DG ENER Lot 37: Preparatory Study on Ecodesign and Energy Labelling of rechargeable electrochemical batteries with internal storage

Organization:	Name :	Date:
• ECOS, EEB, the Coolproducts campaign. • Transport & Environment • iFixit • RREUSE	Mélissa Zill	19.11.2019

Task #	Section #	line #	Topic	Comment	Proposed change	Reply study team
1			General – Scope of the Regulation	Considering the market forecast predicting a capacity for batteries used in e-pedelec equivalent to ESS, and the various durability and sustainability issues surrounding e-scooters, we support the extension of the scope of the upcoming Regulation to Light Electric Vehicles. As stated in our previous written comments and during the stakeholder meeting on 5 November 2019, we also believe the e-bus batteries should be included in the scope of the Regulation.		

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1	1.3.2	p.25, line 9	BMS requirements	The study report reads "*EOL of LEV batteries is lower compared to EV, so that no second life seems realistic for LEV batteries*". Considering the large scope of this work package, this claim is too broad (and the formulation "*EOL of LEV batteries"* is unclear). While this may be true for the smaller applications (e-scooter and e-pedelec), it is unclear for e-moped, and not applicable for e-motorcycles, which can have a significant battery capacity.	Nuance this claim according to the different applications described in the Work Package and clarify the wording.	
1	1.3.2	p.25, line 15	BMS requirements	The summary of the section of the study report reads that: "*requirements mostly applicable but probably not required due to low second-life / repurposing chance*". This statement is not true for all the applications in the scope of this work package.	The requirement on BMS should be obligatory for certain high capacity applications (e.g. e-motorcycles).	
2	2.4.1.2		Conclusion on the standards analysis	A "gap analysis" should be added to the report. The conclusion of the section is that currently the standards are not sufficient for most battery types, but a gap analysis would help define what needs to be included in a standard, what is currently available, and what remains to be done so that the standards can be used.	Include a gap analysis in this section.	

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2	2.4.2		BMS requirements	We are strongly in favour of the requirements proposed for battery management systems in Task 7 and welcome the inclusion of these requirements for other chemistries. Such policy measures greatly facilitate the transition to second life applications which allow to lengthen the battery life.		
2	2.4.3		Requirements for providing information about batteries 1 and cells	The information to be provided about batteries and cells needs to be standardised. To facilitate the classification of batteries for second-life applications, the development of standards on information for batteries and cells needs to be carried out in parallel with the development of standards for certification for second-life applications (such as protocol UL 1974), so that the information provided by the BMS is aligned with the information required by the certification standards.	The report should clarify that development of standards regarding the batteries and cells information needs to be coherent with the future certification standards for second-life applications.	
2	2.4.4		Requirements on the remaining three topics	The claim that "*no issues are supposed*" for these three topics is unsubstantiated. A short analysis explaining why these requirements are not problematic for different battery chemistries than Li-ion should be added.	Substantiate the claim that "*no issues are supposed*" for the remaining three topics.	
2	2.5.2	p.20 line 2	Rationale and method for potential concessions on remaining capacity versus life time in policy requirements	The condition "*when 890/2 < cEEI <890*" is used twice in lines 1 and 2. We believe this to be a typo and that the second line should read "*when cEEI < 890 /2*".	Fix the typo	

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2	2.5.2		Rationale and method for potential concessions on remaining capacity 14 versus life time in policy requirements	The proposal there is that the use of renewable energy in the manufacturing process will grant concession on battery performance. The study report, however, fails to describe how this information will be obtained (e.g. based on green certificate, based on the country energy mix?), and this is crucial since each method could have very different consequences (e.g. penalising an entire country when using the energy mix).	Elaborate on how the renewable energy used in the manufacturing will be accounted for.	

