EUROBAT
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Position paper on Carbon Footprint provisions in the new Batteries Regulation[1]

Our suggestions to policy-makers

1. Support the introduction of a carbon footprint declaration, performance classes and maximum thresholds to **promote green batteries made in Europe**

2. Focus the scope on specific applications: **electric vehicle and stationary energy storage batteries**
    a. The category of industrial batteries includes hundreds of very diverse applications and several technologies – it would not be proportionate to regulate them all according to the same criteria
    b. No targeted impact assessment and cost-benefit analysis is available for these applications and technologies

3. Develop **individual methodologies to consistently and coherently calculate the carbon footprint of all battery technologies** falling under the scope of the carbon footprint requirements

4. **Adapt the timeline to the tasks and priorities**:
    a. The deadline of 1 July 2023 to adopt a methodology for all technologies does not seem compatible with the need to have a robust document
    b. Include a timeline for the adoption of specific methodologies for all technologies, prioritising those for which a dataset is already available or more advanced (e.g. PEFCR for lithium)
    c. Allow a period of at least 24 months between the adoption of the delegated acts and their implementation

5. Provide carbon footprint data for each battery model per manufacturing plant and **remove the reference to the batch** to streamline the process. Rules for setting the appropriate frequency of calculation and reporting of carbon footprint should be developed

6. Clarify how the Commission and Member States plan to ensure that appropriate enforcement will take place to make the Regulation equally effective for batteries **manufactured in or outside of the EU**

7. **Exclude distribution, end of life and recycling phases from the carbon footprint calculation**: the battery will be recycled 10-15 years after its production, and including an imprecise assessment of carbon footprint recycling would not help when selecting the greenest battery

8. **Use of primary data** should be required for all identified hotspots within the supply chain, from mining to battery assembly

[1] With this position paper, EUROBAT would like to provide its position on the proposal to regulate the carbon footprint of batteries, as described in article 7 and Annex II of the Proposal for a Regulation 2020/353 concerning batteries and waste batteries.

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1. **Support the introduction of a carbon footprint declaration, performance classes and maximum thresholds to promote green batteries made in Europe**

EUROBAT welcomes the proposal that aims to ensure that batteries placed on the EU market are sustainable, high-performing and safe during their entire life cycle. The battery industry is an energy intensive but also an energy conscious industry, and it is therefore supportive of legislative proposals that reduce this impact. European battery producers have already started to address this problem in several ways, including the installation of solar panels in existing factories, promoting energy efficiency measures and selecting the location of new plants considering the availability of low carbon energy.

Regulating the carbon footprint in stages, starting with a declaration and then developing performance classes and thresholds, is also a good way to prepare the industry, authorities and the market to adapt to this change.

Such a revolution in the way we produce batteries should take place anyway, taking into account the complexity of the task and always considering the key target – to promote green batteries made in Europe. This means that European competitiveness and sustainability need to go hand in hand, and we should not promote one at the expense of the other. To do so, we believe that the proposal needs refining in some key aspects.

2. **Focus the scope on specific applications: electric vehicle and stationary energy storage batteries**

As defined in Article 7, the carbon footprint requirements would apply to electric vehicle batteries and rechargeable industrial batteries with an internal storage and capacity above 2 kWh. We, of course, agree on the need to include electric vehicle batteries in the scope, but we invite the regulator to more clearly specify the scope in relation to industrial batteries.

'Industrial batteries' is a very broad and diverse category, including hundreds of very different products and several battery technologies. A non-exhaustive list of batteries falling under this category includes batteries for stationary storage at different grid-levels (large power plants and solar parks, ancillary services at grid-level, residential storage), off-grid applications, telecom towers, uninterruptable power supply (UPS), batteries for motive power (forklift trucks, ground support equipment, cleaning machines, golf carts, railway applications, construction and agricultural machines) and so on. In some cases, tailor-made industrial batteries are manufactured in very low volumes to answer the needs of individual customers.

This complexity is not limited to the applications. A variety of battery technologies can be used for different industrial applications. These technologies can be split into five major families: lead-based batteries, lithium-based batteries, sodium-based batteries, nickel-based batteries and flow batteries. All these technologies have their own specific features that are fit for specific types of applications.

Considering this variety, and also the fact that the impact assessment prepared by the Commission targeted only electric vehicle and stationary storage batteries, we challenge the proportionality of applying this requirement to the entire category of industrial batteries. Similarly, the Preparatory

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Study on Ecodesign and Energy Labelling of batteries[2] included in its scope only "High energy rechargeable batteries of high specific energy with solid lithium cathode chemistries for e-mobility and stationary energy storage (if any)". It even explained why non-lithium technologies (lead, nickel and sodium) used in industrial applications should not be taken into account.

