Gefördert durch:

Bundesministerium
für Verkehr, Bau
und Stadtentwicklung

aufgrund eines Beschlusses
des Deutschen Bundestages

Modellregion
Elektromobilität
Region Stuttgart

Pilot Region E-Mobility Stuttgart

Vision • Approach • Projects

An introduction

CARS / Wirtschaftsförderung Region Stuttgart GmbH

Dr. Rolf Reiner & Holger Haas

Wirtschaftsförderung
Region Stuttgart GmbH

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- The region: facts and figures
- Vision and objectives
- Time scale and first steps
- Demonstrators and pilot projects
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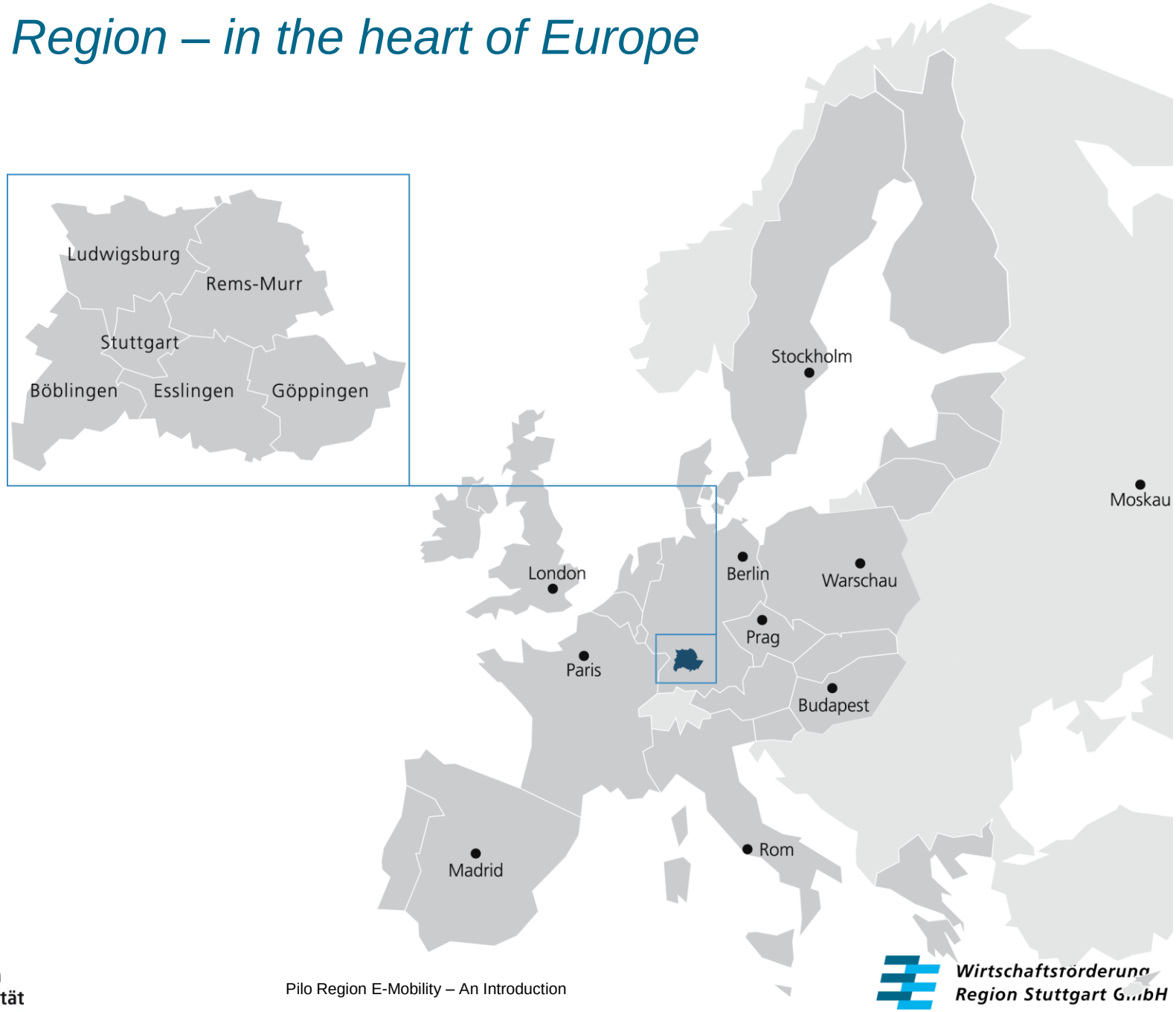
1. The region – facts and figures

