

Meeting minutes

32nd Session of the Subgroup 4 (Usage Phase) of the IWG on Automotive Life Cycle Assessment (IWG on A-LCA)

Meeting documents available at:

<https://wiki.unece.org/display/trans/SG4+-+32nd+Meeting>

Time		Agenda Item	Lead	Working Paper	Purpose or Target
10:00 ~ 10:05	1	Welcome and introduction	Chair	NA	Introduction
~ 10:10	2	Adoption of the agenda	Chair	A-LCA-SG4-31-01	Agreement
~ 10:20	3	New SG4 draft document	OICA	A-LCA-SG4-32-02	Presentation
~ 11:50	4	Feedback on Draft Document	Chair	A-LCA-SG4-32-03 A-LCA-SG4-32-04 A-LCA-SG4-32-05	Discussion
~ 12:00	5	Any other business & Closing	Chair	-	Closing

Agenda item 1: Welcome and introduction

The Chairs welcomed the participants to the 32nd SG4 meeting and provided some overview of the main topics for today's meeting. The meeting was convened with the strategic objective of synchronizing the content of the SG4 draft with other subgroups for coherent methodology and implementation. Brief updates included the current status of collected feedback and the timeline for document revisions, underscoring collaborative efforts as crucial to meeting upcoming deadlines and preparing the draft for the SG7 review.

Agenda item 2: Adoption of the Agenda

The agenda, as articulated in document A-LCA-SG4-32-01, was adopted unanimously. Participants agreed to remain flexible with agenda timing to accommodate detailed discussions, especially on complex feedback items.

Agenda item 3: New SG4 draft document

Tripathy S. (OICA) introduced the revised draft, detailing the separation of chapters concerning leakage, maintenance, service life, and use phase consumption to enhance organization. N. Hill (Ricardo) raised concerns about managing methane and hydrogen emissions, prompting technical discussions on accurately reflecting these emissions in the draft. Emphasized the importance of addressing boundary conditions and adopting a comprehensive perspective for these key topics. The chair (G. Di

Pierro JRC) confirmed his commitment to sharing the updated draft reflecting these discussions by Tuesday, prior to the SG7 meeting.

See document(s): [A-LCA-SG4-32-02](#)

Agenda item 4: Feedback on Draft Document

The Chair (G. Di Pierro JRC) presented a consolidated set of proposals and feedback on the most critical unresolved issues in the draft guideline. This presentation served as the guiding framework for the technical discussions that followed.

Functional Unit

G. Di Pierro (JRC) revisited proposals for functional units in vehicle certification, balancing regional preferences such as Japan's approval for unique units, based on CPs request, and Korea's jurisdiction-neutral language preference. J. McDonald (US EPA) argued for standardizing vehicle kilometres in functional units, discussing integration challenges such as passenger weight in certification data. He emphasized the need for clarity and consistency, proposing ongoing discussions to refine functional unit definitions where such complexities arise, prioritizing a functional unit related to the primary (or secondary) data used to determine vehicle energy consumption and/or CO2 emissions, which in nearly all cases will be either certification data or type approval data. N. Hill (Ricardo) raised concerns over subgroup involvement, advocating for SG4's exclusive jurisdiction over user-phase decisions to prevent complexity proliferation from overlapping with other subgroup areas.

The chair planned to upload a dedicated document on functional units for further review and action.

Vehicle Mileage and Service Life Modeling

G. Di Pierro (JRC) presented the need for precise age-dependent vehicle mileage data in emissions modelling, urging regions with available official data to prioritize its usage to enhance accuracy in lifecycle assessments. J. McDonald (US EPA) emphasized the fluctuating nature of scrappage rates, recommending their inclusion in future activity projections as they affect both SG4 and SG5 scope. N. Hill (Ricardo) highlighted key distinctions between fleet-wide lifecycle assessments versus singular vehicle assessments, calling for precision in defining datasets to ensure consistency. He also expressed that while the variability in vehicle data is expected, the lack of standardization in profile selection could lead to inconsistencies in LCA outcomes. G. Bieker (ICCT) agreed with N. Hill, noting the necessity of finding a suitable average for individual vehicle analysis.

Regarding the service life data displayed in the document's table, G. Di Pierro (JRC) emphasized the need to clarify citations for historical data and projections, particularly regarding vehicle use. The US EPA pointed out that the EIA data has not been updated to reflect changes in the MOVES model, recommending that the MOVES site be cited instead. The JRC also addressed comments from the ICCT regarding the distinction between vehicle usage duration and full vehicle lifetime, suggesting the addition of footnotes for clarity.

Use phase Consumption

G. Di Pierro (JRC) addressed Japan's comments on carbon emissions methodology,

proposing to use "energy" to encompass both fuel and electricity, responding to internal discussions to streamline document language. Nishimoto (JPN) confirmed Japan's support, suggesting removal of non-relevant statements related to regional classifications and specific technology references to enhance clarity.