For instance, the study states that Uninterruptable Power Supply (UPS) systems "have a complete different functional unit, i.e. provide back-up power during occasional power interrupts, which would lead to an inconsistent study", while "Industrial back-up batteries […] can have each very different requirements (duration of back-up, service life, ability to withstand temperature, shock and vibrations, ability to perform additional services). A unique functional unit would not adequately cover all these segments"[3]. Despite these considerations, the selected indicators for the functional unit and the reference flow are only relevant for some applications: Annex II includes a reference to "manufacturing CO_2 FP (in kg) / the total energy discharged by the battery throughout its useful life (in kWh)", which is relevant for batteries that are designed for cycling, but it makes no sense for back-up industrial batteries.

These back-up batteries are either stand-by (back-up power for IT) or mobile (back-up power for aircraft or trains) and are not designed to deliver energy across thousands of cycles. They stand still and discharge very infrequently (in many instances less than once a year) in case of grid failures, so it makes no sense to express their carbon footprint performance as noted above.

In the absence of an impact assessment and cost-benefit analysis for these batteries, we would strongly suggest to better clarify the scope of this proposal and focus on specific applications with higher potential for decarbonisation – that is, electric vehicle batteries and stationary energy storage batteries. Given this more targeted scope, it would also be possible to remove the 2 kWh threshold, since all electric vehicle batteries and stationary energy storage batteries are generally well above this threshold.

The inclusion of other specific applications could be considered only after the development of appropriate impact assessments. In particular, we understand that other stakeholders might also be interested in including batteries for light mobility (e.g. e-scooters) in the scope. Since they are considered as portable, they are outside of the remit of EUROBAT and therefore we will not comment on this specific point.

3. Develop individual methodologies to consistently and coherently calculate the carbon footprint of all technologies falling under the scope of the carbon footprint requirements

One limit of the proposal on carbon footprint, but also for other provisions included in the Regulation, is the almost exclusive focus on lithium-ion batteries for electric vehicles. This segment is of course strategic for Europe's climate change ambitions and of growing importance, but it does not mean that

[2] Preparatory Study on Ecodesign and Energy Labelling of rechargeable electrochemical batteries with internal storage under FWC ENER/C3/2015-619- Lot 1 TASK 1 Report Scope (Definitions, Standards and Legislation) For Ecodesign and Energy Labelling

[3] Preparatory Study on Ecodesign and Energy Labelling of rechargeable electrochemical batteries with internal storage under FWC ENER/C3/2015-619- Lot 1 TASK 1 Report Scope (Definitions, Standards and Legislation) For Ecodesign and Energy Labelling, page 39.

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we should not consider the specificities of other technologies, above all when the measures included in the Regulation have a (disproportionate) impact on them.

The carbon footprint proposal is a good example in this sense. The proposed scope includes "rechargeable industrial batteries with internal storage and a capacity above 2 kWh", but the methodology described in Annex II was developed for and is applicable only to lithium batteries, even if several segments of the industrial battery market are dominated by other technologies.

Therefore, we think that it is essential to develop specific methodologies to allow the calculation of the carbon footprint of each technology, which can be used for the applications that will be covered by this proposal. Of course, these methodologies need to be as consistent and coherent as possible. Lithium, lead, nickel and sodium batteries can all be used as stationary energy storage batteries, and dedicated methodologies should therefore be developed for each chemistry. Similarly, specific performance classes and maximum carbon thresholds should be developed for each battery technology/chemistry.

4. Adapt the timeline to the tasks and priorities

The development of these battery chemistry specific methodologies will require an appropriate amount of time, above all for those technologies where the existing Product Environmental Footprint Category Rules (PEFCRs) are not available. Currently, a PEFCR is available only for lithium-ion and nickel metal hydride batteries for mobile applications[4]. Similar exercises should be developed for other technologies and applications within the scope of the carbon footprint proposal. However, the existing PEFCR was the result of a four-year long process. Of course, the PEFCR is only the basis for the methodology, not the methodology itself.

Therefore, we believe that it will be impossible for the Commission to meet the deadline of 1 July 2023 to adopt the delegated act establishing the methodologies for all technologies included in the scope of the proposal. EUROBAT would instead suggest a more reasonable timeline to make sure that the methodologies are robust and comply with the most recent requirements in terms of life-cycle assessment analysis. However, we believe that the Commission should prioritise its work. The methodology for the calculation of the carbon footprint of lithium-ion is more advanced and should, therefore, be developed and adopted as a priority. The methodologies for other technologies could then be published at a later stage, and it will be important to already have a detailed timeline for the development and adoption of these delegated acts.

Finally, the impact assessment mentions that economic operators should be given sufficient time to adjust their production facilities and generate supply chain information, in view of the requirements for a carbon footprint declaration, performance classes and maximum threshold. The regulation grants only one year between the adoption of the delegated act and its implementation, which is clearly not sufficient. The opinion of the industry is that a minimum of 24 months will be needed to

[4] PEFCR - Product Environmental Footprint Category Rules for High Specific Energy Rechargeable Batteries for Mobile Applications

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adapt production facilities. Moreover, we expect that a similar amount of time will also be needed for Member States to train and prepare their market surveillance authorities for the task.

