Electromobility in Berlin

Visit by the City of Bratislava
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Contents

I. Traffic objectives and the potential for electric vehicles

Goals and objectives	Electric bikes	Electric cars	Electric trucks
As a substitute for	Combustion engine vehicles	Combustion engine vehicles	Diesel-powered trucks
1. Reduce the space needed for car parking to allow for other uses	🟢🟢🟢	🔴	○
2. Reduce air pollution	🟢	🟢	🟢🟢🟢
3. Reduce traffic noise	🟢🟢🟢	🟢🟢	🟢🟢🟢
4. Reduce greenhouse gases	🟢🟢🟢	🟢🟢🟢	🟢🟢🟢
5. Increase traffic safety	🟡	🟡	🟡
6. Reduce dependence on oil	🟢🟢🟢	🟢🟢🟢	🟢🟢🟢
7. Reduce infrastructure costs	🟢🟢🟢	🔴🔴	○

🟢 Positive effect 🟡 Clarification needed 🔴 Negative effect ○ No effect

I. Traffic objectives and the potential for electric vehicles

Relevant criteria	Electric bikes	Electric cars	Electric trucks
As a substitute for	Combustion engine vehicles	Combustion engine vehicles	Diesel-powered trucks
Potential availability, time	🟢🟢🟢	🟢🟢	🟢
Cost efficiency (e.g. cost avoidance)	🟢🟢🟢	🟡	🟡
Regulatory requirement incentives	🟢🟢🟢	🔴🔴	🔴🔴🔴
Users pay transport costs	🟢🟢🟢	🔴	🔴

🟢 Positive effect 🟡 Clarification needed 🔴 Negative effect

II. Priority areas, goals, advantages and requirements

Electric bikes	Goal:	- Shift commuter traffic from cars to e-bikes and e-scooters, particularly between the city center and surrounding areas
	Advantages:	- Significant extension of cyclable distances - Extended range of public-transport and regional-rail stops
	Requirements:	- Storage infrastructure near residential areas, destinations (e.g. workplaces) and at public-transport and regional-rail stops - High-speed bike paths
Electric logistical transport	Goal:	- Regulate inner-city traffic by displacing logistical transport to off-peak hours
	Advantages:	- Higher logistical efficiency
	Requirements:	- Customizable or adaptable logistics processes - Exemptions: based on individual assessments of noise projections

II. Priority areas, goals, advantages and requirements

Electric cars in car-sharing programs	Goal:	- Reduce parking demands by cutting the inventory of parked cars - Make the process of choosing a transport mode more rational - Shift modal split toward walking, bicycling and public transport - Capture environmental and climate benefits
	Requirements:	- Availability of parking spaces and the ability to reserve them - Determination of traffic and environmental effects - Public acceptance - Integration with public transport

III. Building EV charging infrastructure

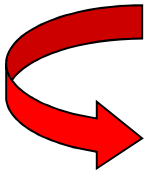
1. Approach to building EV charging infrastructure

2. EU-wide expansion of EV charging infrastructure

III. Approach to building EV charging infrastructure (1)

- Goals
  - To guarantee electric transport in Berlin through rational and systemic construction of EV charging infrastructure
  - Ensure the lowest costs for public authorities

- Demand for charging infrastructure in public and semi-public spaces
  - Flexible car-sharing programs – Providers plan to increase the volume of new electric vehicles (i.e. Berlin has approximately 130 EVs on the streets today, but this number will grow to approximately 2,500 by 2015)
  - Private electric vehicle sales are expected to remain low in the coming years; the charging needs of private and commercial users in public spaces will also remain low



