

Contributions on A-LCA SG4 activities

prepared by JPN

A-LCA SG4 Meeting on 21st September, 2023

1-1. Comments and/or Feedbacks on A-LCA-SG4-02-02

Scope : **fully support !!**

also SG3/SG5 → please refer SG4-03-JPN02

- SG4 can interact with other SGs (such as SG6)
- Open discussion: Clearly define the topics to be included , topics in interaction with SG6 and over arching topics ?

Scope :

- Draft Term of Reference covers all category of vehicle and all type of powertrain
- Open discussion: should SG4 give priority to some and why ?

How is the service life ?
How frequent maintenance required

→ please refer SG4-03-JPN02

How to determine energy consumption ?
What are the maintenance input ?

**should cover
all powertrains**

	Vehicle Category								
	Light Duty		Medium Duty		Heavy Duty				
	M1	N1	M2	N2	M3	N3
Gasoline vehicle									
Diesel vehicle									
CNG Vehicle									
NOVC-HEV									
OVC-HEV									
Pure EV									
Fuel Cell									
OVC-FCHV									
...									
...									

**focus on Category1-1 as a first stage
according to IWG decision**

1-2. Comments and/or Feedbacks on A-LCA-SG4-02-02

List of Topics and proposals :

- Open discussion: Should the SG4 go for a summary to improve transparency ?

JPN positions

	Proposal 1	Proposal 2	Proposal 3	Proposal 4	SG4 Comments
Service life	Regional	Unique service life	Regional with option to declared higher life	-	
Energy consumption					
In-use energy consumption	Regional homologation value (WLTP, CLTC etc.)	Homologation value normalised to a standard homologation values		Real Driving value (based on OBFCM)	
Other consumptions	Efficiency of charging station	-		-	
Maintenance					
Urea consumption for diesel cars [Ricardo]					
Change of tires during lifetime					
Extended use					
V2X					

no interest according to ToR purpose

later stage due to current tolerance and data unavailability in JPN

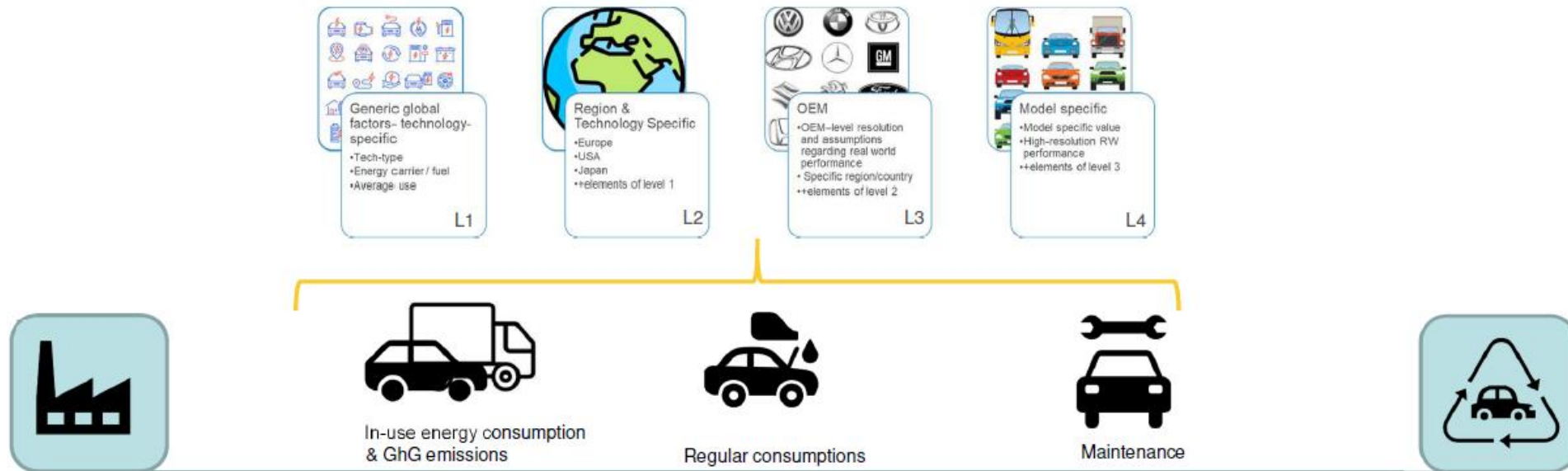
later stage
← better to follow EVE IWG discussion

