

Draft meeting minutes of SG3's 3rd meeting (On-line only)

19 September 2023, 12:10 PM to 13:30 PM cet.

Meeting documents available at:

[https://wiki.unece.org/display/trans/4th meeting](https://wiki.unece.org/display/trans/4th+meeting)

Agenda

Meeting Information				
Date	19th September, 2023			
Time	12:00 AM CET			
Venue	On-line			
Link				
Time	No.	Agenda Item	Lead	Purpose or Target
12:00 ~	1	Welcome and introduction	NIER	Information share
~ 12:10	2	Adoption of the agenda	NIER	Agreement
~ 12:20	3	Adoption of the last meeting minutes	NIER	Agreement
~ 13:20	4	Discussion topics 1) Leveling concept - Examples of each level 2) Interconnect meeting with other SG - Discussion topics for the meeting with SG2 3) Request all members - Share the case studies of hotspot analysis 4) The next meeting (Oct.19th)	Participants	Discussion
~ 13:25	5	Any other Business	Participants	
~ 13:30	6	Closing	NIER	-

## Meeting minutes

### **Agenda Item 1: Welcome and introduction**

The leader started the A-LCA IWG SG3 Teams meeting at 12:10 (cet.) and welcomed the participants.

### **Agenda Item 2: Adoption of the agenda**

The meeting agenda was presented and reviewed.

No comments

### **Agenda Item 3: Adoption of the last meeting minutes**

The leader briefly explained the contents of the meeting, explained one by one, and received questions

and comments. The contents of the meeting were explained in the order of leveling concept,

overarching aspects, and meeting plan.

No comments

### **Agenda Item 4: Further discussion (leveling concept)**

#### **1. Discussion topic 1: Leveling concept : Examples of each level**

##### 1.1. Presentation/documentation

<b>SUPPLY CHAIN &amp; PRODUCTION</b>	<b>Possible Comparison<sup>n1)</sup></b>	<b>Vehicle modelling</b>	<b>Representativeness<sup>2)</sup></b>	<b>Supply chain modelling</b>	<b>OEM manufacturing Processes</b>	<b>Supplier manufacturing process</b>	<b>Individual decarbonisation measures</b>
<b>Level 1</b>	General concept of drivetrains & <b>specific vehicle fuel efficiency</b> (e.g. BEV vs. ICEV)	Generic ( <b>Default</b> ) material composition & average vehicle curb weight	<b>China</b>	generic footprint per kg of vehicle curb weight <b>China Automotive life cycle database (CALCD)</b>			none

<b>Level 2</b>	General concept of drivetrains (e.g. BEV vs. ICEV) based on exemplary „real“ car vehicle model (Sedan at A class)	BOM & Material information system (CMDS) & specific vehicle curb weight	China	China Automotive life cycle database (CALCD)			none
<b>Level 3</b>	A representative ICEV model of OEM A VS A representative BEV model of OEM A (Sedan at A class)	BOM & Material information system (CMDS / IMDS <sup>3</sup> ) & „part-by-part“ for hotspots	Regional & individual SC for hotspots	primary information for the vehicle hotspot parts (BIW & powertrain system)	Primary data for OEM's inhouse hotspot processes (stamping, welding, painting, final assembly, power station house)	primary information for the manufacturing of vehicle hotspot parts (BIW & powertrain system)	included
				secondary information for the rest & CALCD	Secondary information for the rest or average values per vehicle from OEM's Scope 1 & 2 emissions & CALCD	secondary information for the rest & CALCD	
<b>Level 4</b>	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

1) a column describing comparable objects to help you understand the concepts at each level, giving hints about how to access them by level and what data to find

2) data information characteristics that can be used for evaluation

3) (CDMS) Chinese Material Data System, (IMDS) International Material Data System

## The current table proposed by leading team

SUPPLY CHAIN & PRODUCTION	Possible Comparison <sup>1)</sup>	Vehicle modelling	Representativeness <sup>2)</sup>	Supply chain modelling	OEM manufacturing Processes	Supplier manufacturing process	Individual decarbonisation measures
<b>Level 1</b>	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
<b>Level 2</b>	General concept of drivetrains (e.g. BEV vs. ICEV) based on exemplary „real“ car vehicle model	BOM & Material information system (CMDS / IMDS <sup>3)</sup> )	Global average / regional	global secondary data material footprints (incl. generic information for production processes)			none
<b>Level 3</b>	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	
<b>Level 4</b>	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

1) a column describing comparable objects to help you understand the concepts at each level, giving hints about how to access them by level and what data to find

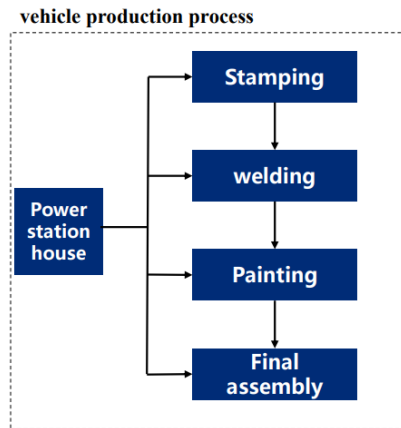
2) data information characteristics that can be used for evaluation

3) (CDMS) Chinese Material Data System, (IMDS) International Material Data System

There are some comments from China in this level concept.

