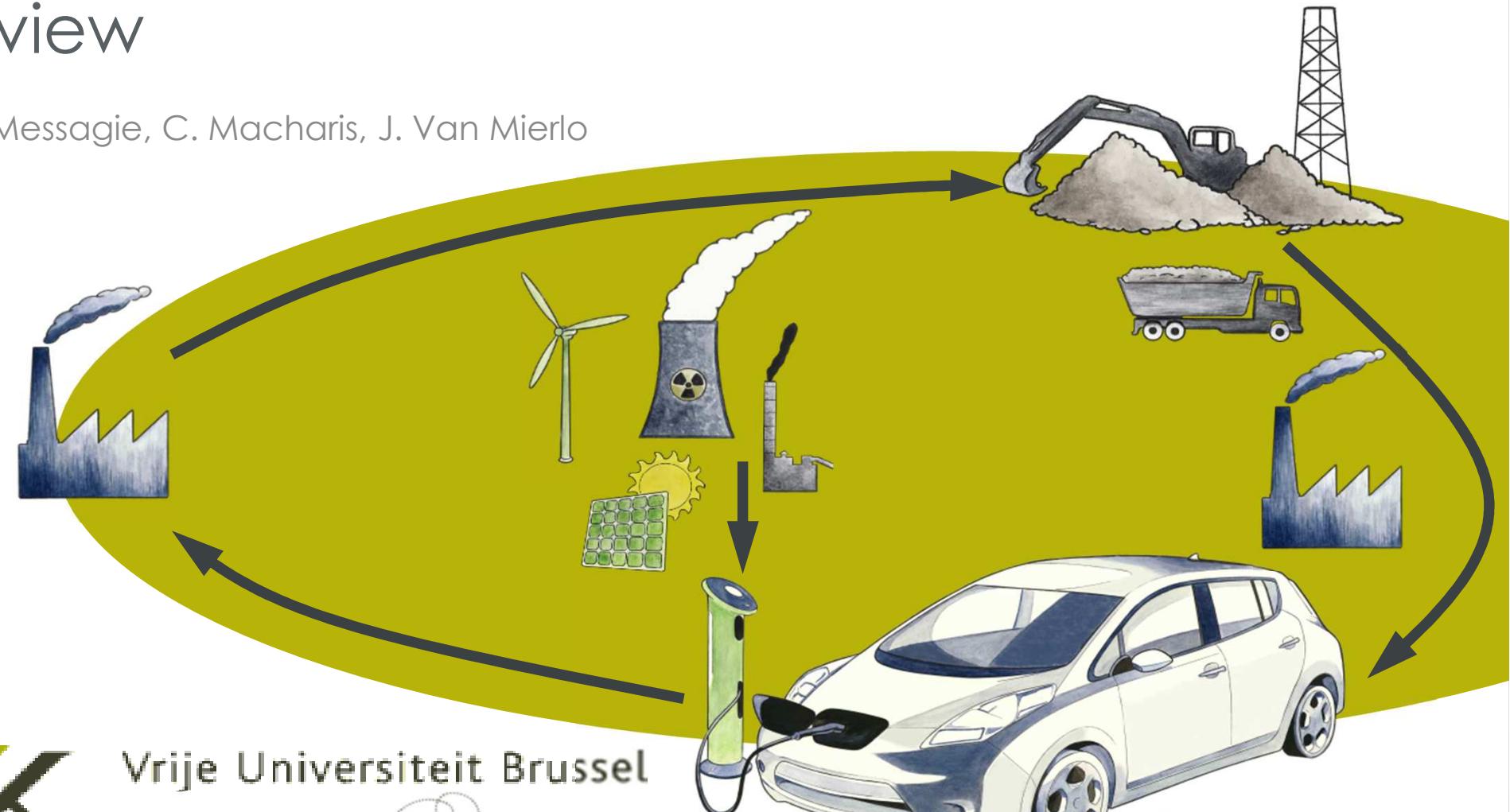


# Key outcomes from Life Cycle Assessment of vehicles, a state of the art literature review

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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

