## D-BAUG Lighthouse Project: E-Bike City Subproject F

# Assessment of environmental benefits and impacts of the e-bike city

**Vanessa Schenker, Stephan Pfister, Stefanie Hellweg**
**Chair of Ecological Systems Design, Institute of Environmental Engineering, ETH Zurich**

## 1 Goal and scope

### What are the environmental benefits and impacts of an e-bike city?

- Assessing environmental performance of future e-bike city using **life cycle assessment**
- Analysing **trade-offs and co-benefits** of an e-bike city such as Zurich
- Assessing environmental performance of various **scenarios** regarding infrastructure, vehicles, and technology shifts relevant for Zurich

## 2 Data collection/Project structure

- Collection of life cycle inventory data of **relevant supply chains** (special focus on Li-ion battery production and relevant upstream industries (**1-2**))
- Assessment of future **technology trajectories** and **use patterns** for e-bikes
- Assessment of a wide range of life cycle impacts (e.g., Global Warming Potential (IPCC 2013)(**3**), comprehensive set of environmental impacts (ReCiPe 2016)(**4**))

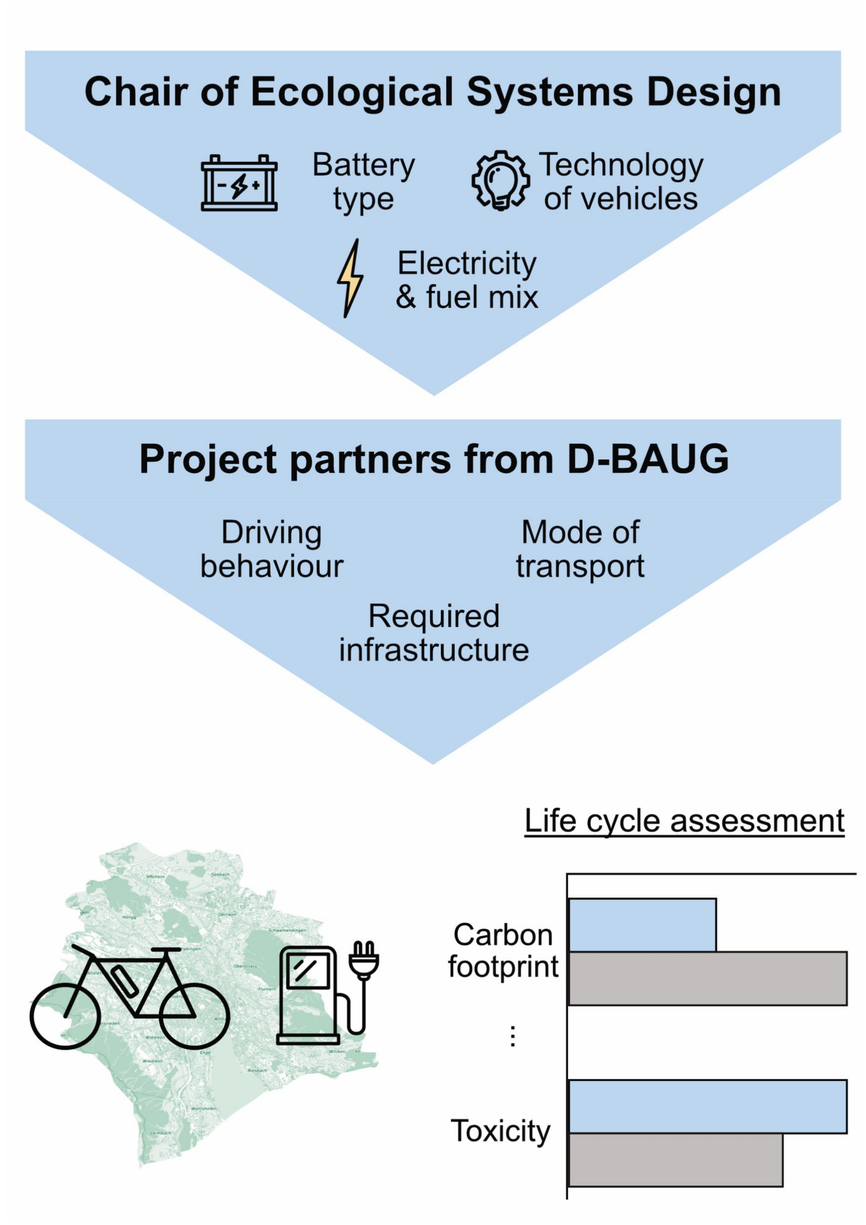


**Fig. 1: Structure of the sub-project within the e-bike city.**

## 3 Scenario assessment

- Optimization of environmental benefits of an e-bike city by **developing scenarios and identifying relevant parameters** (e.g., energy supply)

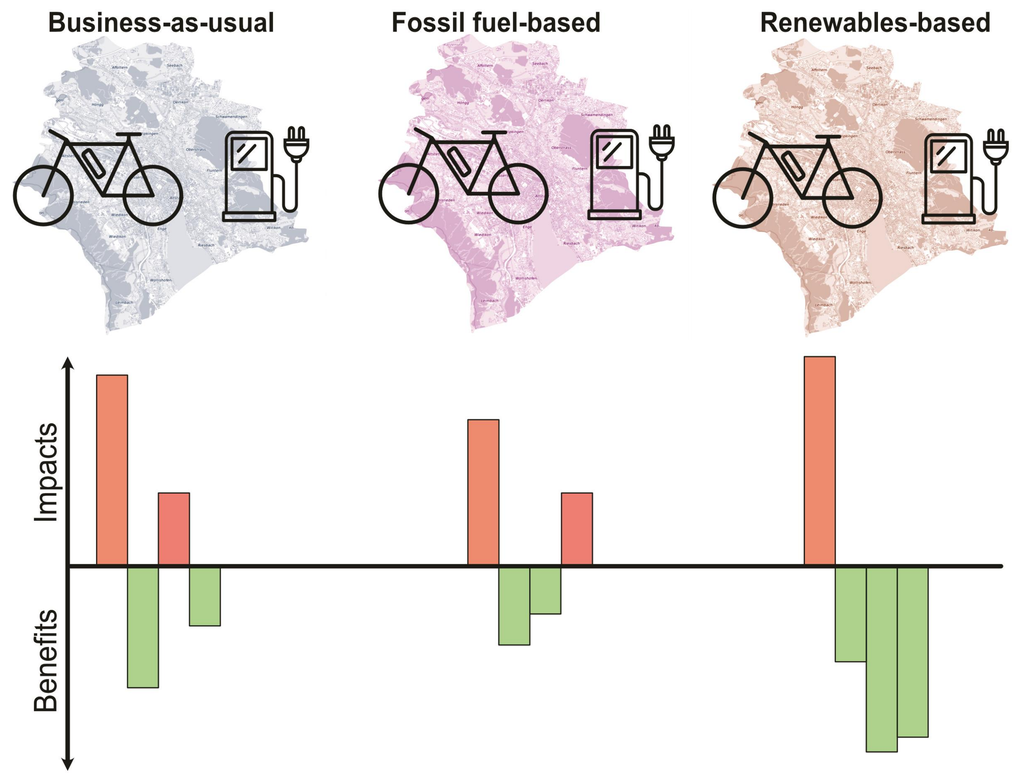


**Fig. 2: Scenario assessment of future e-bike cities**

## 4 Potential outcomes

- Improved **life cycle inventories** of electrified mobility (especially Lithium-ion batteries)
- Possible **reduction potentials** within assessed system boundaries
- Enhanced understanding of environmental **trade-offs and co-benefits**

- Recommendations to policymakers how to **sustainably transition toward the e-bike city**
- National agencies, LCA practicioners, and stakeholders will be better supported by increasing the **reliability of LCA assessment**

## 5 References

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