5. **<u>Provide carbon footprint data for each battery model per manufacturing plant and remove the reference to the batch to streamline the process; rules for setting the appropriate frequency of calculation and reporting of carbon footprint should be developed</u>**

Another concern of the industry is the granularity of the data to be provided, and the consequent administrative burden. The regulation currently requires data to be provided on the carbon footprint "for each battery model and batch per manufacturing plant". While we understand the reason to provide information for models and manufacturing plants, we do not see the need to provide information on single batches of batteries. Differences in carbon footprint among batches of the same model of batteries produced in the same plant are actually negligible, and including such level of detail would unnecessarily complicate the reporting and verification process for both industry and national authorities. Also, the administrative costs need to be considered, and the impact assessment prepared by the Commission seriously underestimated them. The calculation in the impact assessment is based on the "battery type" not on "battery model and batch". The practical consequence is that the impact assessment only foresees five declarations per plant per year, while the real number is 2-3 orders of magnitude higher, so the real administrative costs will be considerably higher than those estimated in the impact assessment.

We would therefore suggest to streamline the certification process by reporting carbon footprint data "for each battery model per manufacturing plant", removing the reference to "batch".

Additionally, it might be appropriate to insert rules for the setting of carbon footprint reporting frequency. These should assist in striking the right balance between the meaningless effort of trying to identify the carbon footprint of each item that leaves the manufacturing line and an inadequate single value per model, whether it came from the first production run or the last.

6. **<u>Clarify how the Commission and Member States plan to ensure that appropriate enforcement will take place to make the Regulation equally effective for batteries manufactured in or outside of the EU</u>**

The European battery industry has a serious concern regarding the enforcement of the proposal, above all in relation to imported batteries. The entire carbon footprint concept relies on independent third-party verification statements and on the surveillance of national market surveillance authorities. We wonder if these authorities will have enough resources and technical knowledge to check this remarkable amount of certifications, also considering that similar provisions are included for performance and durability requirements and for recycled content.

This is a cornerstone of the proposal and lack of consideration of the practicalities of implementing and enforcing such requirements risks damaging the European battery industry vis-à-vis international competitors. The European battery industry is concerned about the possibility of having non-

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compliant batteries placed on the EU market due to inherent weaknesses in the certification and enforcement process, which would negatively impact the trust of consumers and the compliant industry. Of course, this problem is amplified in the case of batteries manufactured outside of the European Union, where testing and enforcement becomes quite complicated. We believe that the current proposal does not sufficiently address this problem. Therefore, we would suggest to better clarify how the Commission and Member States plan to ensure that appropriate enforcement will take place, above all for batteries produced outside of the EU.

7. **Exclude distribution, end of life and recycling phases from the carbon footprint calculation**

Annex II includes the following life cycle stages among those to be included in the calculation:

- Raw material acquisition and pre-processing
- Main product production
- Distribution
- End of life and recycling

As reported in the Commission's impact assessment, "the production phase is the main contributor to life cycle GHG emissions of lithium-ion batteries, while the use phase and end-of-life treatment hold much smaller contribution". This is a view shared by the industry. The production phase is the key hotspot and we should focus on it. We therefore agree on the exclusion of the use phase, which will be anyway regulated as part of the performance and durability requirements.

However, we are quite sceptical of the inclusion of the distribution, end of life and recycling phases, for two key reasons: their contribution is quite small and it is extremely difficult to assess them when the battery is produced and placed on the market. The battery will be recycled 10-15 years after its production, and any estimation of the amount of energy needed to recycle is by nature a wild guess, and it would not help customers to select the greenest battery on the market. Besides, it cannot take into account the technical improvements in the recycling processes: we cannot use today's carbon footprint recycling values to assess those available in 10-15 years' time. Finally, the efficiency of the recycling process depends on the individual recycling plant, and manufacturers do not have control over it – above all for batteries that will be recycled in the future.

We would therefore suggest removing the distribution, end of life and recycling phases from the calculation of the total carbon footprint.

8. **Use of primary data should be required all for identified hotspots within the supply chain, from mining to battery assembly**

The definition for primary data should be more visible since, in the draft, it is hidden in the definition of company specific data. It needs to be clarified that the essential elements of defining the carbon footprint (raw material acquisition and pre-processing, main product production) have to be based on primary data only. Section 5 of Annex II seems to restrict the use of company specific data to process

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and component analysis that relate to battery-specific parts. However, materials or components that are produced and used beyond the battery sector are both a significant source of impact as well as differentiation due the large spread of CO_2 footprint performance for identical substances or chemicals.

Examples are:

- Base metals in cathode active materials represent over 20% of the battery footprint. For some of these minerals, the range between best and worst exceeds 1:10.
- The manufacturing of cathode active materials shows similar impact levels. These vary significantly across sources and efforts to reduce these impacts are progressing fast.
- Graphite in anodes represents 10% of the total battery CO_2 footprint and is believed to demonstrate a high level of variability across sources.

These examples demonstrate that primary data should prevail over secondary for all “hotspots”, allowing for more differentiation and hence faster progress.