- (level 1): Vehicle fuel efficiency can be compared for a specific vehicle model of a battery electric vehicle or ICEV, and the basic material composition in vehicle modeling is, on average, the same for all vehicles and vehicles by vehicle manufacturer. And as a case in point, China currently has CALCD, a cycle database for the China Automobile Research Institute, which corresponds to Level 1.
- (level 2): The actual vehicle model is a type of A class sedan that models BEV and ICEV. BoM and Material Information System CMDS data use Chinese databases using vehicle models of specific vehicle years for BEVs and ICEVs.
- (level 3): OEM A's representative ICEV model and representative BEV model have the same vehicle modeling based on parts such as powertrain systems and hot spots, and representative vehicles produced in China can be considered hot spots, but the supply chain considers body-in-white (BIW) and powertrain systems as stamping, welding, painting, and final assembly stages and is considered hotspot parts for vehicles. The parts supplier considers the BIW and the secondary database of the powertrain system for the vehicle's hotspot parts, the engine of the ICEV, and the power battery of the BEV as background data.

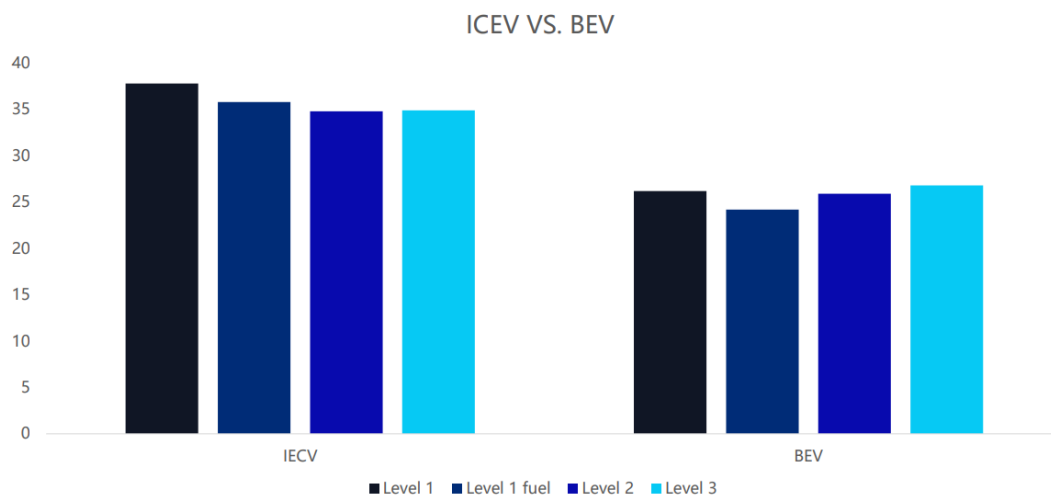
**Hotspot of vehicle production process:** Vehicle production process including stamping, welding, painting, final assembly, power station house, the entire process of carbon emissions of about 550 kgCO<sub>2</sub>e/p, excellent Oems can do even lower such as 320 kgCO<sub>2</sub>e/p



Carbon emission composition of vehicle production process

Process	Electricity, kgCO <sub>2</sub> e/p	Water, kgCO <sub>2</sub> e/p	Natural gas, kgCO <sub>2</sub> e/p	Steam, kgCO <sub>2</sub> e/p	CO <sub>2</sub> escape, kgCO <sub>2</sub> e/p	Subtotal, kgCO <sub>2</sub> e/p
Stamping	4	0.01				4.01
welding	9	0.02			0.4	9.42
Painting	10	1.7	59			70.7
Final assembly	5	0.2				5.2
Power station house	10	0.5		221		231.5
<b>Subtotal</b>	<b>38</b>	<b>2.43</b>	<b>59</b>	<b>221</b>	<b>0.4</b>	<b>320.83</b>

Level comparison



1.2. Questions / Comments:

**(Daeyoul Kim / Korea)** As the level increases, the footprint decreases for ICEVs and increases for BEVs, why is there a difference?

**(Xin Sun / CATARC)** This trend could be seen through comparison of results, and I think it varies by model. This is because it is about the target model and the average of the base model. If the target model is heavy and large on average, the target BEV model is heavier and the average range and electrical concept are larger. We believe that the higher the level of the target ICEV model, the smaller the perception, the smaller the weight, and the smaller the average for each vehicle model.