2-1. Comments and/or Feedbacks on A-LCA-SG4-03-03

SG4 Scope

would like to confirm : “realistic” doesn’t mean “real-world”

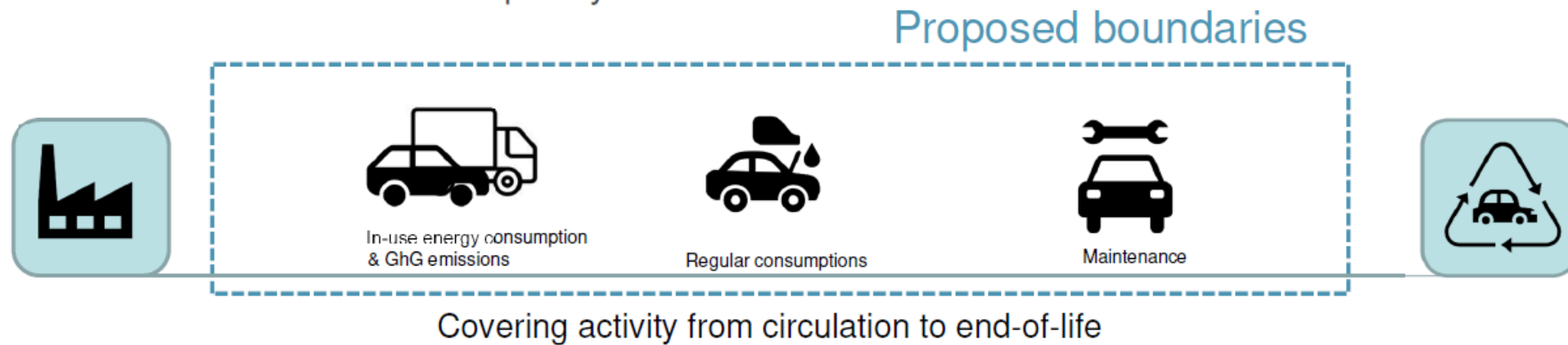
- Provide a comprehensive methodology for calculating realistic GhG emissions and energy consumption over vehicle use-phase at various levels of detail and considering the availability of different information and datasets



2-2. Comments and/or Feedbacks on A-LCA-SG4-03-03

SG4 Boundaries

- Agree on vehicle types type/powertrains to be included
- Define service life (OEM or Default)
- Agree on databases – acceptable data sources - standards
- Define maintenance frequency



fully support !!

- ✓ no need to consider product deliver to user in all phases (but flexible per further discussion)
- ✓ OK to accept SG3 request (dealer showcase), but it's out of consideration
- ✓ “maintenance” include also disposal phase

2-3. Comments and/or Feedbacks on A-LCA-SG4-03-03

SG4 Scope & Boundaries Definition

- Ricardo proposes to use real driving values **JPN will NOT consider at this stage**
← may mislead the wrong direction without clear methodology
- UTAC proposes that for Europe the existing OBFCM data can be used. **Use Phase Values**
JPN will NOT consider at this stage ← current OBFCM tolerance is not precise enough for LCA determination
- JRC suggests to enlarge the scope and consider the charging efficiency
JPN plans to consider when the efficiency of current charging stations are provided
- ICCT propose to discuss energy efficiency topic also with SG6, and define lifetime use (duration and not only distance). Take into account the lifetime in the registration country but should also take into account lifetime outside the registration country.
- Green NCAP shares the same view of ICCT **It's up to each CP responsibility** **Lifetime usage**
- Japan suggested that the use phase parameters should be region specific and contracting parties should decide. Also lifetime and distance should be for the CPs to consider.

Japan provides the discussion tool “SG4-03-JPNO2” for our further activities.

