EU Commission proposal for the Delegated Regulation supplementing Regulation 2023/1542 for Art. 7 of the Battery Regulation regarding “establishing the methodology for the calculation and verification of the carbon footprint of electric vehicle batteries”

Position of the German Association of the Automotive Industry, VDA

The German Association of the Automotive Industry (VDA) unites more than 650 manufacturers and suppliers under one roof. Its members develop and produce cars and trucks, software, trailers, bodies, buses, parts and accessories, and ever new mobility offerings. We represent the interests of the automotive industry and stand for modern, future-oriented multimodal mobility on the way to climate neutrality. The VDA represents the interests of its members in politics, the media, and other groups in society. We work for electric mobility, climate-neutral drives, the implementation of climate targets, securing raw materials, a sustainable circular economy, digitization and connectivity as well as German engineering. We are committed to a competitive business and innovation location. Our industry ensures prosperity in Germany: More than 780,000 people are directly employed in the German automotive industry.

The German automotive industry is wholeheartedly committed to the goals of the Paris Climate Agreement. Reducing CO_2 emissions is the top priority of business, politics and society. All political initiatives should be directly linked to and support the primary goal of the European Union to achieve climate neutrality by 2050.

As the German automotive industry, we fully support the advancing of the European Union into a modern, resource-efficient, and competitive economy. Therefore, we welcome the EU Battery Regulation as a cornerstone of the European Green Deal that aims at improving the circular economy, resource use and efficiency and environmental protection. Article 7 is currently and should remain a central piece of legislation dealing with the methodology for calculation, verification and reporting of the Carbon Footprint Battery (CFB) of electric vehicle batteries.

However, the Commission’s current draft delegated act contains various ambiguities that may lead to unclear responsibilities, misunderstandings and potentially different approaches to calculations. This thereby causes significant implementation difficulties related to the definition of system boundaries, underlying assumptions, and uncertainties concerning data responsibilities and availability, as well as quality.

Overall, it does not reflect the nature of the automotive industry as it neither considers its technical background nor feasibility requirements. Therefore, we would welcome a dialogue and consultation service to address all remaining issues.

The priority challenges arising from the draft proposal are:

I. The **Rejection of Renewable Energy Certificates** and the focus on a location-based approach conflicts with the goal of expanding the share of renewable energies in Europe. It hinders opportunities for companies to invest in the expansion of renewable energy installations due to economic reasons, energy efficiency, and lack of technical feasibility. Additionally, the current proposal contrasts with the EU strategy to expand the share of renewable energies such as the Renewable Energy Directive III (RED) or the Corporate Social Responsibility Directive (CSRD), which incentivize companies to financially support the expansion of renewable energy generation e.g., through Green Power Purchase Agreements (PPA). The default modelling of national average grid mixes furthermore disadvantages countries with a traditionally coal-heavy electricity mix. The automotive industry has minor influence on the overall national/regional energy-mix.

ð Therefore we propose the acceptance of Power Purchase Agreements (PPA) and Electricity Attribute Certificates that meet the minimum criteria as outlined in the PEF method and are based on the GHG Protocol scope 2 criteria. Furthermore, instead of using national average grid mixes, we propose the use of regional electricity mixes (e.g. EU) as default approach. In the long run, a standardization of energy tracking systems e.g., in China should be promoted.

II. The current specifications for defining **System Boundaries** as well as handling, and collecting **Data** contain various ambiguities, leading to implementation barriers, unclear responsibilities, and disadvantages for companies or individual production sites. Further points of criticism relate to the requirements for using the Carbon Footprint Datastock, which is currently not available.

ð Therefore, a revision of various specifications is requested to create a uniform and fair basis for defining system boundaries. Furthermore, shared responsibilities between manufacturer and suppliers should be considered that define clear obligations regarding data provision and processing. In addition, the Carbon Footprint Datastock should be made available soon and needs to fulfil minimum quality requirements.

III. The **Circular Footprint Formula (CFF)** as proposed in the draft version of the delegated act anticipates future recycling technologies and market development for credits without substantial foundation, leading to a procedure that is neither accurate nor practical. It is rarely applied in any scientific literature and in most cases not considered by LCA guidelines and standards (e.g. GBA, VDA vehicle LCA, Catena-X, PFA recommendations, etc.).[1]

ð Therefore, a general commitment to the state-of-the-art cut-off approach is proposed. Otherwise, issues concerning the assumed return rate and the battery quality in the CFF formula need to be addressed in more detail.