Stuttgart Region – in the heart of Europe



Modellregion Elektromobilität Region Stuttgart

Wirtschaftsförderung Region Stuttgart GmbH

Do you know Stuttgart Region?

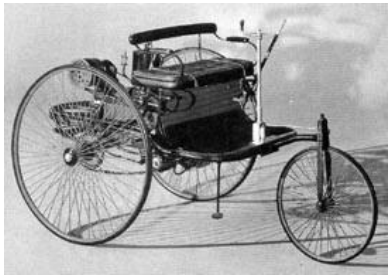
- Population: 2.7 million
- Area: 3.654 km²
- Municipalities: 179
- People in employment: 1,3 million
- Members of the Regional Assembly: 93
- Hours of sunshine: 1834 per year
- Wine production per year: 42 million liters
- Spa water per day : 40 million liters
- Michelin stars: 13
- Historic palaces and castles: 68

Facts and figures

- ~165.000 companies
- Gross domestic product: ~100 billion Euro
- Overseas Sales (manufacturing): ~50 billion Euro
- Unemployment rate: ~4,2 %
- Most important industries: Automotive, Machinery/ Mechanical Engineering, Electrical, IT, Media, Biomedicine.
- Headquarter of corporate groups such as Daimler, Porsche, Bosch, Festo, Trumpf, Behr, Alcatel-SEL, Dürr, Stihl, Celesio, Schuler, Allianz Life etc.
- Extremely high research-density and -intensity R&D expenditure by the private sector: **~7 %** of the GDP!