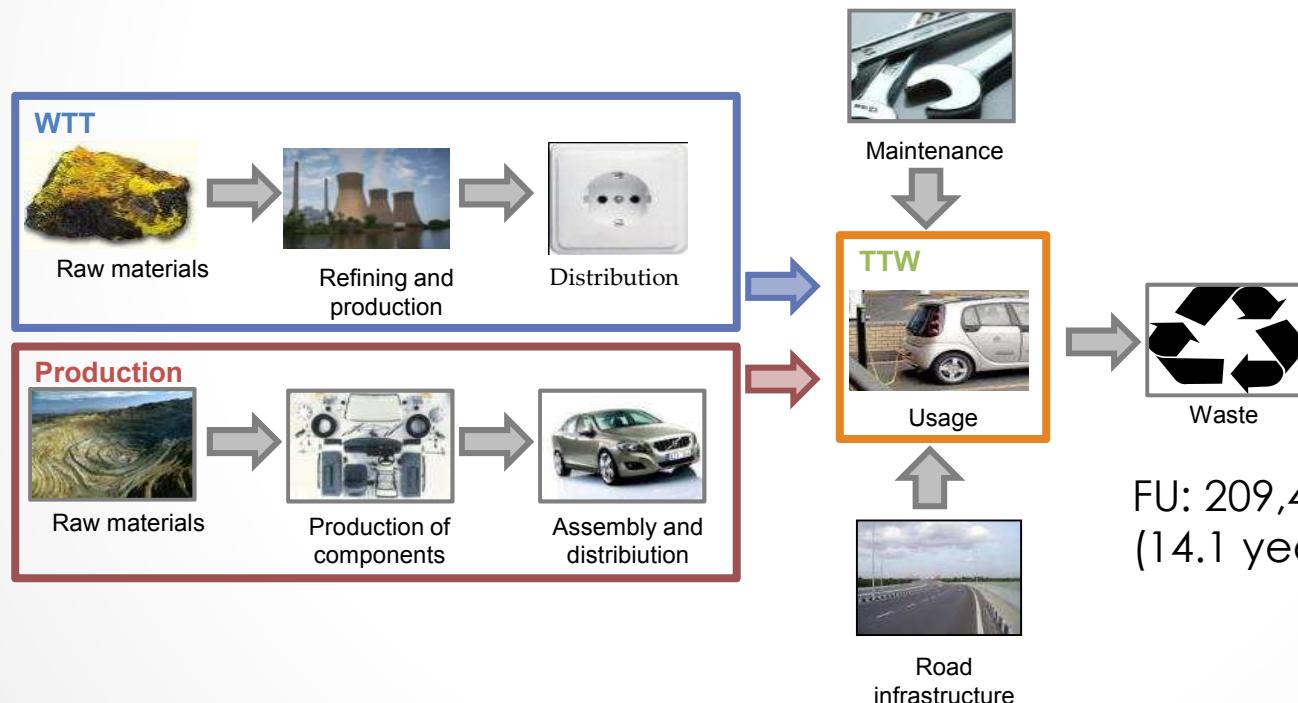
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Midpoint impacts

CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, NO<sub>x</sub>, Cd, Benzene, iron ore, hard coal, land use, ...  
and other elementary flows (emissions and resources)