[1] https://lca4transport.eu/wp-content/uploads/2023/11/TranSensus-LCA_D-1-1_Final.pdf

Detailed Analyses of Priority Challenges

Based on an initial assessment of the draft regulation, following is a more detailed analysis and suggested proposals of the main identified challenges:

1. Rejection of Renewable Energy Certificates

Extract Delegated Act [ANNEX Methodology; 30.04.2024, p. 16]:

2.4. Electricity Modelling: “The carbon footprint of the consumption of electricity shall be that of the national average electricity consumption mix […]. By way of derogation from the first paragraph, the carbon footprint of directly connected electricity shall apply in accordance with section 2.4.1.”

2.4.1. Directly Connected Electricity: “The carbon footprint of directly connected electricity shall apply if the electricity is supplied to the process in question from a production asset within the same installation or via a direct line as defined as defined in Article 2, point (41), of Directive (EU) 2019/944 of the European Parliament and of the Council.“ [Annex, p.16f]

Analysis:

- European countries with a traditional coal-heavy electricity mix face disadvantages but OEMs have little to no influence on a country’s energy mix. Relocating production sites within a region with common development and reduction targets causes additional emissions.
- From an economic and ecological-efficiency perspective, energy systems are located where profitable and energy-efficient e.g., offshore vs. onshore wind. These locations may not necessarily coincide with the sites of battery factories. The current proposal causes disadvantages for existing production facilities if they are located in unsuitable areas for renewable energy generation plants e.g., solar power system in northern Germany compared to Spain.
- The current approach diminishes companies’ motivation to take initiative in promoting/financially supporting the expansion of renewable energies, which is often done through PPAs which is based on the energy delivery through the grid without a direct connection between the renewable energy generating plants and the production plants.
- The draft conflicts with Renewable Energy Directive II (RED II) and Corporate Social Responsibility Directive (CSRD), which incentivize companies to support the expansion of renewable energies e.g., through Green Power Purchase Agreements (PPA).
- The current draft also contradicts the Greenhouse Gas Protocol (Scope 2), which allows certificates under the condition of dual reporting (market & location-based approach).
- Overall, the rejection of all renewable energy certificates does not fit into the general EU strategy for promoting the expansion of renewable energies and incentivizing economic players to promote/financially support this expansion.

VDA Proposal:

- Accept Electricity Attribute Certificates that meet the minimum criteria as outlined in the PEF method and are based on the GHG Protocol scope 2 criteria.

- Regional electricity mixes should be used as default approach (e.g. European average grid mix).
- In the long run, the standardization of energy tracking systems e.g., in China should be promoted.

2. Availability Activity Data for New Cell Production

Extract Delegated Act [ANNEX Methodology; 30.04.2024, p. 10-11]:

2.3.5. Company-specific data: "Company-specific data shall be the average of one year. However, the data may be the average of a different period if the process concerned has not yet been running for a full year or exceptionally in another case justified in the carbon footprint study"

AND: "Where the process concerns a new facility, extension of capacity or exchange of entire production line, up to six of the initial months may be excluded from the data collection."

Analysis:

- Each new facility, extension of capacity or exchange of entire production line entails factors (e.g., higher scrap rates, capacity planning) that contribute to a larger CO2-footprint.
- For a new facility, extension of capacity or exchange of entire production line, the Delegated Act states that data from up to six of the initial months can be excluded.
- However, for economic reasons, cell production often begins shortly before vehicle production. Excluding the first six months of data means there will be no or insufficient data available for accurately modeling the battery carbon footprint.

VDA Proposal:

A solution should be provided for new facilities, extension of capacities or exchange of entire production lines that does not lead to long-term disadvantages in the form of an increased footprint. Potential solutions could be:

- The provision of a list with default scrap rates and energy consumption values that can be used when primary data for cell production is not yet available.
- Allow the use of justified planning data for facilities < 6 Months
- Standardized recalculation after a certain period of time (e.g., 6 or 12 months) after starting production could ensure more reliable footprint reporting.
- A special solution is also needed regarding the maximum carbon thresholds to be met in the future. Again, the carbon footprint value of the ramp-up should not be decisive.

