

Carbon-footprint calculation: options and consequences for EU Member states

The Commission's draft delegated act on calculating the carbon footprint of batteries has an impact on all industrial sectors. It introduces double counting of green energy and the Member States most in need of investments in renewable energy are penalized. There is a risk that industrial production activities will move away from those countries.

We therefore recommend rejecting the electricity modelling of the draft delegated act and to stay close to the scientifically sound rules developed by the JRC.

Europe is committed to greening industrial production. From raw materials (in the Critical Raw Materials act, CRMA¹) to consumer goods (via the Ecodesign for Sustainable Products Regulation, ESPR²), all recent legislation contains references to the environment and more specifically climate impact.

All these legislations refer directly to the Product Environmental Footprint method³ (PEF) or to the Commission Recommendations on the use of PEF⁴. This also applies to the recently published Battery Regulation⁵.

The Battery Regulation mandates the Commission to develop a delegated act for the precise calculation of the carbon footprint of batteries, based on the PEF.

An essential chapter in this calculation method concerns the modelling of the electricity used. The PEF method prescribes using as much supplier-specific data as possible. This is possible with Energy Attribute Certificates (in the EU: Guarantees of Origin). The JRC, at the request of the Commission, developed a detailed calculation method based on PEF, limiting the use of EAC to only those EACs that completely eliminate double counting of low-carbon energy⁶. An essential element is that the countries that issue EACs must 'remove' this energy from the national average energy mix, resulting in the residual energy mix. If a country does not issue reliable EACs, they cannot be claimed, and the national average energy mix must be used.

In the draft delegated act⁷, the Commission states that since there are countries in the world that do not issue reliable EACs, EACs cannot be used anywhere, not even in the EU, where the EACs are indeed reliable. This position, which is a complete U-turn compared to the current Commission Recommendations, is problematic for several reasons. These can be found in detail in the 'have your say' feedback. We limit ourselves here to the most important ones: the industry-wide impact, double counting, industrial migration, and the negative impact on investments in renewable energy.

¹ [EUR-Lex - 52023PC0160 - EN - EUR-Lex \(europa.eu\)](#)

² [Ecodesign for Sustainable Products Regulation - European Commission \(europa.eu\)](#)

³ [Environmental footprint methods - European Commission \(europa.eu\)](#)

⁴ [Recommendation on the use of Environmental Footprint methods - European Commission \(europa.eu\)](#)

⁵ [Regulation \(EU\) 2023/ of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation \(EU\) 2019/1020 and repealing Directive 2006/66/EC \(europa.eu\)](#)

⁶ [European Platform on LCA | EPLCA \(europa.eu\)](#)

⁷ [Have your say \(europa.eu\)](#)

1. A delegated act with an impact on all industrial sectors

The importance of this draft delegated act cannot be overestimated. Once calculation rules for batteries have been established, other products will follow. The rules must necessarily be the same. Imagine if a raw material producer had to apply different calculation rules depending on where the raw materials are used? It would also cause chaos if, for example, the car battery had to be calculated according to one set of rules and the car itself according to another set of rules. And the electronics in the car follow yet another set of rules.

To illustrate: Art. 30 of the Critical Raw Materials Act refers to 'scientifically sound' assessment methods to evaluate the environmental impact of the production of raw materials. The Commission Recommendation⁴ describes the PEF method as scientifically sound. It can therefore be expected that the PEF method is a 'sound' starting point for the environmental assessment of raw materials. At the same time, Annex V⁸ of the CRMA says: *When establishing calculation rules for the environmental footprint of specific critical raw materials, the Commission shall aim to ensure consistency with calculation rules for the environmental footprint of product making use of the relevant critical raw materials.*

This shows that the PEF method will de facto be abandoned and that the rules of the delegated act for battery carbon footprint will always have to be applied: a miner really does not know whether iron, nickel, copper... will be used for batteries or for something else.

It is very questionable whether this drastic change to the PEF rules, with an impact on the entire European economy, can be implemented via a delegated act. We would expect that there would be in-depth consultation on this with all stakeholders, and not just with the battery sector.

2. Double counting

The Commission Recommendation⁴ rightly warns against double counting. A system with EACs is not compatible with the use of an average energy mix: low-carbon energy that is certified allocated to a specific customer must be removed from the average (resulting in 'residual'). If, for whatever reason, Europe would opt for an average energy mix, the EAC system must be abolished. According to the official Recommendations Committee, the 'EACs + average' combination is apparently so bad that it is not even included as an option. So, we can no longer speak of 'the last PEF option', but of a completely changed philosophy that no longer fits in with the PEF method.

