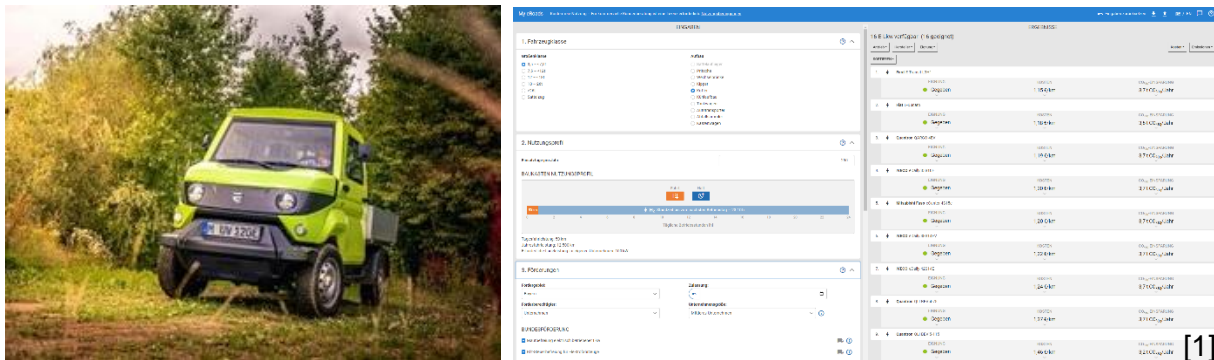


Interdisciplinary Project (IDP)

Development of an interactive tool to assess fleet electrification potential, TCO & sustainability

Electrification is one of the major trends in automotive technology and a cornerstone of making transportation more sustainable. Besides human mobility like commuting or leisure trips, commercial purposes are another critical sector. Many cities apply strict directives for their own fleet. Those often concern means of public transport like busses but also municipal vehicles like garbage trucks and utility vehicles needed for a multitude of tasks like winter road clearance, gardening etc. As costs and sustainability are the key drivers when deciding whether to electrify a fleet of municipal vehicles, providing well-founded data on those factors is key when enabling customers to make this decision.



Together with the partners Evum Motors (manufacturer of an electric municipal vehicle) and MCube Consulting, it is the goal of this IDP to develop a tool for customers to assess whether the electrification of their fleet is financially viable and sustainable. Based on in-depth knowledge on TCO (total cost of ownership) and CO₂ calculation, which is available at the Chair of Automotive Technology, a web-based tool is to be developed. The input data for the calculations will be available as a SQL database or CSV, the calculation code in Python. In this phase, a prototypical implementation, for example with Python based frameworks like Flask or Dash, is needed for further discussion with the stakeholders (representatives of the municipalities and the vehicle manufacturer).

The main tasks within the scope of this IDP comprise:

- Review of different tools suitable for the task at hand
- Getting acquainted with the calculation methods (no specific knowledge needed)
- Prototypical implementation of an interactive, web-based tool allowing to assess electrification potential, TCO and CO₂ emission savings

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