Development of an Electromobility Hub in Berlin

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Workshop “Cross Border Cooperation to accelerate the Deployment of Alternative Fuels”, 09 October 2018, Brussels
Accelerate the deployment of alternative fuels - Why cross boarder cooperation?

➢ Exchange experiences – learn from others – avoid unnecessary mistakes

➢ Make use of scale effects

➢ Establish sustainable partnerships for joint projects and – potentially – for joint procurements

➢ [...]
Electromobility is subject of Berlin’s forward looking strategies

There is no specific Berlin electromobility strategy, but electromobility is an important driver to implement forward looking strategies for the city and the region, such as

- Berlin Energy and Climate Protection Programme
- Innovation Strategy Berlin-Brandenburg
- Berlin Mobility Act
- Urban Development Plan for Transport
The Berlin energy and climate protection programme (BEK) – ambitious goals fostering a “Mobilitätswende” (mobility turnaround)

Strategy adopted mid 2016, implementation programme running

Overall Objectives:

• Reduction of CO$_2$ emissions by 40 percent by 2020 (compared to 1990)
• More than halving the emissions per-capita by 50 percent by 2030
• Climate neutral city by 2050
• No fossil powered vehicles from 2050, latest

And therefore: Supply of electricity and hydrogen everywhere in the city (not just city centre)
Berlin Mobility Act – taking into account the strengths of all mobility modes

- Berlin Mobility Act lays the foundation for a climate-friendly and clean transport in Berlin
- The Mobility Act consists of different elements
  - Mobility in general • Public Transport • Bicycle Traffic • Pedestrian Traffic • Commercial Transport • Smart Mobility
- First elements already finalized – commercial transport and smart mobility on the agenda for 2019
- The chapter on Smart mobility shall encompass e.g., electromobility, intermodal traffic management, autonomous traffic, connected driving, etc. => highlighting the opportunities and limitations
- The Berlin Mobility Act has been in force since mid 2018
- It is the first of its kind – at least in Germany
Electromobility Target and Core Objectives in the context of the Innovation Strategy Berlin-Brandenburg

Target for 2020, first postulated in 2010

Berlin-Brandenburg is an internationally recognized model for electromobility. The capital region makes consistent use of its locational advantages and its potential in order to develop its economy and to improve the quality of the environment and of life.

Core Objectives of Electromobility in the German Capital Region

1) Increase regional economic power by generating further added value and creating new jobs

2) Support the region’s transport, energy, climate, and environmental policy goals in order to improve the quality of the environment and of life
The Berlin Agency for Electromobility eMO
– Key element to foster Electromobility in the Region

- eMO is an **agency of the State of Berlin** and operates under the aegis of Berlin Partner for Business and Technology.

- eMO’s **partners are the State of Brandenburg and companies and institutions** in the fields of business and science.

- eMO is a **neutral platform and initial point of contact** for electromobility in Berlin und Brandenburg.

- eMO works closely with its partners to **pool and integrate the expertise of the industry, research institutions and government/public administration** in the German capital.
eMO Network

Agency of

Premium

Partner

eMO Club

Network

Member of

Smart City

as of 09/2018

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Electromobility in Berlin and Brandenburg

Status: Mid of 2018

- Some **6,000 electric vehicles** in the Capital Region (Berlin and Brandenburg), thereof **75 %** in commercial operation

- Approx. **1,350 electric scooters** operated in flexible sharing schemes (Bosch/Coup, emmy)

- **150,000 e-bikes/pedelecs** in Berlin (estimation)

- Approx. **800 charging devices** (publicly accessible) in Berlin und Brandenburg, thereof > 20 fast chargers

- **5 Hydrogen filling stations** in operation
International Showcase for Electromobility Berlin-Brandenburg – important “trailblazer”

**Essential features of a showcase for electromobility**

1. Achieving the critical mass with regard to number and density of vehicles, infrastructure, user patterns, etc.
2. Following a systematic and integrative approach
   - Energy system – Vehicle technology – Transport system
   - Crucial 3 years of activity to support the market run-up
   - Joint program involving 4 federal ministries
   - 180 mill. EUR public funding earmarked for 4 showcases in Germany

**Basic data for the Berlin-Brandenburg showcase**

<table>
<thead>
<tr>
<th>Origin</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Self-Funding of Private Companies</td>
<td>25 Mio. €</td>
</tr>
<tr>
<td>Federal government</td>
<td>35 Mio. €</td>
</tr>
<tr>
<td>States of Berlin and Brandenburg</td>
<td>16 Mio. €</td>
</tr>
</tbody>
</table>

- **Coordinated** by Berlin Agency for Electromobility eMO
- **Duration**: 2013 – 2016
- **Project Volume**: about 83 Mio. €
- **Project Partners**: more than 100 partners from business science, politics and administration
- **Core Projects**: about 30
Results and Findings of the Showcase: What’s left to do?