2-4. Comments and/or Feedbacks on A-LCA-SG4-03-03

SG4 Scope & Boundaries Definition

Other Emissions

- RICARDO wants to include: (1) GHG emissions not directly related to fuel consumption - i.e. fugitive emissions/leakage (storage only), or from emissions aftertreatment (e.g. N₂O); (2) emissions resulting from use of Urea in SCR systems (direct emissions, plus production of Urea); (3) other aspects besides remaining parts (i.e. consumed fluids, etc.).
- Green NCAP proposes to use dependent factors such as lubrication/oil consumption or other consumption. The lack of these factors and battery durability can negatively affect the methodology.

→ please refer SG4-03-JPNo2 for concrete our proposals

Other

2-5. Comments and/or Feedbacks on A-LCA-SG4-03-03

Draft CO₂eq Calculation (JRC)**

Under the consideration

Lifetime GhG [CO₂eq] = GhG [CO₂eq] * total average distance [km] + Maintenance * occurrences + waste (total)



GhG [CO₂eq.] (g/km) = Energy consumption (MJ/km) * Factor SG6 + Fuel Energy Consumption (g/km) * Factor SG6 + fugitive emissions + other emissions (TBD from the guidebook)



Energy consumption OR Fuel energy consumption = TA Value (or equivalent) * RW correction factor [lvl1, lvl2, lvl3, lvl4] * degradation factor [lvl1, lvl2, lvl 3, lvl 4] * other factors (?) apply currently available database

Fuel energy consumption for OVC-HEV is only parameter to be considered, but it's up to the impact (JPN has no data)

