

AVERE - Setting Up a Vehicle Eco-Score

As the automotive industry undergoes a transformative shift towards electric mobility, the European Union (EU) stands at a pivotal juncture where regulatory orientations can profoundly impact the widespread adoption of electric vehicles (EV). This paper urges the EU to **introduce and champion a new EU-wide vehicle eco-score framework**, which would allow to rate the environmental credentials of vehicles, remove the need for current individual pass/fail requirements and avoid fragmented sustainability rules at national level. Consumers would be able to see and compare the levels of sustainability across EV models, governments could use the eco-score to adapt electric vehicle (EV) purchasing incentives and tenders, and the eco-score would naturally create a race to the top instead of a risk and compliance driven approach for car makers to continuously improve the sustainability of EV models over time. **An EU-wide vehicle eco-score is needed now more than ever to continue Europe's trajectory towards zero-emission vehicles and meet the EU's wider decarbonisation goals.**

A) Context and Justification

Requirements around vehicle sustainability have been mushrooming in different shapes and forms for the past decade. This has led to a scattered regulatory landscape with divergent - and at times overlapping - national and European regulations, each attempting to address different aspects of vehicles' environmental performance. The EU urgently needs to harmonise these requirements under one cohesive European umbrella.

For instance, in the case of all vehicles, examples of such existing regulations include:

- Energy consumption and CO2 emissions;
- Non-CO2 pollutants, including brake and tire emissions;
- Noise emissions;
- Embedded carbon emissions for aluminium and steel (Carbon Border Adjustment Mechanism Regulation¹).

In the case of electric vehicles, examples include:

- Energy use (Wh/km) and electric range;
- Battery durability and minimum performance requirements (UNECE GTR 22², EU Batteries Regulation³);
- Battery carbon footprint declaration and maximum thresholds (EU Batteries Regulation)
 - Recycled material content in batteries (EU Batteries Regulation);
- Sourcing rules and due diligence for battery materials (EU Batteries Regulation);
- Critical raw material content and environmental footprint (EU Critical Raw Materials Act⁴);

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R0956>

² https://unece.org/sites/default/files/2023-01/ECE_TRANS_180a22e.pdf

³ <https://eur-lex.europa.eu/eli/reg/2023/1542/oj>

⁴ <https://data.consilium.europa.eu/doc/document/ST-16127-2023-INIT/en/pdf>

- The End-of-Life Vehicles Regulation (ELVR) proposal⁵ would introduce new parallel requirements to integrate recycled content in new vehicles, starting with plastics, and later adding recycled steel and aluminium;
- Vehicle tire and brake wear emissions calculation and limit values, under the “Euro 7” Regulation⁶.

In addition, it is worth pointing out that France has set new rules for electric cars to be eligible for their national EV incentive called “Ecobonus”. As a result, the embedded carbon footprint of an EV needs to be below 14.75 tCO₂eq, based on a unique French calculation methodology involving batteries, steel and aluminium content (not based on the CBAM Regulation methodology for embedded carbon emissions calculation of steel and aluminium), as well as vehicle transportation between point of production and point of sale. Similar environment-related criteria are also being considered by other EU Member States and by extra-EU jurisdictions, e.g., Japan and South Korea. In parallel, non-governmental entities such as “GreenNCAP” are elaborating their own set of rules by which they judge the “greenness” of a vehicle, which are disconnected from several requirements above.

All environmental standards and criteria listed above are enshrined in different pieces of law, each with different regulatory or policy intentions, and are designed as pass/fail requirements. This calls for a unifying and harmonised framework at EU level to protect the EU’s single market for sustainable vehicles.

AVERE therefore proposes to introduce a holistic EU-level framework, replacing the current "pass/fail" requirements and targets with an EU-wide vehicle eco-score. This transformative approach aims to simplify regulatory compliance and foster a proactive race to the top for OEMs to improve vehicles beyond strict compliance, based on EU-level definitions, criteria and methodology. Ultimately, this eco-score could be used for consumer information, for national vehicle incentives and taxation, and for differentiating vehicle recycling contributions (see section C).

B) Basis and Criteria

The proposed European vehicle "eco-score" would serve as an EU-wide metric for assessing vehicle sustainability performance over time based on the following principles:

- The score would be based only on existing EU legally-binding requirements;
- The score should focus on the true environmental hotspots of the vehicle;
- Only static data should be used in the criteria for the score;
- The weighting of the criteria will be decided at a later stage, as it will need to be tailored to effectively reflect the importance of each criteria;
- The ultimate objective over time would be to replace existing, individual pass/fail requirements with this new score.

⁵https://eur-lex.europa.eu/resource.html?uri=cellar:8e016dde-215c-11ee-94cb-01aa75ed71a1.0001.02/DOC_1&format=PDF#:~:text=The%20Directive%20sets%20out%20provisions,ELVs%20per%20vehicle%20and%20year.

