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EUROBAT comments on the outcome of the sectoral meetings on the legislative framework for batteries

Introduction and key messages

With this paper, EUROBAT wants to comment on the outcome of the sectoral meetings on the legislative framework for batteries. We welcome the work of the European Commission on this subject: **batteries will be an essential part of the decarbonisation of a number of sectors**, from transport and energy to telecommunications and logistics, and it is of course very important to produce different battery technologies with the lowest environmental impact. At the same time, **Europe should take the lead in producing sustainable batteries**, as already outlined in the framework of the European Battery Alliance. For this reason, we welcome the fact that DG Environment and DG Internal Market are cooperating on this file to ensure that the objectives of competitiveness and sustainability, or competitiveness through sustainability, are both met.

We also welcome the fact that the proposal on the eco-design of batteries and the revised Batteries Directive will be combined in a single **Regulation**, to ensure legislative coherence and better regulation. However, we regret that the revision process of the **End of Life Vehicles Directive** has been delayed compared to the work on this proposal. There are several points of contact and overlap between the two instruments, and it would have been beneficial to discuss them together for the purposes of coherence.

The new legislative framework for batteries will include several new elements, taking into account the evolution of the market from 2006 and their growing importance. For this reason, it is of utmost importance that the impact assessment carefully evaluates each individual measure for its economic, environmental and social impact, bearing in mind the overall targets of sustainability and the competitiveness of the European industry.

In this regard, even if the discussions we had were fruitful and interesting, we regret to note some general problems in the analysis presented by the consultants. In general, the conclusions presented by the consultant are only preliminary, and the **sources and references used by the consultants have not been disclosed**. However, since several assumptions seem to be at least questionable, it would be reasonable to have access to this kind of information to be able to provide constructive feedback. This should be done at the preliminary stage of the report and not at the end of the process because wrong assumptions may lead to improper policy decisions. Of course, we would also appreciate the possibility to comment on the final study prepared by the consultant. Besides, the short deadlines to comment on such a large amount of information are not helping stakeholders provide substantial comment and additional sources.

We also regret the fact that some topics were not discussed: for instance, **substance management and restrictions were not addressed**. This is not a minor topic, but it is actually one of the key concerns of the industry. Since all batteries use hazardous substances, we believe that moving from a hazard-based to a risk-based approach on chemicals management would deliver important benefits in terms of competitiveness, but also environmental and worker protections. Currently, there is a clear overlap

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on this topic between the Batteries Directive, the End of Life Vehicles Directive, REACH and Occupational Safety and Health (OSH), which is curbing investments and putting the entire battery industry at risk. We therefore call for the initiation of proper discussions and analysis of this key point for the industry.

Looking at the overall analysis, we would also like to remark that the **market analysis used for the study presents several wrong or questionable assumptions**. For instance, we read that "there will be a substantial shift from lead acid and nickel-cadmium batteries (with a high recycled content) to Li ion batteries (with a low recycled content)". Figures for the industrial lead battery market foresee a contraction from 408,000 in 2020 to 167,000 tonnes/year in 2035. We would like to know the sources for these analyses as they are in direct contradiction to other market analyses. For example, Avicenne predicts that the industrial lead battery market will actually remain stable or even grow in absolute terms in the next 10 years.

We outline in the rest of the document our observations on some specific points to be addressed. Of course, given the short timeframe to provide these comments, we would appreciate the opportunity to have a more in-depth discussion on a more advanced version of the report, including sources for data and assumptions.

Measure 2: Additional collection target for industrial batteries

To address the supposed issue of low collection rates, the consultants consider two policy options: reporting obligations or collection targets. As explained in the **EUROBAT proposal for a notification, verification and validation system of batteries that become waste,** there is no evidence to support the assumption that not all waste industrial batteries are collected and recycled. Industrial batteries are generally bulky, heavy and used in a business-to-business context, and therefore professionally handled at the end of their life. All automotive and industrial batteries, including EV traction batteries, are already covered by the implicit 100% collection target outlined in the Batteries Directive.

The consultants challenge the 100% collection rate, but without bringing sufficient evidence to substantiate this assumption or explaining why batteries would not be collected and where they end up. "**Batteries in exported used products**" are mentioned as losses that could be avoided, but we do not see how these could be considered losses. These batteries are generally still in operation and, above all, no longer available for collection in the EU.

The comparison between the two policy options is clearly flawed by the assumptions. The consultants assume that the current collection rate of industrial batteries is 95%, but there is no evidence to support this value. They assume that a 3% collection rate increase would deliver environmental benefits, but this is obvious. The report fails to demonstrate that the collection rate is lower than 100%, and therefore it does not prove that a 3% increase is even possible. **On this basis, it is not**

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possible to state that establishing a collection target would bring "higher amounts of collected and recycled industrial batteries associated with environmental benefits"[1].

