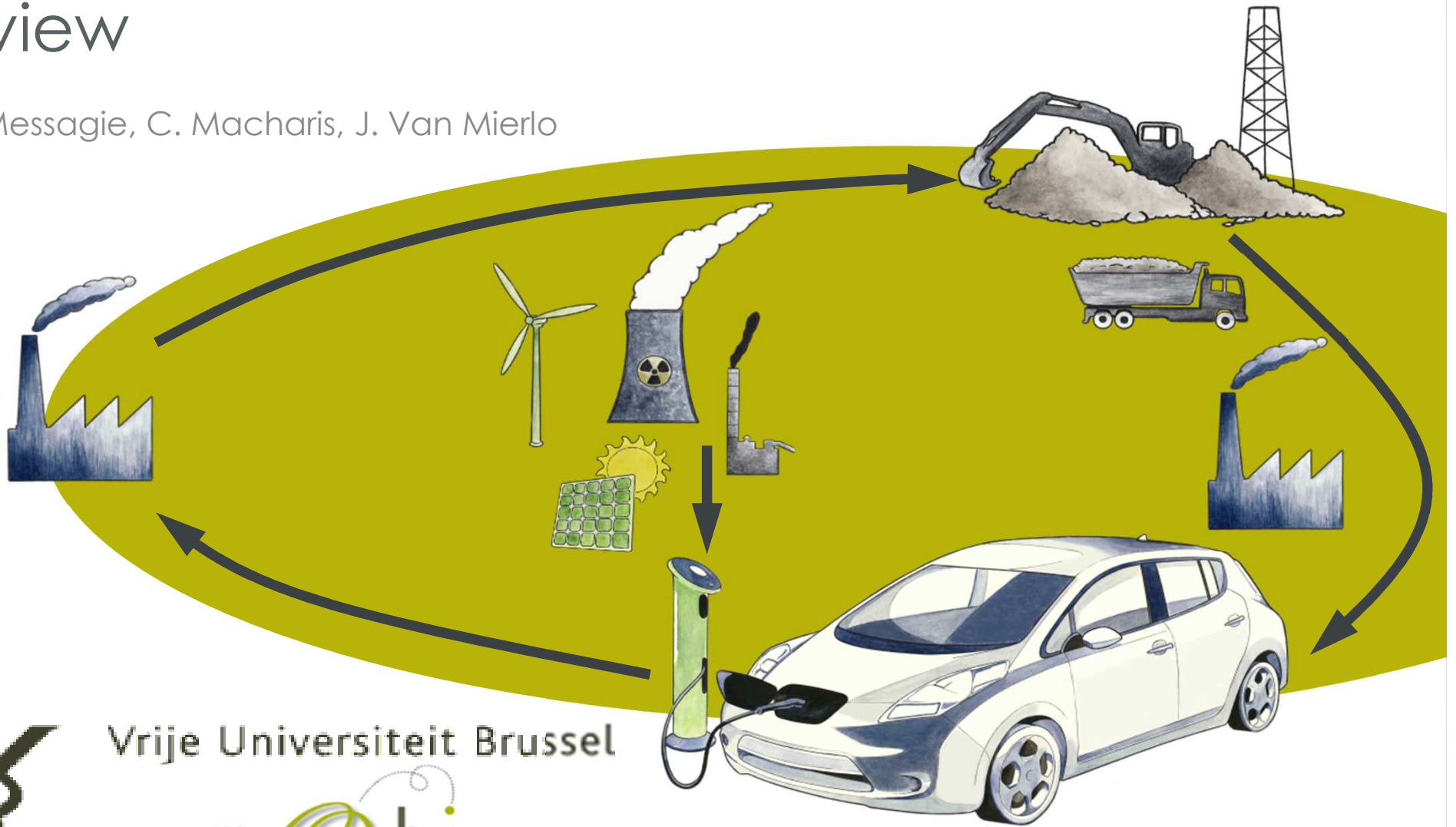


Key outcomes from Life Cycle Assessment of vehicles, a state of the art literature review