3	General comment		Calculating the carbon footprint of a rechargeable battery based on a PEFCR – usage of generic data	During the stakeholder meeting on 05/11, a very brief presentation (approx. 10 minutes) was given by DG GROW (unit C1), to present the calculation method of the carbon footprint. Evidence shows that the highest carbon impact comes from the carbon intensity of the energy that is used in the cell and battery production. This focus should be reflected in the documents. Some concerns have been raised that generic carbon intensity values derived from the electricity used for battery packs can be used. Since setting an accurate carbon footprint accounting methodology for all batteries placed on the European market is the key rationale behind the introduction of a Regulation on batteries, it is of paramount importance that 1) electrodes and cell manufacturing is accurately accounted for and 2) country/company-specific carbon intensity of the electricity is used. Competition among EU Member States should not be a barrier to setting accurate sustainability criteria. When aiming at the least carbon intensive battery manufacturing, some competition is sound and will contribute to steer the market in the right direction, provide consumer confidence in the claimed carbon footprint and reward efforts on both the manufacturer and national government level. Importantly, this would encourage battery	A document presenting how the PEFCR would apply to batteries in practice should be included in annex to Task 3. In particular the document should clearly describe: • What are the possible default (or generic) secondary datasets that can be used. • When default secondary datasets can be used. The PEFCR methodology for all LIB should further include the following changes: • In the case of the carbon intensity of the electricity used for the production of cells and batteries, only company-/country-specific values should be used. • Battery manufacturers should not be allowed to use generic data when specific data is available and should use accurate data on electrodes and cell manufacturing. • Generic data should always be more conservative than	

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				manufacturers to seek clean (provided it is additional) electricity supply, thus putting pressure on Member States to increase their investment in renewable power generation. The timeframe proposed (carbon footprint information fully available from 2022, minimum threshold from 2024) allows for a gradual implementation of the necessary measures before 2024 (e.g. supplier-specific contracts or deployment of on-site renewable electricity generation with hourly metering).	the worse-in-class carbon footprint (and include a safety margin).	
3	General comment		Traceability of the carbon footprint	It is important that the traceability mechanism for batteries goes down to the cell level, and this should include information on the carbon footprint. Should the battery be disassembled and repaired, it should be possible to replace individual cells without losing information on carbon footprint. This is already a widely spread best practice within the industry.	The document should acknowledge that battery manufacturers have implemented traceability at the cell level and this best practice should be required for all batteries.	

3	General comment			Setting an accurate carbon footprint accounting methodology for all batteries placed on the European market is the key rationale behind of the introduction of a Regulation on batteries. If done correctly, this will allow Europe to fully capture the sustainability and competitiveness benefits from the uptake of e-mobility. Currently, the preparatory study proposes to rely on the PEFCR methodology for High Specific Energy Rechargeable Batteries for Mobile Applications and does not further question or research this methodology. This methodology dates back to 2014-2016 and during the stakeholder meeting on 2 May several stakeholders mentioned that the PEF study was not accurate enough to serve as a basis for policy regulations. A precise carbon calculation for both the cell manufacturing and the battery assembly is key to achieving a reliable carbon footprint calculation for the whole battery, but for most upstream part of the PEFCR, the "background" information can prove to be imprecise because of the aggregation of the information on manufacturing of battery cell components and battery components. Improving this requires a dataset enriched with company-specific and country-specific data, and a traceability system.	For the battery carbon footprint calculation to be accurate and thus for the battery Regulation to be reliable and trustworthy, the following points should to be improved: • Data from background processes should be disaggregated to provide more accuracy and robustness to the carbon footprint calculation. For example, the background data should accurately differentiate the mining and refining stage in different countries (e.g. Congo, China, etc..). For these background values, the quality of the proxy data should be improved, while the data should be composed of as much primary or secondary company-specific data as possible. • Company-specific PEF values for all key products along the whole value chain should be publicly available, in particular in the upstream processes where it is lacking. In the future regulation, this information will be necessary to enable all actors to undertake PEF assessments.	

				A reliable and accurate approach is instrumental for the EU to impulse a dynamic where domestic and foreign actors along the value chain would benefit from evaluating the PEFs of their products. This could build momentum at global level (bottom-up approach).	• The LCA databases necessary to undertake the PEFs should be made publicly accessible and should be regularly updated to stay in line with technological progress. This is not the case currently and the European Commission should purchase the data and make it transparent and open for all. • The complexity of the PEF should be reduced by focusing on CO_2 hotspots. It was reported that it is not feasible to implement or audit the methodology as it is. Steps along the value chain that have a negligible impact (e.g. <1% variation) could be eliminated to have a realistic and practical implementation and enforcement of the regulation. • Nevertheless, performance on carbon footprint should not allow burden shifting to other "significant" impact categories. For example, a low carbon footprint should not permit a higher water footprint. Consideration should be given to how to ensure performance on other impact categories is maintained – for example assessing the relative	

