

Carbon Footprint of EV Batteries

THE EU BATTERIES REGULATION



Introduction



Johannes Drielsma is an accomplished communicator with proven success in leading interdisciplinary teams to deliver on strategic sustainability goals, based on field experience in several sectors and cultural settings:

- ✓ Mining (coal, copper, diamonds, gold, iron ore, potash, salt, tungsten, lead/zinc, barytes)
- ✓ Smelting & Refining (copper, aluminium)
- ✓ Chemicals, oil & gas (site remediation)
- ✓ Automotive manufacturing (Czechia, France, Japan, Poland, Turkey and the UK)
- ✓ Telecoms throughout Europe
- ✓ English/French bilingual; Dutch/German basic level

Lead lobbyist for sustainability in the mining industry within **OECD, UN and EU institutions**; preparing the industry's policy priorities and advocacy strategy; building effective coalitions and partnerships to engage with and improve EU policies; and organizing events and studies to promote and develop the industry's vision. Representative on international industry bodies.

Process review, development, design, recommendation to clients, submissions to authorities, site commissioning, implementation and monitoring of environmental improvement projects for a major multi-national **mining** company.

Directly responsible for preparation and roll-out of group-wide responses to market trends, identifying and managing on-site management improvements, attainment of environmental permits, and implementation of third-party assured environmental management systems for **automotive production** sites in Europe.