2. Vision and objectives

The framework

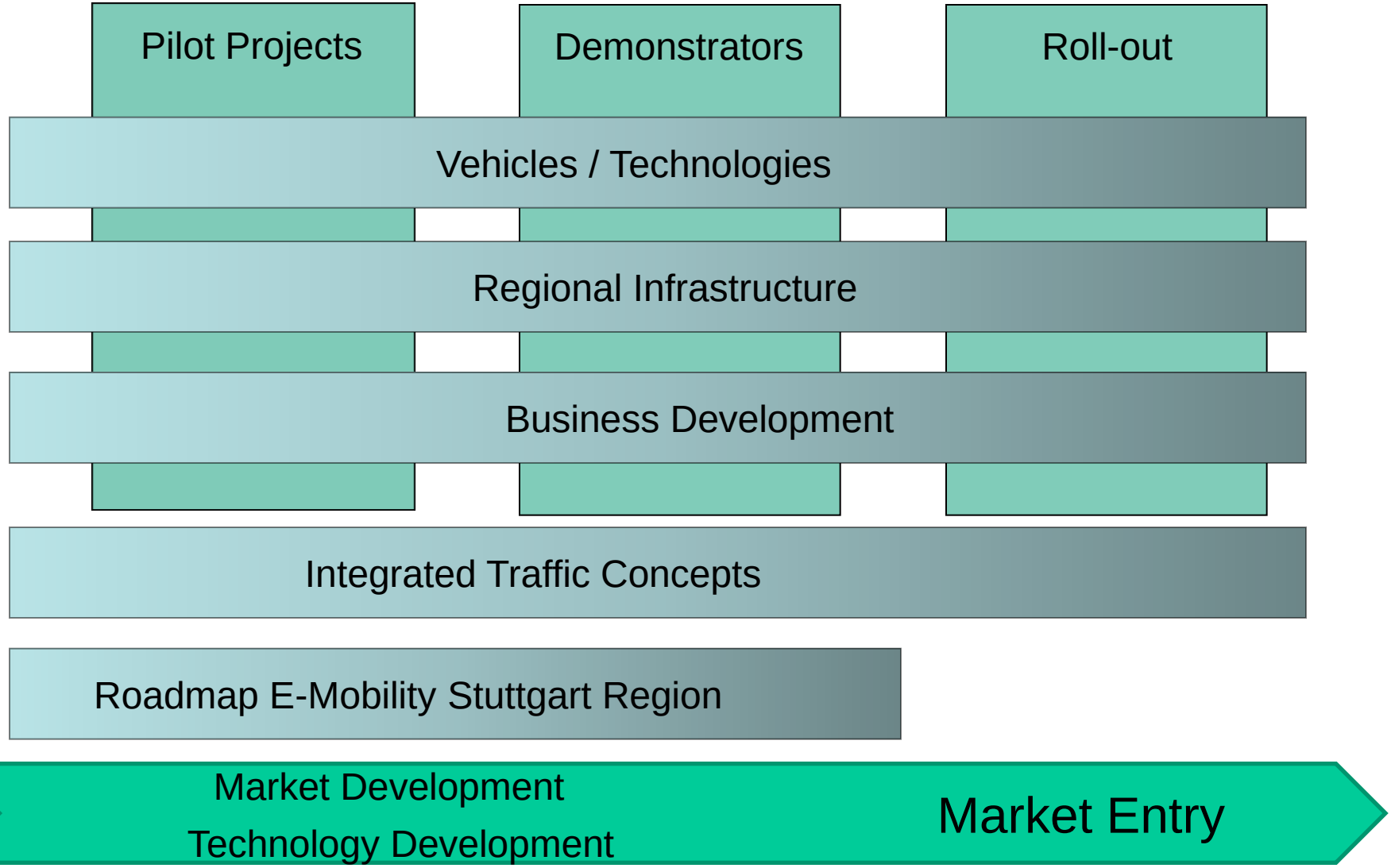


- Structural change of the automotive sector has high impact of Stuttgart Region‘s economy and wealth.
- WRS supports the automotive cluster in Southwest Germany to prepare Stuttgart Region for the era of e-mobility.
- Overall ambition is to keep automotive value creation in the region.

Stuttgart Region – a lead market for green mobility

- Holistic approach for market preparation
- Regional showcase for integrated e-mobility solutions
- Pilot projects and demonstrators for
  - infrastructure
  - inter-modal hubs
  - (locally) emission free city logistics
  - billing and roaming models
  - variety of vehicles and usage

