

Draft meeting minutes of SG3's kick-off meeting

In-person only

Venue:

63333 Johamhaean-ro, Jocheon-eup, Jeju-si, Jehu-do, Rep. of Korea
 29 June 2023, 9:00 a.m to 18:00 p.m KST
 30 June 2023, 9:00 a.m to 12:30 p.m KST

Meeting documents available at:

[https://wiki.unece.org/display/trans/SG3-Kick-off meeting](https://wiki.unece.org/display/trans/SG3-Kick-off+meeting)

Agenda

Time	No.	Agenda Item	Lead	Purpose or Target
Day1 (29th June)				
9:00 ~	1	Welcome and introduction	NIER	Information share
~ 9:30	2	Adoption of the agenda	NIER	Agreement
~ 12:00	3	Discuss on meeting plan - The schedule of method of meeting that brings together the whole members (main participants, Observers)	NIER CATARC CLEPA OICA	Discussion
Break				
13:30 ~	4	Discuss on leveling concept	NIER	Discussion
~ 17:00	5	- Definition of levels - Initial target level in the viewpoint of IWG and SG3 Time schedule of SG3 - The schedule of method of meeting that brings together the whole members	CATARC CLEPA OICA	

Time	No.	Agenda Item	Lead	Purpose or Target
Day 2 (30th June)				
9:00 ~	6	A look-back of the Day 1	NIER	Information share
~ 9:30	7	Introduction of the Day 2	NIER	
~12:00	8	Discuss on overarching aspects in the part of vehicle-parts production	Discussion CATARC CLEPA	Discussion
~ 12:30	9	Any other Business	NIER	

Meeting Minutes

Agenda Item 1: Welcome and introduction

For this kick-off of SG3, the meeting was opened at 09:00.

Attendee

(NIER) Sangil Kwon, Yunsung Lim, Hwansoo Chong, Yunmin Jeong, Jiseung Kim, Suhan Park(Konkuk Univ.), Jeongju Rho(Ministry of Environment)

(CATARC) Tongzhu Zhang

(CLEPA) Ansgar Christ

(OICA) Tina Dettmer, George Bedenian

Self-Introduce

Agenda Item 2: Adoption of the agenda

The meeting agenda was presented and reviewed.

No comments

Agenda Item 3: Meeting plan

[Discussion]

(Chong, Hwansoo/NIER) It would be nice if you all could give your opinion on when it would be better for SG3 to have a group meeting with both main participants and observer before July 10.

((Dettmer, Tina/OICA) The schedule feels quite tight. We may have a meeting next week or so, but Wednesday or Friday is already the weekend in Korea, so I think it will be difficult. I think I can think about Wednesday.

(Christ Ansgar/CLEPA) I think we should have a meeting before July 10th. Ask other participants questions and listen to their opinions. I think we should set a date sometime next week, and I think it's better to avoid Friday. The participation rate is usually a little low on Friday, so I think it would be good next week except for Friday.

(Zhang, Tongzhu/CATARC) I think next Wednesday and Thursday will be good.

(Dettmer, Tina/OICA) I think we should consider someone who connects from the U.S. I think it would be better to check the participants again. If there is no one in contact in the U.S., I think I can set the time more freely. Considering Korean and Chinese time, I think 11 a.m. or 12 a.m CET. would be good, but I'm a little worried about the American participants.

(Chong, Hwansoo/NIER) After this meeting, I'll announce the main participants and the observer on Thursday, July 6th at 12:15 pm CET. After July 10, we will have to discuss the contents necessary for the SG3 group in earnest, so let's prioritize having an on-line meeting. Then, if necessary, it would be good to have a face-to-face meeting in the middle. The meeting should be held at least once every two weeks.

(Bedenian, George/OICA) In Europe, many people go on a long summer vacation and a lot of vacation from July to August. I have a vacation scheduled for this weekend, and many people usually go on vacation in August. So, in European countries, participation rates will be very low in August, so I think it's better to avoid August.

(Chong, Hwansoo/NIER) Then, it would be better to have a video meeting for one day between July 10 and July 31, and gather opinions on the schedule at the plenary session on July 6.

(Dettmer, Tina/OICA) I think it would be better to set two or three date options in advance and present them then.

(Christ Ansgar/CLEPA) I think 19th or 20th would be the best.

(Dettmer, Tina/OICA) If you expect about two hours, Thursday, the 20th, would be the best. Now, I will ask if Ansgar is not available on Tuesday.

(Christ Ansgar/CLEPA) I think I can attend the meeting on the 18th if I adjust it. On July 6th, the participants will also give their opinions on when is better on the 18th and 19th. Considering such discussions, I think an hour will not be enough for our meeting, and I think we should schedule 2 to 2 hours and 30 minutes.

(Chong, Hwansoo/NIER) First of all, I will make a proposal for a day from July 10th to 30th as a meeting date option on the 18th or 19th, and why don't we announce the meeting time exactly at 12:15 and 2 hours and 30 minutes? August is off, and the first meeting in September is still a lot of time, so the schedule is not clear, but why don't we have a full-fledged meeting in the week of September 4th?

(Bedenian, George/OICA) I suggest that we have a more serious discussion every two weeks from September.

(Dettmer, Tina/OICA) It would be nice to set it as Tuesday when we do it every two weeks.

(Bedenian, George/OICA) It would be good to always think about 12 o'clock in European time. The U.S. and Asian countries are suffering, and if it is okay, it would be good to decide at the group meeting. It's a good idea to have a group meeting and figure out how many U.S. participants there are and advance the time if there are no U.S. participants. It would be good for Asian countries to have meetings within working hours, but I am wondering how to set the time. I think we should have a group meeting and decide the time zone.

(Chong, Hwansoo/NIER) Starting in September, we will have a meeting every two weeks on Tuesday and decide the time after hearing opinions from the general meeting. Then I think it would be better to fix the date with the first meeting on September 5th, which starts in September. If it is on the date of the iwg team meeting, we will have a general meeting again and adjust the date.

(Bedenian, George/OICA) I'll check to see if I understand. The first meeting will be held on September 5, and the next day is September 19.

(Chong, Hwansoo/NIER) If you only have on-line meetings, there may be more things to discuss, It would be better to set a rough schedule for face-to-face meetings during the on-line meeting schedule.

(Dettmer, Tina/OICA) I understand that there is a schedule for face-to-face meetings in Brussels on 17 and 18 October. If we meet then and have a face-to-face meeting, I think we can save time and travel expenses.

(Lim, Yunsung/NIER) The Brussels meeting is on the 17th and 18th, and the SG3 meeting can be held once the day before, or on the 19th, after the meeting.

(Chong, Hwansoo/NIER) If we have an SG3 meeting in Brussels on the 19th, I don't have much information about Brussels, so it would be nice if someone could book a meeting place on the 19th or arrange it.

(Dettmer, Tina/OICA) For one suggestion from our side, I will ask ACEA in Brussels and check if it is possible and share it with you.

(Christ Ansgar/CLEPA) There are a few places to contact in Europe. Also, there are suitable places for the October meeting, so I think I can ask various places.

(Chong, Hwansoo/NIER) I would like to decide to arrange and decide on the meeting place on October 19th by CLEPA or OICA.

(Christ Ansgar/CLEPA) It would be good to think of the number of people in the meeting as about 25.

(Chong, Hwansoo/NIER) If most of the main participants are present and some of the observer are present, it would be good to have about 30 to 40 people.

(Dettmer, Tina/OICA) I don't think there will be 40 people.

(Christ Ansgar/CLEPA) I'm also in Stuttgart, so I don't know exactly what's going on in Brussels. But if you think about the main partners in a face-to-face meeting, you can set it up with about 25 people, but it's not hard to find a space for about 25 people. But if you think of it as 60 people in total and look for a space, it might be a little difficult.

(Chong, Hwansoo/NIER) The meeting on July 19th would be a good idea to divide participation by conducting it as a hybrid. We will prepare the program for the online meeting.

(Bedenian, George/OICA) It might be easier for the host to prepare the meeting program. Communication or system situations may be more familiar to us, and there may be differences between Korea and Europe. I think it would be easier for you to send an invitation email from Korea, but share the meeting link or venue with the host.

(Christ Ansgar/CLEPA) I think it would be good to create an sg3 folder on the wiki of iwg and upload the contents of the meeting to that folder.

(Chong, Hwansoo/NIER) After this meeting, I will ask a leader of IWG to make a folder so that the contents and results of the meeting can be uploaded to the folder.

(Christ Ansgar/CLEPA) I think it would be easy to ask for some access to wp29.

(Chong, Hwansoo/NIER) I will check who I should contact and proceed with creating a folder.

[Conclusion]

The 1st meeting : 6th July (Thursday), 12:15 pm ~ 14:15 pm(cet.)

After this meeting, NIER will share the meeting schedule by email to all participants (main participants and observers)

The 2nd meeting : 18th July (Tuesday) or 20 July (Thursday), 12:15 pm ~ 14:15 pm(cet.)

At the first meeting (6th July), the leader will ask attendee to which of two days, 18th or 20 July, they prefer

August is summer vacation, so we will not have a meeting and start in September.

The first meeting in September will take place on September 5. After that, SG3 has a meeting on Thursday every two weeks, and the meeting duration will be determined at the group meeting.

The October meeting is a hybrid meeting in Brussels on 19 October, the meeting place can accommodate 25 people and will be shared by CLEPA or OICA to participants before October.

After the meeting, the meeting data and results are uploaded to SG3 folder on wiki.unece.org, and NIER asks IWG for access so that SG3 members can upload the data.

The minutes are prepared by NIER.

Agenda Item 4: 1) Leveling concept

[Discussion]

(Chong, Hwansoo/NIER) Let's start discussing the fourth item.

(Dettmer, Tina/OICA) Overall, I think this leveling concept itself is very helpful. I think this is very good, but if you define that you can't directly compare the results if you have different levels, it will be very helpful for discussion or work. And I think this level concept will be very helpful in distinguishing what data should be used for each question in the future, primary data or generic data.