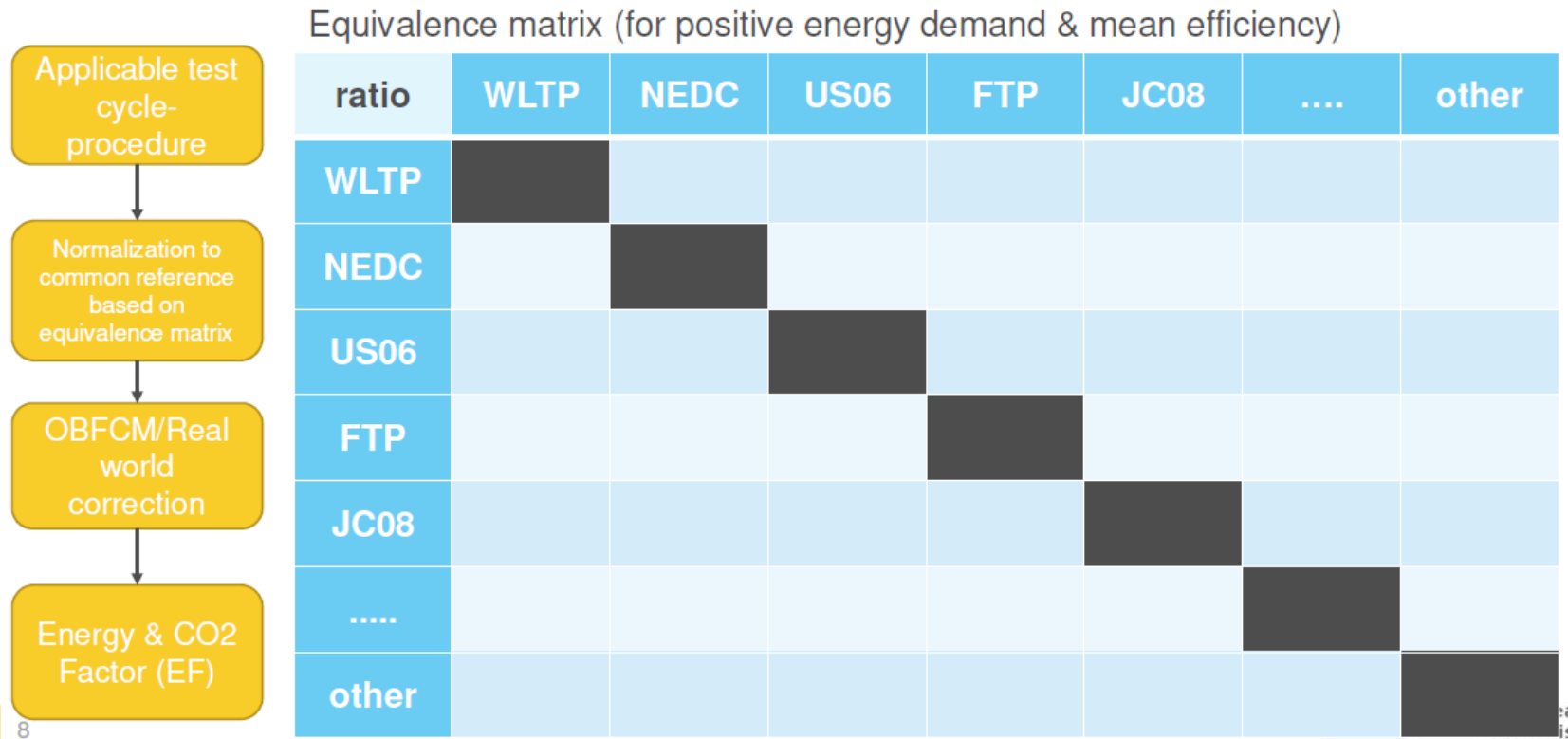
No proposal from JPN side

** Important to define levelling concept [lvl1, lvl2, lvl 3, lvl 4] and the data sources

JPN sees that no levelling concept is necessary for SG4

2-6. Comments and/or Feedbacks on A-LCA-SG4-03-03

Fuel Consumption/Efficiency



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JPN has no motivation to normalize each test procedure
← Comparison of each CP will NOT contribute CN

2-7. Comments and/or Feedbacks on A-LCA-SG4-03-03

Level Concept for SG4

USE PHASE	Reference Vehicle	Representativeness	Energy consumption		Maintenance	Service Life
			In-use	Charging		
Level 1	General concept per powertrain tech /energy carrier	Global average	Average homologation value normalized to WLTP corrected for RW (global)	Generic charging efficiency (?)	Generic	Generic/Global
Level 2	Same as Lv 1	Regional (EU/US/JP/KR/CN...)	Regional RW correction	Regional charging efficiency value (standardised)	Generic/regional	Regional / Unique service life
Level 3	Representative vehicle for each OEM/powertrain/energy carrier (need to define criteria)	OEM/National	OEM-resolution and assumptions for RW performance	OEM average efficiency (standardised?)	OEM Specific	Regional with option to declared higher life
Level 4	Specific OEM's vehicle model	OEM's specific vehicle model	High-resolution RW value (based on OBFCM or similar data)	Vehicle specific charging efficiency (standardised?)	Model specific	OEM/Model specific average data

<example>
 PEV : 7yrs/100k km
 Others : 12yrs/150k km

JPN sees that no levelling concept is necessary for SG4
 SG4 (and other SG3/5) should develop the methodology to define each specific model

2-8. Comments and/or Feedbacks on A-LCA-SG4-03-03

Methodological question

- What happens if the user selects values from different levels because of data availability eg 4/6 values are level 4 one value is level 3 and one is level 2?
 - Is that acceptable?
- If yes, then lower levels should have more conservative values to encourage measurement/data provision
- Other boundaries to be included?

Definition of each level is up to each SG,
so we just need to accept each SG decision.

However, some of items* need to be in-line among SGs.
It's part of “overarching aspects”.

2-9. Comments and/or Feedbacks on A-LCA-SG4-03-03

| Methodological question

Missing the timing of calculation : should be one of the “overarching aspects ”

➤ JPN position : up to each CP (or each practical level)

3. Request to other SGs and Request from other SGs

items	to which SG	from which SG	notes
1. OEM showroom	NA	SG3	Accept the request
2. Provide the consumed energy for maintenance parts (please refer SG4-03-JPNo2 for detail)	SG3/SG5	NA	unit should be J, not GHG
3. Provide GHG factors for each fuel (please refer SG4-03-JPNo2 for detail)	SG6	NA	unit should be GHG/L or kg
4. Provide GHG factors for each energy source (please refer SG4-03-JPNo2 for detail)	SG6	NA	unit should be GHG/J
5. tbd			