

END-OF-LIFE OF VEHICLES DIRECTIVE REVISION EUROPEAN ALUMINIUM TOP PRIORITIES

December 2023

Position Paper

European Aluminium welcomes the publication of the long-awaited proposal for a “Regulation on circularity requirements for vehicle design and on management of end-of-life vehicles (ELV)” and looks forward to engaging with policymakers for the shaping of an effective and forward-looking ELV Regulation.

The ELV Directive has undeniably led to significant improvements in the recycling and treatment of end-of-life vehicles. Since its initial implementation, substantial enhancements have been introduced. While we wholeheartedly endorse the current update of this directive to align with recent technological and societal developments, we also firmly believe that now, more than ever, there is a pressing need to **continue our efforts towards regulations that prioritize the availability and reuse of materials used in cars.**

The revised Regulation should not only ensure that materials are **collected at the end of life and appropriately recycled or recovered** but should further focus on the improvement of the quality of such materials, to **ensure their reuse in closer loops and high-quality applications.** Such targets could be achieved through increased attention to the design of vehicles, increased dismantling of components before shredding and their separate recycling, improved flow of information to dismantlers concerning the composition of the various components, and further implementation of post-shredding technologies.

This would also **contribute to improving the collection and recycling of some critical and strategic raw materials (CRM)**, such as aluminium, as defined in the Critical Raw Materials Act. In fact, some existing CRMs besides aluminium, like magnesium and silicon, are typically used in aluminium alloys.

Improving the collection and recycling of aluminium alloys that already contain these CRMs as alloying elements would directly have an effect on these CRMs as it will decrease the need for virgin materials, it will enhance supply chain resilience and will ultimately contribute towards the specified recycling benchmark for each identified CRM.

In a nutshell, our main recommendations concerning this proposal are the following. More detailed explanations are reported in main text of the position paper below:

- 1) Tackling unknown whereabouts, illegal treatment and shipping
- 2) Focusing on vehicle design to ensure circularity
- 3) Including minimum requirements for the classification of aluminium scrap coming from ELV treatment
- 4) Improving aluminium scrap quality by dismantling before shredding
- 5) Expanding the scope of the circularity passport to provide effective information to end-of-life operators
- 6) Potential post-consumer recycled content measures shall be fact-based
- 7) Improving the involvement of stakeholders into the procedure for exemptions

1) Tackling unknown whereabouts, illegal treatment and shipping

European Aluminium welcomes all the measures proposed by the European Commission to solve the issue of “unknown whereabouts” and to tackle the illegal treatment and illegal export of ELVs. In particular, European Aluminium believes that the allocation of responsibilities for certificates of destruction, binding criteria for distinguishing used vehicles and ELVs, the ban on the export of vehicles that are no longer roadworthy, and new enforcement provisions will significantly increase the number of ELVs treated legally in the EU. This will in turn increase the amount of materials recycled and reused in Europe and will play a pivotal role in securing the availability of strategic raw materials in Europe. Vehicles are real “mines on wheels” that Europe could and should exploit to gain access to an incredible amount and variety of raw materials, including aluminium.

2) Focusing on vehicle design to ensure circularity

The most cost-efficient End-of-Life Vehicle treatment that ensures the maximum level of circularity is only achievable if all actors in the value chain work together.

End of life operators, with their dismantling, shredding and post-shredding technologies are only one part of the solution. Pivotal here is the role of vehicle design that would allow for improved repairability, remanufacturing and finally for a better treatment of the vehicle at the end of life achievable through “design for recycling”. We thus welcome the circularity strategy requirement, in which car manufacturers should explicitly mention their circularity approach by addressing the aforementioned aspects. Reporting only on the material recyclability and circularity characteristics will not be enough going forward and the focus should be on improving the recyclability of the product actually put on the market: the vehicle.

3) Including minimum requirement for the classification of aluminium scrap coming from ELV treatment

Today, most of the aluminium used in vehicles that are legally collected and recycled in Europe is already recycled in a profitable way. From the quantitative point of view, only little improvements will be possible in the aluminium recovery from the end-of-life vehicles since the recovery is already as good as 95%.

