



**NGVA**  
— Europe  
for sustainable mobility

# NGVA Europe Overarching aspects

Rev.1

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Natural & bio Gas Vehicle Association

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**This revision has been done to focus the attention on the following open points:**

- Identification of measure unit flow and how to combine them for the whole LCA value **✘**
- Identification of full analysis in each SG (Level 4 methodology) and then 'downgrade' (if needed) to lower levels. **✘**

NGVA Europe aims the discussion on the measure unit, using a Top-Down approach:

1. Identification of basic principles, **special focus on measure units.**
2. Definition of general guidelines for all SGs (including expected output and measure unit)
3. All different SGs output will be combined in the whole LCA analysis by IWG (values not homogeneous from different SGs).

All vehicle categories included, category 1-1 high priority. Special focus on **target measure units**:

- For passenger cars (1-1) GHG emissions expressed in gCO<sub>2</sub>eq/km
- For trucks and freights (2) GHG emissions expressed in gCO<sub>2</sub>eq/tkm
- For transport services (1-2) GHG emissions expressed in gCO<sub>2</sub>eq/pkm

However, within the same vehicle category, there will be the need to combine different types of values. For example: in use emission in **gCO<sub>2</sub>eq/km**, fuel production (WTT) in **gCO<sub>2</sub>eq/MJ** and materials production emission in **gCO<sub>2</sub>eq/kg**.



**IWG to understand from SGs what is the expected output (specific or absolute emissions)**

**IWG to define methodology how to combine all data in the whole GHG emission of vehicles over lifetime (definition of lifetime, mileage, etc...).**

## Practical proposal for the combination of different measurement units

SG	Description	Main goal	Data required
SG1	Overarching aspects	Combine different outputs into the whole LCA analysis	
SG2	Material and recycling	gCO <sub>2</sub> eq/kg of material	Kg of all materials
SG3	Productions	gCO <sub>2</sub> eq/? (time of productions, plant or others?)	
SG4	Use	gCO <sub>2</sub> eq/km (TTW - 1-1 vehicle category) for emission in use gCO <sub>2</sub> eq/maintenance (in turns composed by materials)	Lifetime in km Number of maintenances in the lifetime
SG5	End of Life	gCO <sub>2</sub> eq/kg of material	Kg of all materials
SG6	Fuel and energy cycle	gCO <sub>2</sub> eq/MJ (WTT)	Energy consumption of the vehicle (MJ/km for 1-1 vehicle category)

**Sum all the above values in gCO<sub>2</sub>eq and then divided by the lifetime (in km) the final output is a value in gCO<sub>2</sub>eq/km for 1-1 vehicle category**

## About functional units:

- Lifetime is needed in the calculation chain. For example to switch from **gCO<sub>2</sub>eq/km** (emissions in the use phase of 1-1 vehicle category) to **gCO<sub>2</sub>eq**
- The whole emissions of a specific vehicles will be the sum of all emission phases (**gCO<sub>2</sub>eq**)
- The final emission specific value is the ratio between the total emissions and the milege (**gCO<sub>2</sub>eq/km**)



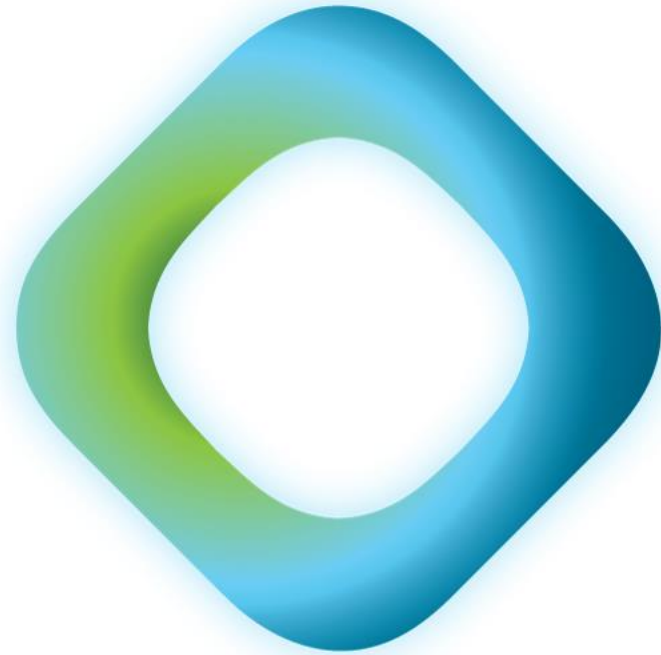
**Lifetime, expressed in km shall be standardized ‘in some way’ (regional/global average)?**

## **About the levels of analysis (refer to previous NGVA Europe presentation):**

With 4 levels there is the concrete possibility to introduce an high level of complexity for manufacturers, contracting parties and final users.



**Proposal to cover from the beginning Level 4 and one simplified level.**



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