

Key issue in SG3 Level concept by OICA

- There are **additional considerations** in discussing the solutions proposed by OICA below.

SUPPLY CHAIN & PRODUCTION	Possible Comparison ¹⁾	Vehicle modelling	Representativeness ²⁾	Supply chain modelling	OEM manufacturing Processes	Supplier manufacturing process	Individual decarbonisation measures
Level 1	General concept of drivetrains (e.g. BEV vs. ICEV)	Generic material composition & average vehicle curb weight	Global average / regional	generic footprint per kg of vehicle curb weight			none
Level 2	General concept of drivetrains (e.g. BEV vs. ICEV) based on exemplary „real“ car vehicle model	BOM & Material information system (CMDS / IMDS ³⁾)	Global average / regional	global secondary data material footprints (incl. generic information for production processes)			none
Level 3	A representative vehicle of OEM A VS A representative vehicle of OEM B	BOM & Material information system (CMDS / IMDS) & „part-by-part“ for hotspots	Regional & individual SC for hotspots	primary information for the vehicle hotspot parts	Optional: primary data for OEM's inhouse hotspot processes	primary information for the manufacturing of vehicle hotspot parts	included
				secondary information for the rest	Secondary information for the rest or average values per vehicle from OEM's Scope 1 & 2 emissions	secondary information for the rest	
Level 4	e.g. OEM A's BEV model vs. OEM B's BEV model	BOM („part-by-part“)	individual SC	regional or primary data based part (& material) footprints	included	included	included

https://wiki.unece.org/download/attachments/213877109/SG3_level%20concept%20illustration_v1%28LCA-SG-03-03%29.pdf?api=v2

KEY ISSUE

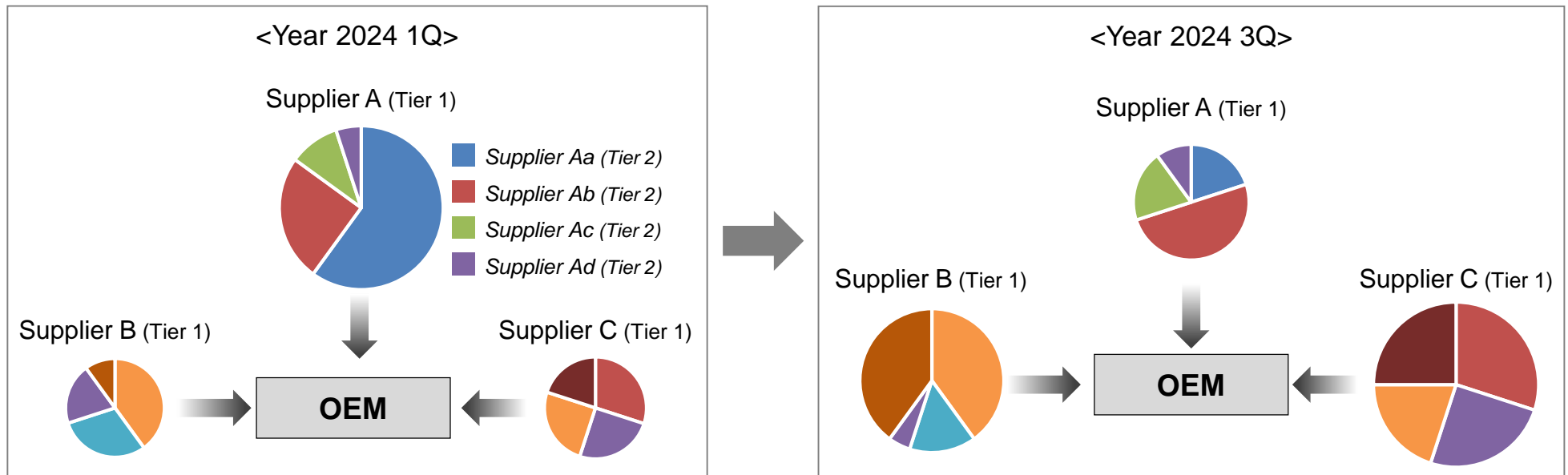
- How to make a global and regional database related to parts production?

In particular, is it possible to reasonably make a regional database (Lv.3) related to parts production?

Key issue 1. Fluctuation of parts supply and demand

- The supply of both raw materials and parts is made through **various regions(countries) and companies**.
- The supply and demand of raw materials and parts **fluctuate in real time** depending on conditions such as prices and international circumstances, and the **carbon emissions of total vehicle can also vary accordingly**.
- But it is **impossible for OEMs to track** it in real time and calculate carbon emissions.

[Example] The supply and demand **conditions can vary** depending on a specific point in time.



- The size of each circular graph is proportional to the amount of parts delivered to the OEM by Tier 1 suppliers.

- Each piece in the circular graph represents 'Tier 2 supplier' and the percentage of each piece is equal to the percentage delivered to Tier 1 suppliers.

IWG's adoption of the Level concept is due to the **inability to have a complete system before 2025** that of calculating, tracking and collecting carbon emissions from the supply chain in real time.