## **2. Discussion topic 2: Interconnect meeting with other SG**

### 2.1. Questions / Comments:

**(Xin Sun / CATARC)** There is one mention of the topic to be discussed, and the topic to be discussed is about system boundaries. Since there is a system in which material and material production and automatic auxiliary production are partially mixed, it is thought that what SG3 should discuss with SG2 is the boundary between material production and automatic auxiliary production. I think these will be the topic of action.

**(Chong, Hwansoo / NIER)** I have a question, too, as an example, whether the steel plates we all know are used in the car as raw materials or parts. An accurate definition of raw materials and parts is needed, and it seems that other parts are also required.

**(Christ Ansgar / CLEPA)** What I would suggest is, we've already basically talked about this last time. Now, when you take a raw material and you turn it into a product, the first thing you do is shape it now, which is the first production step. So, we're going to take the raw material and we're going to prepare it and we're going to mold it into a certain shape. But in this first step, ideally, if you think about how to differentiate between the raw material and now the part, if you want to differentiate between SG2 and SG3, now this steel is going to change shape, whether it's a billet or a sheet. Now, the first time it changes shape, I think that's where we're going to see the transition from SG2 to SG3.

**(Hans Nuglisch)** I'd like to add another one to the slides. It's about raw materials and how we separate parts and how we measure the quantity. When molding in the first stage, raw materials are measured in quantity, but when they are already in production, they don't seem to measure in kilograms, and I think it may be a little difficult to distinguish, especially small screws because they can be mass-produced. Because this is also based on the amount, it is quite difficult to distinguish whether it is a part or a raw material because it is already being molded.

**(Christ Ansgar / CLEPA)** I mean, of course, if you've already produced the product, you can measure it by mass. For example, screws can be sold in kilograms or in packages sold in multiple screws and kilograms. But I think the other thing that I want to do is if it's still a material, it basically has something that you can't count in pieces. And if that's the case, we don't think the range of

the material group is in the range of automobile or parts production.

**(Xin Sun / CATARC)** I think the boundary between SG2 and SG3 should be after the loading stage because most steel products are finished after hot rolling.

**(Chong, Hwansoo / NIER)** Is there any particular reason to classify based on hot rolling?

**(Xin Sun / CATARC)** Yes. I think hot rolling is the system boundary because most steel production used in vehicles may have a hot rolling stage.

**(Christ Ansgar / CLEPA)** As far as I know, steel products need to be refined by raw materials. Because the boundary is based on a specific raw material, not a normal process. How should we define the boundaries of plastic when we are in a hot rolling phase? I don't know if it applies to metals, but for other raw materials, we need to discuss individually what additional processes and criteria we will use to split the system. This can cause problems setting boundaries by raw material. In principle, the definition that we use internally now needs no overlap between SG2 and SG3.

**(Chong, Hwansoo / NIER)** I don't think what we're discussing is going to be decided in such a short time, and we need to listen to SG2's thoughts, so it would be good to share the contents of the meeting with SG2 at the next meeting.

### **3. Discussion topic 3: Request all members : Share the case studies of hotspot Analysis**

**(Chong, Hwansoo / NIER)** Other OEMs have analyzed hot spots, so if you have any related information or previous research cases, it would be good to share them. I think it will help you understand our leveling concept a little bit more deeply. I don't think we need to talk about this leveling concept for a long time. I need to quickly organize these contents and move on to the next stage. If you have a good example, please share it with me.

### **4. Discussion topic 4: The next meeting**

**(Chong, Hwansoo / NIER)** Next, regarding the schedule of the meeting that we are supposed to do on October 19th, the meeting place is ACEA. Since we don't meet often, we need to discuss more in person. Of course, when we have a non-face-to-face meeting, we have a meeting for an hour or an hour and a half, but when we have a face-to-face meeting, we can discuss it more and draw a conclusion, so we set the meeting time from 10 to 3. Of course, the meeting is also a hybrid meeting, so not only those who attend face-to-face but also those who are online from other places can participate in the meeting. I would appreciate your opinion on the overall meeting time.

**(Chong, Hwansoo / NIER)** It is also necessary to discuss setting an agenda for what to discuss when we meet on October 19. We will hold two meetings on the 17th and 18th of the informal working group, and I will report the progress of SG3 group here. It is also necessary to discuss in our meetings what direction SG3 should proceed and what goals it should take.

**(Chong, Hwansoo / NIER)** Lastly, if you have a good case study by October 10, I would appreciate it if you could send me an e-mail.

#### **Agenda Item 5: Any other business**

There was no any other business.

The meeting was closed at 13:30 PM