Where there is a huge potential for improvement is in the quality of the aluminium fraction recovered from end-of-life of vehicles and European Aluminium hopes to achieve such improvements thanks to the new provisions of the proposed Regulation. It is already evident in the proposed Regulation how quality recycling is in the focus, however we believe that this aspect could be even more emphasised.

When it comes to aluminium, the great improvement will be in separating the aluminium fraction into aluminium fractions of the same alloy family. This will allow for the recycling of these aluminium alloys into the same aluminium alloy family again. For recycled materials to be of the quality required for product-to-product recycling operations, well-designed and ‘dismantling-friendly’ product systems are a prerequisite.

While the optimum will be the division of aluminium scrap in approximately 10 different families (see table provided in the annex 1) we believe that in the medium term, the possibility to get at least two aluminium alloy families shall be prescribed in the Regulation: cast alloys, as defined in the standard EN 1706:2020, and wrought alloys, as defined in the standard EN 573-3:2019.

This requirement shall be included in Annex F and shall be guaranteed whether dismantling before shredding takes place or not.

4) Improving aluminium scrap quality by dismantling before shredding

With the objective of ensuring high quality recycling of aluminium scrap and as complementary action to the minimum requirement for the classification of aluminium scrap that we are proposing, we welcome the requirement of mandatory dismantling before shredding of at least the selected components listed in Annex VII Part C.

The mandatory dismantling before shredding of these components has a double advantage when it comes to recycling:

- 1) On one side, it will allow the separation of components with known composition in terms of materials and, when it comes to aluminium, of alloy families. The subsequent separate treatment of these components, for example via shredding, will generate scrap of known average composition that more easily can be recycled in the same alloy family
- 2) On the other side, removing these components will ensure that the materials in these components will not “contaminate” the fractions derived from the shredding of the hulk of the vehicle. A clear example for aluminium is the removal of engines from the vehicle before shredding. This removal will ensure that aluminium alloys with high content of silicon and iron are not mixed with the other aluminium scrap coming from the vehicle, thus ensuring a better quality. The same is true for all other components mentioned in Annex VII Part C.

While supporting the overall proposed approach and requirements, European Aluminium would like to suggest some adjustments to the list proposed in Annex VII Part C.:

- We believe that “closures” should be added as an additional component that shall be dismantled before shredding. This will include front doors, hood, rear doors, trunk. These parts are relatively easy to dismantle and includes large pieces of well-defined materials.
- We suggest clarifying the definition of the components listed in Annex VII Part C. For example, we recommend renaming point 14 (currently: “bumpers”) into “Crash Management System, including bumper, bumper beam, crash boxes”.
- A clarification of what “mono-metal part” (point 17 of the current list) means shall be added. In the vehicle, components are seldom mono-metal because of the complexity of the product in question. Rivets, screws, small plastic parts or small parts of other metals may be attached to big mono-metal parts. Our recommendation would be to add a definition of “mono-metal” in the regulation as: “part that is composed for X% in weight of a unique metal. Different alloys of the same metal are considered as being a unique metal”. The threshold should be defined in a dedicated study, also considering the presence of different combination of materials in the various metal components present in a car. As a starting point, we would propose to set the threshold at 90% in weight.
- The threshold for requiring the dismantling of “mono-metal parts” will strongly depend on the definition of “mono-metal” parts and should thus be set after such definition is agreed on. If our proposed definition of “mono-metal parts” is considered, we recommend lowering the threshold to 4 kg.
- Electric vehicle batteries are required to be dismantled before shredding. This shall include the dismantling of the battery housing, since it is included in the definition of EV batteries proposed by the recently published Battery Regulation. A reference to this definition shall be

added, to avoid any misinterpretation of the requirement. The casing of electric vehicle batteries shall be always dismantled before shredding of the car, as well as heat exchangers and cooling plates contained in the battery box. These parts contain a high amount of high quality critical raw materials that should not be lost or mixed with other fractions.

“Heat exchangers” (point 16 of the current list) deserve a separate paragraph due to their peculiar nature. These components are very aluminium intensive and easy to identify and remove from the vehicle, however their design is very complex. If these components are mixed with the rest of the aluminium scrap, they could contaminate the aluminium fractions recoverable from ELVs by introducing special alloy mixes that are only used in heat exchangers and never in other part of the vehicle. We strongly recommend to always require the mandatory dismantling of heat exchangers and their separate treatment from other aluminium components, to make sure that these components are recycled properly and do not affect the quality of the remaining aluminium scrap. We strongly advise to do not allow the shredding of these components with the rest of the hulk.