Elementary flows



Inventory model

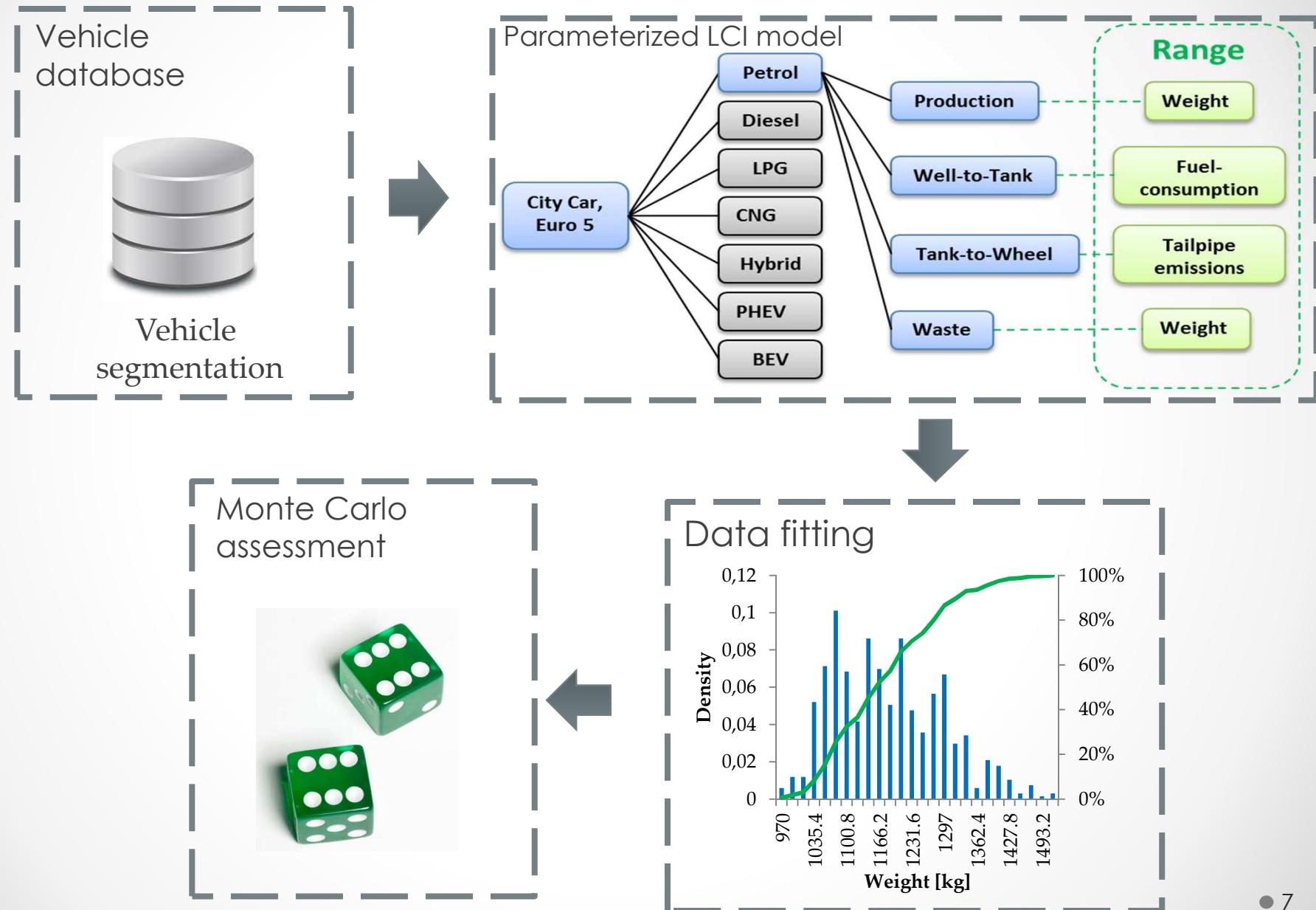
FU: 209,470 km  
(14.1 years, 14,856 km/yr)

