

AIT Austrian Institute of Technology

ELEKTROMOBILITÄT QUO VADIS?

Elektromobilität im Verkehrsverbund der Zukunft

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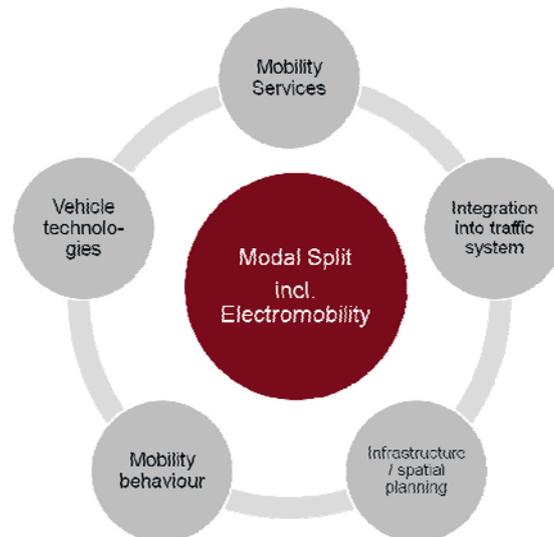
Future Mobility

- 2030: World population around 8 billion people, approximately 60 % located in urban centers (2050: 75%)
- New mobility and vehicle concepts are needed to meet the growing demand for freight and passenger traffic efficiently and environmentally friendly
- Passenger transport shall enable mobility with low energy consumption, zero emissions and mitigate congestion and accidents



→ **Electromobility is a key technology to reach these goals**

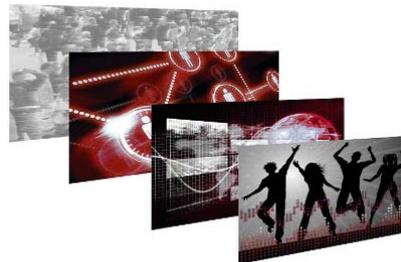
Modal split of the future: main challenges



Mobility behaviour: changing societies & lifestyles & needs

▪ Drivers of changing mobility needs

- Ageing society
- Urbanisation
- Owning a car plays a diminishing role for young people
- More rational view on mobility establishes (awareness concerning sustainability and lifestyle)
- Large growth rate forecasted for car-sharing



→ the future transport system needs to be intermodal, interactive, dynamic and tailored to people's needs/preferences

Mobility and spatial (urban) planning

- Efficient Mobility is also a question of spatial planning and urban/regional
- Integrated approach of mobility strategies, intermodal electromobility concepts, and urban planning
- Local authorities, transport operators, developers, energy providers and residents have to work together to break new paths



→ **Cities and regions need customized solutions, based on the same technology**

Integration into transport system

- **Integration of electric mobility in individual transport**
 - Pedelecs, e-bikes, electric scooters
 - Hybrid & electric cars
 - Fleets (logistics)
- **Infrastructure:** sharing systems, charging stations; integrated into building concepts
- **Integration of electric mobility in public transport systems**
- **New Mobility Services:** Information technologies



MIT electric vehicles for urban environment: CityCar
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→ **Intelligent control of traffic flow combines comfort, safety, efficiency and freedom in mobility**

New Mobility needs – new mobility services

- value-chain is shifting from manufacturing value-added services in the field of the „new mobility“ industries
- Intertwined network (being online) & available technologies
- eMobility providers must enlarge their scope of services
- e.g. innovative Commuter Information Services delivering real time information for a commuter's entire intermodal trip and suggesting alternative routes



→ **A mix of various mobility and information services will establish**

MOBILITY ON DEMAND

Creating methods and technologies for an attractive urban mobility system

- Optimisation of transport system
 - through new mobility concepts
 - Intelligent routing and planning
 - Optimising transport infrastructure
- Crucial to achieve this goal is:
 - Data collection and analysis
 - Simulation
 - Optimisation



MIT electric vehicles for urban environment: CityCar
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Mobility on Demand – New Mobility Systems

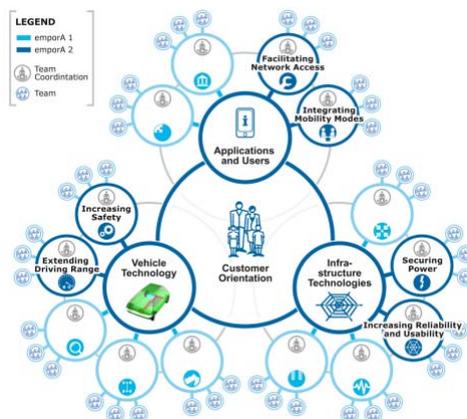
- Make electric vehicles available at stations at short spatial distances across the city
- Using a travel card one can always rent a car and park at the next station at your destination.
- Users can enjoy the benefits of private vehicle, without having to deal with the cost, insurance, service, repair, and finding a parking space.



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Electromobility's Technical beacons in Austria

- **emporA / empora 2**
 - Integration of electromobility, connected with other modes (PT, Carsharing systems)
 - Co-modal tour- and route planning
 - Real-time data, range information, meteorological data
 - Information about POIs (PT stop, Car-Sharing station)
 - Mobile App providing all information along the whole travel chain for pre- and on-trip planning



Opportunities in urban and rural environment



High density population area

- Flexible, electric mod-systems
- Create a completely new mobility network but require new approaches to urban and infrastructure planning
- must meet user needs and be affordable; vision: no privately owned car
- Crucial to the success are availability (time and location), costs for the user



Rural area



- First/Last-Mile to public transport station and P&R (commuters)
- Trips > 100km
- garage or carport can be converted with little effort to a charging point.
- High Potential in tourism

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your ingenious partner

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