

# Suggestion for discussion points for Vehicle LCA development

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# Discussion point 1

## » In General

- **Key objective** of this activity is **developing an internationally-harmonized vehicle LCA methodology to evaluate which powertrain and fuel technologies are most capable of shrinking the carbon footprint of vehicles and helping policy makers to promote LCA-based policies like improving national energy generation mix and encouraging automotive industry to improve carbon footprints to achieve carbon neutrality.**
- **Key aspect** of developing internationally-harmonized methodology for vehicle LCA is to **encourage participation from as many contracting parties and automotive industry as possible** because **drawing consensus for reliable data for inventory analysis and quality requirements is critical** in LCA methodology.

## Discussion point 2

### » Proposals for Harmonized vehicle LCA Methodology Development (1)

#### ➤ Purpose and aim of vehicle LCA-IWG

- Develop guidelines for internationally-harmonized vehicle LCA methodology and database which are transparent, fair and consistent
- Product (vehicle) specific carbon footprint
- Information exchange in the initial stage

#### ➤ Items for assessment

- GHG emissions only in the first step
- Scope of greenhouse gas species

#### ➤ Target products for assessment

- Passenger cars (M1 and N1) in the first step

## Discussion point 2

### » Proposals for Harmonized vehicle LCA Methodology Development (2)

#### ➤ Outline of working items on which LCA-IWG will focus

##### ▪ Need for harmonization

Functional unit (vehicle mileage and lifetime...)

System boundary (fuel cycle & vehicle cycle settings)

Cut-off criteria

Allocation schemes

Fuel production chains and Vehicle chains (related to data collection stages)

Requirements to primary and secondary data

Data collection for each stage (primary & secondary data, pathways...)

Validation of data...

# Discussion point 3

## » Discussion topics

- **For Use phase, the difference in carbon footprint among countries where the same vehicle operates could be significant**
  - For WTT, electric grid mix varies among countries
  - For TTW, driving cycles of CO<sub>2</sub> test procedures vary from country to country (Korea, US : FTP-75 & HWFET / Japan, EU : WLTC / China : WLTC(ICEs), CLTC(EV))
  
- **Any possibility to exchange country-specific LCI DB ?**
  - For defining requirements for secondary data, activities for data sharing and exchange would be considered
  - Sharing/exchanging of primary data (e.g. company data) is NOT considered
  
- **Method for vehicle-cycle LCA ?**
  - Top-down vs. Bottom-up method in LCA approach

## Discussion point 4

### » Dividing Roles for TFs

- Suggest **organizing task forces** divided into **developing methodology parts for Fuel cycle and Vehicle cycle** as well as **data qualification part** for the progress of the IWG and satisfying the target completion date

<Example>

- TF1 : Methodology for Fuel cycle
- TF2 : Methodology for Vehicle cycle
- TF3 : Data qualification and requirements

# AoB

## » Opinions of Korean vehicle LCA consultative group

- Vehicle LCA has been conducted for all new vehicle models by vehicle manufacturers' own methodology since 2022 to demonstrate the effectiveness of carbon reducing activities in vehicle-cycle
  - For vehicle data collection, primary data were used for life cycle stages regarding site-specific and directly related with the company and other stages were estimated using secondary data
- From an LCA standpoint, vehicle operation and raw material acquisition / processing stages have significant impacts on GHG emissions
- Thus, vehicle manufacturers aim to improve the environment impacts on supply chains as well as vehicle electrification and improvement of fuel economy
- However, it would be challenging and time-consuming process because vehicles have complex value chain and supply chains as well as poor availability of supplier specific primary data
- The vehicle LCA methodology for K-PEFCR(Korean product Environment Footprint Category Rules) is under development

**Thank you!!**

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