# Observations from literature on vehicle - LCA

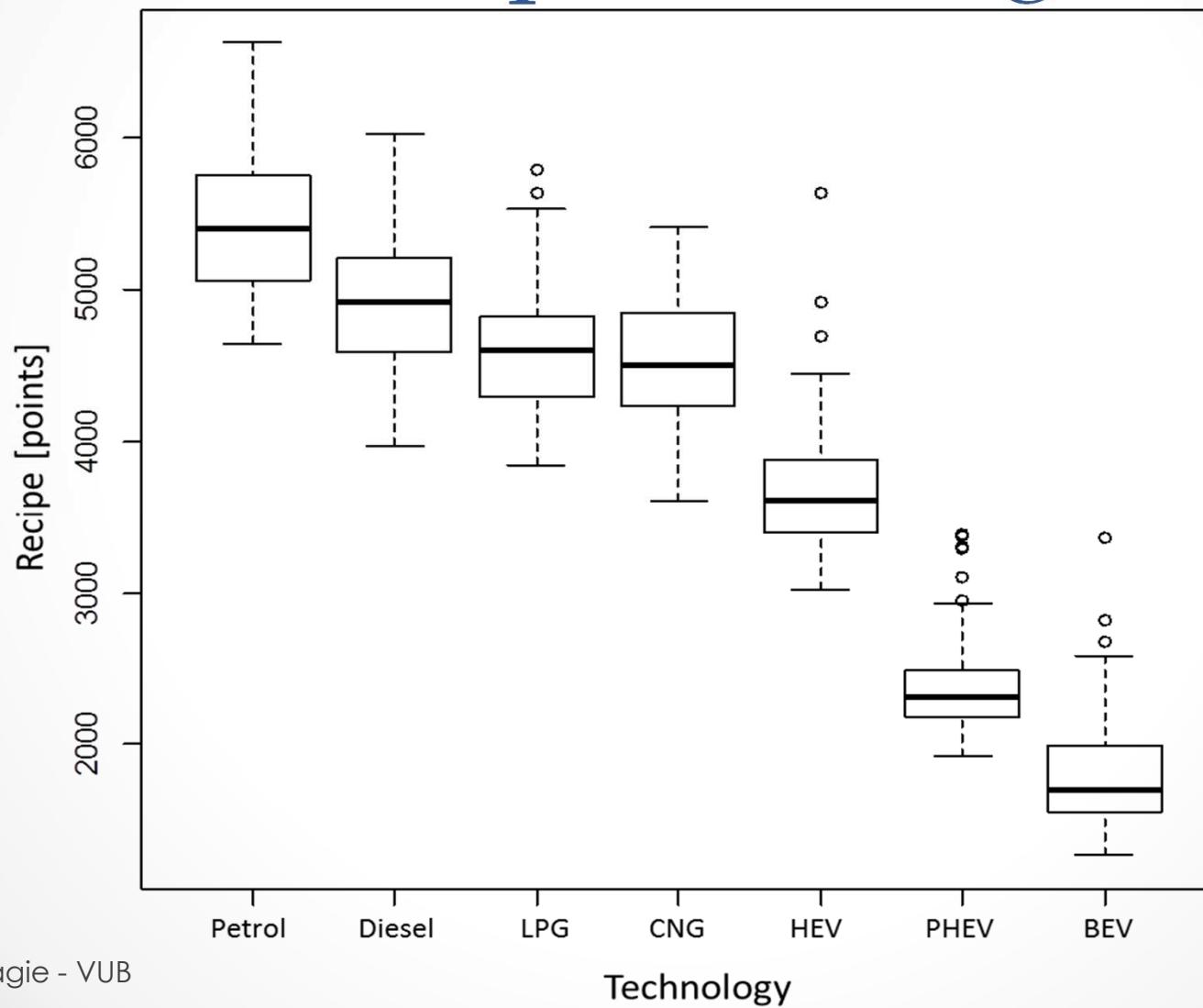
1. Mainly climate change
2. **Single values**
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# One single value ≠ robust

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



# How to interprete a single score?



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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?