Model Region e-Mobility – overall approach



Model Region E-Mobility - Partners

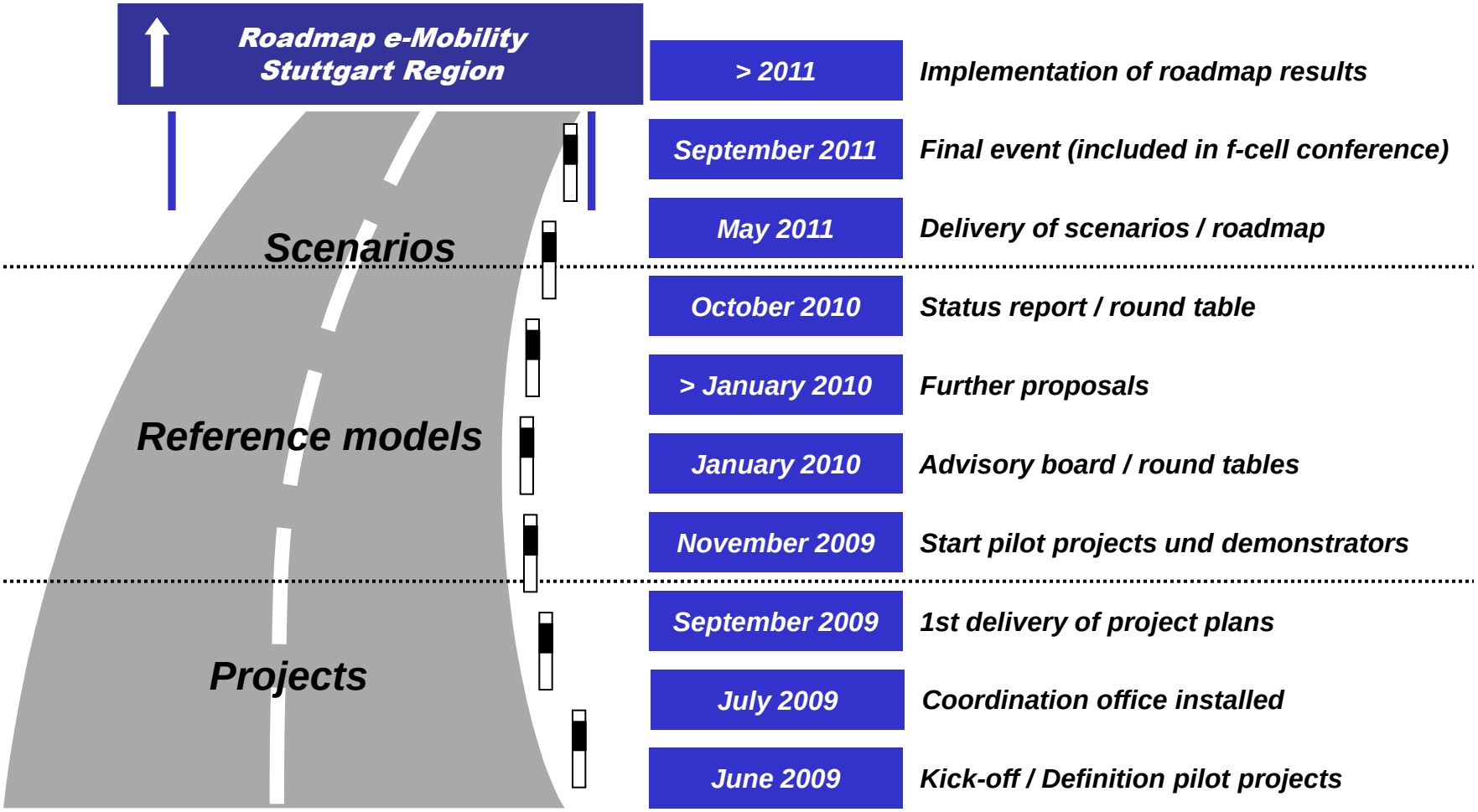
- Municipalities und urban transport (e.g. SSB)
- Daimler, EnBW, Bosch, SAP
- Suppliers throughout Baden-Württemberg (Mahle, Eberspächer, Dietz Automotive, Huber, Heldele, ...)
- Fraunhofer institutes
- University of Stuttgart and FKFS
- University of Karlsruhe / KIT
- University of Applied Science Esslingen
- Wirtschaftsförderung Region Stuttgart / Cluster Automotive Region Stuttgart as regional project managament and clearing point

3. Time scale and first steps

We are on the way …

- Regional project management and clearing point established.
- First regional projects kicked-off.
- Advisory Board established (representing all stakeholders: OEMs, energy suppliers, Tier 1 suppliers, lower Tier suppliers, university and research institutes, municipalities, state of Baden-Württemberg)
- 5 proposals in the evaluation process.
- Further proposals in submitted end of April.

Milestones (State: 22. May 2010)



4. Demonstrators and pilot projects

Test drivers wanted…

Interplay e-scooter usage – infrastructure – mobility portal (lead: EnBW AG)

- Project started in September 2009
- Pilot project for private use of electric vehicles
  - 700 scooters with tracking systems
  - 500 private and 200 public charging points
  - mobility portal
  - analysis of patterns of use / charging needs / user acceptance / …
  - test bed for billing and roaming models
- Partners: EnBW AG, Robert Bosch GmbH, Dornier Consult
- Closely related and linked to MeRegio mobil (additional charging points within and outside the region) and Call-a-Bike Pedelec Stuttgart

S-HyBus (lead: SSB AG)

- Project started in September 2009
- Trial operation of 5 articulated buses with serial hybrid drive
  - recuperation
  - reliability (engines and batteries)
  - life cycle assessment
  - cost analysis
- Partners: SSB AG, TÜV Nord and PE International