- Market ramp-up and industrialisation
  - Broader introduction of electric vehicles through financial incentives and adoption of legal framework
  - Expansion of charging infrastructure
  - Electric vehicles as core element of connected and automated mobility

- Further on demand for RTD support
  - Continuation of technology funding (smart grids, intermodal solutions, ICT)

- Convergence of electromobility and smart mobility
  - Systematic introduction into Smart City-driven concepts
  - Utilization and development of the established networks useful
Two current items to highlight

➢ (1) Step-by-step build-up of charging infrastructure

➢ (2) Approach to accelerate market penetration of electromobility for commercial fleets
(1) Infrastructure build up in public and semi-public areas

- Stepwise approach -

First step: from 2008 on
Erection of first charging stations in the frame of research projects
Locations in city boroughs according to „easy access“, available infrastructure connections
=> Exception permits
e. g. „MiniE powered by Vattenfall“ (BMW and Vattenfall); e-mobility Berlin (Daimler and RWE)

Second step: be e-mobil 2012 - 2016
Expansion with public tender towards a concession model – „driven by offers“
Locations according to a scientific study – based on flexible car sharing demand
=> A sub project of the e-mobility showcase, awarded by „The New Motion“/Alliander

Third step: be e-mobil 2016 - 2020
Expansion based on „growth on demand“
Electric vehicle owners (commercial/private) may apply for a charging station in their vicinity
=> Follow-up of showcase sub project
Electromobility – infrastructure build up in public and semi-public areas (2)

Interactive information platform for charging infrastructure in Berlin

About be emobil
Berlin is raising electromobility to the next level. Since the beginning of the project, a multitude of charging possibilities were created. From the streetlight charger, the electric vehicle charging station to a fast charging point. The city and “be emobil” are bringing standardized and easy-to-use charging points to the streets of Berlin.

Timetable:
Supply-oriented based on the site concept
01.01.2016 - 30.06.2020: Installation Period 2.  
Expansion based on the growth of demand

Suggest Location

Search Areas

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(2) Programme Welmo „Business related electromobility“

The support programme aims to facilitate the transition to low-emission (zero-emission) vehicles for SMEs with commercial, non-profit or freelance activities.

- Programme launched and financed by the Berlin Senate Department for Economics, Energy and Public Enterprises
- Operated by the Berlin Business Development Bank IBB
- Supported by eMO
Programme Welmo – what is it all about

Elements

- Consulting
- Electric Vehicles
- Charging Infrastructure (private land)

Target group

- Small and Medium Enterprises (SME‘s)
- Freelancer
  ➢ Condition: Headquarter or branch in Berlin

Purpose of the programme?

- To electrify commercial vehicle fleets with battery-powered, fuel cell powered and plug-in hybrid vehicles
- To install battery charging infrastructure (private land, usually company premises)
Programme Welmo – financial support for vehicles

- New vehicles, annual vehicles
  - max. € 4,000 for cars and vans up to 2.25 t (gross weight)
  - max. € 8,000 for vans > 2.25 t and < 4.25t (gross weight)
- Combination with „environment bonus“ (federal level) (€ 3,000 - 4,000) possible

- Different approach for leased vehicles

- Motorised two-wheelers (electric scooter, S-Pedelecs)
  - Lump sum € 500
Programme Welmo – financial support for charging infrastructure

- On private land (publicly available or purely private)
  - 50% of total costs
  - (max. € 30,000 per charging point)
- 100% renewable power supply to be proven

- Proportionally funding of necessary grid connection
  - 50% of eligible costs
    (max. € 55,000)
Exemplary Calculation for electric vehicles

**Renault Kangoo ZE33**

- Retail price: 35.605 EUR
- Load: 625 kg
- Gross weight: 2.504 kg
- Range: ~270 km

Price taken into account funding
- WELMO: - 8.000 EUR (> 2.25t)
- Federal bonus: - 4.000 EUR

Total: 23.606 EUR

**Smart EQ**

- Retail price: 22.600 EUR
- Load: 2 persons with (little) luggage
- Range: ~160 km

Price taken into account funding
- WELMO: - 4.000 EUR (<2.25t)
- Federal bonus: - 4.000 EUR

Total: 14.600 EUR
Programme Welmo – first experiences

- Great interest and high demand: almost 200 applications since programme launch (July 2018)
- „Upstream block“ consulting (analysis of operation, fleet evaluation, etc.) important for lot of small companies with little knowledge about e-mobility
- Besides vehicle-related support, the programme is in particular attractive to remove the barrier „charging infrastructure“ and „connection to the grid“
Summary and Outlook

- Electromobility contributes to transport-, environment- and innovation-related strategies of Berlin and capital region.

- Implementing electromobility is not a self-supporting activity – one need a longer breath than originally expected.

- RTD and demonstration programmes on national and European level were (and still are) important to gain experiences, to improve the awareness in the public and to prepare market ramp-up.

- Targeted programmes to support vehicle procurement and infrastructure installation are going to replace research activities.

  => Cross-border cooperation has the potential to improve the efficiency of financial and non-financial measures.
Thank you very much for your attention!

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