(Bedenian, George/OICA) I totally agree. But one thing I want to add is that the level concept that we define will be summarized into something that can be understood equally by the SG3. I hope that each SG can work with the same content and the same understanding by cross-checking each other rather than defining different definitions and operating them separately.

(Christ Ansgar/CLEPA) I think it's very reasonable to apply the same level concept for SG 2 and 3, but for SG 4, I don't know. I think it can be applied a little differently. In the case of SG 4, it is a use phase, but since it is a completely different activity, it seems unnecessary to conduct a higher-level production-related analysis. So I think it's reasonable to organize all the activities for the production stage and coordinate each level. However, I think there will be room for different applications for each group. If we talk more about the leveling concept, it can be understood that each level eventually changes the degree of simplification of the evaluation. So there is no need to do a full analysis of all questions equally. That's why I thought it would help the way we do things. I think we're already heading toward simplifying some of the process. I think the starting point is to define what parts can be simplified and simplified at each level.

(Zhang, Tongzhu/CATARC) I explained about the level concept, and I thought this level concept could be applied in two scenarios. The first scenario is to compare different products. For example, I thought I could apply this level concept when comparing glass bottles and plastic bottles. At this time, it can be said that only secondary data can be used. The second scenario is to compare products from different companies. For example, the scenario is to compare the bottle of company A and the bottle of company B. You can use primary data here, and you can use secondary data. Secondary data can also be used because it is targeted data, but the result is unlikely to be better than using primary data. The level concept divided into four levels was presented in Korea. As far as I know, Europe recently announced regulations on batteries. So I wonder if you are using this level concept for the rule in Europe.

(Dettmer, Tina/OICA) It is currently not being used in Europe.

(Zhang, Tongzhu/CATARC) As far as I know, there are rules related to data quality related to battery rules. It seems to me that the rules related to data quality are similar to the concepts divided into these four levels, so I wonder if there is a correlation between the two.

(Dettmer, Tina/OICA) The level concept is not reflected in European battery regulations, as it has just been proposed. However, it is admitted that methodologies can have some similarities with each other. In the case of the current battery regulation, it is applied only to batteries, and compared to the level concept here, it seems that the middle level of level 3 to 4 is applied. OICA has already discussed how the vehicle model should be defined at each level. For example, discussions have already begun on how raw materials and such parts should be modeled. Then, after the presentation to the Korean side, I think we can talk about what Dr. Jang gave us about the ticket we provided at the meeting. Let's discuss that and then talk about the vehicle model.

(Zhang, Tongzhu/CATARC) It is the part that sets the boundaries of the system, and it seems possible to collect primary data at the production stage in the four leveling concepts. While it is relatively easy for OEMs to collect primary data in the production phase, it is not easy to collect primary data in other stages, such as the use phase. In the case of parts suppliers, I think it is right to collect primary data at the supply stage, and in other stages, the subject who can collect primary data corresponding to each stage should collect primary data. However, carbon footprints occur in multiple stages, so it's almost impossible for a single producer to collect all of the primary data. However, the subjects who can collect primary data at each stage collect primary data. I think it's also possible to aggregate it later and calculate the carbon footprint over the entire life cycle. I explained that the leveling concept can be used in two scenarios. The first scenario is to evaluate different products with glass bottles and plastic bottles, as I mentioned earlier. Primary data is not available here, only secondary data is available. The second scenario is to evaluate other companies' products. You can use secondary data here in addition to primary data. Primary data can be used, but it is difficult for producers to collect overall, so secondary data is applied first. But in terms of the carbon footprint, it's going to be worse than just using primary data.

(Dettmer, Tina/OICA) In the case of scenario 1, levels 1 and 2 can be applied, and in scenario 2, levels 3 and 4 seem to be connected.

(Zhang, Tongzhu/CATARC) The biggest feature of scenario 1 is that it uses only secondary data. Scenario 2, on the other hand, uses primary and secondary data together. If you compare internal combustion vehicles and electric vehicles, Scenario 1 can only use secondary data and primary data cannot be used. Scenario 2 can also compare internal combustion vehicles and electric vehicles produced by different companies. Here, primary and secondary data are used together. I keep emphasizing it, but primary and secondary data can be used together, and in the case of secondary data, the results will be worse than when I use only primary data. I think level 1, 2, 3, and 4 are all applicable in scenario 2.

(Dettmer, Tina/OICA) I understand that level 1 has a very small proportion of primary data, and I think the proportion of primary data increases as level 4 goes, right?

(Zhang, Tongzhu/CATARC) Level 1 contains less primary data, and Level 4 contains more primary data than Level 1.

(Dettmer, Tina/OICA) Do you have any ideas on how to use this secondary data? For example, I wonder how you're going to implement the punitive nature of this secondary data use, whether you're adding 10% of emissions or applying the worst-worst-case scenario.

(Zhang, Tongzhu/CATARC) I think it is important to define punitive data. If we use the default data as secondary data, we think about 10% more emissions to express them badly. Finding a secondary database is also an important time.

(Dettmer, Tina/OICA) I think this part is very important. It is common to use accurate data like primary data to produce poor numbers. So if you look at secondary data or generic data, the results are much more optimistic. So I think it's very important to implement punitive measures here. Only then can we find incentives for using primary data.

(Christ Ansgar/CLEPA) In conclusion, it is common for people to use secondary data because the current use of secondary data is not very punitive. To encourage the use of primary data, it is necessary to inform the extent to which it is punitive to use secondary data

(Chong, Hwansoo/NIER) Whether to define a level concept from a data perspective, such as which of the data you use, I think I can define a level concept and decide what data to write for each level.

(Dettmer, Tina/OICA) I think it's right to focus on the overall level concept and not just the data. But of course, one of the important features in the process is whether the data is primary or secondary. So it's not completely detachable, but I think it'll be too limited if we focus on the data side.

(Bedenian, George/OICA) I agree with Ansgar in the opinion that punishment is not so clear in the current database, so it should be reflected. But we're talking about this methodology. So I kind of wonder who's going to develop this database itself. I think this is beyond our mandate. I wonder if we should somehow include this in the discussion.

(Christ Ansgar/CLEPA) If secondary data is used a lot in a particular raw material and there's a kind of rule that gives a 10% penalty at that raw material production stage. I think it's within our role to make the rules. But it seems to be outside our role to give a certain number. I really liked Dr. Zhang's metaphor. You compared glass bottles and plastic bottles with internal combustion and electric cars. The question we are dealing with now seems to be in this middle stage. In particular, the battery regulations currently in Europe are located in the middle. I'm not currently at the stage of comparing batteries. For example, we're producing batteries, and we're looking at primary data. So I think it's about looking at the effect of the battery system on electric vehicles. I think looking at the effect of the battery itself in an electric car is about level 3. So, if comparing different types of cars is Level 1, then I'll compare the effects of batteries on electric cars with different battery specifications, In the future,

in order to be level 4, I think we should go by comparing the electric cars produced by about two companies as a whole. The average value of internal combustion vehicles and the average value of battery electric vehicles can be compared in this way, which is considered to be level 1. So you can't use primary data here, you're going to use secondary data. For example, you can't bring primary data to every next year and we can average it out and do it like this. So it's just to see the average level, so I think we're just going to use the secondary data. By comparing the results using the secondary data, I think it will proceed to compare the technology itself, such as the technology of the internal combustion vehicle or the battery technology. If you go down to the bottom level, you're going to select each electric car from BMW and Volkswagen, and you're going to look at the primary data. The secondary data here will not be very helpful for analysis. If we compare the primary data and find that lithium-ion batteries are much better than batteries made from other materials, we can use the primary data for vehicles with lithium-ion batteries, Vehicles using other materials can be calculated and compared using generic data, grouped into another form. So, I think the level concept is a matter of how much simplification will be made at each level. I think the most important thing in defining the levels is to decide which level to use to compare specific technologies or specific models.

(Dettmer, Tina/OICA) I'd like to give you an idea. I think we should consider the representation of the data. If it's a level 1 analysis, we'll compare different drive trains. When comparing internal combustion vehicles and electric vehicles, you need to use data that can reflect the characteristics that can represent general internal combustion vehicles. The same goes for electric cars. I think level 1 analysis can be successful only when you use concepts and data that can represent this technology. On the other hand, if you go to level 4, the key is to use data that can represent that model for a specific car model. That's why we keep talking about primary data. For example, I think I'll be more specific like comparing certain OEM fleets. And in the case of Level 2 and 3, I think it would be appropriate to compare one area. Put the battery technology at level 1 or 3 and analyze it. Then data at the local level is likely to go in.

(Christ Ansgar/CLEPA) What I felt was unclear about the level concept at the last IWG meeting may have different manageable scopes for each OEM. And even if Tier 1 is the same Tier 1 supplier, the integration level of the components may be different. Because of the problems that arise from these differences, I thought it might not be clear where it ends by level. I thought it would be a little clearer to divide it into system-level levels and major component-level levels. Because the system and the parts are well distinguished, regardless of who is OEM, tier 1, or 2, I thought it would be clear to distinguish them from each other. So I thought about using the system itself and the parts itself as a dividing point.

(Dettmer, Tina/OICA) ACEA and OICA have already begun discussing how vehicle models should be configured at each level. And we are reflecting what should be included in the carbon footprint of raw materials and what should be analyzed at the supply chain level. I am thinking about how to model the OEM manufacturing process as well. And one of the most important things is, if you've decarbonized the automotive industry, whether it's manufacturers or suppliers, or if you've made progress in reducing carbon, how can you reflect that in the results. I think that's also a very important question. And when we can secure data at the regional level is also very important right now.