Focus initially on the needs of electric car-sharing programs

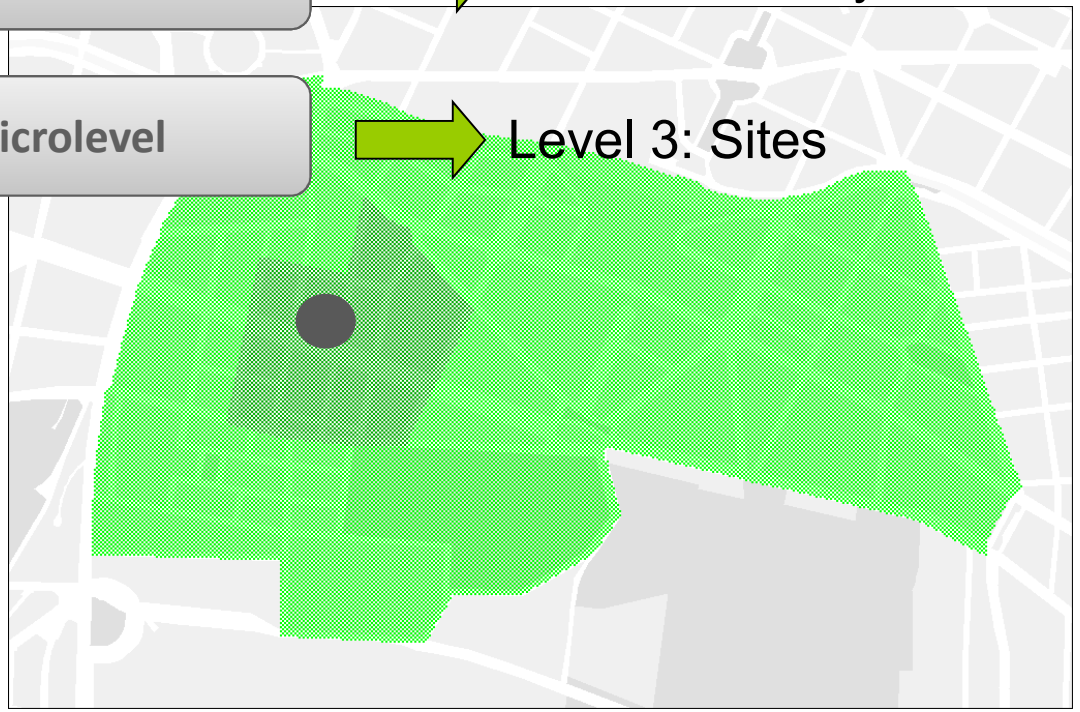
III. Approach to building EV charging infrastructure (2)

3 levels

192 statistical areas → Level 1: Priority areas

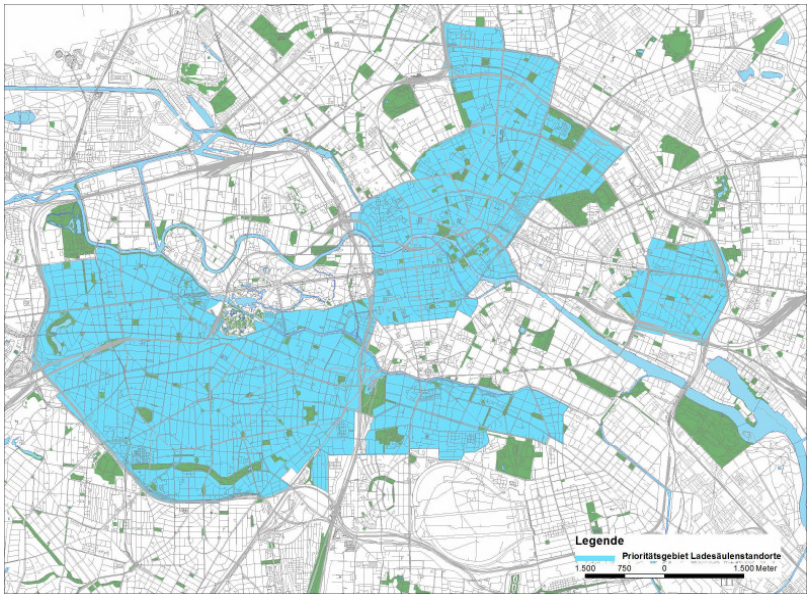
1200 traffic districts → Level 2: Priority districts