M. Messagie, C. Macharis, J. Van Mierlo



Vrije Universiteit Brussel

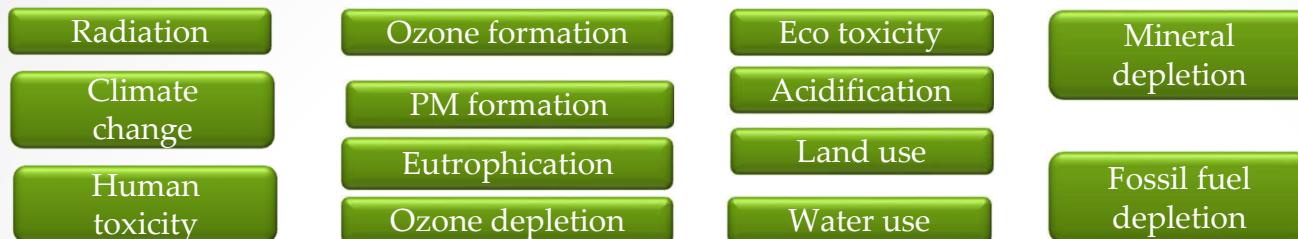


Observations from literature on vehicle - LCA

1. Mainly climate change
2. Single values
3. Poor goal and scope definition
4. Electricity production
5. Credibility of LCA

Observations from literature on vehicle - LCA

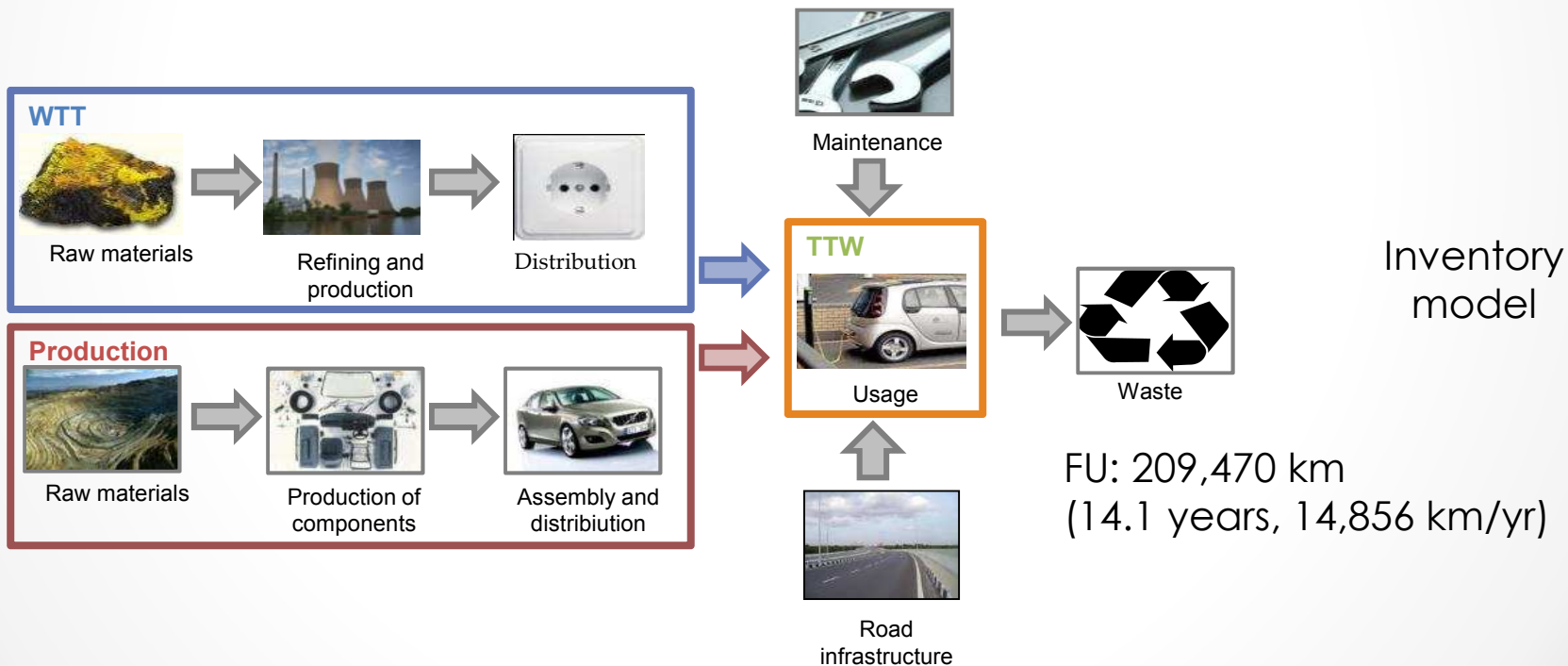
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Midpoint impacts

