BeMobility:
Integration of electric vehicles into public transport and the electric grid

InnoZ GmbH
London March 2014
New Ideas for the Future are needed

Drivers for new business models

Oil price  Pollution  Space / Parking  Speed

New propulsion technologies for cars world-wide (2010–2050)

Current & future expenditure on mobility by households in Germany

Innovation Centre for Mobility and Societal Change
Vision: Integrated multimodal electric mobility in Berlin

2 projects (BeMobility 1.0, 2.0) practical research
more than 20 project partners

costs about 10 Mio. € for each project
around 50% supported by Federal Ministry of Transport

September 2009

December 2013

> 4 years practical research

Berlin electric Mobility
Collaboration of different partners, within BeMobility

Collaboration within BeMobility

Energy Sector
Mobility Sector
ICT Sector

FUTURE MARKET

e-mobility

Leader of consortium
inno
Project coordination

Alcatel-Lucent
Bosch
BVG
CONTIFARK
DAI-Labor
DAIMLER
DB
BAHN
DB Bahn Park
DB Energie
GASAG
HaCon
Buro Happold
hiriko
INFRAWIND
inno
LSE
Netzgesellschaft Berlin-Brandenburg
Schneider Electric
SOLON
TOYOTA
Vattenfall
VBB

Partners

Funding and coordination
Vision of a user-friendly integrated mobility solution

1. Inclusion of electric vehicles in different rental systems
2. Integrated information and communication systems
3. Integrated tariff structures for public transport
4. Integration of electric vehicles into the electrical grid

Abbildung: Kircher&Burkhard 2010
We develop, test and improve electric car sharing

Station based and flexible car sharing

<table>
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<tr>
<th>Station-based carsharing</th>
<th>Flexible e-carsharing</th>
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<tbody>
<tr>
<td>Price conventional cars = price e-cars</td>
<td>1 Minute = 0,28 €</td>
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<tr>
<td>40 e-Flinkster / 200 Flinkster</td>
<td>350 multicity cars</td>
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<tr>
<td>~120 car sharing stations</td>
<td>(Sept. 12 – 100, Spring 2013 - 350)</td>
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flexible inside city center
Supply station network for „Flinkster“ in Berlin

Over 100 Car sharing stations and approximately 20 e-Car sharing stations
Charging is a big challenge – not only for the customers

Customer feedback about charging

“Cable is bulky and dirty.”

“Information about charging, current energy level of the battery and places of charging infrastructure is not sufficient.”

“In the car there is no special place for the cable.”

“Charging is too complicated.”

“Shall I leave the cable or take it with me?”

T 2 – Aug. / Sept. 2011
Informational integration of BeMobility suite

Scope of BeMobility suite

- Map-service, easy available information in maps, address search, POIs
- Vehicle-navigation, public transport data, bicycle paths, path comparison public/private, intermodal routing
- Vehicle search (critical aspect, currently WIP)
- Search for charging stations including status information
- Booking via integrated partner-applications
We developed the BahnCard 25 mobil plus

**Connected mobility – mobility card**

~340 cars in two car sharing systems

~13,000 stops (bus, tram, underground, rapid transid railway, )

5 rail stations for long distance travel

~1,250 bikes at over 80 stations
BahnCard mobil plus BC 25 in detail

Price and components of the 12 monthly card

1. **79,00€ one-time**
   (Year bond)
   - City bike: 10 € per Month (-125 free minutes)
   - Flinkster: 15 € per Month
   - BahnCard: Multicity

2. **59,17 € monthly / 680 € one-time payment**
   (Year bond)
   - ÖPNV-Abo: Berlin AB

Optional

Innovation Centre for Mobility and Societal Change
In future we are going to test vehicle to grid solutions

Vehicle to grid at EUREF-Campus
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