Site planning at the microlevel → Level 3: Sites



III. Approach to building EV charging infrastructure (3)

Level 1: Identifying priority areas for infrastructure expansion

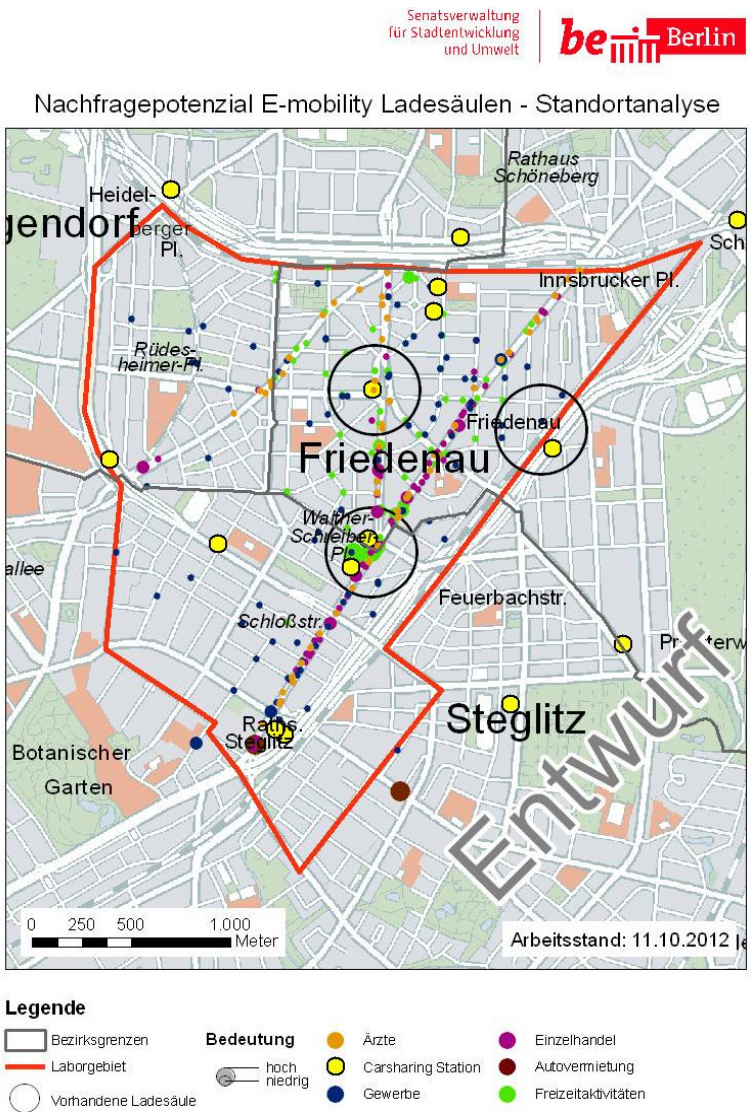


Draft

Analysis of routes (i.e. point of origin and destination) used by potential car-sharing customers based on empirical data
(SrV Berlin 2008, using data from approximately 39,000 individuals and 110,000 recorded routes)

- Selection of groups most likely to use electric vehicles
- Selection of routes, for which an electric vehicle can be used
- Identification of spatial mobility patterns
- Identification of substitutable private car routes

III. Approach to building EV charging infrastructure (4)



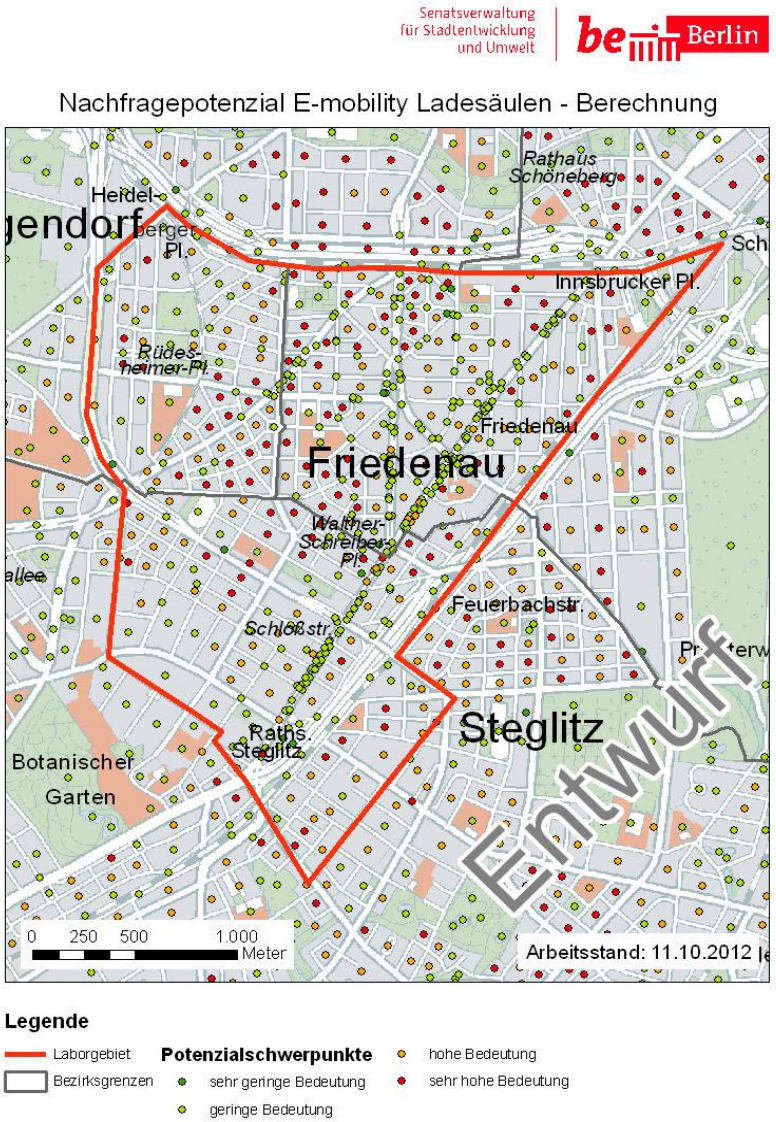
Level 2: Identifying a priority district

Goal: Ensuring the utilization of charging stations through longer service life and more frequent use