CO₂, CH₄, N₂O, NO_x, Cd, Benzene, iron ore, hard coal, land use, ... and other elementary flows (emissions and resources)

Elementary flows

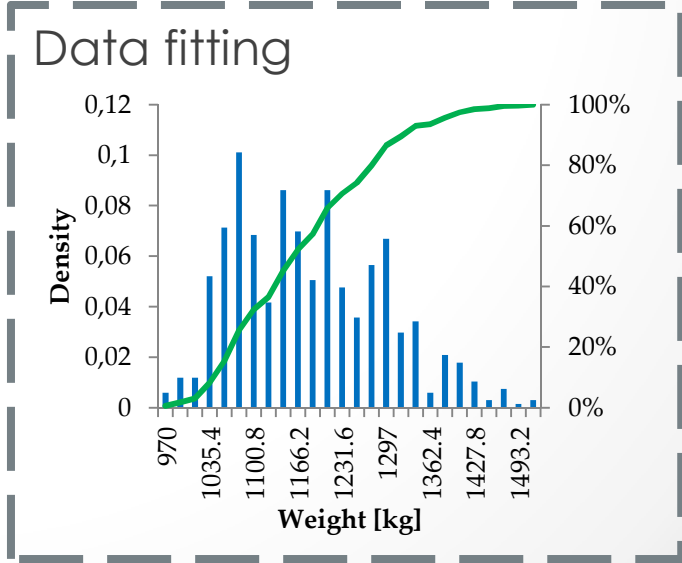
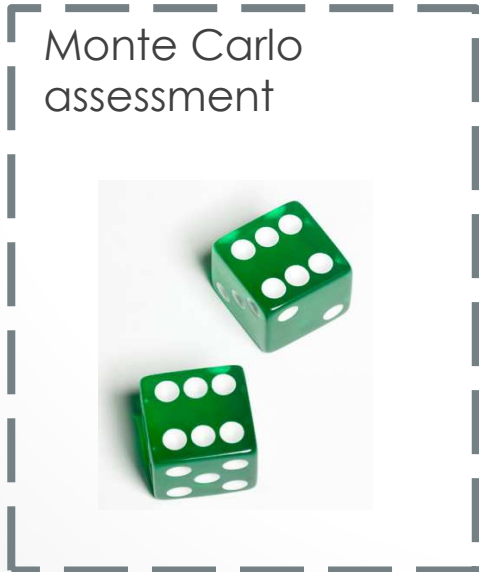
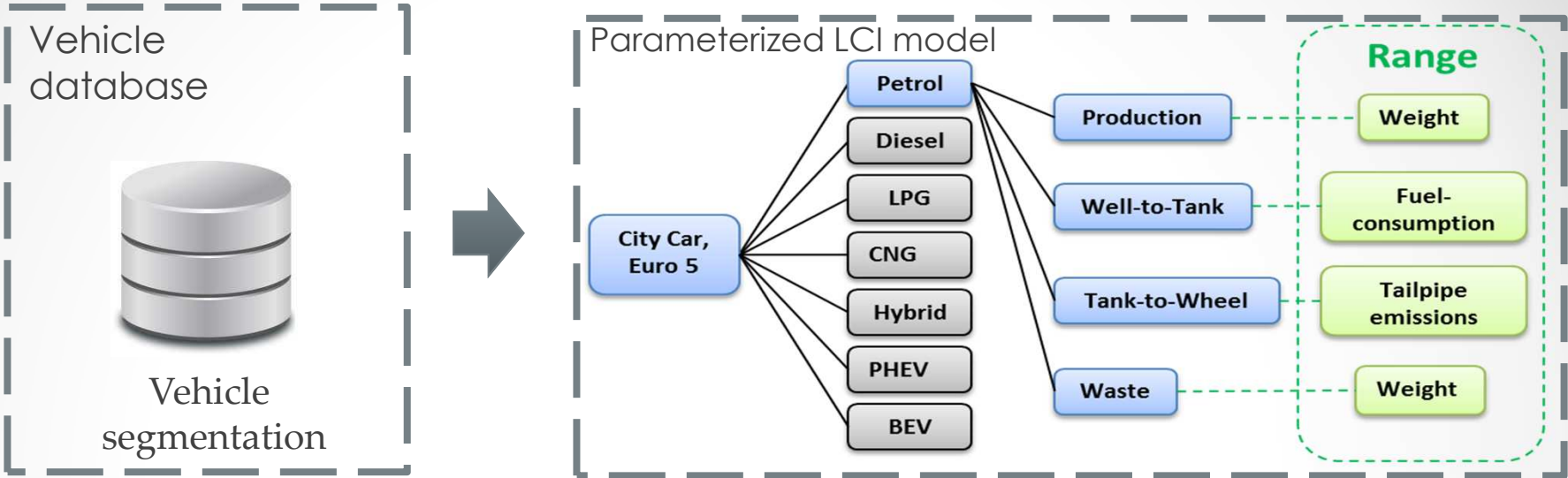