3. Manufacturer Responsibilities

Extract Delegated Act [ANNEX Methodology; 30.04.2024, p. 7-11]:

2.3.5. Company-specific data: "All data sources and mathematical treatments applied to the data shall be provided in carbon footprint study." [Annex, p. 11]

2.3.1. Mandatory company-specific processes: "The manufacturer of the battery shall ensure that the company-specific data is communicated in any of the following methods […]. Where the manufacturer communicates the company-specific data in accordance with point (b), the manufacturer shall ensure that the notified body receives from the manufacturer's suppliers all the information specified in section 3.1.1 when the manufacturer lodges its application for assessment by the notified body. The manufacturer shall also ensure that a market surveillance authority receives such information upon request." [Annex, p. 7]

Analysis:

- The collaboration model and data responsibility between manufacturer, suppliers and sub-suppliers needs to be improved and better defined. Currently, the manufacturer bears sole responsibility for furnishing data and conducting the carbon footprint study.
- Due to confidentiality constraints and non-existing supplier contracts with Tier 2-n, there are certain details that cannot be shared with the manufacturer of battery systems. Therefore, the manufacturer cannot be made accountable for gathering, handling and verifying this information.
- The current wording makes it unclear if the supplier's company-specific dataset includes only company-specific activities (gate-to-gate) or also upstream activities (cradle-to-gate).
- In addition, organizing the requested assessment visits to supplier premises (see Section 3.2) is linked to significant difficulties for the battery manufacturer.

VDA Proposal:

- The implementation can be streamlined if suppliers generating company-specific datasets compile their own reports and undergo an independent verification and validation process with the notified body. During the verification and validation of the complete battery system, the manufacturer could then refer to the corresponding supplier reports available to the notified body. This approach gives shared responsibility to the manufacturer and suppliers, with each party being accountable for their own data.
- Company-specific datasets from suppliers shall be declared as the cradle-to-gate footprint.
- In addition, a reference to Article 39 of the Regulation would be useful at this point to clarify the obligations of suppliers.

4. Unclear Definition of System Boundary I

Extract Delegated Act [ANNEX Methodology; 30.04.2024, p. 4]:

2.2. System boundary and cut-off rules:

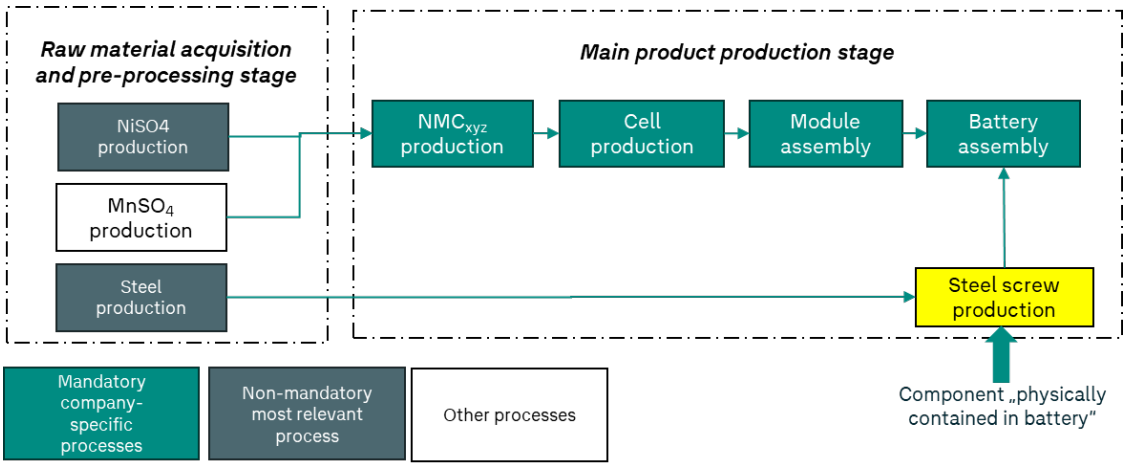
"(b) Main product production stage

This life cycle stage covers the manufacturing of the battery including that of all components that are physically contained in or permanently attached to the battery housing.

This life cycle stage covers the following activities: cathode active material production; anode active material production, including the production of graphite and hard carbon from its precursors; anode and cathode production […]"

Analysis:

- The scope of the manufacturing stage is unclear when it comes to defining what classifies as company-specific processes:
  - Section 2.2.1 (a), raw material acquisition and pre-processing, refers to several specific components (e.g. precursors, cooling pipes, fluids for thermal condition system).
  - Other small components that qualify as "physically contained in or permanently attached to the battery housing" and not part of the activities as highlighted in Section 2.2.1 (b), Main product production, could therefore be regarded as part of the main product production stage.
  - Example for a steel screw is presented below. How to model such a component and its transportation?



