

Terms of Reference of Informal Working Group on Automotive Life Cycle Assessment (IWG on A-LCA)

Background:

Japan and Korea proposed during the 85th GRPE session in January 2022 to work in the context of GRPE on the clarification of methodologies for the assessment of life-cycle Greenhouse Gas (GHG) emissions of automotives (GRPE-85 -29r1e). GRPE agreed on organizing a dedicated workshop during the GRPE session in June 2022. Following the successful workshop, GRPE agreed during its 86th session in June 2022 to put the A-LCA methodology on its priority list and GRPE agreed on creating a new Informal working group A-LCA under GRPE (ECE/TRANS/WP.29/GRPE/86/Rev.1).

Japan proposed to host 1st IWG meeting in October 2022.

1. Introduction

- 1.1. The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership.
- 1.2. UN SDGs 12 on "responsible consumption and production" and 13 on "climate action" encourage efficient use of natural resources and to limit climate warming through long term societal goals. Sound and reasoned resource use and climate change mitigation are key preoccupation of citizens, corporations, investors, legislator and society as a whole.
- 1.3. The Paris Agreement has set ambitious targets to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal, stakeholders aim to reach a global peak of GHG emissions as soon as possible and transition towards achieving a climate neutral world by mid-century
- 1.4. The transport sector is a major contributor to global GHG emissions and road transport has the majority of the overall transport sector emissions.
- 1.5. To be able to have comprehensive, comparable and consistent values for the carbon footprint* over the whole life of automotives put on the market across the globe, from material extraction and processing, to manufacturing, use and dismantling / recycling at the end of its life, it is desirable to define and develop an internationally unified method for GHG life cycle assessment (LCA).
- 1.6. ISO14040 series has been in effect since 2006 as an international standard on life cycle assessment for environmental management, and automotive manufacturers have been publishing results of LCA in accordance with these ISO standards for several types of vehicles.
- 1.7. However, the ISO standards state that the scope of investigation and the preconditions for conducting LCAs be determined by the investigator such as automotive manufacturer, and since

each investigator conducts LCAs according to their own method, an internationally harmonised LCA methodology designed for automotive industry with global business activity is needed.

2. Objective

- 2.1. The IWG on A-LCA is an open structure which will enable the exchange of information and experiences on relevant regulations, policy measures and standardization efforts. It is intended that the discussions will encompass all types of road automobiles with different technologies for energy pathways.
- 2.2. Methods of measurement of GHG emissions of automotive life cycles is not defined under either the 1958 Agreement or the 1998 Agreement. The objective of the IWG on A-LCA is to develop an internationally-harmonized procedure to determine carbon footprint* of different technologies, also considering energy use, for energy pathways and automotive types from production to use and disposal as a resolution under the framework of WP.29.
- 2.3. This resolution can be used to help make policy and can encourage automotive industries to reduce carbon footprint* also considering energy use. The methodology shall be developed respecting the transparency and consistency. It also shall have balance between the accuracy and the workload considering the complex supply chain of automotive industry.

3. Working items

3.1. Definition of Scope

Goal and scope definition aspects according to ISO 14040 (e.g. functional unit, reference flow, technical, temporal and geographic scope, allocation rules) should be covered

- (a) Product systems to be covered by the A-LCA methodology shall be defined. Breakdown of each product system may vary per automotive category based on reviews of the automotive manufacturing process.
- (b) System boundaries shall be defined. (c) Temporal, Geographical and Technical scope shall be defined

3.2. Inventory Analysis

- (a) Methodology for obtaining Primary data and possible sources for secondary data (internationally recognized database) for each stage shall be defined.
- (b) The assumptions and scenarios for the activities in each stage shall be defined.
- (c) Quality requirements for data shall be defined. Quality requirements may include the temporal scope, geographical scope, technical scope, accuracy, completeness, representativity, consistency, reproducibility, etc. Data derivation, accompanying metadata and formats should conform with existing international guidelines and nomenclature systems, including ISO 14048, the UNEP Global Guidance Principles for LCA Databases, and UNEP Global LCA Data Access network standards.

3.3. Life Cycle Impact assessment of

The format and minimum contents of the A-LCA report shall be defined.

4. Timeline

- 4.1. The target completion date for the work of the IWG on A-LCA and possible adoption of the Resolution shall be the session of WP.29 in November 2025.
- (a) Jun. 2022: Workshop on LCA organized by GRPE and establishment of the IWG on A-LCA
 - (b) Jan. 2023: Approval of Terms of Reference for the IWG on A-LCA by GRPE
 - (c) 2023-2025: Meetings of IWG on LCA, with regular reporting to GRPE and WP.29
The group must identify proposal for interim steps / deliverables in the build-up for the final output
 - (d) Jun. 2025: Adoption of the UN Resolution on LCA by GRPE
 - (e) Nov. 2025: Adoption of the UN Resolution on LCA by WP.29

5. Rules of Procedure

- 5.1. The following rules of procedure describe the functioning principles of the new informal working group.
- (a) The IWG is open to all experts from any country or organization of WP.29 and its subsidiary bodies. A limitation of the number of participants for the IWG is not foreseen. Other experts can participate upon invitation by the Chairsof the IWG on A-LCA
 - (b) Chairs (Japan, Republic of Korea) and Technical Secretariats (CLEPA, AVERE and Japan) will manage the IWG.
 - (c) The IWG on A-LCA could consider creating subgroups or taskforces for specific tasks and activities to help deliver on the timeline;
[initial working structure and organization will be determined during 2nd IWG meeting on 6th December, 2022]
 - (d) The official language of the IWG will be English.
 - (e) All documents and/or proposals shall be submitted to the secretariat of the group in a suitable electronic format, preferably in line with the UNECE guidelines in advance of the meetings.
 - (f) The IWG shall meet regularly in conjunction with the GRPE sessions, pending the availability of meeting rooms. Additional meetings will be organized upon demand.
 - (g) An agenda and related documents will be circulated to all members of the informal working group in advance of all scheduled meetings.
 - (h) The work process will be developed by consensus. When consensus cannot be reached, the Chairs of the informal working group shall present the different points of view to GRPE. The Chairs may seek guidance from GRPE as appropriate.
 - (i) Draft meeting reports will be available after each meeting, and presented for approval at the following one.

- (j) The progress of the informal working group will be reported to GRPE orally or as an informal document by the Chairs or the Secretariats.
- (k) All documents shall be distributed in digital format. The specific A-LCA section on the UNECE website shall be used for this purpose. It is available in :
<https://wiki.unece.org/pages/viewpage.action?pageId=172852228>

* carbon footprint : sum of GHG emissions and GHG removals in a product system, expressed as CO₂ equivalents and based on a life cycle assessment