Observations from literature on vehicle - LCA

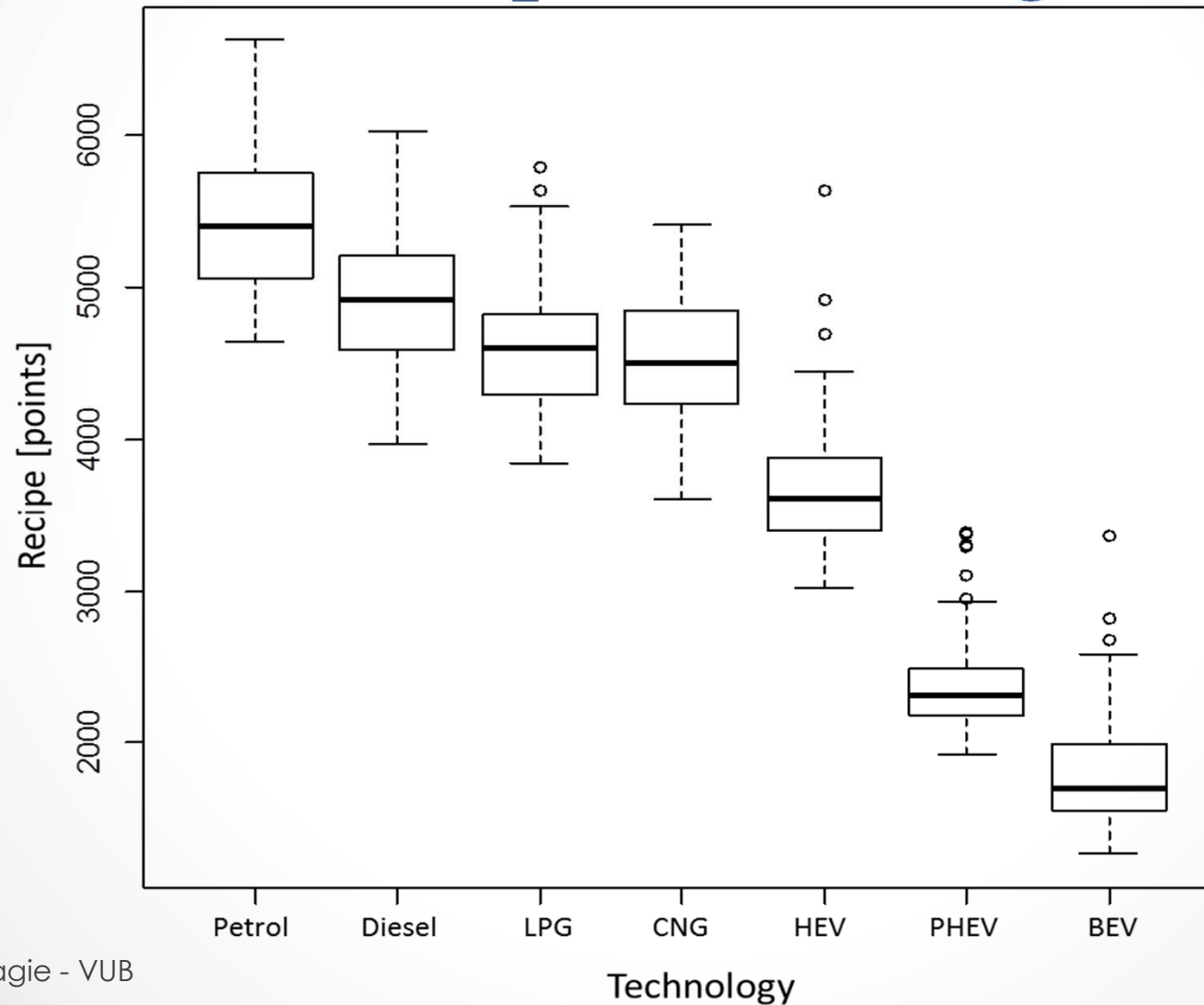
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One single value \neq robust