We agree with the consultants on the challenges to set up such a collection target. There is a very **large variety of industrial batteries** available in terms of technologies, applications, lifetime and dimensions, which makes it difficult to set up such target. We therefore agree with the consultants when they state that **"[in view of the] foreseeable difficulties in developing a practicable target, it is questionable whether the unclear benefits justify the necessary effort"[2].**

To address the issue of lack of data, EUROBAT supports a notification, verification and validation system of batteries that become waste, in line with the option 3 proposed for EV batteries. This system should apply to all industrial batteries, including EV traction batteries but excluding light mobility batteries (eBikes, eScooters, etc.).

Measure 5: Changes in calculation methodology of recycling

We agree that the underlying calculation methodology for recycling presents problems[3]. The quality of data provided by Member States on recycling efficiency is indeed questionable. The Regulation should clarify the recycling efficiency reporting obligation and methodology to be used by Member States. It cannot be reasonable to read, as we do today, Member States reporting (highly unrealistic) recycling efficiencies for processes that are not operating in their territory.

We therefore **agree that process specific recycling targets could deliver benefits** in terms of data availability and quality, but also support fair competition between recyclers and ultimately support high-quality recycling.

Measure 6: Control and auditing system for recycling of batteries

As a consequence of implementing process specific recycling targets, we agree with the consultants that **an auditing and control system is needed**. Industry and national surveillance authorities should be consulted on the design of an auditing system that is not burdensome but still delivers the expected benefits in terms of fair competition, competitiveness and high standards. It is of course fundamental to ensure that recyclers in third countries (outside the EU) also have to perform and prove audit compliance of their activities according to EU standards, as mentioned by the consultants.

However, the funding to cover the **costs** of this initiative needs to be clarified and **should not just be transferred to the recyclers.**

[1] Slide 22, Measure 2: Additional collection target for industrial batteries
[2] Slide 21, Measure 2: Additional collection target for industrial batteries
[3] Measure 5: Changes in calculation methodology of recycling

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Measure 7: Recycling efficiencies and material recovery rates

Lithium-ion

We agree with the conclusion of the consultants on the feasibility of a 50% recycling efficiency target for NMC lithium-ion batteries. A target of 60% would be difficult to achieve, and should be carefully tested for its feasibility. However, the analysis of the consultants is **based only on the NMC chemistry** and no analysis is provided on the feasibility of this target for other lithium technologies, which might have different recycling efficiency rates. We cannot accept the principle that what works for one chemistry will also work for others without having targeted analysis on each technology.

Even if we understand the necessity to recover key materials during recycling (cobalt, nickel, etc.), we **disagree on the material recovery targets** as proposed by the consultants. There is no evidence or sources provided for the feasibility of these targets and, above all, that all of these specific targets could be met simultaneously. We understand from the discussion that these values were provided by an individual company. However, we would expect the consultants not to simply accept these numbers, but to conduct a proper independent assessment to test the hypothesis. Certain processes allow a higher share of a particular metal over others, and recyclers should be granted the flexibility to prioritise their targets or achieve higher specialisation. This flexibility would enable innovation and make the proposal adaptable to future evolutions in the battery chemistry, as well as in relation to market demand.

EUROBAT therefore supports a '**sum**' **target for all active materials together instead of individual targets**. The objection that this might result in economically less valuable materials not being recycled could be addressed by including a **weighting system** in the calculation to give more relevance to specific metals. At the very least, we believe that this option should be carefully assessed by the consultants, and compared to the policy option of having individual material recovery targets.

Lead

Adapting the current target value for the recycling efficiency of lead batteries from **65% to 75% appears feasible** and in line with the declared recycling efficiency values provided by Member States. However, it should be noted again how those values present some criticalities in terms of data quality. For this reason, we would appreciate the possibility to have access to the sources and methodologies used by consultant to assess the 75% target.

We also believe that the proposed **95% recovery rate** is acceptable in principle. However, the current Directive already includes an obligation to recycle lead "to the highest degree that is technically feasible while avoiding excessive costs". It is therefore questionable that a specific target would deliver the desired benefits, also because it would remove one incentive to recycle beyond the minimum recovery rate. Moreover, in this case, we believe that an in-depth technical analysis should be conducted.

We disagree with the indication that only 10% of **plastics used in lead batteries** are being recycled, and we would like to know the source of this assumption. The recovery rate is actually by far higher, and several recyclers already recover plastics used in lead batteries.

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Finally, the consultants explored the possibility of changing the **methodology of the recycling efficiency**. Even if we understand the challenges to have those changes implemented into a new methodology, the initial analysis of the consultants shows that an alternative methodology could deliver important environmental benefits. It should, therefore, be carefully assessed as a possible option.