But since the use of EACs (GoO) in an EU context is widespread and is included in various legislation, it is impossible to abolish the system via a delegated act.

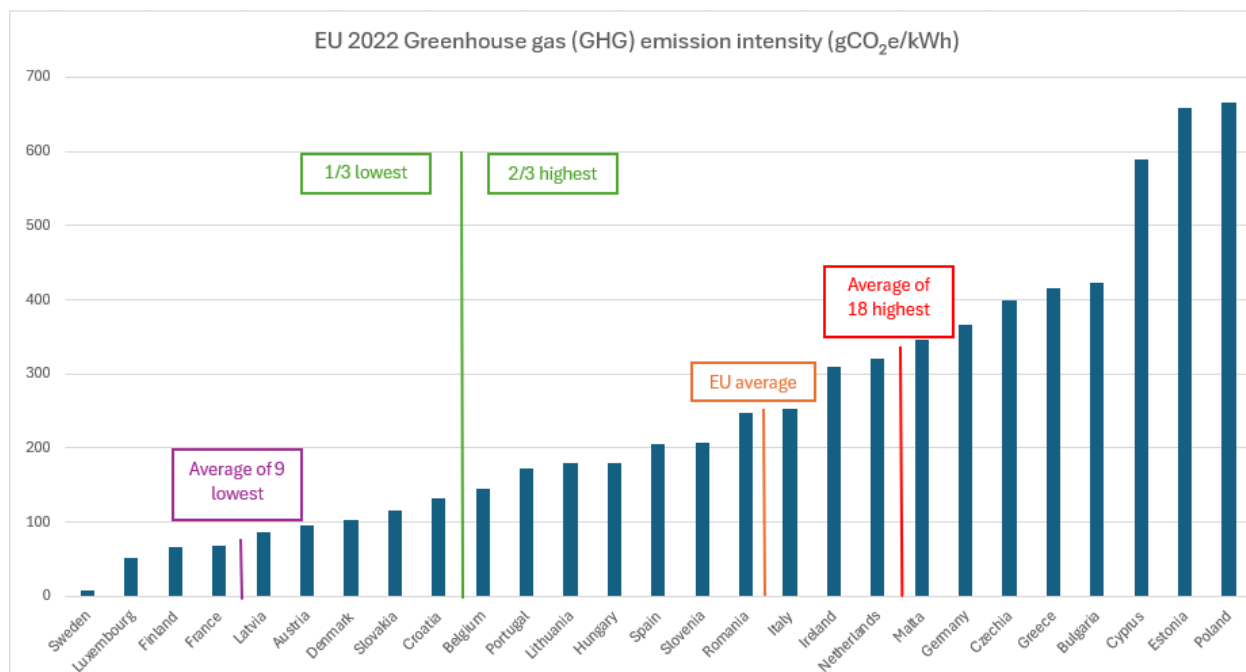
In addition, the Commission's proposal for the delegated act refers to EACs of 'direct lines' (which bring low-carbon energy directly to the battery producer). It is explicitly stated that if this energy producer sells EACs to other specific customers, then that energy must indeed count towards the national average. In other words, the double counting is not just an unfortunate oversight, but deliberately organized. It would have been more logical to say that a directly connected producer cannot issue EACs.

The EU must choose: either GoOs combined with residual energy mix, or average energy mix. GoOs combined with average energy mix is greenwashing. This choice cannot be made per product family but must apply to all products simultaneously.

⁸ [resource.html \(europa.eu\)](https://resource.html.europa.eu)

3. Industrial migration

The average CO₂ intensity of electricity in the EU varies a lot: it ranges from (much) less than 100 gCO₂e/kWh in countries such as Sweden and France to more than 600 in Estonia and Poland. Until now, this has not made much difference for industrial production: by acquiring GoOs, e.g. via PPAs, companies can claim green products according to the existing Commission Recommendations⁴. If in the future companies have to substantiate their claims according to the method proposed in the draft delegated act, then acquiring GoOs will no longer make sense. The only way to claim green products is to move the production facility to one of the countries with a low carbon intensity. It is not the company's merits (for its investments in PPAs) that are rewarded, but its coincidental location in a 'good' country. Investments in a 'bad' country are therefore punished.



based on data from [Greenhouse gas emission intensity of electricity generation in Europe | European Environment Agency's home page \(europa.eu\)](https://europea.eu/en/topics/climate/electricity-generation/ghg-emissions)

The Commission wants to encourage consumers and public authorities to purchase 'green products' through awareness-raising and Green Public Procurement rules. **Obviously, this 'national average' policy will have an impact on future investments in new industrial production facilities.**