(Dettmer, Tina/OICA) I would like to explain it with two examples. I will explain the vehicle model and the OEM manufacturing process using two examples. If you look at the vehicle model, if you analyze it at level 1, you will mainly use generic data. For example, if you compare drive trains by OEM, you can see what the composition of raw materials is by looking at previous research or paper materials, such as comparing glass bottles and plastic bottles. In general, in electric vehicles, it is Level 1 to model by reflecting average data while looking at this kind of data, such as this much steel and this much aluminum, and a little more steel in internal combustion vehicles. When the level goes up, you analyze it by looking at more accurate data. For example, if you go in looking at CMDS, you'll find much more accurate data, you'll find data on all the parts, you'll find data on the raw material management system, and you'll find detailed data on how the parts and raw materials are combined. So through these data, I think we can analyze how much steel materials should be aggregated. So, in the end, when you set the level, you can distinguish between how accurate the data and how much individual data you need. Then, I will explain once again using the OEM manufacturing process as an example. At Level 1, we'll be using generic information here as well. You can look at the CBP report published by OEMs and the emissions of one or two companies to see the amount of energy demand for the vehicle. And level 2 is almost the same as what we're doing right now. At OEM, each task force will monitor and report to the authorities how much carbon emissions are being emitted from their factories. That level of data is available at Level 2. In Level 3, we started using primary data on OEM's hotspot process in Europe. I think level 3 corresponds to that level. In the case of paint shops and final assemblies, the most power and energy are consumed here, so we need to use more accurate data and analyze them. In addition, we are not looking into how power is allocated to each company in detail. Because sometimes the factories are in China, sometimes they're in Germany, sometimes they're scattered like this. In this decentralized production, level 4 is to analyze how strategies and energy use are allocated, from factories to the creation of finished products.

(Zhang, Tongzhu/CATARC) I think the level concept is meaningful. One question is that it is impossible to compare different levels. For example, if we're going to compare two companies and Company A has a result that corresponds to Level 2 and Company B has a result that corresponds to Level 3. These two results are not directly comparable. But if our target is to compare the products of these two companies, then how can we solve this problem.

(Christ Ansgar/CLEPA) I wonder how the expression "Generic Footprint of Level 1" in the currently developed table and the raw material footprint of the global secondary data in Level 2 are different.

(Bedenian, George/OICA) As for generics, if it's a generic footprint that focuses on the data in research or literature, as explained earlier, The global secondary data corresponding to level 2 is much more accurate than that, and I think it will be more specific data.

(Dettmer, Tina/OICA) In the case of a hybrid at Level 3, it is named Hybrid because it partially contains primary data.

(Chong, Hwansoo/NIER) I'd like you to give me an example to improve my understanding of the hotspot process.

(Dettmer, Tina/OICA) For example, the hotspot process can be a paint shop. This could be the final assembly step. And OEM vertical integration can also go into the hotspot process. If we produce our own fuel cells, it can go into the hotspot process. There are parts where OEM does it on its own, but there are cases where it is purchased externally, so it is classified as a hotspot process to proceed on its own.

(Chong, Hwansoo/NIER) Usually, we say Scope 1, 2, 3, but where does Scope 3 correspond.

(Dettmer, Tina/OICA) In the second item, the carbon footprint of the raw material is mentioned in scope 3. It's only partially included. If we expand this table and make it, I think if we add items in the manufacturing process of the supplier, we will deal with scope 3. But we've only got basic ideas, so we've focused on how to model the various details and how to model the activities that are happening in the supply chain. Only OEM is in here, so it doesn't seem like there's anything about scope 3, but I mainly dealt with items that OEM can control. Scope 3 is always outside the control of the OEM, so I don't think it's fully reflected in this table. If we add some of the supplier's items, I think some of them will be reflected. I think scope 3 is less reflected because this table is centered on OICA.

(Chong, Hwansoo/NIER) How about putting scopes for each level in the table?

(Christ Ansgar/CLEPA) I think it would be difficult. The scope is different for each OEM, so I think it would be difficult to match it and organize it in the first place. As we talked about earlier, some OEMs produce fuel cells themselves, and some OEMs buy them and use them. Then, the scopes are completely different from each other. That's why I told you earlier that it would be easier to distinguish by system or parts. In particular, this table focuses on the hotspot process. As you can see here, it's a little easier to compare if you compare only with the battery pack, but there are too many variables to work by just putting the scope of the OEM and matching it to the level.

(Bedenian, George/OICA) This table deals with the hotspot process. But in the case of hotspots, you have to apply it separately. It's a completely different matter because it depends on whether the OEM is producing it or not. If you look at scope 1, 2, and 3, I think it will be a more important question whether to use primary or secondary data here rather than matching this level.

(Dettmer, Tina/OICA) The discussion is so complicated that I think we need to make this table in more detail. When it comes to how to compare, as Dr. Zhang said earlier, there may be companies that have asked all companies to conduct a level 3 evaluation, but only level 2 has been conducted. Like the penalty for the use of secondary data that was mentioned earlier, companies that proceeded with level 2 here can also consider giving penalties like adding some percentages or something like this way. As

we all know, even if the evaluation is conducted with the same car, the number is bound to be higher at level 4 when it is level 1 and level 4. Because we're dealing with much more accurate and in-depth data. So, I think it's an option to consider, such as giving additional penalties for each level, as we talked about data earlier.

(Christ Ansgar/CLEPA) If you refer to a lot of existing literature, the results are more positive if you use secondary data. This is because research is often conducted focusing on the positive aspects when previous studies are conducted, so when looking at existing literature data, most secondary data are often advantageous in terms of CO2 emissions.

(Zhang, Tongzhu/CATARC) China is working a lot on making standards. For critical parts and raw materials, by default, companies are asking for data on their carbon footprint. So, several entities are working on building a database. This database is used to accumulate primary data. For example, we created the industrial carbon emission system in China. But through this, I'm collecting primary data from OEMs and creating a database. I'm thinking a lot about how to activate this part because it's important how much primary data are measured by OEMs. That's why there's a way to apply penalties to secondary data. That's why punitive penalties are being introduced as part of an incentive for OEMs to use primary data more actively. And if you use secondary data to calculate the carbon footprint, it's punitive. So, we're thinking about making sure that the results are not as good as when we used primary data.

Taking batteries as an example, battery producers are setting standards for calculating their own carbon emissions. We're calculating emissions according to this standard. In addition, according to scope 2, battery manufacturers are required to collect primary data related to batteries. The same goes for the engine. Engine manufacturers have established standards for calculating the total carbon emissions from engine manufacturing, and primary data has been collected on its own. And regarding the abolition of vehicles, companies in charge of EOL are now creating emission standards and collecting primary data. In this way, each subject is making data. Battery manufacturers, engine manufacturers, and organizations that manage EOL calculate their carbon footprint according to their own standards. And when we get the primary data that we can collect, we're looking at the primary data every step of the way in the entire system. As a result, it is now laying the groundwork for proceeding with the full LCA.

(Bedenian, George/OICA) Do each manufacturer calculate their carbon footprint in their own way and report the results?

(Zhang, Tongzhu/CATARC) It's not done by each company, but it's a way in which battery manufacturers come up with one standard and calculate it, and engine manufacturers come up with one standard and calculate it. All industries have incentives related to carbon neutrality because carbon neutrality is currently active in China. So each company has its own standards, and they measure their carbon footprint according to those standards. So in the future, we believe that in the end, each field will be able to calculate its own carbon footprint. And I think level 3 can play a very important role.

We believe that SG3 can do it as an activity that encourages us to calculate carbon footprints on its own.

(Christ Ansgar/CLEPA) I don't think we are now changing the leveling concept itself, but I think we are having a discussion to define how to interpret this leveling concept or how it's used for each level. There seems to be a difference between levels of data integration and information integration, whether it's simplified or complex. There is a part that I am confused about, so I want to understand and proceed. For example, even if we proceed with level 4, I would like to ask you how to deal with the information that we can't get right now. If you don't have primary data, you're going to use a different kind of information to fill that part anyway, and that could be secondary data. I'm wondering if this could also be part of the activity we're trying to apply this level. In my opinion, whether it's primary data or state data, how to collect and utilize the data seems to be a very important issue, so I asked you all.

(Chong, Hwansoo/NIER) In fact, it is expected that no company has all the data at level 4. I think it makes sense to consider the punitive factors mentioned earlier about writing secondary data at level 4. However, applying this punitive factor is likely to have to be applied after stabilizing after a certain period of time. In addition, it would be good to set a certain period of time to use primary data to a certain extent during this period, and to use primary data to a certain extent in the next period.

(Christ Ansgar/CLEPA) In principle, it seems that all companies should request primary data to calculate their carbon footprint and share supply chain information. So I think the activities of upstream companies that calculate carbon footprints using primary data at all levels are ideal. There may be data that cannot be acquired like this. In that case, we might have to use some secondary data. As you just said, one company has this much more data than the other, and I don't think this is going to happen that much. So I think it will be difficult to determine the extent and extent of the primary data. So the current situation is that we're asking to use that data, but I don't think it's at a stage where we can force it now.

(Dettmer, Tina/OICA) Currently, the learning curve must also be considered because the process of applying it while learning is necessary. And since it takes some time for the guidelines you're writing to be completed, you need time to reflect additional individual activities and opinions that will be carried out in the meantime. If you ask me to do level 4 right now, it's impossible right now. It's impossible to fully proceed with level 4, and various activities and progress are being made, and if you don't reflect this at all and just move on to level 4, there is a possibility that a lot of things have been improved in the future but not reflected. In addition, various improvement activities are being carried out, and I think it is necessary to see how the results actually come out and reflect them.

(Christ Ansgar/CLEPA) Not only OEM but also companies and suppliers related to raw material production have set decarbonization targets, and are currently carrying out decarbonization initiatives based on primary data. And we're also predicting that primary data will be available sooner than we're predicting.

(Christ Ansgar/CLEPA) I think we can take the concept of these four levels as it is. However, the main areas of discussion are Level 1 and Level 4. In addition, in the case of Level 3, we talked about how to do data that can reflect differences between regions in terms of data. And if the most specific difference between Level 3 and Level 4, I remember that the biggest difference in Level 3 was to include data that reflected the differences between the regions. If you compare the differences over the average data at level 1, I understand that Level 2 has a little more in-depth analysis than that, and it compares and analyzes how each vehicle decarbonizes. If you agree with the difference between levels, let's stop organizing the levels. I think the next question follows the question of what data is used when analyzing each level. When I always compare only the average, I naturally use secondary data. In addition, primary data was naturally used to find and compare variables in more detail.