Measure 8: Problems to establish end-of-recycling criteria

We agree with the consultants when they state that in some Member States the recycling output slag (and the black mass) is counted as part of recycling, while in others it is not, and this is hampering the development of a level playing field for recyclers. For this reason, we believe that **EU-wide harmonised rules on what is accounted for in recycling should be established**. We would, however, expect a full LCA analysis to be developed to assess exactly what should be accounted for in recycling, and stakeholders should be consulted to provide comment on such an analysis.

Measure 9: Setting minimum levels of recycled content

Having minimum levels of recycled content in batteries might seem an appealing change in terms of environmental benefits. However, once we start carefully assessing the pros and cons of such a proposal and the complications of setting up and properly implementing it, it becomes clear that it would be extremely difficult to obtain environmental benefits at all. As in the case of other subjects, **the presentation lacks sources and supporting studies** to prove the assumptions, including the baseline scenario for 2020 and the suggested values for minimum levels of recycled content. For instance, the 100% recycled cadmium content in new batteries is highly questionable. It is, therefore, not possible to properly comment on them.

Some considerable problems are already highlighted by the consultants:

- **Material availability**: given the growth of battery sales, not enough secondary materials will be available up to 2035.
- **Secondary materials cannot be reliably distinguished from primary materials**: it is therefore unclear how this target could be tested and enforced.
- **Closed-loop vs open-loop**: a closed-loop system is not necessarily preferable to an open-loop system. Metals recovered from batteries are used in other applications. Forcing them to be used to produce new batteries instead would distort the market and force other sectors to look elsewhere for their raw materials with zero net societal gains.

Besides, we would like to remark that a **minimum level of recycled content is in direct opposition with second life** – we can either reuse the materials OR the battery, not both at the same time.

Furthermore, the **economic impact** should be carefully assessed. Due to the fact that the EU collection rate is already very high (~100%), waste collectors can only marginally influence the amount of waste collected and recyclers can only marginally influence the quantity of raw materials generated through

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the recycling process. Price increases generated by a bidding war on the part of battery producers will have almost no influence on the quantity of secondary raw materials available on the market. Besides, this could give huge bargaining power on the sale of recycled materials to recyclers of low-volume technologies that hold a quasi-monopolistic position (Ni-Cd).

Therefore, price increases would only benefit recyclers and penalise battery end users who would have to pay more for new batteries with no benefit to the environment. It could also incentivise hoarding of waste batteries if prices are considered too low.

We would also appreciate further details on the proposed **auditing and certification system** for reporting levels of recycled content for materials, in particular in relation to non-EU countries. Extreme enforcement must be imposed on imports, also considering that such an obligation would have the unforeseen consequence of creating an element of differentiation in favour of non-EU manufacturers when selling into the EU market. Indeed, some Asian markets have been supplied in e-mobility batteries for some years, so there are some used batteries already coming back for recycling. Using this secondary material flow, Asian manufacturers could develop and manufacture "EU specific products" to meet the regulatory requirements set for recycled content using these secondary raw materials. At the same time, this measure should not be imposed on products exported from the EU, since it would damage the competitiveness of EU products.

This difficulty is amplified by the fact that **the new target must not be placed on individual products**. For instance, the level of secondary lead in individual lead acid batteries varies from >50 to 100%, for the entire industry the best estimate is 85% of secondary lead used in new battery manufacture. A key obstacle is the specification for certain sealed products that have a low target e.g. for water consumption. These products often require some primary lead for the active material (a little below 50% of the entire lead content), and they will not be able to meet a high target.

To conclude, it seems that this measure would face considerable difficulties and unintended consequences, while the environmental benefits are at the very least questionable. We would therefore suggest the preparation of a proper LCA analysis to assess the impact of this proposal before including it in the new legislative framework.

Measure 10: 2nd-life for Li-ion traction batteries from EV

First of all, the environmental benefits of second life resulting from the quantitative assessment model are questionable. The model relies on a long list of assumptions that should be checked for their validity. For instance, the model assumes that second life batteries will replace LFP in stationary applications, but there is **no actual indication that second life batteries will be competitive compared to any other stationary battery**. We can assume that their cost will be lower, even if proper analysis should be conducted to prove that the total cost of ownership is also lower, and not only the upfront cost.

Batteries that have reached the end of their life are usually approximately 12 years of age, and it can therefore be expected that they were designed 15-18 years earlier. At this point in the future, the

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performance of current batteries is likely to have improved significantly over this period of time (approximately 5 generations in between), and it would be a pity to see valuable materials stranded in underperforming assets. **Better performance (with longer lifetime) of new stationary batteries compared to second life batteries would deliver additional environmental benefits** that are not captured in the model.