Outline

What the EU Batteries Regulation requires

Where the GHG emission Hotspots are likely to be

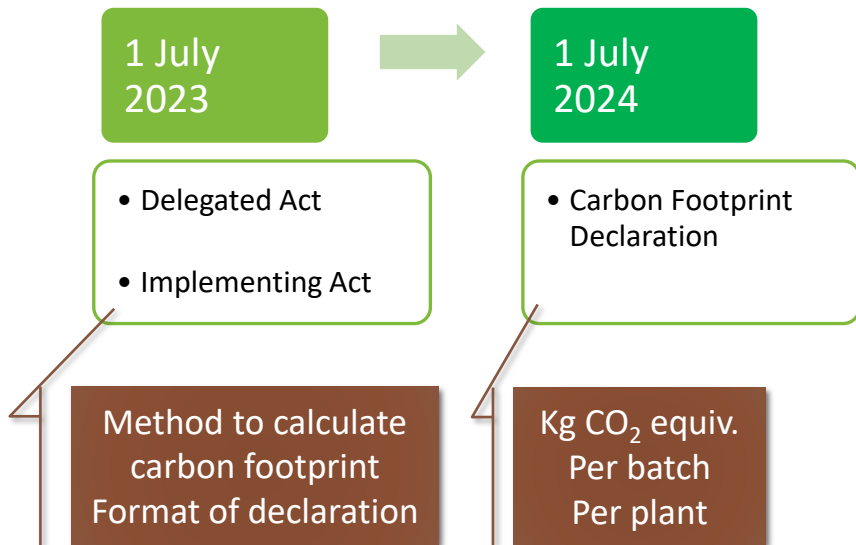
Important Aspects



What the EU Batteries Regulation requires



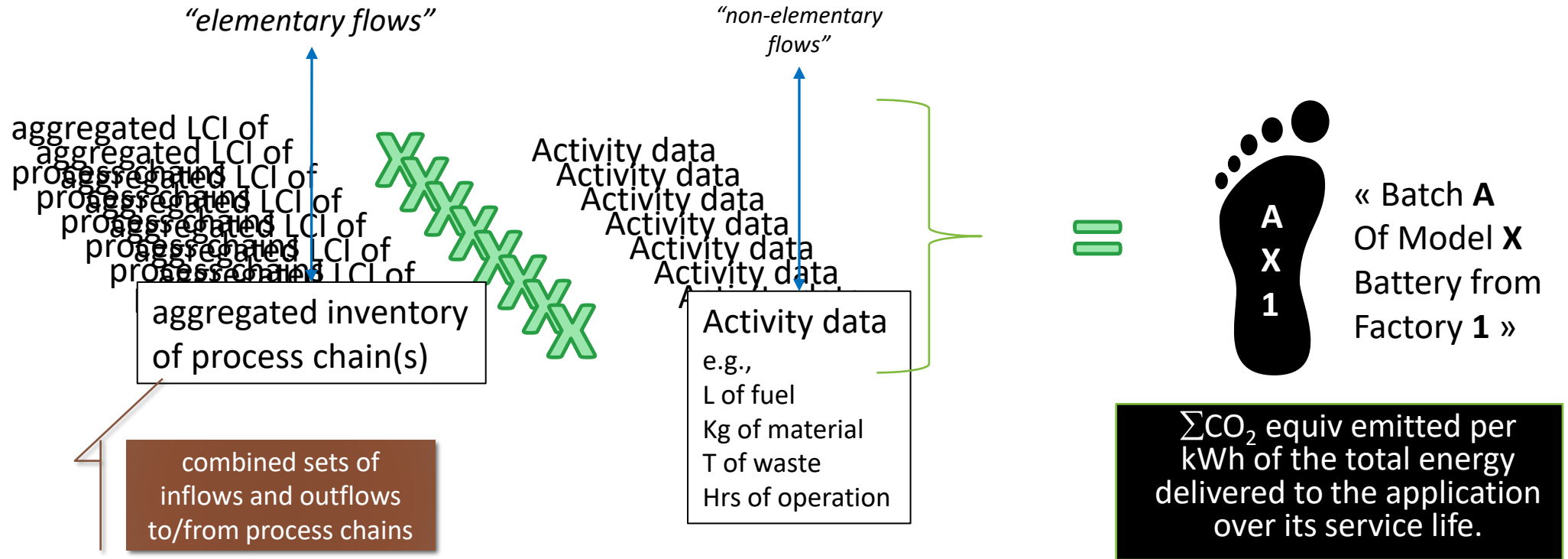
EU Batteries Regulation Art.7 & Annex 2



- (a) administrative information about the producer;
- (b) information about the battery;
- (c) information about the geographic location of manufacturing;
- (d) total **carbon footprint** of the battery;
[sum of GHG emissions and removals in a product system]
[CO₂ equiv based on an EU Environment Footprint study]
(e) differentiated per life cycle stage as described in Annex II;
- (f) independent third party verification statement;
- (g) Public link study supporting the carbon footprint.