(Dettmer, Tina/OICA) I want to add one more thing. Regarding OEM, there may be differences by OEM from level 3, and I think it is different from level 3. The measures related to decarbonization taken by individual OEMs can be reflected from level 3. I would like to add that the difference between level 2 and level 3 can be reflected as the biggest point that distinguishes level 3 from level 2. It seems necessary to use regional data at level 3 to distinguish which region data this data is, whether differences are reflected by region, and whether differences by OEM are reflected.

(Christ Ansgar/CLEPA) I think it would be good to write down the differences by OEM and region in level 3. Level 4 can be classified as seeing the difference between each vehicle.

(Kwon, Sangil/NIER) It shows what data is used for each level for the OEM manufacturing process, and I wonder if parts suppliers can come out in this form, such as what data can be used according to this level.

(Dettmer, Tina/OICA) That's right. On the left side of the OEM, there are items related to the carbon footprint by raw material. If you add a little more detail to that, I think it can be a supplier's data.

(Zhang, Tongzhu/CATARC) If you want to compare the carbon emissions of OEMs at level 2, you can compare the gate-to-gate emissions that OEMs have. And at the same time, I think we need to consider the carbon footprint in the supply chain. It is impossible to compare Level 2 and Level 3. Taking Guangzhou's recent announcement as an example, there has been a policy that incentives OEM to reduce carbon emissions. At that time, we decided to compare gate-to-gate levels when we were comparing OEM to reduce carbon emissions. However, this policy did not take into account the carbon emissions from cradle-to-gate. And we didn't take into account carbon emissions at the use or EOL stage. And if you want to compare carbon emissions from a Level 3 supplier to an OEM, you don't need to calculate the carbon emissions only by the cradle-to-gate, and you don't need to consider emissions at the use or EOL stage. Therefore, using secondary data does not reflect the carbon reduction efforts of OEM or suppliers, so if you want to compare products from different companies, you should consider primary data under OEM's control.

(Dettmer, Tina/OICA) If you want to use the primary data, you need a fore-ground system in the production part, and in the use part, the only amount of electricity that can be included in the production is the amount of electricity in the consumption stage. I think we can reflect how much electricity was used per 100km and how much fuel was consumed. For the rest, we have no choice but to use generic data, because it's too vast to see all the rest as primary data.

Here, it would be good to summarize the contents we want to compare by level. To help you understand, I will explain by taking an example. Let me explain how each level is compared. You can say that level 1 compares the general concepts. For example, battery electric vehicles and internal combustion vehicles are comparing technologies themselves. We can do this analysis to judge whether it is in Korea's interest to introduce electric vehicles in France or Korea. If you compare the battery car and the internal combustion car themselves to level one, Level 2 is also comparing general concepts, but it's comparing one of the most representative cars in existence. For example, whether it is a mass-produced vehicle or an average vehicle on the market, it is Level 2 to analyze two representative cars, electric and internal combustion vehicles. From Level 3, enter the level by OEM. Let me tell you two examples, Hyundai and Volkswagen. To prove the assumption that Hyundai's electric cars are more eco-friendly than Volkswagen's electric cars, it may now be level three to make a comparison. Therefore, it is Level 3 to compare Hyundai's overall electric vehicle models and all Volkswagen's electric vehicle models in this integrated manner. Level 4 is a stage where even car models are compared in detail. For example, Hyundai IONIC and Volkswagen ID 3, the comparison is now level 4. You can put this table as a starting point. We don't always compare two things. When you do LCA, you don't always compare it, but when someone needs some guidelines, when you want to compare this car with another car, you know you have to do a level 4 analysis. Or you can just use this data to show that if you want to make a general comparison of concepts, you can proceed with Level 1 or 2.

(Christ Ansgar/CLEPA) Level 4 is a model-specific comparison of individual vehicles. First of all, IONIC and ID 3 are examples here. In this case, if it's related to production, we have to use the primary data. In the case of sweet things to use or EOL, it's different, but when it comes to production, it's meaningless if you don't compare primary data. For Level 3, the original data for Hyundai and Volkswagen is basically used, but for carbon footprints, a more simplified analysis is available.

(Dettmer, Tina/OICA) I don't think it's fair to use only a simplified analysis of the carbon footprint. It's possible that Hyundai and Volkswagen have implemented more decarbonization measures than other companies. In this case, you would want to make sure that the measures they have implemented are reflected in the decarbonization process figures. In that case, I think it is fair to use primary data to reflect it. Especially in the case of the hotspot process, it is necessary to reflect it, especially through primary data.

(Chong, Hwansoo/NIER) Then we should use primary data for the supply chain of level 4 as well?

(Dettmer, Tina/OICA) However, if there is a place in the supply chain where primary data is not available, I think we should consider giving the penalty that Dr. Zhang mentioned and introduce it,

because the secondary data shows less greenhouse gas emissions. Level 3 may have a difficulty in distinguishing the hotspot process that each OEM has, but it's not as difficult as you think because it's very clear in the supply chain. Battery, steel, and aluminum are clearly defined. So in the case of processes that have a big impact on carbon emissions, I think we can organize it by using primary data and other factors that make secondary data available. In fact, I think it will be possible even if we set a certain limit for the proportion. For example, if you use more than 50% of primary data, you can set a lower limit like this, such as proving it with primary data, but I think it will be more complicated. I think it's a much easier way to operate it by allowing only the hotspot process to be applied separately.

Most OEMs are doing hotspot analysis. And I think we can collect the results and table them and present them to you. There are already many hotspot processes defined that we can use as a starting point. You can think of batteries, steel parts, aluminum parts, and additional electronic components and tires. If I summarize it in a table and give you a presentation, you can use it as a starting point to continue the process of lowering the definition of the hotspot process.

It's getting more complicated, so I hope we can expand the table and discuss it by filling in the blanks. Starting with the items that can be compared for each level, I will also summarize what information is needed and what the fore-ground system and back-ground system of that level are. Also, I hope you can organize whether it is a global data point or still a regional level, and make a table by recording whether it will reflect decarbonization measures or not. While organizing like this, I think about what elements we need to define, so sporadic things came to mind, so I hope we can organize them systematically. When modeling, I think we need to talk about modeling accuracy, and when we make a working group, when we make a group by raw material, we need to think about how much detail we are going to divide the group. There are five types of steel alone, there are alloys, and the types of raw materials should be classified, but it seems that they should be grouped together by region. I think it would be faster for us to discuss it systematically.

Although we are sg defining the vehicle model, coordination and coordination with the activities of adding sg are always necessary with respect to raw materials. It is a discussion about that.

(Christ Ansgar/CLEPA) In particular, I think it's most important to coordinate the definition of SG3 with SG2. If the definition doesn't match a little there, I think there will be continuous mismatches in my work.

If you show the table to other participants in a completed form as much as possible, there will be additional parts that they can discuss there, but I think it would be better for us to make as much information as possible.

(Dettmer, Tina/OICA) Level 1 will be described by looking for average data such as what substances are in general concept vehicles through existing research or literature data, and then looking at secondary data to find carbon emission data in general.

I think the biggest problem is that the higher the level 1 to 4, the more necessary the harmony between the region and the subject is. If you look at Level 1 activities, there are many activities that do not need to be adjusted. So there could be situations where no one can say you're making the wrong comparison. I think the need to adjust their own calculations is significantly lower than level 3 or level 4. I wish I

had it, but I don't think it's necessary. So I think the third or fourth stage really needs coordination between regions, but I don't think it's that necessary in the first stage.

(Christ Ansgar/CLEPA) For Level 1, I think it's okay to merge OEM and supply chain cells. I think the same content can be included. I would like to say that we can actually compare with certain levels with this table. I don't think I need to elaborate too much.

(Dettmer, Tina/OICA) I'd like to ask your opinion. Now I want to ask you the question of whether I should leave the comparison I wrote on the left. Because we're talking about vehicle modeling. Finally, I'll write a similar story. If there is data from research institutes or government agencies, I will calculate it, but if there is no data from OEMs, I will find and use the data like this. Do you agree to put the comparison to the left? What do you think?

(Christ Ansgar/CLEPA) Here you can look at comparability and get hints about what research data people should look for. I think we'd better just leave it.

(Dettmer, Tina/OICA) In the case of commercial vehicles, there are cases where other systems other than CNDS are used, so I wanted to add them, but they are asking me to use only springs. It's pretty clear what's going on, but I think that's enough.

Should I leave it like this or add some more?

(Christ Ansgar/CLEPA) Level 4 does not analyze raw materials, so it will be more useful if we add a raw material information system at another level.

(Dettmer, Tina/OICA) There are cases where each country uses a different system, not IMDS, so I'll change the order a little and use the expression information system first, and then I'll write CMDS and IMDS.

Now let's just model the supply.

(Dettmer, Tina/OICA) The first line of this shows how much carbon emissions are typically generated per kilogram of tolerance weight, and I think all three can be applied equally.

(Christ Ansgar/CLEPA) In the case of the second level 2, it seems that it can be applied to both OEM and supply chain. Global secondary data are now used for carbon emissions by raw material.

(Dettmer, Tina/OICA) I kind of like the expression "global" here. In Europe, oems usually calculate with European data. So it's European data rather than global data. So I wonder if I can express this as global.

I think level 2 has two options.

I think it's time to add a column to the expression representation. However, the column in the back is regionalization, and there is an item related to regional data, so it is too overlapping. Now, I think it would be better to get rid of regionalization and leave a representation column behind. I think this is a more general expression.

The concept of vehicle curve weight on the left is to see how the ingredients are blended when making a vehicle. So when you make a car, you generally see the weight of steel and aluminum as a percentage, and for example, if you think that the car weighs two tons on average, that's the curve weight. Multiply by how many footprints per kilogram of vehicle curve weight to calculate carbon emissions from the entire supply chain.