Method 1 (all EV users)
- Analyze field use
- Analyze the frequency of use and trip purposes throughout the day
- Link to different types of use
- Measure the amount of time that cars are in use for various purposes

Method 2 (car-sharing oriented)
- Traffic demand simulation
- Simulation of use patterns
- Determination of charging station utilization

III. Approach to building EV charging infrastructure (5)



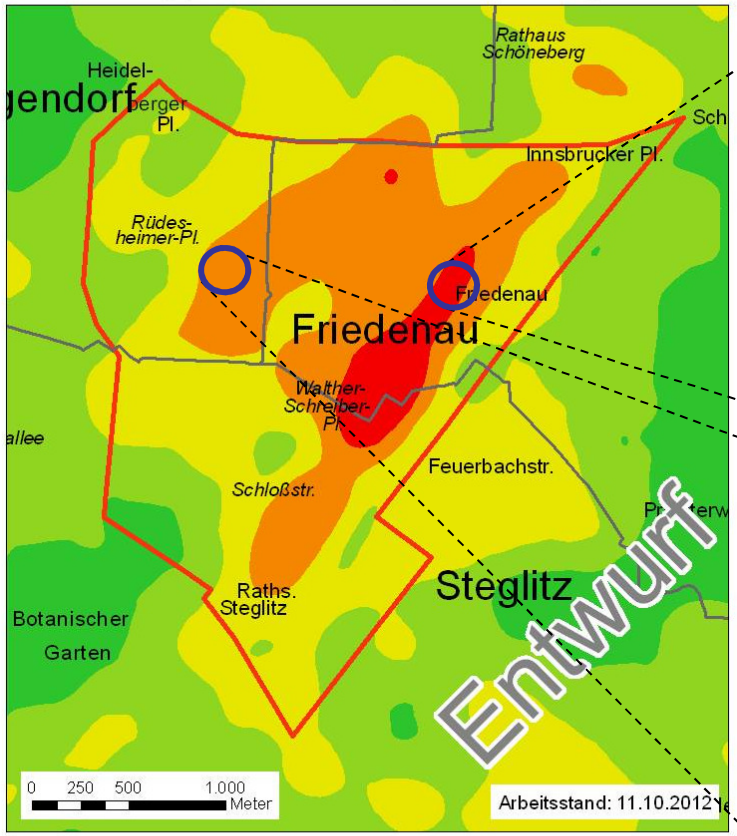
Level 2: Identifying a priority district

- Locations (e.g. retail shops, activity providers) are classified according to their importance
- Residential areas are also classified from low to very high importance
- Areas with the highest potential for use are determined using a density calculation

III. Approach to building EV charging infrastructure (6)

Senatsverwaltung für Stadtentwicklung und Umwelt | be Berlin

Nachfragepotenzial E-mobility Ladesäulen - Ergebnis



Legende

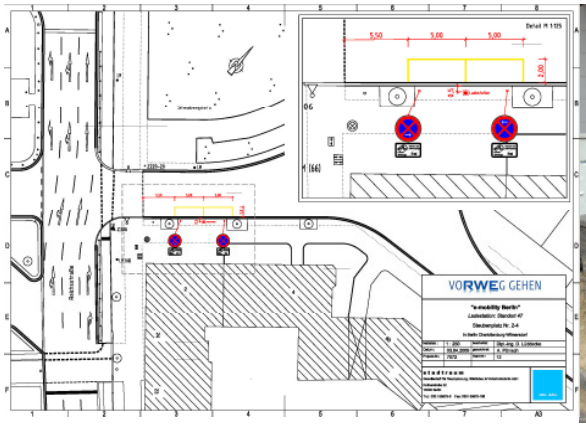
Bezirksgrenzen | **Nachfragepotenzial** | gering | hoch
Laborgebiet | sehr gering | mittelmäßig | sehr hoch

Level 2: Priority districts → potential sites

III. Approach to building EV charging infrastructure (7)

Level 3: Sites

- Availability of semi-public spaces
- Review of various options (e.g. charging stations, street lamp outlets, wallboxes)
- Determining if proposed sites match existing electricity grid infrastructure
- Costs and implementation time
- Planned above- and under-ground construction
- Participation process (e.g. traffic authorities, police, conservationists, parks commission)





IV. EU-wide tender of EV charging infrastructure

Goals

- Install 300 EV charging stations (all type, private/public) by the end of 2013
- Install 800 EV charging stations (all type, private/public) by the end of 2015
- Ensure the lowest costs to public authorities

Dialogue process

- Applications from interested participants accepted until 23 November 2012
- Selection of participants (mid-December 2012)
- Dialogue with selected participants / consortium
- Definition of services and solutions
- Tendering of defined services and solutions (end of first quarter 2013)
- Allocation of EV charging infrastructure (mid-2013)

Thanks for your attention!

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