Based on the previous comments, European Aluminium thus strongly recommend that the separation of components listed in Annex VII Part C, point 17 and point 16 should no longer be subject to shredding processes which will act as a disincentive to design for dismantling and design for recycling. For those other parts that will be shredded, the minimum quality requirement for aluminium proposed in section 3 of this position paper shall be prescribed.

5) Expanding the scope of the circularity vehicle passport to provide effective information to end-of-life operators

European Aluminium is pleased to see the introduction of a circularity vehicle passport in the Regulation and wish for a faster uptake than the 84 months from entry into force proposed in the Regulation.

Ensuring the convergence and co-existence of the various passports and their practical implementability by users, including the Batteries Passport, should be the first priority for co-legislators. The proposed passport will be a great tool to improve the flow of information down the value chain to improve collection and recycling of aluminium components, however we would suggest adding some additional fields to the ones already proposed for reporting.

- ➔ the bill of materials (glass textile, aluminium, steel etc.) with weight (or percentage) for each material should be included in the digital passport.
- ➔ When it comes to aluminium, the indication of the aluminium alloy (AA coding) shall be provided, since this information will allow downstream operators to better segregate the components based on their composition and to have a view on the expected average composition of the derived aluminium fraction. If not possible, like in the case of heat exchangers and casting alloys, the average chemical composition shall be delivered instead.
- ➔ For each component, the use of joining techniques within the component shall be included, with the specification of which technique has been used.
- ➔ Information about lacquering and coating of aluminium is also welcome (type and thickness, if available)
- ➔ An additional information that may be provided in the case of aluminium alloy is the alloy family of destination, see table in annex 1 to this position paper. This should simplify the work of EOL operators.

Since most probably there won't be requirements for the dismantling of the Body-In-White (BIW), it is recommended to have a reporting requirement to identify the composition of the BIW (for example:

100% steel, 100% aluminium or X% aluminium and X% steel) in the automotive passport, to allow EOL operators to separate aluminium-intensive and steel intensive hulks.

6) Potential post-consumer recycled content measures shall be fact-based

European Aluminium supports the current proposal of the European Commission to perform a comprehensive feasibility study before deciding on the implementation and potential threshold of minimum post-consumer recycled content requirements for aluminium and its alloys. Variables such as the rate of electrification, the issue of “unknown whereabouts” and the overall availability and demand of scrap in the various sectors need to be taken into account prior to making any decision. We would however propose a shorter timeline for the delivery of such feasibility study, from 35 months as proposed to the European Commission to 23 months. In addition, we would like to suggest having the same timeline for the entry into force of post-consumer recycled content requirements for the various materials to avoid any potential distortive effect on the material choice when designing new cars.

7) Improving the involvement of stakeholders into the procedure for exemptions

The process to amend/delete existing exemptions should be improved to allow for better interaction with stakeholders.

As presently described in Article 5, stakeholders would only be given 8 weeks to formulate their recommendations at the beginning of the assessment by ECHA and would apparently not be consulted later.

European Aluminium thus recommends:

1. a longer period to formulate initial recommendations, to allow organizations enough time to consult membership and experts, if relevant.
2. the possibility to comment a draft version of ECHA’s assessment before the publication of the final version.

Annex 1

Proposal for a list of alloy families that should be separated for optimum aluminium recycling

Aluminium alloy family	Notes
1xxx	
3xxx	
5xxx	
6xxx Low Copper	Alloys from 6xxx series with Copper content lower than 0,3%
6xxx High Copper	Alloys from 6xxx series with Copper content higher than 0,3%
7xxx Low Copper	Alloys from 7xxx series with Copper content lower than 0,3%
7xxx High Copper	Alloys from 7xxx series with Copper content higher than 0,3%
Cast Low Fe/Cu Low Mg	Cast with Low Iron or Copper, with Magnesium content lower than 1%
Cast Low Fe/Cu High Mg	Cast with Low Iron or Copper, with Magnesium content higher than 1%
Cast High Iron/Copper	Cast with High Iron or Copper (Fe > 0.2%, Cu > 1%)
Others	All alloys that are not included in the previously listed families