(Chong, Hwansoo/NIER) Europe uses data from Europe, the United States from the United States, and Korea from Korea, but I am also not sure if I can use the word global here.

(Dettmer, Tina/OICA) Of course, Europe will use European regional data. Because Europe can use the daker for free.

(Christ Ansgar/CLEPA) I thought about whether it was right to merge all three cells into Level 2. I'm not sure if it's okay to put the three together and write the same thing because I don't know how other oems will proceed with the production process. If we count various things, there is also a fear of double counting. And when modeling in relation to the hot spa process, the paint shop models the hot spa process in the painting and final assembly stage, and I wonder if it can now reflect the difference by OEM. Level 3 when we talk about hotspots.

(Dettmer, Tina/OICA) Regarding the representation column, we added individual supply chain elements at level 4. And as for level 3, I was thinking about whether I should add this, but in the case of hotspots, I'll add that I need to consider individual supply chains. For example, it includes information such as where countries in the European Union import steel and where production takes place among countries in the European Union.

(Bedenian, George/OICA) Going back to level two, putting hotspots in level two can include hotspots that require generic calculations. But even if you need a little more detailed calculation here, you shouldn't be as detailed as level 3. So I think we need to distinguish the boundaries well. If you put too much detail into the hotspot process at level 2, there will be no difference from level 3.

(Chong, Hwansoo/NIER) This is a fundamental question, can there be generic data in hotspots?

(Dettmer, Tina/OICA) This data set requires the development of the data set by oem and individual suppliers in the hotspot process. For example, If we take a battery as an example, we can use a generic data set, but if we want to be more specific about the battery type, we have to look at the primary data.

In the case of level 3, you have to look at the battery according to the specific hotspot process you have, so there is a difference. At Level 4, OEMs are likely to be based on the information and knowledge they have. we'll try to write it as general as possible without making it complicated.

Let's take a look at level 3 of supply modeling. I wrote that the primary data is partially used.

We would like to write primary data in hotspots and secondary data for the rest.

I wrote it in two. For 1 and 2, we just apply the average value, and for the OEM hotspot process, we wrote two things in and/or.

(Christ Ansgar/CLEPA) Except for hotspots, raw materials and parts seem to be applied the same as level 2. In the end, the average value is also a value from their average production process.

Wouldn't it be the same for OEM?

(Dettmer, Tina/OICA) Since the values for common hotspots and those for hotspots at the production site are different, they should be written separately like this.

(Christ Ansgar/CLEPA) Why differentiate between hotspots in its own production process and hotspots in the supply chain?

(Dettmer, Tina/OICA) If we don't distinguish it, the hotspot for our own production process will not be revealed, so we have to describe it separately.

(Christ Ansgar/CLEPA) Data on emissions will also be included in OEM Scope 1 and 2, and if primary data is used separately for the hotspot process, double counting issues may arise.

(Dettmer, Tina/OICA) It has already been managing hotspots separately for more than 10 years. It is not a matter of distinction in terms of production. Managing primary data separately for hotspots here has been done in terms of process management rather than lca, but for this reason, I think it is not appropriate to view this data only as generic data.

I think we understand each other a little differently, so we'll leave it as it is and talk about it tomorrow or we'll discuss it separately later.

(Chong, Hwansoo/NIER) I don't think I understand this concept of hotspot because it's not clear to me.

(Dettmer, Tina/OICA) In my opinion, if the suppliers are the manufacturers of the components, they are very likely to use the same hotspot process. In the end, we call the energy-intensive process or the process of using a specific material that requires a lot of energy a hotspot process, so suppliers that produce the same components and use the same process will not have much difference in the hotspot process. This is similar to the OEM. In the end, there's a process where a lot of co2 emissions are allocated, for example, battery production. So in the end, I know that OEMs have similar hotspot processes. I think it'll be easier for Clapper and OICA to understand each other first. I think I can give you a more detailed example, so I will explain it separately after consultation between CLEPA and OICA.

(Christ Ansgar/CLEPA) I want to modify level 4 of supply chain modeling. If you look here, it says that it is a raw material based on local or primary data. So it's not clear whether this is the right expression for the raw material or just the product, so I'd like you to revise that part.

(Dettmer, Tina/OICA) Let's change the expression to the base primary data of the product, not regional data.

I think it's good to leave it as a footprint of parts and raw materials. This doesn't make sense either because we always start with raw materials.

(Kwon, Sangil/NIER) I think the material footprint is already included in the part footprint.

(Dettmer, Tina/OICA) In some cases, the supply chain directly supplies raw materials, starts with raw materials, leads to parts later, and sometimes purchases raw materials rather than producing raw materials directly, and sometimes purchases parts themselves. So I used two cases separately, so I used the parts and the raw materials separately.

I buy a lot of steel for the press. Now that could also be an example.

(Chong, Hwansoo/NIER) It might be right that steel is not a product but a raw material.

(Dettmer, Tina/OICA) I think it would be good to make a glossary together. I think it is necessary to make a glossary that can distinguish the raw materials and products and unify the terms with each other. I suggested that it is the same included in the empty blank now. In the case of suppliers, I think they've already been discussed in the supply chain. I think it's reflected in that, so I think you can write "included."

(Bedenian, George/OICA) I wrote "Included" in several places. Can you understand what this means at a glance?

(Chong, Hwansoo/NIER) We don't need an explanation so far as we discuss the contents of the section above here, but it seems that people who are seeing it for the first time need an additional explanation so that they can understand it.

(Dettmer, Tina/OICA) I think it would be good to add an additional understandable explanation for these terms.

I've looked at the carbon reduction efforts in levels one-half and three-quarters of data usage. Level 2 may include carbon reduction efforts of oem. So I marked primary data in green, secondary data in gray, and oem's carbon emission reduction efforts in primary data in green. And management in the supply chain was included, indicating carbon emission reduction efforts as primary data. In the case of level 4, it is indicated that all primary data are used in the overall process.

(Christ Ansgar/CLEPA) As far as I know, there was no use of primary data in Level 2.

(Dettmer, Tina/OICA) It indicated that secondary data was used, including generic data for the production process.

(Zhang, Tongzhu/CATARC) How can we reflect the efforts of oem to reduce carbon emissions at level 4? How does level 4 reflect where OEM uses cleaner energy to produce cars?

(Dettmer, Tina/OICA) I think the inclusion of OEM's perspective is from level 3. Level 2 is in the general concept comparison stage when looking at the comparison item table. However, the difference from Level 1 is that it compares concepts around vehicles in the actual market. So levels 1 and 2 are at the stage before the OEM perspective is included.

(Zhang, Tongzhu/CATARC) The initial proposal included efforts to reduce carbon emissions of OEM in level 2.

(Christ Ansgar/CLEPA) That's right, according to the definition on the left, but I think we can adjust to what we've discussed so far because we're still at the stage of defining concepts. I think we can move the definition of the part related to OEM to level 3.

There is data on the physical shape of the car in the data set, there is data on the process, there is data on the process of making the car shape using materials, and there is data on the background system. In

the case of this background system, you can think of something like a power mix. Primary data is not always available here. It is the background system that needs to reflect generic data to some extent. I don't think the power consumption patterns we use can directly affect the background system. Because the background system is too vast. There will be a time when it will be possible to purchase directly later, and it will have a direct impact on the background system

(Dettmer, Tina/OICA) It doesn't work overnight. However, I think it may be possible in some regions, even if it is not universal worldwide. This is because each country has a different situation. The important point in a background system is that when we do calculations, we are always within the influence of secondary data. Since there are many data sets, sometimes I think of this data set when I look at the table, and I'm confused because I think about another data set in other places.

[Conclusion]

The following table briefly compares how each level differs depending on vehicle modeling, data information characteristics that can be used for evaluation, supply chain modeling, OEM manufacturing process, supplier manufacturing process, and individual decarbonisation measures.

SUPPLY CHAIN & PRODUCTION	Possible Comparison	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)	Global average / regional	global secondary data material footprints (incl. generic information for production processes)			none
Level 3	e.g. OEM A's BEV fleet Europe vs. OEM B's BEV fleet Europe	BOM & Material information system (CMDS / IMDS ³⁾ „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

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 difference between Level 1 & 2 and 3 & 4 is whether OEM-related data is included. If OEM-related data is included in the evaluation, it is Level 3 & 4, and if not, it is 1 & 2. Level 1 & 2 is a general concept comparison stage, and the difference between level 2 and level 1 is that carbon emission is evaluated for a model sold in the world with the level 2. Also, if full primary data is used, it is level 4, and if some secondary data is used, it is level 3.

- Vehicle modelling]

Level 1 finds average data, such as some materials in general vehicles, through existing research or literature data, and then finds secondary data to evaluate carbon emission. Level 4 does not analyze raw materials separately because carbon emission analysis is conducted for each part. In level 2 and level 3, since raw materials are analyzed differently from level 4, it is useful to use a material information system, and the material information system used by each country may be different, so CMDS and IMDS are written and clearly displayed. In particular, in Level 3, hotspot information for each part was partially added.

- Supply chain modelling

Level 1 is the amount of carbon emissions per kg for the vehicle's curb weight, and it seems that it can be applied in common to all supply chain modeling, OEM manufacturing process, and supplier manufacturing process.

In Level 2, carbon emissions by raw material are calculated using global secondary data, which can be applied to both supply chain modeling, OEM manufacturing process, and supplier manufacturing process. It seems that European companies will use European secondary data, and China and Korea will use their respective countries' secondary data, but it is questionable whether the word "global" can be used. Furthermore, the supply chain modeling, OEM manufacturing process, and supplier manufacturing process are all integrated into "global secondary data material footprints", and it is

questionable and worrisome that it is appropriate to use them in a situation where each OEM's models are unknown.

In Level 3, "Regional" can be explained, for instance, by where EU countries import steel and where it is produced among EU countries. Since hotspot needs to consider individual supply chains, it would be good to use primary data for hotspot and secondary data for the rest.

Level 4 includes all supply chains.