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					performance against the benchmark.	
3	General comment			The carbon footprint metric proposed in the study is the $gCO_2eq/FU(kWh)$ while the value of gCO2eq/capacity(kWh) is the most commonly used to compare batteries. The carbon footprint calculation should be set on the battery put on the market and accurately account for its carbon footprint up until the moment it is put on the market, independently of the use case assumed. During the stakeholder meeting concerns and criticisms were voiced regarding the uncertainties of the lifetime and the usage of batteries. A carbon footprint that is only based on the initial (or declared) battery capacity is therefore a more robust method. The carbon footprint standard should also focus on the production step only. Given that the warranty requirements are already likely to be included, adding lifetime or a number of cycles for the calculation of the carbon footprint could be considered redundant, as it duplicates the requirements on warranty and lifetime. In addition, manufacturers also have a commercial incentive to offer a long lifetime.	The carbon footprint of batteries should be calculated based on both metrics: $gCO_2eq/cap(kWh)$ and $gCO_2eq/FU(kWh)$. The first one is key for vehicle producers makers and consumers to choose sustainably produced batteries and provides a real-world data, which is absolute. The inclusion of both pieces of information will provide stakeholders with a much more robust and informative understanding of the market, which will also give more options to set a carbon minimum requirement later on.	

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4	2.	l.19-24	Definition of sustainable sourcing	A set of specific focus areas were identified as important to ensure the three main pillars of social, environmental and economic sustainability. The suggested focus areas are missing two key social concerns (see proposed change).	Add to the proposed definition: - fair remuneration and benefit sharing - local land rights e.g. land grabbing and forced resettlement	
4	5.2.1.	p.65	OECD industry certification frameworks	The report states that existing industry certification frameworks can serve as a basis to prove compliance with the future EU level due diligence requirements. These industry certification frameworks often consist of a simple report and do not include any certification, third-party audits or verification (e.g. CIRAF). It is important that companies participating in voluntary supply chain certification schemes are not exempt from rigorously applying the binding OECD Due Diligence requirements.	Clarify which are the existing industry certifications referred to in the document, and clearly state which of the requirements in these certification schemes are legally binding. In particular, the document should be explicit on the fact that these certification schemes are not binding requirements but rather voluntary reporting schemes, e.g. CIRAF, where industry often evaluate themselves. Crucially, it needs to be clear that compliance with such industry certification schemes cannot replace the obligation for mandatory due diligence at EU level.	
4	5.2.1	p.66 l. 1	OECD 3rd party independent audits	Independent third-party audits are crucial to ensure compliance. Audits should tackle specific requirements on how to respond to risks and there should be strengthened authorisation procedures for conformity assessment bodies to undertake audits (which was for example the case with type approval authorities after diesel gate, and for medical equipment).	The document should stress the importance of independent third-party audits carried out at least annually and, in particular, for specific risk assessments.	

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4	5.2.1	p. 66	OECD DDG publication of risk assessment	The OECD DDG does not include strong transparency requirements on the transparency of the risk assessment and risk mitigation.	DDG risk assessment should be published every year (e.g. in the company's annual report) and include a focus on risk mitigation measures.	
4	5.2.1	p.65	OECD scope and application to final products	It is not clear what the envisioned scope of the OECD DD requirements is. DDG requirements should apply to all actors upstream, middle stream and downstream of the value chain, in particular smelters/refining industries who buy from many different mines and mix the metals into battery. The document claims that extending the scope to primary materials is crucial. In the future, the European battery manufacturing industry will be importing raw materials, so it is key the regulation is future-proof.	Clarify that the OECD DDG guideline applies to the whole value chain. In particular, how are the upstream and middle stream actors (e.g. refineries) concerned by OECD DDG requirements?	

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4	5.2.1		OECD DDG role of downstream producers	The implementation of new regulatory measures benefits most the downstream actors who can claim ethical and sustainable batteries, while most of the actors of the upstream supply chain (e.g. miners and refiners) do not benefit directly from these improvements (e.g. economically or reputation). The “weight” of the additional regulatory measures should be proportional or aligned with the benefits that actors directly retrieve from these measures.	The document should stress that downstream producers (carmakers), have a responsibility vis a vis their upstream supply chain and its improvement. Implementing new procedures can be costly for upstream players (e.g. miners, refiners) and it is important that implementation of regulatory measures does not place an excessive burden on these upstream actors.	