

**DRAFT GUIDELINES**  
**Subgroup 6 (Fuel & Energy Cycle)**  
of the IWG on Automotive Life Cycle Assessment  
(IWG on A-LCA)

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**Guidelines to SG6 methodology :**

**1. Goal**

= methodology with a global approach

**2. Scope of emissions:**

- All GHG IPCC AR6 emissions or the three main (+GWP Hydrogen)
- Include upstream emissions but what about methane leakage? → Yes, but only upstream (rest is for SG4)
- IPCC software already running so in favour of taking this into account.
- **NO AGREEMENT YET : As defined by IWG we will use the latest versus of IPCC (AR6 or any later version), adding Hydrogen and where there are no flows, we consider them to be 0. Exclusion of certain factors might be considered later within this SG.**
  - **Question from CLEPA:** include Hydrogen or not? As it is not in AR6 yet.
  - **EPA** recommends to use a fixed number (5,8) but will come back to the January meeting with a recommendation (in IWG). Based on literature.
  - **ICCT, EPA agree to include Hydrogen**
- **AGREEMENT: All Levels should have the same impact assessment methodology.** → Comparability between levels is not needed and should serve a different goal.

**3. Scope & boundaries:**

- **LEAKAGE:**
  - Concawe wondered if methane leakage should be considered on a very local level and a quantitative approach might be insufficient. □ ICCT wondered if we should consider averages or real numbers.
  - **AGREEMENT: Include methane leakage in all situations where methane is used, produced or emitted.**
  - **AGREEMENT: Average/secondary or detailed/primary data □ To be solved via de levelling**
- SF6 emissions (isolator) to be included into the infrastructure emissions?
  - **AGREEMENT: All other forms of emissions linked to leakage will be taken into account (SF6, ...).**
- **LOSSES:** Losses should, like leakage be included into the in the upstream and transport emissions.

Commented [RD1]: JRC will come back on this

Commented [RD2R1]: Other CP's?

- **AGREEMENT:** Losses taken into scope are:
  - Energy/fuel producing plant
  - Transport- and conversion-losses
  - **Boundary for each fuel should be considered in the upstream: (important to have an objective measurement without overburdening) → Everything upstream of the vehicle. (when the energy 'enters' the car.**

ENERGY/FUEL PRODUCTION → SG6

TRANSPORT → SG6

REFUELING STATION/CHARGER → SG6

VEHICLE → SG4

PRACTICAL THOUGHT: Differentiation between AC- and DC-charging, ICCT suggests to take into account the differentiation AC and DC but have them both in SG6? → NGVA suggests to take into account onboard charging losses in SG4 and external (to the vehicle) charge losses to SG6.

**AGREEMENT: Suggest to take into account onboard charging losses in SG4 and external (to the vehicle) charge losses to SG6.** Prevent not counting it, but also prevent double counting.

**AGREEMENT: Raise this SG4.**

- **AGREEMENT: ~~elements linked to efficiency within a vehicle (and between the connection and the vehicle) should be tackled by SG4. But may not be forgotten.~~**

**AGREEMENT: Raise V2X at the next IWG.**

- Clepa: V2X/V2G charging? → EPA agrees it is an important point and would suggest.
  - AVERE agrees but would align on the same break-point.
  - ICCT disagrees to include V2X/V2G charging as it is outside of scope. Wondered what the climate impact of V2X would be...
  - JRC agrees it is important as V2X will become more important and agrees with ICCT that this will be hard to model it in terms of LCA perspective, the vehicle is not only a mean of transport but also energy vector...  
**SUGGEST to raise it at the IWG for feedback**
  - EPA indicated that they already model it like battery storage, this has an LCA impact.
  - Question from ICCT: how to include this into the functional unit??

- **INFRASTRUCTURE:**

- Emissions linked to infrastructure for energy and fuel production

- **AGREEMENT: The following emissions for the construction of new production infrastructure:**
  - Construction of new energy and fuel production infrastructure (and other embodied emissions) is recommended.
  - Construction and afterlife of infrastructure for producing of infrastructure is recommended but is seen as not necessary to be included. (infra of the infra)
- **DISCUSSION: Role of self-produced energy?**
- **Remark: should be checked with IWG (and other SGs)**
  - Emissions linked to infrastructure for transport of energy and fuel
  - Emissions linked to infrastructure for construction and maintenance of infrastructure of energy and fuel

- CARBON FEEDBACK: upstream emissions

- ALLOCATION and CO-PRODUCTS:

- ILUC: ]

- ...

4. **Levelling concept:**

TBD

5. **Functionnal unit (?)**

IWG will ultimately decide,

6. **Future projections of carbon intensity of energy and fuel**

IWG

Commented [RDE3]: Proposal coming from CONCAWE

Commented [RDE4]: To review and further discuss next time

Commented [RDE5]: ICCT proposal

**ANNEXES**

**Participants list:**

IN MEETING

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