The approach of the proposed delegated act is also not in line with the Council Recommendation of 16 June 2022⁹ on ensuring a fair transition towards climate neutrality, that says: *The need for a fair transition is an integral part of the European Green Deal, which underlined that **no person and no place should be left behind.***

⁹ Publications Office (europa.eu)

4. Impact on investments in renewable energy

The electricity modelling in the draft delegated act makes investments in low-carbon energy production by industrial companies useless. If you are not allowed to claim green energy in your products, why would you still invest? If everyone claims the same average energy mix, you will have to rely on the collective greening of energy production, funded by all consumers and the government.

However, Power Purchase Agreements (PPAs) play a crucial role in EU Member States' decarbonization roadmaps due to several key factors:

- **Stable Revenue Stream:** PPAs provide a stable and predictable income for renewable energy projects, replacing the need for government subsidies and improving project bankability¹⁰.
- **Risk Management:** With the increasing dominance of fluctuating renewable energies like wind and solar, PPAs offer a way to manage market price uncertainty by locking in energy prices for the long term¹¹.
- **Corporate Demand:** There is a growing demand from corporations to procure renewable power, which drives the growth of PPAs in Europe¹².
- **Support for New Capacity:** PPAs support the introduction of new clean generation capacity, contributing to the increase of clean energy shares in power systems¹².

These elements collectively facilitate the transition towards sustainable energy and help EU member states achieve their decarbonisation targets.

The loss of the main incentive to invest in PPAs will undoubtedly have a negative impact on the decarbonisation plans of the Member States that need it most. Instead of being able to count on investments by pioneering companies, companies will adopt a wait-and-see attitude and rely on everyone else.

This applies not only to countries that still have a long path of decarbonization ahead of them, but also to countries that want to turn green energy into an export product. If private investors in sustainable energy cannot conclude PPAs because their customers cannot claim the Guarantees of Origin in their products anymore, this undermines the business model.

¹⁰ [Power Purchase Agreements – An important component of Europe's Green Deal ambitions \(mxunderwriting.eu\)](#)

¹¹ [2019-11-15_Whitepaper_PPA_EN.pdf \(aquila-european-renewables.com\)](#)

¹² [Advancing Decarbonisation through Clean Electricity Procurement – Analysis - IEA](#)

5. Proposal for amendments in the text of the delegated act

Proposed amendments in § 2.4 Electricity modelling of Annex I to the [Commission Delegated Regulation](#) supplementing Regulation (EU) 2023/1542 of the European Parliament and of the Council by establishing the methodology for the calculation and verification of the carbon footprint of electric vehicle batteries

1) Residual instead of average energy mix

The carbon footprint of the consumption of electricity shall be that of the national **residual** electricity consumption mix, which shall be determined in accordance with section 2.3.3

Motivation: as long as an economy has a system of GoO's (or more generally called 'Energy Attribute Certificate's'), those certificates must be subtracted from the average to avoid double counting. This is explicitly said in [Commission Recommendation](#) of 16.12.2021 on the use of the Environmental Footprint methods to measure and communicate the life cycle environmental performance of products and organisations (Annex 1 to 2 art. 4.4.2.1.c):

The 'country-specific residual grid mix, consumption mix' shall be used. Country-specific means the country in which the life cycle stage or activity occurs. This may be an EU or non-EU country. The residual grid mix prevents double counting with the use of supplier-specific electricity mixes in (a) and (b).

As the DA on battery carbon footprint cannot abolish the use of GoO's in other legislations, the Battery DA should not refer to 'average' but to 'residual'.

2) Allow the use of PPA, not only 'direct lines'

By way of derogation from the first paragraph, the carbon footprint of directly connected electricity **or electricity covered by a contractual instrument that meets a set of minimum criteria** shall apply in accordance with section 2.4.1 and 2.4.2.

2.4.2 Electricity covered by a contractual instrument that meets a set of minimum criteria

The criteria as mentioned in section 7.1.3 Supplier-specific electricity product of the JRC Science for Policy Report "Rules for the calculation of the Carbon Footprint of Electric Vehicle Batteries" (2023) apply.

Motivation: this is to include the use of Power Purchase Agreements. Direct lines is a way of supplying Renewable energy that requires lengthy permitting procedures and that is discouraged in many EU member states. In countries with fewer stakeholder consultation and appeal procedures, direct lines can be installed much faster. Contrary, many EU member states prefer that renewable energy is injected in the public grid and allocated under PPAs to specific customers.