- Market variability (200.000 different vehicles)
- Differences between real life and NEDC
- Unrepresentative and inaccurate data
- Uncertainty in impact assessment



How to interpret a single score?



Observations from literature on vehicle - LCA

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Goal definition

- What is the objective of the study?
- What is the intended use of the results?
- Who is the target audience?
- Who is the commissioner?
- Who are the stakeholder and what are their interest and involvement?

- What is the functional unit?

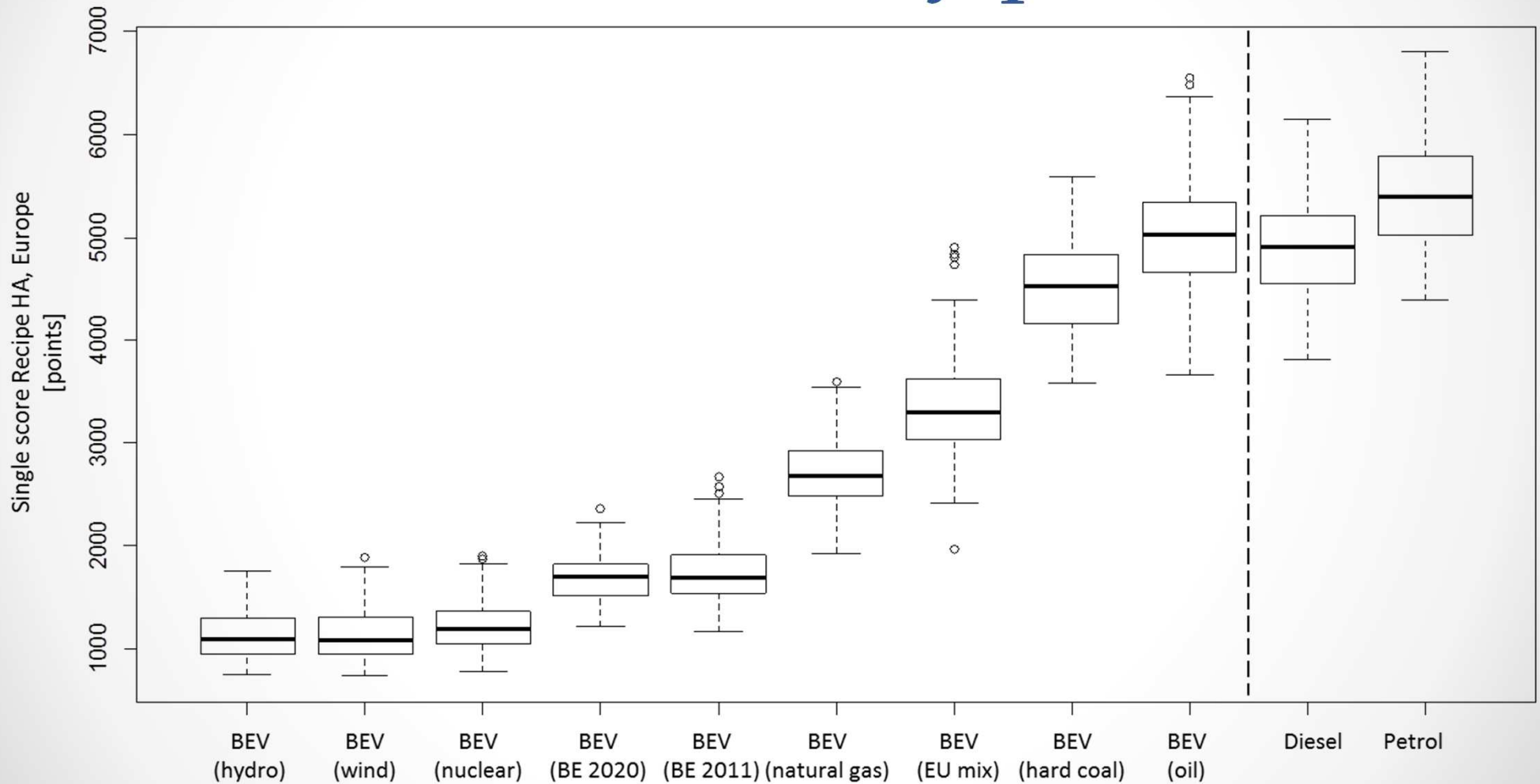
Scope definition

- What are the system boundaries?
- What is the temporal and geographical scope of the study?
- What are the data quality targets?
- Who will review the report?

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Influence of electricity production



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reproduceability

Q & A

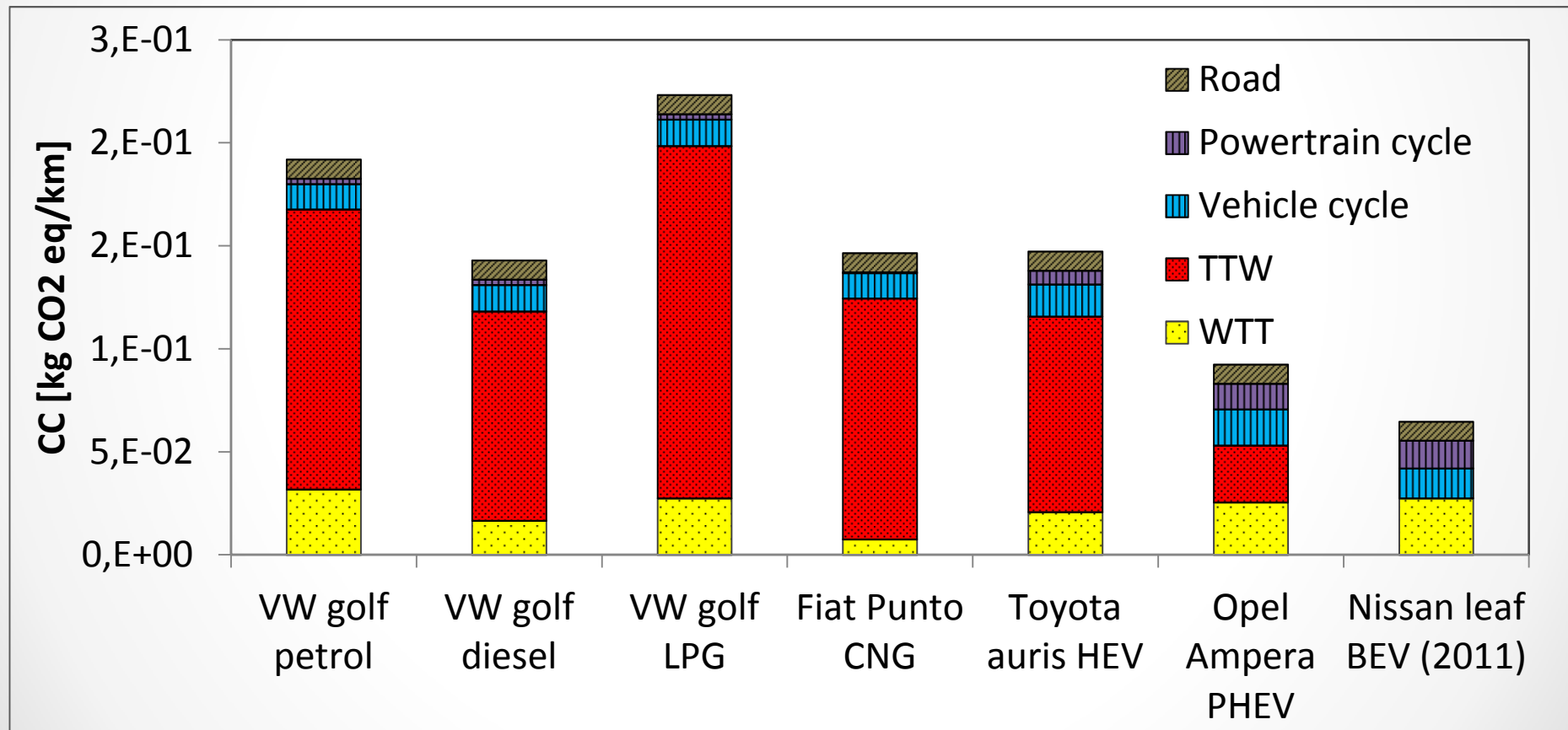
Info @:

maarten.messagie@vub.ac.be

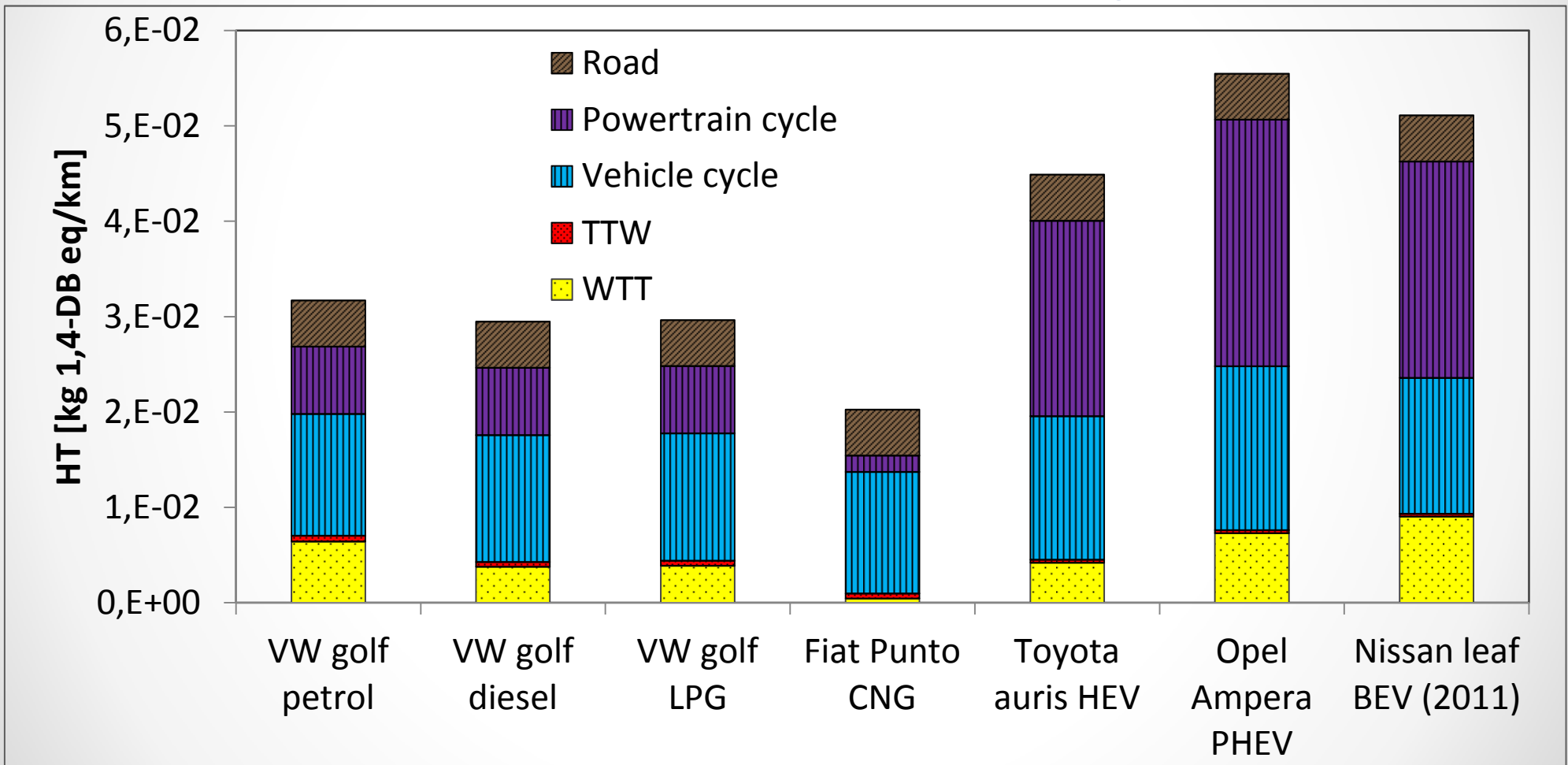
<http://mobi.vub.ac.be>



Climate change



Human toxicity



Statistical analysis of LCA result