Methodology for PHEVs energy consumption

G. Di Pierro (JRC) presented and opened for comments the latest amended text on the methodological approach proposed for PHEV energy consumption. J. McDonald (US EPA) commented that the UFs seem to be converging in each market with each successive change in regulations, but for now they still differ, and also that for some types of PHEV, there is still some fuel consumption in the charge depleting mode of operation. S. Tripathy (OICA) commented on the potential risk of double counting impacts due to updated UF with both the discrepancy and deterioration factor, and the need to better understand/explain the methodology proposed. G. Bieker (ICCT) commented that the updated methodology already accounts for the potential for both electricity and fuel consumption in the charge depleting mode of operation.

S. Tripathy (OICA) commented that the combined consumption/emission figures were publically reported, and there may be difficulty in calculating adjusted results if the separate figures were not readily available. N.Hill (Ricardo) confirmed that the separate figures for consumption in the different modes were certainly available to OEMs from certification testing, and that some OEMs had already accounted for this in their published carbon footprint studies – e.g. in Volvo's EX90 carbon footprint report (which Ricardo critically reviewed) the comparison with the XC90 PHEV used figures which were adjusted using the most recent (2025) Utility Function [the vehicle was originally certified on the previous UF]. S. Tripathy (OICA) commented that it may be useful to provide a worked example for the PHEV methodology so that it can be better understood. F. Lachina (OICA) also commented that it was complicated and so not so easy to understand, and questioned whether it was not sufficient to simply take real-world FC measured to take into account of RW behaviour. G. Bieker (ICCT) explained that real-world consumption was not available for models being introduced to the market, and this would also not capture impacts on electricity use (currently not being monitored) – hence a bottom-up methodology is needed for vehicles not already on the road. N.Hill (Ricardo) proposed to provide a worked example of the methodology for the SG4 participants to review (potentially also similar to the approach provided in Ricardo's 2020 vehicle LCA report for the European Commission), G. Bieker (ICCT) commented that he was happy to support the development of this.

Methane Emissions

G. Di Pierro requested comments on the text addressing methane emissions and leaks from stakeholders. G. Bieker (ICCT) expressed confusion over leakage versus emissions and suggested evaporative emissions be considered. A. Castagnini (EuroGas) highlighted the repetition in the documentation about methane emissions and suggested removing redundant sentences. He questioned calculations concerning CO2 equivalents and expressed a need to further investigate ICCT's points. Ricardo clarified that CO2 emissions derived from fuel do not include methane as CO2 equivalents in the European context. EuroGas requested practical examples to understand content calculations better.

Maintenance Parts Protocol and Methodological Updates

G. Di Pierro updated participants on maintenance parts and methodology changes, confirming alterations in the maintenance table to improve clarity, including relocating

refrigerant text and removing traction battery's mandatory replacement.

Discussions centred around the methodology for lifecycle assessment of battery and fuel cell lifecycle impacts, aiming to streamline and improve clarity. J. McDonald (US EPA) highlighted the importance of excluding by default the replacement of traction batteries, considering that they are durable enough to last the vehicle's lifetime. He indicated that the US would not issue a certificate of conformity for a vehicle if its battery was not designed for long-term durability. He also noted that life cycle assessments sometimes involve arbitrary, non-realistic assumptions about multiple battery replacements, which the US finds problematic.

G. Di Pierro (JRC) outlined the resolution mandating the assumption that traction batteries and fuel cells should ideally not be replaced during the vehicle's lifetime. He acknowledged situations where component lifespans might be shorter than the vehicle's lifespan, necessitating their inclusion based on empirical data or manufacturer statements on durability and replacement practices. N. Hill (Ricardo) supported an approach where battery replacements are considered only in exceptional circumstances or extreme usage profiles. In addition, that the alternative simple standardised methodology (where the OEM declares shorter than vehicle lifetime, or for non-OEM studies where this information is not available/not confirmed) is also applicable for Level 1 and 2 studies (and was originally developed for this purpose by Ricardo to explore the effects also of different battery sizes and extreme variations in activity) – so the table should be updated to reflect this.

Looking forward, the chair indicated plans to continue adjusting the text and table summarising battery replacement considerations, with the intention of providing a clear framework.

See document(s): [A-LCA-SG4-32-03](#) / [A-LCA-SG4-32-04](#) / [A-LCA-SG4-32-05](#)

Agenda item 5: Any other business & Closing

The chairs indicated that a document containing the most recent draft on Functional Unit, along with another document featuring the latest SG4 text in the revised structure, will be uploaded to the wiki page as soon as possible.

Key Action Points:

1. Resolve certification protocol topics and finalize text by month's end.
2. Develop jurisdiction-neutral language for functional units, considering comments from Japan, Korea, and the US.
3. Clarify and resolve differences between methane leaks and emissions in documentation.
4. Align text summarising battery replacement considerations, integrating US concerns around battery durability.
5. Prepare new document drafts and upload them for review before the next SG7 meeting.

Meeting Adjourned: 2:00 PM CET.