- The definition of "physically contained in or permanently attached to the battery housing" is not clear, e.g. the physical boundaries of a thermal conditioning system are not straight forward.

VDA Proposal:

- Provide a clear and precise definition of the activities covered in the "main product production stage". This should only include the activities as currently listed in Section 2.2.1 (b), Main product production.
- All other components, e.g. steel screw or circuit boards, should fall under the "raw material acquisition and pre-processing" stage. This should be made more explicit under Section 2.2.1 (a), raw material acquisition and pre-processing, whereby currently only a reference is made to the following components: cathode active material precursors, anode active material precursors, solvents for the electrolyte salt, the pipes and the fluid for the thermal conditioning system.
- Provide further clarification on what is meant with "physically contained in or permanently attached".

5. Unclear Definition of System Boundary II

Extract Delegated Act [ANNEX Methodology; 30.04.2024, p. 5]:

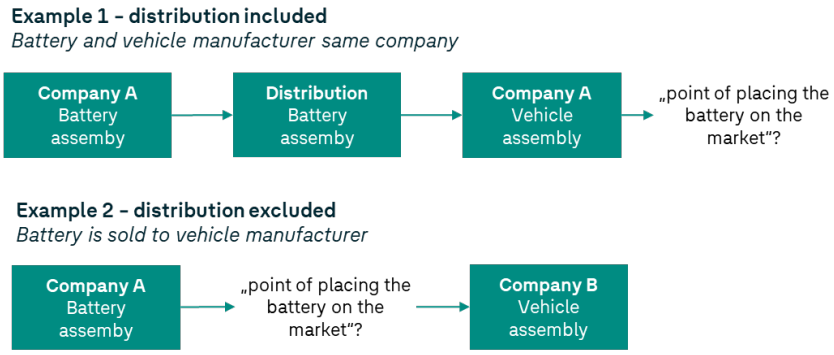
2.2.1. (d) Distribution: “This life cycle stage covers the transport of the battery from the battery manufacturing site to the point of placing the battery on the market. Storage operations are not covered.” [Annex, p. 5]

Analysis:

The definition of "placing the battery on the market" can vary depending on how it's interpreted. This also impacts how and if distribution is included. For instance:

(1) Vehicle and battery producer are the same company: the point of placing the battery on the market is after vehicle assembly. This includes the distribution.

(2) Battery and vehicle producer are different companies: the point of placing the battery on the market is after the battery assembly, which implies the gate of battery supplier. This excludes distribution.



VDA Proposal:

Further clarifications and guidelines should be provided as to how “placing on the market” is defined and how the distribution phase should be modelled under different supply chain scenarios to ensure consistency in LCA calculations.

6. Data Availability and Quality

Extract Delegated Act [ANNEX Methodology; 30.04.2024, p. 8]:

2.3.2. Non-mandatory most relevant process: “If at least one secondary dataset with a Technological Representativeness (‘TeR’) quality rating equal to or lower than four determined in accordance with section 2.3.6 is available in the datastock dedicated to the carbon footprint of batteries in the Life Cycle Data Network (LCDN) on the European Platform on LCA (‘carbon footprint datastock’)” [p. 8]

2.3.3. Other processes: “If one or more secondary datasets with a TeR quality rating equal to or lower than four determined in accordance with section 2.3.6 are available

in the carbon footprint datastock, the most representative secondary dataset in the carbon footprint datastock shall be used. “ [p. 8]

Analysis:

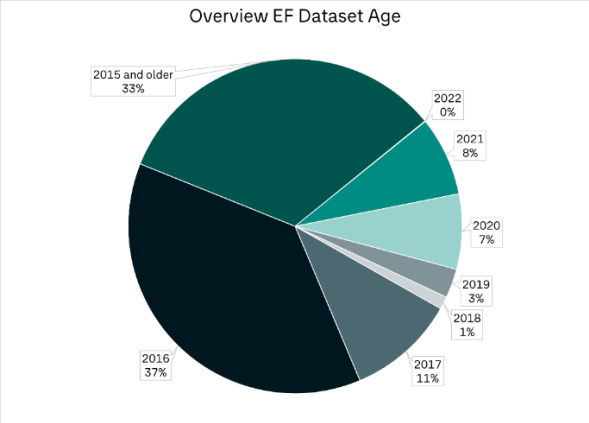
- It is not yet clear when the Carbon Footprint Datastock will be available on the LCDN
- Currently technological representativeness is used as the only criterion to select secondary datasets. This does not ensure data quality sufficiently.
- Generally, technological representativeness is difficult to assess for parties that are not the process owner. The level of detail that describes the technology behind the datasets varies but is usually high (e.g., specific process temperatures and chemical concentrations are mentioned). This can easily lead to misjudgments within technological representativeness.
- Current datasets available from LCDN are insufficiently representative in terms of technology, geography and time. e.g., electricity grid mix Germany (1-60kv):