- OEM/Supplier manufacturing processes

In Level 3, OEM Scope 1 & 2 emissions may include data related to hotspot, so if primary data is used in the hotspot process, it is necessary to check because there is a risk of duplicate calculations. In addition, primary data management for these hotspots has been managed by OEMs for a long time in terms of process management, so it is difficult to see them as generic data of LEVEL 1 & 2.

In some cases, the supply chain directly produces and supplies raw materials, manufactures and supplies parts starting from raw materials, purchases and supplies raw materials without producing raw materials, and purchases and supplies parts, so level 4 requires both part and material.

Agenda Item 4: 2) Initial target level of SG3

[Discussion]

(Christ Ansgar/CLEPA) I think we need to adopt a method that harmonizes globally in approaching levels.

Level 1 is the level that everyone can do. There is not much need for coordination and cooperation at the global level.

Level 2 is basically the same. So now it seems that it is Level 3 and 4 that need coordination and cooperation at the global level.

Basically, there can be multiple parts across the supply chain at level 3. The processes that we define as hotspots are also included. But at level 3 or 4, no matter where the part goes, we need to find the carbon footprint of the product and track it down. So I think I should prioritize level 3 or higher.

I don't think it matters much whether it's level 3 or 4, and I think the way we need it is the same after all. In particular, in the case of hotspots, it is thought that there will be no significant difference if handled in the same way as level 4.

(Lim, Yunsung/NIER) Each country has a regulation called the greenhouse gas emission allowance

standard, and if it is included, it is thought that it should be linked to the current regulation. Since Level 4 does LCA for each individual vehicle, considering the average greenhouse gas emissions, and Level 3 of "Possible comparison" targets individual vehicles among Levels 3 and 4, so I think Level 3 should be more meaningful.

(Christ Ansgar/CLEPA) I agree with what you said. I think we need to talk about methodology. Regardless of which method we choose, I think each government can decide how to apply it and whether to proceed according to level 3 according to the purpose.

(Zhang, Tongzhu/CATARC) I heard from Professor Song, who first proposed the concept of level, that it is very difficult to collect data about the entire life cycle. So there is an additional work we need to do regarding level 2 3 4. Level 1 is still easy to achieve, and I think Level 2 will be achieved soon. Level 3 seems to be possible in the distant future and level 4 is our final goal. However, I think the timing may vary a little depending on how useful primary data collection becomes. If you set your initial target to level 4, I think there's no room for level 3 or 2.

I just took a quick slide. As I mentioned in the case of Guangzhou, there has been a policy to encourage the use of vehicles that use less energy. Here we have a policy standard that provides subsidies to car manufacturers according to this standard. This only reflects the car assembly process. This 60kg is also a target for car assembly. This is because it is now easier for oem to collect primary data that they control. In my opinion, based on the first proposed definition, I think it is an activity that corresponds to level 2.

(Dettmer, Tina/OICA) If I lose 60kg compared to the previous year, will the government provide subsidies?

(Zhang, Tongzhu/CATARC) As shown here, carbon emissions are generated through four processes to produce one car in the previous year. On that basis, we subsidize emissions less than that.

Since China thought it was relatively easy to collect primary data from OEMs in the manufacturing process, standards related to OEMs were established. Currently, China believes that it is difficult to collect the process's priority data regarding suppliers. That's why I started first about OEM.

(Christ Ansgar/CLEPA) Considering the four core processes as hotspot processes, it seems to correspond to level 3.

(Bedenian, George/OICA) It may be questionable whether these processes are hotspots. Because there are four processes: press, welding, painting, and assembly, which you mentioned earlier seems to be 60kg considering only the assembly process.

(Zhang, Tongzhu/CATARC) There would be a gap because some OEMs carry out four processes and

some carry out three processes. So it's not level 3 because it applies the average value. The calculation can be divided into vehicles produced for co2 emissions emitted by a company over a year.

(Dettmer, Tina/OICA) Once the calculation method is simple, if one other point is subsidized, OEMs will outsource more to the parts supplier. When OEMs produce fuel cells on their own, it becomes quite difficult to adjust 60kg because it corresponds to OEM scope 1 and 2, and there is a possibility that they will be outsourced to match.

(Zhang, Tongzhu/CATARC) Currently, there are many car manufacturers in Gwangju, and most companies mainly use energy generated by nuclear power and solar power.

(Dettmer, Tina/OICA) In the case of generic scope 1 and 2, emissions are included, so it does not matter much, but the difficult part is that if scope 1 and 2 are divided by the number of products, it is difficult for different OEMs to reflect activities related to vehicle manufacturing. As mentioned earlier, the level of vertical integration for each OEM is also different, so it may not be fair. So I will delete that OEM scope 1 is the average value. Here, in the process of dividing into production units, it seems that the description of what was included in the process should be shared.

I wonder where we need to decide to start one level. When discussing in OICA or ACEA, I think it was the most efficient when discussing all four levels together, focusing on the big picture. For example, if you decide to start with Level 3, you continue to talk about where the boundary with Level 2 is broken and where the boundary with Level 4 is broken. So rather than that, I think it is more effective to proceed with four levels at the same time. As we all know, level 1 is the easiest and level 4 is the most complicated, and I think we should set 2 and 3 through various discussions somewhere in the meantime. At this rate, I don't think it's too much to discuss all four levels.

(Christ Ansgar/CLEPA) In fact, I think it will be more important to secure more primary data than from which level to start. Basically, no matter what level you are at, if you don't have primary data on carbon emissions, you can't eventually start collecting data. So I think it's more important to secure primary data corresponding to that level.

It doesn't seem to matter if it's primary data on the OEM side or primary data on the vendor side. It is necessary to secure as much primary data as possible by applying the same rules.

(Chong, Hwansoo/NIER) If discussions are conducted at four levels at the same time, it will be difficult to set system boundaries considering not only SG3 but also other SGs.

(Dettmer, Tina/OICA) In all cases, the system boundaries are, after all, the same. So I don't think it'll be a big problem.

(Chong, Hwansoo/NIER) If that's right, it's a question that I thought about from the beginning, and I wonder if I need to choose one of the four.

(Bedenian, George/OICA) Additionally, the system boundaries are the same everywhere. Rather, there is a difference in whether primary data or secondary data are used for each level. So it's good to aim for level 4, but first of all, we need to develop a methodology to proceed with the evaluation to level 4. Right now, even if I want to do level 4, I can't help but have no data to fulfill it.

(Christ Ansgar/CLEPA) That's why we continue to talk about the importance of collecting primary data and securing it.

(Chong, Hwansoo/NIER) Considering that the contents of our initial target continue to be modified as other methods continue to be modified, it is also necessary to view the initial target as level 4 we currently define and put level 2 and level 3 up to a certain point as an intermediate step to reach it.

(Christ Ansgar/CLEPA) Then I'd like to ask you a question out of curiosity. Are you thinking about applying different methods for different levels? Or are you thinking of analyzing according to the level and providing the results? If you just decide how, I think discussing how to do level 4 itself can suggest a way to get there much easier and faster than other levels.

(Chong, Hwansoo/NIER) I think it should be applied equally according to the level. However, it takes a lot of time and budget to secure the aforementioned data to set Level 4 as the current method, and there is a lot of uncertainty about how fair it is to use the secured data, so further discussion is needed.

(Zhang, Tongzhu/CATARC) I'm also participating in other SGs. When discussing levels, there's a feeling that 1 and 2 just don't try. If you decide to level 4, I don't think it's necessary to separate levels. That's why everyone seems to think that a decision on the level is necessary.

(Dettmer, Tina/OICA) The case you just talked about is the story of SG5, which deals with topics related to EOL. And the same goes for the use part. I think that is very different from what we are discussing now. Because even if the car sales take place today, there is still a lot of time left for use and EOL.

(Zhang, Tongzhu/CATARC) Although it may be difficult to collect primary data immediately, primary data should be collected as a potential priority.

(Dettmer, Tina/OICA) But in the end, it's a later stage, and when the vehicle is sold, the transportation company will collect primary data from it, for example, if it runs for three years. Still, only three years' worth of primary data will come out. In the case of EOL, it will be about 10 or 15 years from the time of sale. In the end, you'll always have to use secondary data when you use it.

Initial targets determine what level we start at? My understanding is that our role does not consider what regulations or standards will come out in the future, but makes a decision considering the current concept and future possibilities and reports this to the IWG. I think each government makes its own decisions when the environment changes, such as legislation for regulation is prepared later. I think our role is just up to there.

(Chong, Hwansoo/NIER) If we take all four level concepts, shouldn't our group review all four methodologies?

(Dettmer, Tina/OICA) I think it depends on the situation of each country. For example, if the U.S. wants to improve Scope 3 in relation to inventory, the U.S. can select Level 2 to proceed with the evaluation. I want to compare different cars in different countries, so I can choose level 4. I understood that they make their own decisions individually.

(Christ Ansgar/CLEPA) The method itself has no significant impact. The method applied to levels 3 and 4 is not different, but only the proportion of the primary data and the secondary data used is different. I think we can offer you a ratio. The ratio can vary, such as 80 to 20, 90 to 10, and 50 to 50, but in the end, both levels 3 and 4 use both primary and secondary data, and only the proportion varies. In terms of methodology, it is unlikely to have a significant impact.

(Bedenian, George/OICA) I just want to add one thing to the last story. Methodology eventually links to boundaries. So if we set the boundaries, I think we can proceed by determining the level by looking at the data level in each country. In the case of the discussion that we are having now, I think it applies not only to our sub-groups but also to other sub-groups. I think this is connected to an important topic that encompasses all subgroups.

(Chong, Hwansoo/NIER) To sum up the opinions now, I think this is the conclusion to create a way to cover all levels without setting an initial target for the level.

[Conclusion]

(Opinion 1) Level 1 & 2 is generally at a level that can be easily evaluated, and level 3 & 4 requires cooperation and coordination at the global level. Level 3 & 4 thinks that level 3 & 4 should be a priority because we have to find and track the carbon emissions of the product no matter where the part goes.