IKONE – integrated concept for sustainable e-mobility (lead: Daimler AG)

- Project started in January 2010
- Fleet test and validation of 50 electric light trucks
  - different profiles of services
  - city logistics / craftsmen / …
  - recuperation potential, reliability, maintenance
  - user analysis / patterns of use
- Partners: Daimler AG, TÜV Süd, EnBW AG, Fraunhofer IAO

EleNa – e-mobility retrofitting for diesel engine delivery vans

- Project started in April 2010
- Development and testing of an e-mobility retrofitting package for delivery vans with conventional combustion engines
- Partners: Lauer & Weiss GmbH, Telemotive AG, ARADEX AG,Huber Automotive AG, J. Eberspächer GmbH & Co. KG, WSEngineering GmbH & Co. KG, TÜV SÜD Automotive GmbH, Heldele GmbH, FKFS, IBZ, Hochschule Esslingen, Kompetenznetzwerk Mechatronik BW e.V., Fraunhofer IPA

The „E-Boxster“

- Project started in April 2010
- Construction of a full electric roadster based on the Porsche Boxster (Typ 987 II)
  - Range of 150 km / 0-100 km/h < 6sec
  - Operational strategy for optimal consumption and performance
  - Testing of charging strategies of batteries, billing systems / durability of batteries
  - Layout, calibration and optimisation of ancillary units
  - Specifications for an e-roadster
- Partner: Porsche

Call-a-bike Pedelec Stuttgart

- Project started in March 2010
- Technical and economic integration of e-bikes into „Call a Bike fix Stuttgart“
  - 450 pedelecs capable for renting systems
  - Upgrading of renting stations
  - Integration in the public transport system
- Partners: Stadt Stuttgart, db rent

E-mobility in urban environments (Ludwigsburg)

- Project started in April 2010
- Public charging infrastructure
- Integration of electric vehicles in carsharing models
- Rental of pedelecs
- Partners: Stadt Ludwigsburg, stadtmobil carsharing AG, University of Stuttgart, Stadtwerke Ludwigsburg-Kornwestheim GmbH, Ludwigsburger Parkierungsanlagen GmbH, Eder GmbH, CargoLogix GmbH, Fraunhofer IPA

The e-mobile city (Airfield Böblingen/Sindelfingen)

- Project started in April 2010
- Linking urban infrastructure with electric vehicles and related mobility models
  - 2 full electric utility vehicles
  - 3 full electric cars (smart ed or Fiat) for shuttle services and test drives
  - 10 full elctric scooters
  - Innovative charging infrastructure (e.g. inductive charging)
- Partners: Zweckverband Flugfeld Böblingen/ Sindelfingen, Sensapolis GmbH, City of Böblingen, City of Sindelfingen, Stadtwerke Böblingen und Sindelfingen, Max Holder GmbH, Siedlungswerk, University of Stuttgart, LIC Langmatz GmbH, Fraunhofer IAO

Projects in preparation

- E-mobility showroom
- Competence Centre E-Mobility
- Smart ed test operation in social and charitable services

Overview vehicles in the field

- **Two-wheelers**
  - Up to 700 electric scooters
  - 480 rental pedelecs
- **Buses**
  - 5 Citaro articulated hybrid buses
  - 1 FIAT Ducato hybrid bus
- **Vans**
  - 50 Vitos E-CELL
- **Cars**
  - 3 Fiat 500 Elektra
  - 5 full electric cars for car-sharing (n.n.)
  - 26 Smart ed
- **Other**
  - 2 municipal utility vehicles

5. Contact

We welcome you to Stuttgart…

- July 4th, 2010, Schlossplatz, 1pm-5pm
  Public „Kick-off-event“ Pilot Region E-Mobility

- September 27th-28th, 2010, Haus der Wirtschaft
  f-cell 2010 – Congress and Trade Fair
  Including the f-cell special:
  “Electromobility – fuel cells and batteries moving the future”
  For further details and registration see:
  http://www.f-cell.de/englisch/Home/

Contact details

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Thank you for your attention!

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