Key issue 2. Parts supply and demand region

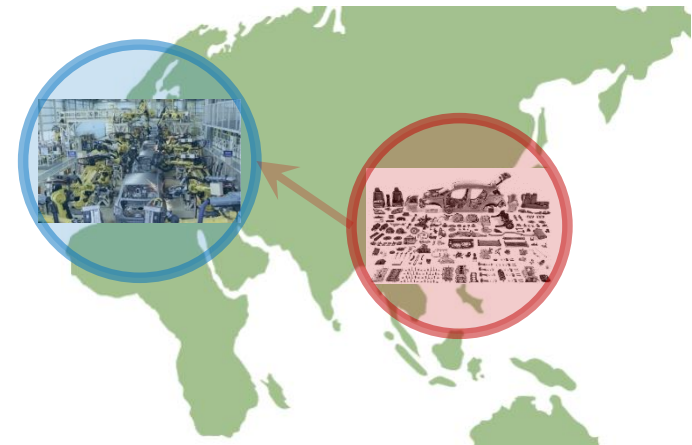
- Vehicle parts have a supply chain not only in the **regions(countries) where the vehicle is produced**, but also **throughout the world**.
- The example below compares the production of vehicle in Asia after all parts are produced in Asia (**CBU**), and the production of vehicles by transporting parts sourced in Asia to Europe (**CKD**).

CBU (Complete Built-up Unit)



Both 'part' and 'vehicle' production take place **in Asia**
→ **Part and vehicle production** are calculated based on **Asian regional LCI DB**

CKD (Completely Knocked Down)



VS.

Parts are produced **in Asia**, and **vehicles** are produced **in Europe**
→ **Parts production** as well as **vehicle production** is calculated based on **European regional LCI DB**

👉 **Is it reasonable** to calculate the carbon emissions of parts production **based on where the vehicle production?**

In the absence of a real-time tracking system for parts carbon emissions, calculating the carbon emissions generated during parts production **based on the 'vehicle production regions' does not represent the actual situation.**

In other words, this is an unreasonable way.

Suggestion

| Regarding 'part production'

- In the absence of a real-time tracking system, it is **difficult to calculate** carbon emissions for parts, and it is also **unreasonable** to calculate it **based on the vehicle production 'region'**.

Therefore, we propose the following ideas;

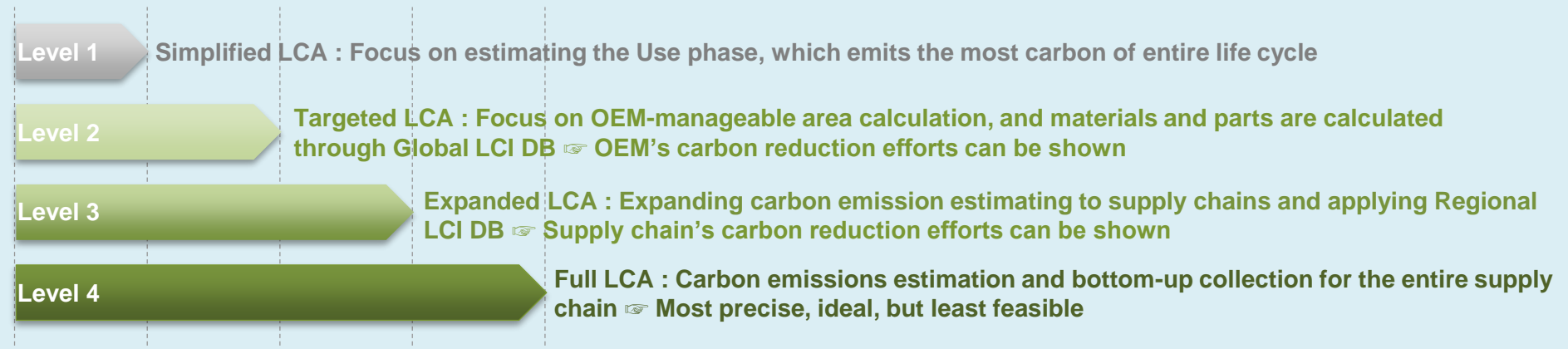
- Only for the **'parts with PCR(Product Category Rules)'**, carbon emissions in the part production are calculated **according to the rules(PCR)**.
- **The rest** of the parts are calculated **based on Global(not regional) LCI DB** or **cut-off**.

| Regarding 'LCI DB'

- If the above proposal for carbon emissions related to parts production is accepted, SG3's activities can focus on the discussion of determining the **reasonable 'Global LCI DB' related to parts and vehicle production**.

Supplement - Level Concept proposed by Korea

❖ Level for estimating carbon emissions



	Level 1	Level 2	Level 3	Level 4
Parts Production	<p>[Simplified]</p> <ul style="list-style-type: none"> • Target) Integrated assessment with SG2 (raw materials) stage • Method) Use of fixed coefficients per powertrains proportional to Curb Vehicle Weight - e.g. xx kg CO₂ eq./kg vehicle 	<p>[Minimization]</p> <ul style="list-style-type: none"> • Cut-off) Calculate carbon emissions only for OEM-manageable data or • Generalization) Apply Global LCI DB for all parts production 	<p>[Use actual LCA results for parts]</p> <ul style="list-style-type: none"> • Target) Only parts with PCR (Hotspots) • Method) Follow the PCR guidelines (Regional / Global LCI DB) and • For 'the rest', apply Global LCI DB for part production or cut-off 	<p>[Full LCA]</p> <ul style="list-style-type: none"> • Bottom-up collection Cradle-to-Gate LCA Results (carbon emissions) from supply chain
Vehicle Production		<p>[Calculate within OEM process]</p> <ul style="list-style-type: none"> • Target) Required processes directly related to vehicle production • Method) Primary Data with Global LCI DB (energy, ancillary material, etc.) 	<p>[Calculate within OEM process]</p> <ul style="list-style-type: none"> • ← • Apply Regional LCI DB 	←