⁶ <https://data.consilium.europa.eu/doc/document/ST-16960-2023-REV-1/en/pdf>

The eco-score criteria could therefore include:

- **Energy efficiency** of the vehicle, as measured under Worldwide harmonised Light-duty vehicles Test Procedure (WLTP) under Regulation (EU) 2017/1151⁷, with vehicle class and real-world functionally considered;
- **Electric range** of the vehicle, as measured under Worldwide harmonised Light-duty vehicles Test Procedure (WLTP) under Regulation (EU) 2017/1151. Electric range should be measured based on the vehicle category⁸ and payload capacity⁹;
- The **carbon footprint of the battery and its associated performance class**, as required by article 7 of Regulation (EU) 2023/1542 (EU Batteries Regulation);
- The **embedded carbon emissions of steel and aluminium used in the vehicle**, calculated in accordance with the Carbon Border Adjustment Mechanism (CBAM) Regulation;
- The **levels of recycled content present in vehicles**, as required by Article 10 of the EU Circular Vehicles Regulation proposal¹⁰, or alternatively the **levels of recycled content in the battery**, as required by Article 8 of Regulation (EU) 2023/1542 (EU Batteries Regulation).

The above list of criteria would provide a short but comprehensive picture of the vehicle's environmental impact.

C) Use and Advantages

As mentioned in previous sections, the new eco-score should ultimately replace all existing relevant requirements and contribute to the EU's REFIT objectives of streamlining and simplifying EU laws.

As a starting point, the vehicle eco-score could be directly included in the Circular Vehicle Regulation proposal as a new article, e.g under Chapter II "Circularity requirements" and should be a top level priority for the next Commission's work plan as well. The concept could be introduced and then tightened over time, especially noting the post-2035 zero-emission vehicle (ZEV)-only context.

This new score could be used:

For consumer information at the point of sale:

- Use the eco-score as basis for the review of the Car Labelling Directive (planned for Q4 2024);

⁷ <https://eur-lex.europa.eu/eli/reg/2017/1151/oj>

⁸ Such an adjustment would help avoid that bigger vehicles with bigger EV batteries get a higher ecoscore than smaller ones. As such, AVERE suggests calculating the ecoscore differently for light-duty vehicles (categories M1 and N1, as defined in Regulation (EU) 2019/631), and heavy-duty vehicles (categories N2 and N3, as defined in Regulation (EU) 2019/1242).

⁹ As the maximum achievable mileage is often reported under lightweight or no cargo load conditions, it would be important to create a standardisation for range calculation of how much range EVs can actually achieve under real-world conditions.

¹⁰ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2023%3A451%3AFIN&qid=1689318552193>

- Include the eco-score in the vehicle Certificate of Conformity and in the vehicle digital product passport;
- Gives consumers a way to compare the sustainability of ZEVs, allowing for “naming / shaming”.

For national incentives and taxes:

- Governments could use the EU-wide methodology behind the eco-score to adapt their national electric vehicle incentives, (registration, purchase, circulation, benefit-in-kind, business tax deductions etc.);
- The eco-score could be included in public tenders, by public and private entities.

For differentiating vehicle recycling contribution:

- Use the eco-score to modulate Extended Producer Responsibility fees, i.e., linking low score with high end of life management costs for OEMs.

In conclusion, the main advantages of a well-crafted vehicle eco-score are that:

- It addresses one of the emerging perceived blockers for consumers and EV sceptics to shift to EVs;
- It is based on the most environmentally impactful parameters of vehicles, i.e., energy efficiency and performance, battery and key vehicle material carbon footprint;
- It is defined and measured based on EU-level harmonised definitions, methodologies, and criteria;
- It prevents individual Member States from setting their own environmental criteria to condition EV purchasing or EV incentives;
- It incentivizes a dynamic approach to improving vehicle environmental performance and encourages car makers to go beyond strict compliance. Indeed, it is a direct incentive for companies to healthily compete and “race to the top” to achieve the highest eco-score for their vehicles. The eco-score could quickly become a helpful market signal and a transparent driver for consumer choice;
- It avoids prescribing how vehicles should be designed or how to decide on trade-offs in vehicle design by allowing companies to decide on the optimal and most cost-effective strategy to achieve a high eco-score.

AVERE believes a serious paradigm shift is needed when it comes to assessing the performance and environmental impact of vehicles. This should mainly be based on their environmental impact, going beyond CO₂ or GHG emissions, and, instead, integrating a wide range of factors which would thoroughly reward the best performing vehicles, and the fully electric ones in particular. Such an approach would also enable greater centralisation of vehicle sustainability requirements, bringing greater clarity and efficiency to OEMs and lawmakers.