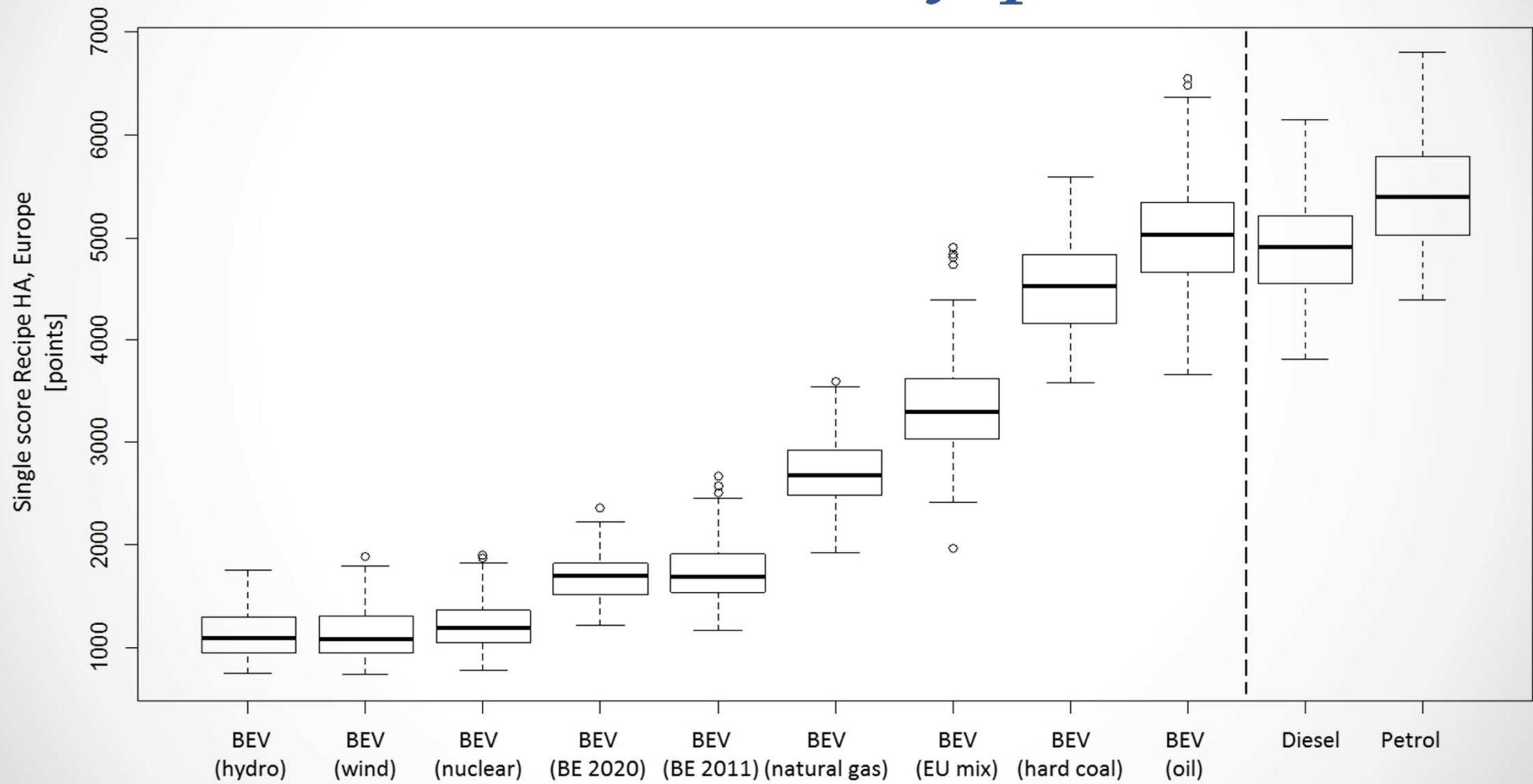
# Scope definition

- 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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# Observations from literature on vehicle - LCA

1. Mainly climate change
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4. Electricity production
5. **Credibility of LCA**  **reproducibility**