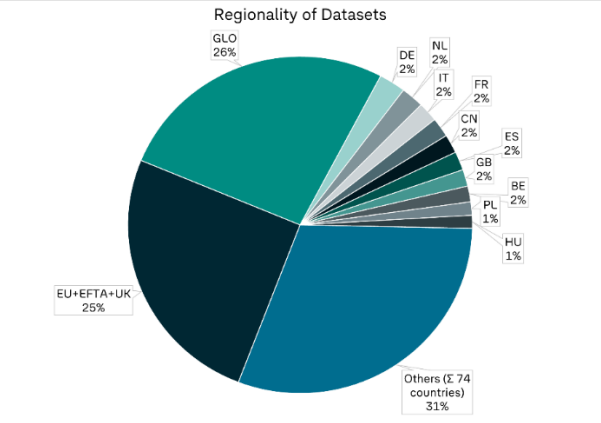
Database	Reference year grid mix	GWP (kg CO_2 eq./kWh)
LCDN (EF 3.1)	2012	0,593
Sphera LCA for Experts (CUP 2023.2, EF 3.1)	2019	0,427

- Generally, the majority of EF datasets can be considered as outdated since 70% of them have not been updated for >8 years:

Figure 1. Overview EF Dataset age of EF Datasets

Figure 2. Overview Regionality





VDA Proposal:

- For a timely implementation of Art. 7, it is essential that the Carbon Footprint Datastock is available soon and free of charge. A specific publication date is needed to allow for timely planning.
- The Carbon Footprint Datastock and other LCDN should meet at least the following requirements:
  - They must contain all data sets necessary for battery LCAs.
  - The data sets must be able to map different production routes and geographies.
  - The database must be updated regularly since LCA calculations should not be based on outdated information e.g., electricity mixes.
- In addition to technological representativeness, temporal and geographical representativeness should also be taken into consideration for selecting the data set. This approach prevents the use of a low-quality data set from the official data stock when a more suitable data set is available from another source.

7. Circular Footprint Formula

Extract Delegated Act [ANNEX Methodology; 30.04.2024, p. 22]:

Return rate: “A different company-specific return rate may be used only for the share of batteries covered by an ownership business model (..) (EU) 2023/1542. “

Material Quality: Chapter 2.6 table 3 on battery quality e.g. Co Qsout/Qp = 0,8

Analysis:

Return rate: A different company-specific return rate may be used only where the ownership of the battery stays with the manufacturer. Business models where the ownership does not stay with the manufacturer are not eligible for the application of higher return rates, even if evidence is provided.

Material Quality: How can the quality of individual materials be determined? The definition of material quality depends on the intended use. Without a uniform definition, the variables cannot be adapted in the future and are therefore questionable.

VDA Proposal:

Return rate: Higher return rates may be used where evidence is provided, independent of the ownership of the battery.

Battery Quality: Provide clear definition on battery quality and battery-grade material.

Further need for Definitions & Clarifications

In addition to the priority challenges, the initial assessment of the draft regulation uncovered several ambiguous and unclear text passages and lacking definitions. They can be found in the following Sections:

Functional Unit (ANNEX 2.1.)

- **Extract Delegated Act [ANNEX Methodology; 30.04.2024, p.2]:** *"Energy capacity* is the useable energy capacity of the battery in kWh at the beginning of life, namely the energy available to the user when discharging a new fully charged battery until the discharge limit set by the battery management system"
  Question/Issue: Is the energy capacity = net-capacity (communicated) or Useable Battery Energy (UBE); Does it depend on depth of charge?
- This single formula approach is not applicable for heavy duty industry and should be revised.

Mandatory Company-Specific Processes (ANNEX 2.3.1.)

