br>++  |
| Environmental benefits                   | No<br>/  | Potentially, higher quality recycling associated with higher benefits for secondary materials<br><br>(+) |
| Environmental burdens                    | No<br>/  | Only minor impacts from travelling of auditors<br><br>-  |
| Additional savings (Euro)                | n.a.     | n.a.   |
| Additional costs (Euro)                  | No<br>/  | Only minor costs for the audit<br><br>-  |
| Administrative burden (yearly)           | No<br>/  | Training of auditors and auditing process<br><br>-   |
| Administrative burden for data reporting | --       | Less burden due to better data quality<br><br>-  |
| One-time administrative burden           | No<br>/  | Development of EU-wide standards and auditing system<br><br>--   |
| Employment                               | /        | Only few additional jobs for auditing<br><br>+   |

## Measure 6 – Control and auditing system for recycling of batteries (V)

### Initial conclusions

- ✓ A control and auditing system will contribute significantly to fair competition between recyclers and harmonisation of data reporting.
- ✓ Environmental impacts and additional costs are low compared to the objective of fair competition and harmonised data.
- ✓ Potentially, auditing could support higher overall quality standards of battery recycling processes.
- ✓ Relevant one-time administrative burden for development of the auditing system (EU-wide standards and training of the auditors)
- ✓ Yearly administrative burdens arise from training of the auditors and the auditing process at the plants. In return, data management should become less burdensome.