# Q & A

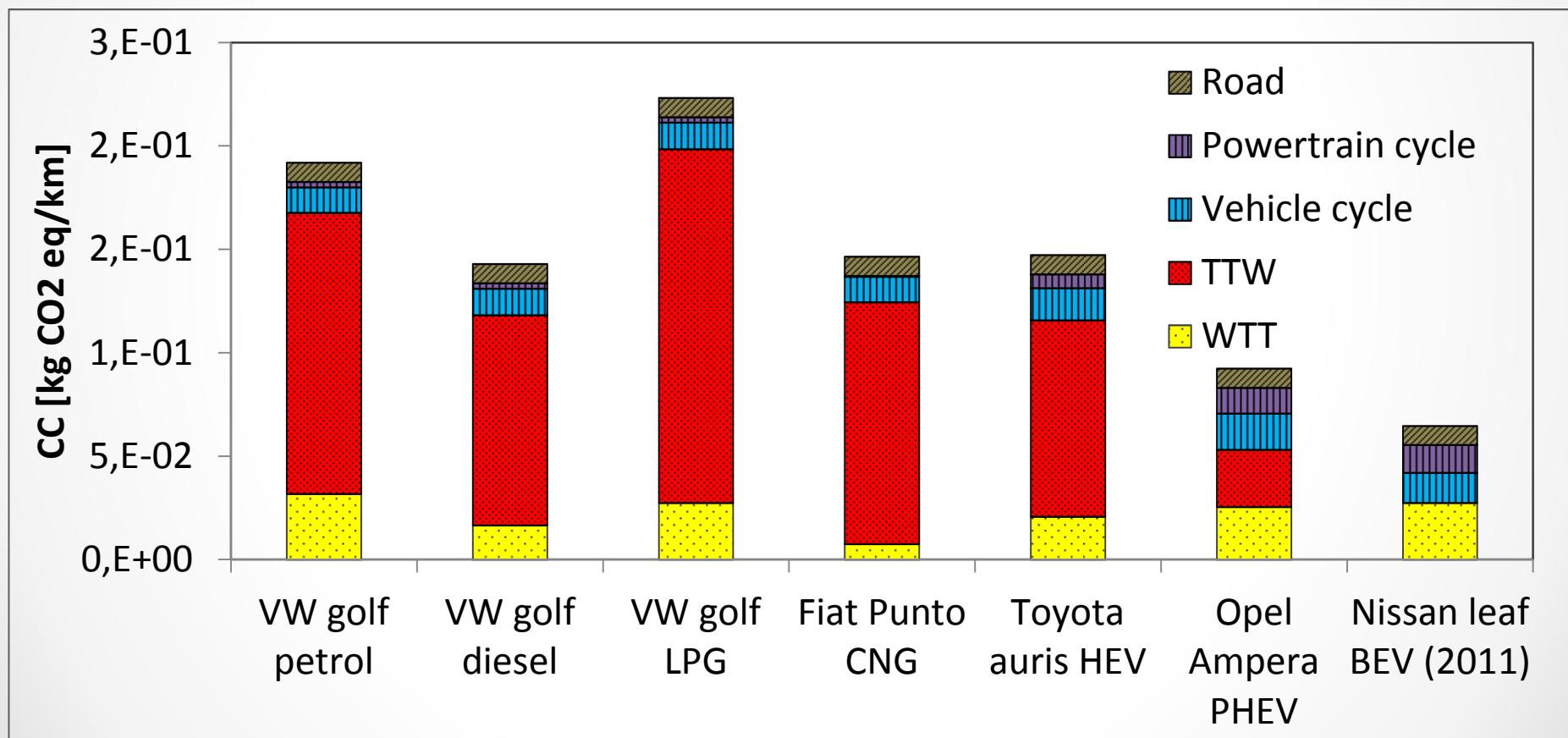
Info @:

[maarten.messagie@vub.ac.be](mailto:maarten.messagie@vub.ac.be)