- **Extract Delegated Act [ANNEX Methodology; 30.04.2024, p.7]:** "(d) parameters related to the quality of the product that affect its carbon footprint, such as purity or specific capacity."
  Question/Issue: The meaning of quality of the product is here not clear
  VDA Proposal: Provide further clarification.

Non-mandatory Company-Specific Processes (ANNEX 2.3.1.)

- **Extract Delegated Act [ANNEX Methodology; 30.04.2024, p.9]:** "The data format shall be compliant with the ILCD data format available in LCDN."
  Question/Issue:
  Unclear bibliography distributed throughout the text.
  VDA Proposal:
  Add a list of abbreviations in the annex

Company-Specific Data (ANNEX 2.3.5.)

- **Extract Delegated Act [ANNEX Methodology; 30.04.2024, p.10]:** "A production process may be divided into sub-processes. The company-specific data may be collected for each process or subprocess stage separately, or for the final production as a whole. For the outputs, direct emissions and waste streams shall be recorded. For the inputs, the following parameters shall be recorded: (d) LCI"
  Question/Issue: What is exactly understood as LCI in the list of input parameters?

VDA Proposal: Provide more information on what is meant with the LCI in point Section 2.3.5.

- **Extract Delegated Act [ANNEX Methodology; 30.04.2024, p.9]:** "The company-specific data to be collected for the creation of company-specific datasets shall include all known inputs and outputs for the processes concerned, including: the following inputs: […] (v) any elementary flow. the following outputs: […] (ii) any elementary flow,.
  Question/Issue: All elementary in and outflows need to be tracked but only GHG emissions are reported.
  VDA Proposal: Provide an explicit list of elementary flows, in line with EF3.1 Climate Change LCIA method, which shall be collected.

Transportation (ANNEX 2.7.)

- **Extract Delegated Act [ANNEX Methodology; 30.04.2024, p.28]:** "For other transport in the raw material acquisition and pre-processing life cycle stage the manufacturer shall verify whether the datasets applied for that life-cycle stage include all relevant transport."
  Question/Issue: The manufacturer does not have the possibility and knowledge to verify whether suppliers and sub-suppliers include all relevant transport.
  VDA Proposal: Datasets provided by the supplier to the manufacturer shall include all relevant transport.
- **Extract Delegated Act [ANNEX Methodology; 30.04.2024, p.29]:** “The manufacturer shall complement these so that transport is accounted for, based on information from their own supply chain or based on average market data and supply chain analyses.”
  Question/Issue: Need clear definition on "based on average market data and supply chain analyses". Delegated Act does not include default transport data or clear definition of "average market data“
  VDAProposal: Include default transport data as in the JRC final draft rules for calculation of the carbon footprint of electric vehicle batteries.
- **Extract Delegated Act [ANNEX Methodology; 30.04.2024, p.8**]: "For transport in the main product production life cycle stage, in the distribution life cycle stage, and in the raw material acquisition and pre-processing life cycle stage between processes for which company-specific data is used pursuant to sections 2.3.1, where relevant, and 2.3.2, company-specific data shall be used for the distance”
  Question/Issue: Which transport values shall be used between processes for which company-specific data is used and processes without company-specific data (i.e. “other processes” and “non-mandatory company specific processes” modelled without company specific data)?
  VDA Proposal: Provide clarification on how to model transport between non-mandatory company-specific processes and company specific processes.

Verification & Validation Techniques (ANNEX 3.2.)

- **Extract Delegated Act [ANNEX Methodology; 30.04.2024, p.32]:** “For batteries manufactured in series, it shall include an assessment visit to

a) the manufacturer's premises;
b) the cell, anode, and cathode production premises;
c) the cathode active material production premises;
d) the anode active material production premises; and
e) where considered important on the basis of the carbon footprint study, the premises of one or more of any other production sites for which company-specific data were collected.”
Question/Issue: Is the notified body visiting the premises or should the manufacturer organize the assessment visits to Tier 2-n suppliers? Please note that direct contact with Tier 2-n suppliers is not possible.
VDA Proposal: The visits to Tier 2-n suppliers should not fall under the responsibility of the manufacturer e.g. due to anti-trust law.

a) the manufacturer's premises;
~~b) the cell, anode, and cathode production premises;~~
~~c) the cathode active material production premises;~~
d) ~~the anode active material production premises; and~~
e) visits to the premises of one or more of any other production sites for which company-specific data were collected, should take place upon request by market surveillance authorities due to reasonable concerns.”

Visits should take place upon request by market surveillance due to reasonable concerns.