Second life applications may result in the risk of having valuable materials parked in those applications instead of having a more efficient use in a state of the art designed first life application. Second life would be in direct contradiction with the principle of **resource efficiency**, but also with minimum levels of **recycled content**.

For these reasons, **we do not believe that the Commission should grant any positive bias to second life batteries.** The decision between recycling and second life should be left to the market, above all because not enough evidence is provided on the environmental benefits of second life.

We do, however, agree that **the regulatory framework on second life batteries should be clarified**, in particular regarding EPR and access to the Battery Management System (BMS). We simply reject the proposal that batteries are waste at the end of their entire lifetime only, and therefore that the EPR remains with the original producer. Refurbishing a battery is a complex process that modifies the BMS and changes the use and purpose of the battery. Since the battery was produced for a different use, **the original manufacturer cannot be held responsible and liable for misuse of the battery**.

We therefore see some merit in the proposal that **batteries become waste after first life, but batteries for second life cease to be waste and re-acquire product status,** if certificates on the state of health and other information are provided and the PRO (or OEM) establishes a contract with a remanufacturer making Input-Output access to BMS available to the remanufacturer. This is a very important point for the industry. Since access to BMS is a very sensitive point, with clear implications on safety, data protection and intellectual property, we believe that **access to BMS shall be regulated by contracts and not mandated by legislation.**

Measure 11: EPR for the collection of industrial batteries and Measure 16: Changes in categories and classification system

Since the EPR for the collection of industrial batteries is addressed by the consultants with a proposed change of classification, we will address these points jointly.

First of all, **we agree with the proposal to create a sub-category of industrial batteries for EV traction batteries**. Given their growing importance and market share, it makes sense to treat them separately and avoid the risk of diluting the relevance of other industrial batteries.

We are **against a weight limit** to differentiate portable and industrial batteries. We also note that this possibility was **already discussed in 2006 and then discarded** for several reasons. For instance, it is quite difficult to establish a unique weight limit to take into account the different battery technologies used for a **large variety of segments**, each one with its own requirements and characteristics. In

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Europe, the United Kingdom has merely a guideline (and neither legislation nor a regulation!) in place with thresholds by weight as criteria for distinguishing between industrial and portable batteries.

In the case of small industrial batteries, they are **designed to be handled by professionals**. It does not make sense to consider them as portable and force them to respect guidelines, restrictions and regulations developed for a different product type.

A clearly unintended consequence of this proposal would be to consider industrial batteries below the 2kg threshold as portable batteries. Since there is a **significant number of industrial Ni-Cd batteries with a weight lower than 2kg**, including batteries for back-up power to civilian aircraft and for the railway market, this proposal would simply remove them from the market because of the cadmium restriction placed on portable batteries.

Similar considerations should be made in case the Commission decides to ban primary batteries. EUROBAT is generally against a ban on entire classes of batteries or technologies and specific provisions are needed to protect primary industrial batteries from this decision. Since professionals handle these batteries, the considerations that might lead to a ban of (portable) primary batteries are not valid for this segment.

However, we think that a **labelling or QR code on batteries** could be an option to allow a clear assignment to the categories portable and industrial, as proposed by the consultants.

The consultants are proposing to create a subcategory of industrial batteries to clearly define the EPR for light mobility batteries (i.e. e-bikes) and for home storage systems. Whilst we acknowledge the need to address the EPR and collection systems of these batteries, it would be preferable to define the new sub-category "small industrial batteries" as "industrial batteries which are used in private homes and whose replacement from the appliance which it powers is conducted by the private household/consumer, rather by an outside professional", as proposed by Saft. This new sub-category would allow the setting of convenient EPR logistical systems to properly serve private households/consumers.

Measure 15: Consumer, safety and sorting labels

We need to remark that the discussion on the labelling of batteries was more disorganised compared to the other ones, perhaps due to the fact that it was not fully clear which types of batteries were targeted by the different proposals and what kind of information would be considered as relevant. As in other cases, it is **difficult to implement the same requirements for all types of batteries**. For instance, information on the state of health of the battery might be relevant for second life applications, but it is of less use for portable and automotive batteries. We therefore suggest to **further develop the study on different labelling options** and then re-discuss it with stakeholders when it is at a more advanced stage.

As a general point, EUROBAT supports the application of the IEC Standard 62902 on **colour coding of batteries to facilitate sorting and collection**. The option of a digital passport is potentially interesting,

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but it should be clarified which kind of information would be included, the access level and the tool (QR code or bar code) in coordination with the Global Battery Alliance initiative. EUROBAT supports the inclusion of **due diligence obligations and carbon content** information for those technologies where a methodology has already been developed (EV traction batteries). Additional methodologies to calculate the carbon footprint could also be developed for other technologies and applications, and then included in the legislation when available.