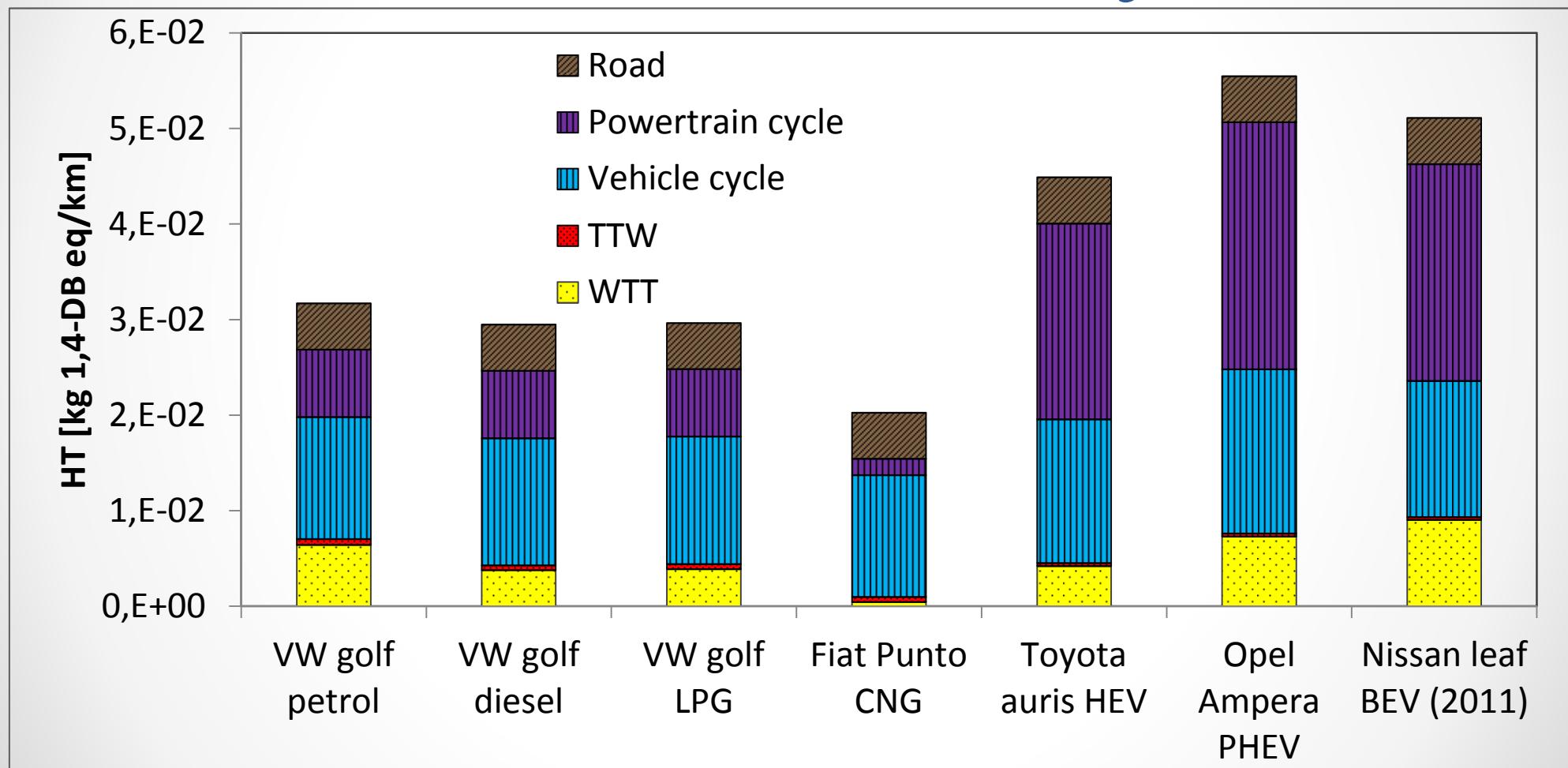
<http://mobi.vub.ac.be>



# Climate change



# Human toxicity



# Statistical analysis of LCA result

