



ECODESIGN BATTERIES – 2ND STAKEHOLDER MEETING CHANGES TO DRAFT TASK 4

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May 2nd, 2019 – Albert Borschette Centre - Brussels





TASK 4: TECHNOLOGIES

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OBJECTIVES AND SCOPE OF TASK 4

Objective of task 4 report:

- Task 4 provides a **technological description** of the products in scope of the study.
- It serves two different purposes:
 - **inform the** policymakers and stakeholders about the product and its components **from a technical perspective**,
 - it serves to define the **Base Cases** and also works towards the **definition of Best Available Technologies (BAT)** and state-of-the-art **Best Not-yet Available Technologies (BNAT)**.

General remarks on the feedbacks received:

- Small number of comments
- No additional data provided for spreadsheet

Most comments adressed:

- Harmonization between tasks
- Additional descriptions or data/ sources
- ...

Thank you for your comments!

MAJOR CHANGES IN TASK 4- TECHNOLOGIES

Major changes in Subtask 4.1 - Technical product description

4.1. Subtask 4.1 - Technical product description

4.1.1. Existing products

4.1.2. Discussion on battery technology improvement (design) options

- Different minor changes to technological descriptions
- Adding information about solid state technology LMP

4.1.3. Overview of the improvement design options and classification regarding BAT and BNAT and expected timeline

black font = no or minor changes

red = noteworthy changes

green = new section

MAJOR CHANGES IN TASK 4- TECHNOLOGIES

Major changes in Subtask 4.2 - Production, distribution and end-of-life

4.1. Subtask 4.1 - Technical product description

- 4.1.1. Existing products
- 4.1.2. Discussion on battery technology improvement (design) options
- 4.1.3. Overview of the improvement design options and classification regarding BAT and BNAT and expected timeline

4.2. Subtask 4.2 - Production, distribution and end-of-life

- 4.2.1. **Product weight and Bill-of-Material (BOM)**
(Harmonized key parameters → task 3/ market share of cell chemistries slightly adapted)
- 4.2.2. Assessment of the primary scrap production during sheet metal manufacturing
(Subchapter “Energy consumption of battery production” reworked)
- 4.2.3. Packaging materials
- 4.2.4. Materials flow and collection effort at end-of-life
 - 4.2.4.1. **Raw material sourcing**
(newly added section about sourcing and availability of raw materials)
 - 4.2.4.2. Second-life applications
 - 4.2.4.3. **Recycling**
(more extensive description of recycling processes and recycling efficiencies)
- 4.2.5. **Environmental impact of li-ion batteries production**
(analysis of main contributor to GHG emissions during production)

black font = no or minor changes

red = noteworthy changes

green = new new section

MAJOR CHANGES IN TASK 4- TECHNOLOGIES

Major changes in Subtask 4.3 – Recommendations

4.1. Subtask 4.1 - Technical product description

- 4.1.1. Existing products
- 4.1.2. Discussion on battery technology improvement (design) options
- 4.1.3. Overview of the improvement design options and classification regarding BAT and BNAT and expected timeline

4.2. Subtask 4.2 - Production, distribution and end-of-life

- 4.2.1. Product weight and Bill-of-Material (BOM)
- 4.2.2. Assessment of the primary scrap production during sheet metal manufacturing
- 4.2.3. Packaging materials
- 4.2.4. Materials flow and collection effort at end-of-life
 - 4.2.4.1. Raw material sourcing
 - 4.2.4.2. Second-life applications
 - 4.2.4.3. Recycling
- 4.2.5. Environmental impact of li-ion batteries production

4.3. Subtask 4.3 – Recommendations

(Giving recommendation based on insights from task 4 for design options in task 6)

⁶ Ecodesign Batteries
2nd Stakeholder Meeting 02.05.2019

TASK 4- TECHNOLOGIES

Summary of main insights from task 4

Summary

- Not yet a dominant cell technology or format (to be considered as "representative cell").
 - Thus, for determining the BOM, an approach based on building a "virtual" battery is used.
- A difference to many other Ecodesign preparatory studies is the possibility of 2nd life applications.
 - An option to prolong the product's lifetime is given.
- Another difference is the comparatively high environmental impact in the production phase (usually the "use-phase" is most decisive).
 - Necessity to consider the whole battery life cycle in the first steps of the study.
- There is a long list of possible improvement options for li-ion batteries. However, data to determine these impacts in terms of performance and additional costs, is still rather limited.
 - No bundles of different design options based on a single improvement examined, but rather general single design options considered.

Recommendations

Recommendations for task 6

Regarding improvement options for a further examination in task 6:

- the consideration of a prolonged lifetime because of 2nd-life application seems to offer a high potential.
- the electricity consumption for battery production can have a comparatively high environmental impact and should therefore also be examined closer in this preparatory study.
- to take account of technological developments, improvements regarding an increased energy density for batteries should also be further analyzed.

THANK YOU FOR YOUR ATTENTION

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