(Opinion 2) At this point, it is too difficult to collect pre-primary data, so the timing of introduction of level 4 may vary depending on how easy it can be to collect primary data. However, if you set the initial target to level 4, you can no longer do level 2 or 3. In the case of China, Guangzhou is implementing a policy to receive subsidies if it reduces 60kg compared to the previous year in OEM's

automobile manufacturing process. This corresponds to level 2 in the initially proposed leveling concept. Primary data collection by OEMs is also easy in China, but primary data collection in the supply chain is very difficult.

(Opinion 3) I wonder if we should decide on one level to start with. From experience, synergy was great and efficient when discussing all four cases. And if we say let's start with level 3, it seems that we will continue to discuss where the boundary with level 2 is cut off and where the boundary with level 4 is. Therefore, I suggest that all levels proceed at the same time. Even if the four levels are carried out at the same time, it is not considered to be very difficult or a problem.

(Opinion 4) It is more important to secure as much primary data as possible than to discuss starting at any level. Therefore, it is necessary to focus on securing primary data for each level.

(Opinion 5) We create a way to cover all levels, and what levels the United States, Europe, or other countries will apply may vary depending on the situation of each country. I don't think we can make a method considering what level to apply to each country. I think you can decide what level to set by looking at the data situation each country has.

(Opinion 6) The method and system boundary are the same, but in the end, only the proportion of primary data and secondary data used may vary depending on the level. If necessary, it is necessary to create the proportion, and in addition, it seems necessary to give a method of being passive in using secondary data.

In summary, SG3 proposes a methodology that includes all levels without setting initial targets at its meeting on July 10.

Agenda Item 5: Timeline

This item has already been discussed in Agenda No. 3.

Agenda Item 6: A look-back of Day 1

For this look-back of Day 1, the meeting was opened at 09:00.

Agenda Item 7: Introduction of Day 2

The Day 2's introduction was presented and reviewed.

No comments.

Agenda Item 8: Overarching aspects in the vehicle-parts production

[Discussion]

(Chong, Hwansoo/NIER) Today's meeting is Agenda 8 to discuss the overarching aspect of automotive parts and parts production. Let's share the overarching aspect that we discussed in the IWG and discuss what to do about the overarching aspect setup. For example, there are likely to be car models, system boundaries, etc. Today I would like to suggest that we create some categories for overarching aspect today.

(Dettmer, Tina/OICA) Yesterday we confirmed in material and EOL that SG 2 and 5 have overlapping parts, and I also think SG 4 will have some overlapping parts. So it would be nice if we could make a simple chart of what overlaps with other SGs to indicate what topic we want to match. I think it can also be made clear that it is directly related to the material and the EOL part, the foundation part, and the direct connection.

(Chong, Hwansoo/NIER) Here, the model means a light vehicle or a light commercial vehicle. In the LCA methodology, we should also discuss how to set the vehicle model for full-process CO₂ calculations. In addition, it is necessary to discuss whether to evaluate only representative cars of the vehicle type by dividing vehicles into specific categories, evaluate all cars, or use the concept of family, such as vehicle emission certification.

There is a sample that we need to consider. Although there are several greenhouse gases, we no longer need to consider CH₄ or N₂O because we have already determined carbon dioxide for the gases that should be considered in the vehicle LCA. And there are boundaries of the system and cut-off criteria, especially I wonder if the cut-off criteria are appropriate for today's discussion. And there are changes in energy sources proposed by Ricardo, the national energy mix, and future energy supply and demand proposed by ICCT earlier. And the boundaries between supply chains and vehicle and component production also need to be discussed. It is also necessary to discuss the hotspot of in-house production and the outsourcing of that hotspot. After that, there are primary and secondary data that we already discussed yesterday, and I wonder if we need to discuss more details or in-depth discussions. There is also logistics and distribution. In the case of our country, there is a very important part because we usually travel long distances from Europe to Korea, or from Korea to Europe. We need to consider how to define the logistics and distribution, the distribution boundaries for vehicles and parts, and then the scope of the maintenance, and the maintenance part. The topic of data quality and validity of data points is also likely to correspond to overarching aspects.

(Christ Ansgar/CLEPA) I think we can review it line by line and cancel the unnecessary discussion. There are parts that have already been completed or that do not actually apply to us.

The current energy mix and etc. are essentially SG6.

(Bedenian, George/OICA) I think we can review it line by line and take it to the excel file if we need anything.

(Dettmer, Tina/OICA) I don't think so. We have to accept what is needed in overarching aspects. Of course, we can give our opinions, but I don't think we need to decide on these just because we agree.

(Christ Ansgar/CLEPA) We basically see all types of vehicles the same and think there is no difference.

(Chong, Hwansoo/NIER) Since the definition of the vehicle category is different between Europe and the United States, it seems necessary to define how to define it here in LCA.

(Christ Ansgar/CLEPA) If we look at the production of vehicles and vehicle parts for vehicle assembly, it doesn't matter whether we're talking about American-defined trucks or light vehicles, or whether they're European-defined light vehicles.

(Dettmer, Tina/OICA) I think all the ideas we have here on this point should be brought to another group personally. Subgroup 3 does not expect to advise here

(Christ Ansgar/CLEPA) We are lucky to be in the middle of the life cycle. not have many boundaries.

Let's talk briefly about system boundaries. I think we need to discuss that in more detail. Because at the end, you have to decide which companies are providing boundary data. The general definition I know from several different directives is that we should count carbon dioxide emissions that are directly related to production, but it may be worth defining them in more detail.

(Dettmer, Tina/OICA) Since the product LCA is really related to the product, I'd say it's just scope 1 and 2 emissions even if it doesn't include a fair amount for one product. There are processes directly necessary for the production and the support processes like making holes by machines and heating holes.

(Christ Ansgar/CLEPA) I think I should write it down because it is a problem. If someone was going to calculate the CO2 emissions for its production, he would ask me what energy I would use to provide heating at the production site and whether I should include it in the CO2 emissions. We think the topic is what kind of production control system we run to produce or control, but the people who actually do it say I don't have to deal with it, so I think I need a better explanation.

(Dettmer, Tina/OICA) The good thing is that we don't have to decide that today. We have to work with the whole group on them, so we can write that we have detected it.

(Chong, Hwansoo/NIER) I wonder if the energy mix directly affects carbon dioxide emissions at the production site. However, energy mix and energy consumption are likely to have to be considered by other groups.

(Christ Ansgar/CLEPA) I mean if you want to calculate CO₂ emissions on your site you have to at least analyze what type of energy I'm using and the carbon intensity for that energy is also provided in subgroup 6. We basically need to measure the amount of energy needed. And if we define, for example, whether or not we should include energy for lighting or heating, we will make quantification fairly easy without going out of range and we won't have to care about it.

(Dettmer, Tina/OICA) For example, if you look at data or data sheets that are already available for data collection, I think what should be included and what should not be helped.

(Christ Ansgar/CLEPA) We have to decide whether this is what we are aiming for.

(Dettmer, Tina/OICA) I think it was the original idea to add methane gas to carbon dioxide. Perhaps it means that those parts should be included or that the processes should be included. I would like to say that the first point on the list about subgroups that we have to deal with is system boundaries. And that's where I'd suggest that we start with how we're going to collect data from the process in the traditional standard data sheet, rather than reinventing everything. And we can easily copy information to explain the system boundaries. I can also search my team's server. I think that is the first point that we should take. And other things like this are very common, so maybe we should do it in the whole group. So the system boundary will be the first boundary. Of course, the following boundaries, the criteria, are also important. The other options are whether you account for 95% or 98% of your emissions. Of course, it's always hard to say what 100% of emissions are.

What I'm just curious about is that we're a key team, but there are other teams. And we can share that burden with other teams. We can now check the list of relevant topics and discuss them there without us thinking at one of the first meetings of the whole group. And perhaps you can see how to prepare for such a decision. For example, we can provide some data sheets. As for the system boundaries, we can provide two to three examples of those data sheets as the basis for discussion. You will hear from some examples that there are internal guidelines. I can also find out what standards we have, or other ways without standards. I don't think there's any need to decide because I'm getting opinions through discussions. We don't need a preferred solution yet, we just know what to solve with other groups.

(Christ Ansgar/CLEPA) The question I don't know is exactly where we hand over to subgroup 2. To what extent subgroup 2 deals with matter, and what is the basic definition of shaking hands between the two subgroups is questionable.

(Dettmer, Tina/OICA) We need a joint meeting with Group 2 for us to decide that.

(Christ Ansgar/CLEPA) Honestly I think this is basically an issue that needs to be clarified with other groups because this is just an internal definition of the methodology we are talking about. I think some of us should get in touch with sg2 to discuss exactly the subject. But the whole meeting is on the 10th, so I think it'll be a little short. I think it would be ideal to discuss bilaterally because it only affects sg2 and us.

(Dettmer, Tina/OICA) That's a question if we should go into detail or not

(Christ Ansgar/CLEPA) Would it actually help us if we listed all the courses you're including here?

(Dettmer, Tina/OICA) This just helps to show what's going on with suppliers. Some people will produce batteries and others won't.

(Christ Ansgar/CLEPA) I mean maybe I can list all of Bosch's production processes and we're not the only ones. Basically, my view is to include all the processes required for selection. Do you have a rough idea of how much process we're talking about?

(Dettmer, Tina/OICA) I was simply thinking of something like getting a picture from one of our documents, but LCA generally has a picture of the product system and generally has some flow. But here, for example, we have an inbound logistics assembly and an outbound logistics for production, as well as mining for raw material production and parts manufacturing.

(Bedenian, George/OICA) We are talking at the same level as TS plating assembly. Therefore, it would not be more detailed if there was another process of this kind. If we add to these four, there might be battery production that we talked about before.

(Christ Ansgar/CLEPA) Let's look at all the different components and classify the main production steps.

(Dettmer, Tina/OICA) I really need a question about what additional information is coming from here. For example, there are examples of components such as manufacturing. Here are some examples to help you get a better idea. There is a part die casting of the crankcase injection molding.

