Zero-Emission Last-Mile Concepts

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Bundesministerium Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie
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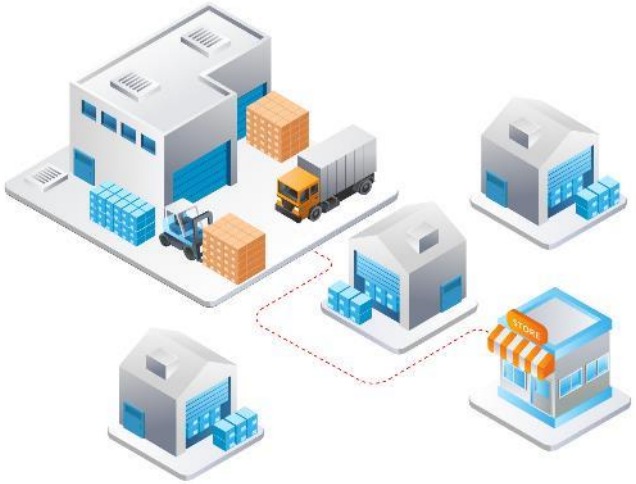
Agenda



Challenges of
Zero-Emission Last-Mile

Our Approaches

Learnings &
Future Perspectives

Challenges of Zero-Emission Last-Mile Concepts

- **Let's talk about: "Unsustainable business models" in the transport sector** (Bocken & Short, 2021)
  - ***Transport sector*** responsible for approx. 23% of total energy related CO2 emissions in 2010 (Sims et al., 2014)
  - Share of European ***online shoppers*** increased by 85% since 2007 (European Commission, 2017)
  - Home deliveries have the ***largest impact on freight transport*** (Visser & Lanzendorf, 2004)
  - ***Pressure on urban land use*** in areas with growing populations (Cárdenas et al., 2017)

Primary affected SDGs	Main negative impacts
13 CLIMATE ACTION 11 SUSTAINABLE CITIES AND COMMUNITIES	Resource depletion and environmental degradation
12 RESPONSIBLE CONSUMPTION AND PRODUCTION 3 GOOD HEALTH AND WELL-BEING	Contributing to climate change and pollution
15 LIFE ON LAND	Normalizing unsustainable consumption patterns/dependency on excessive and unsustainable consumption patterns

3 Based on Bocken & Short, 2021

Our Approaches

E-Transformers

Energie Ingenieure Consulting GmbH

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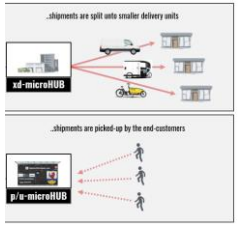
PRODUCTBLOKS

Self-Sustainable Hubs

Logistics Platform+

Location and infrastructural planning of energy sufficient city-hubs

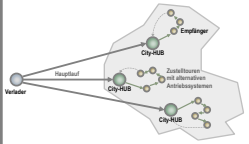
microHUB+



(Semi-)autarch microHUBs+ for improved (food) distribution

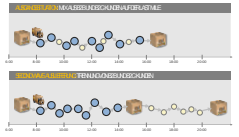
Logistics Engineering

Green City Hubs



Last mile delivery based on city-hubs and alternatively operated vehicles

Delivery on Demand



Adapted e-comm. business models in sustainable last-mile delivery

Vehicle Technology

LEEFF

Low emission electric freight fleets for urban parcel distribution

Zero-Logistics

Electric cold-chain distribution with advanced cooling system

Learnings & Future Perspectives

Learnings

- Zero-Emission Last-Mile concepts require integrative solutions
- Urgent need for migration strategies
- Apply simple rules for practical applications
- Search for pioneers
- Practitioners require tools to eliminate uncertainties
- Greatest solutions go beyond disciplines

Future Perspectives

- Interconnected systems for sustainable distribution
- Self-sustainable logistics hubs
- Sustainable Impact Assessment for venture's pathfinding

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