1 July 2023 Delegated Act

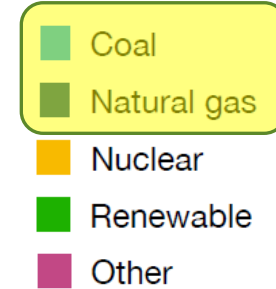
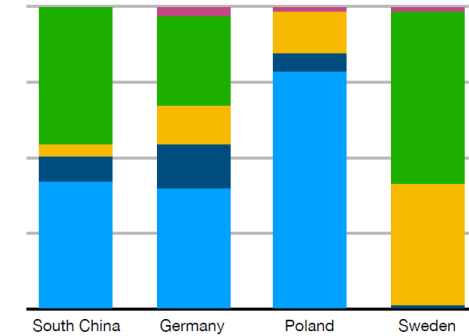
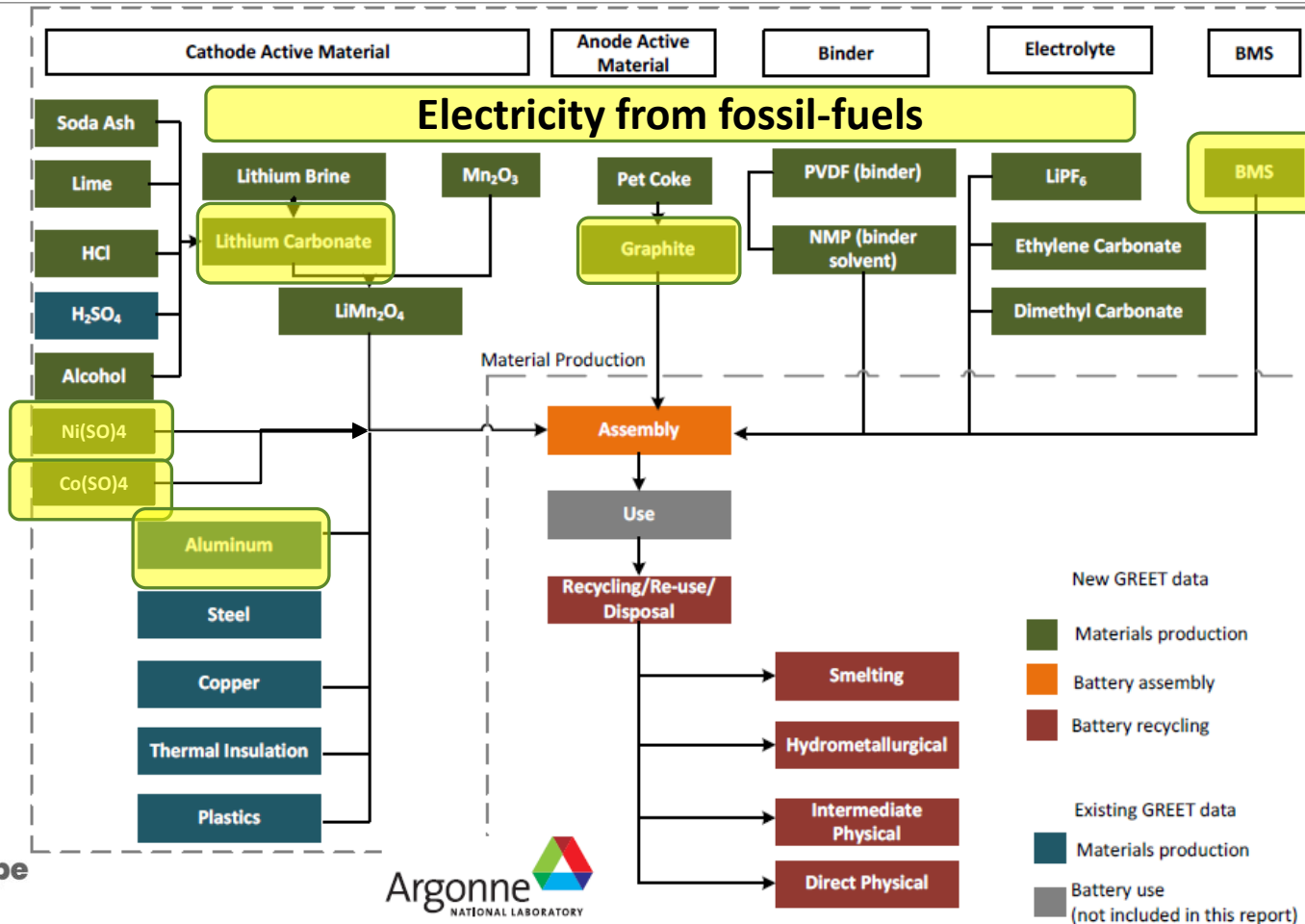


$$\frac{CO_2}{[Unit]_{activity}} \times \frac{[Unit]_{activity}}{Kg_{battery}} \times \frac{Kg_{battery}}{kWh_{application}} = \frac{CO_2}{kWh_{application}}$$

Likely GHG Hotspots



Likely GHG Emission Hotspots



TRANSPORT & ENVIRONMENT

Important Aspects



Important Aspects of Carbon Footprint

- **Accurate modelling of Electricity Consumption is critical**
 - Not guaranteed by existing European/Global footprinting standards
- Anode graphite supply currently dominated by China
- Differences between Nickel & Cobalt refinement routes are important
- Cathode Li-carbonate supply currently dominated by China
- Supply-chain data for Battery Management Systems components is needed
- GHG-emissions from Aluminium production currently dominated by China



Conclusion

EV Battery Carbon Footprint declarations will be required in 2024.

EV Battery Carbon Footprints depend on electricity grid-mixes.

- Both within Europe and outside Europe (e.g., China)

The EU needs reliable electricity grid-mix data and rules for its use.

<https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52020PC0798>



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Track Record

Established in October 2020, Drielsma Resources Europe is a sole proprietorship, through which I provide project management and advisory services on environmental policy and legislation, mining, raw materials, and sustainability to several multi-stakeholder organisations and consulting companies internationally.

Past clients include:



Copper Alliance®



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