(Bedenian, George/OICA) The four categories in this case are similar. So we don't elaborate because we're not far away. For example if we're talking about an engine it's assembling because I'm putting the engine inside.

(Zhang, Tongzhu/CATARC) The first is how many product category rules will be created in the future. What is the difference in PCRS between the other and probably the other. And especially the ingredient level is very high, so we prepare the ingredient PCR. Component level PCR is also required.

(Dettmer, Tina/OICA) If we look at it from a PCR perspective, there may be several guides to which processes do what. Perhaps after determining the general principles, at the end of the day we might as well look at what is appropriate and what is not. And I think it would be very helpful to elaborate on PCRS. Perhaps there are general things. There are some common things that we can do, and we can fix all the parts in the same way. Otherwise, we'll either collect so many different things or have a picture that's not clear.

(Christ Ansgar/CLEPA) I wouldn't even know how to relate all the PCRs I would do.

(Dettmer, Tina/OICA) I think we can learn a lot from them, but it will be impossible to refer to.

(Christ Ansgar/CLEPA) Is Dr. Zhang's idea to integrate or propose an existing PCRS?

(Zhang, Tongzhu/CATARC) Now we've built up and the other is the traditional parts and the third is the general car product. And maybe we'll make another PCRS. For example, transmissions, materials, and many other products.

(Christ Ansgar/CLEPA) There are probably a lot of PCRS around you. Would you suggest basically referring to them and mandating them in compliance with our set of rules or, conversely, find a common denominator of what applies in almost all PCRSs and define it in our guidelines?

(Zhang, Tongzhu/CATARC) For the most important components, such as batteries, the PCR should have the footprint calculated. And for some components, such as B2B components, it may not be possible to calculate the carbon footprint from part to part.

(Dettmer, Tina/OICA) It would be really helpful because there will be a guide for other parts such as batteries. Japan and Germany are already active, and there must be something in China. Then we will have so many different guidelines. And it would be nice to encourage at least that we have new guidelines that adhere to the general principles of the guidelines at the UN level. For example, if we look at CATENA or IGGS, they are providing other guidelines or PCRS lists that proceed in a way that has their own guidelines and adhere to the same principles, so it is possible if you want to match CATENA or IGGS. If you refer to their guidelines and stick to the same rules or the same guidelines, it can be a positive solution, but if we're further down, that's one of the really important questions.

(Christ Ansgar/CLEPA) I think that is very important because the issue is not just for the production of parts or for the assembly of vehicles.

Back to what we're discussing, it applies to EOL, and it also applies to SG2. Materials are also transported somehow. So basically, the question of how to explain transport is once again tangent to other SGs

(Chong, Hwansoo/NIER) Next is the MAINTENANCE PART. It is questionable whether this is necessary to enter our overarching aspects.

(Christ Ansgar/CLEPA) It is questionable whether that should be dealt with in our group.

(Dettmer, Tina/OICA) It's a subject combined with sg4 because we have to produce them. Considering all levels in the vehicle model, it would be very difficult to define at level 1.

(Christ Ansgar/CLEPA) The question of how many maintenance parts need to be accounted for and the EOL's understanding will have to decide. If you do refurbishment parts, you don't need new maintenance parts. It is not connected by default.

(Bedenian, George/OICA) I received some information from Sg4. There is also a discussion of maintenance to be included in their stage, which is consistent, but there is also a way to calculate it if you need to calculate with new parts.

(Christ Ansgar/CLEPA) I mean, if it's basically a new part, it should be calculated according to the rules that we define.

(Dettmer, Tina/OICA) I'm not sure product producers know best about how long it will last or how long it will change. We can define these content or jointly, or how well we can leave it to SG4, it can help us find rules, but at least we need to be consistent on this.

(Bedenian, George/OICA) For SG, this group is the most important, so it's interesting that we all sort together and say OK. I think we can't do it in sg1 but we need a specific discussion. The leadership teams will discuss with three or four groups to align the contents. I think it is important to know each location for the most important group. The same goes for this logistics and supply chain boundary.

(Christ Ansgar/CLEPA) No, I don't agree with the boundaries of the supply chain. Because we only have interactive links to sg2 and 4. In the case of logistics and maintenance parts, you will be right. It is a part of EOL or a subject of material. So it's basically everyone has to deal with it.

(Chong, Hwansoo/NIER) Today I'm going to discuss the supply chain.

(Christ Ansgar/CLEPA) That is another matter. Because we consider our boundaries at the entrance to the production site.

(Chong, Hwansoo/NIER) Could we also consider disposal

(Christ Ansgar/CLEPA) We have waste and we basically have to explain how to dispose of it. And that will probably be done in EOL

(Bedenian, George/OICA) If this is discussed in SG3 or it means that it is completely transferred to EOL.

(Christ Ansgar/CLEPA) According to what you set, they have to deal with it. Because EOL certainly has some waste disposal.

(Dettmer, Tina/OICA) Waste disposal will occur in many different countries. And if you have various industrial methods, or if you have vehicles in EOL, of course you can track EOL, but you need alignment.

(Christ Ansgar/CLEPA) That is why it should be aligned. I explained as a guideline on how to dispose of waste.

(Zhang, Tongzhu/CATARC) With regard to recycling and final treatment during production, the use of recycled content is encouraged if the recycled content contains PCR and carbon footprint.

(Chong, Hwansoo/NIER) The next is the data quality and the validity of the data format.

(Dettmer, Tina/OICA) It's very important. Of course, we have to match the others.

(Christ Ansgar/CLEPA) I think we have another important problem. It's basically a matter of what kind of secondary data it is. We should also consider the handling of punitive secondary data use and look at the question of where secondary data is referenced.

(Dettmer, Tina/OICA) And I think it's good to define what primary data is and what secondary data is. Because I always need information about physical things like what matter is. For example, is it still a major thing for us to combine power demand with grid-mixed footprints, whether we need to know what individual sources of electricity are, or whether it's a major thing along the supply chain or not because we already know it. Let's say that tier 3 collects major data but doesn't know exactly what it does. Although they do not have individual electrical contracts for green electricity they should assume an energy mix. This is the main data.

You must define the default data, expand the table, and display where the default data is required. In this case, you need to explain it in more detail.

(Christ Ansgar/CLEPA) We need some data on whether to put it under secondary data.

(Dettmer, Tina/OICA) Does it matter if it's the number of data points or if it's the percentage of footprints calculated as key inputs?

(Christ Ansgar/CLEPA) For me, it's not just the number of data points, it's the percentage of footprints calculated through input. And I think I should basically rethink whether it's just a matter of energy intensity.

(Dettmer, Tina/OICA) Suppose you have four batteries, you've covered that percentage of primary data, but of course some of the producers get green electricity at some stage and get smaller. And you can use the primary data well on the hotspot. But if you decarbonize it, it comes straight to your head. In general, we also know that batteries will have a very high rate of carbon burden, so we decide to decarbonize to reduce our carbon footprint. Of course, the ratio is low but still has primary data for one of the hotspots. Potential hotspots or old hotspots should be considered. Because otherwise decarbonization will occur and change the overall picture. We want to decarbonize vigorously, so the effect will be enormous.

(Christ Ansgar/CLEPA) Do we have a better definition for a primary data?

(Dettmer, Tina/OICA) I think the environment will be changed, but not when it comes to data. I think there will be a public database and I hope there will be a global public database someday, but there isn't at the moment.

(Christ Ansgar/CLEPA) Nevertheless, I think we should define how to deal with it. Otherwise, if we don't find anything, everyone is basically free to find and use the best secondary data they can find.

(Dettmer, Tina/OICA) Even within the supply chain, I'm not 100% sure that everyone uses the same secondary database. Maybe it's a different solution locally.

(Christ Ansgar/CLEPA) I mean it's okay if it's local or reflecting local differences as long as there are people from the same area.

(Dettmer, Tina/OICA) It's really dangerous now, but I think we should live together. It will be more accurate on one side because we obtain measured data, and less accurate because there are more discrepancies between used secondary data created on the other side. I know the importance of secondary data is decreasing, but it becomes increasingly inconsistent.

(Christ Ansgar/CLEPA) I don't think there is an immediate solution. I don't think we should leave it undecided how to deal with it.

(Bedenian, George/OICA) This problem is not just the SG3 problem. Exactly and much more. Because we are going to primary data more and more. However, the main problem is with groups that rely on secondary data.

(Christ Ansgar/CLEPA) Another problem that arises with secondary data is basically the idea of punitive or conservative secondary data. How do we go from secondary to punitive secondary? Because, as we discussed yesterday, most secondary data are a little more optimistic.

(Dettmer, Tina/OICA) One group may already have to give space to other group members. If we have 80% and others have 70%, you don't need 100%.

[Conclusion]

The following is overarching aspects that should be considered in SG3.

Overarching aspects	Further action
System boundary	
Boundary of supply chain	discuss with SG2, 4
Vehicle production	
Vehicle / parts production categories	
Logistics and distribution	discuss with SG2

Maintenance part	discuss with SG4
End of life (waste treatment)	post consumer recycle
	post industry recycle
Data quality and validity, format	
Secondary data source	
Punitive of secondary data utilization	

(System boundary) how do we define system boundaries for each part and vehicle production

(Logistics and distribution) how do we set to system boundaries for transportation and distribution of materials, parts, etc. in SG2

(Maintenance part) Carbon emissions related to maintenance part production can be included in SG4 or not.

(End of life, waste treatment) How do we define and calculate CO2 footprint for waste treatment in the supply chain and other processes. For instance, some scrap from the part production processes can be used to make some parts.

(Secondary data source) where should we can get the secondary data? Scholar paper or some kind of association reports. Basically, look for the best possible secondary data that we can find.

(Punitive of secondary data utilization) most of the secondary data are more optimistic than the primary data utilization.

Other overarching aspects to be considered are added after hearing opinions from other members at the meeting of SG3.

Agenda Item 9: Any other business

There is no any other business.

The meeting was closed at 12:30 PM.