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Sustainable Mobility for Berlin – Green.Smart.Digital.

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Summary

Berlin has recognized the economic opportunities of sustainable mobility while offering the best conditions for their application: It is not only the city of carsharing, it also has one of the best public transportation networks in Europe. As a pioneer in innovative and sustainable mobility there are electric motorized vehicles for private households and corporate fleets, public transportation with an inductive charging e-bus-line, commercial vehicles as well as electric freight transport by truck, van and cargo bike. Electromobility is an integral component of Smart City Berlin. Results from the last years will be considered for the future development of sustainable mobility.

Keywords: demonstration, charging, public transport, fleet, car-sharing

1 Introduction

Given the global development of urban sprawl, digitization and resource scarcity, a key challenge for cities like Berlin is ensuring economic and sustainable mobility for residents and visitors. These changes require not only sustainable and innovative technologies but also the intelligent integration of low-emission mobility solutions. Electromobility is an integral part of a Smart City and must be integrated into forward-looking Smart City concepts. Particularly in view of current events, electromobility is an opportunity to restore trust in the automotive industry, but most of all it can make an important contribution to the energy transition.

New mobility strategies and renewable forms of energy – electromobility is an ideal vehicle for bringing these two fields together. Electromobility is therefore of great interest to government, science, business and society. Berlin-Brandenburg is committed to meeting the future challenges as a metropolitan region. In the field of "urban technologies", intensive research, developing and testing are being carried out today. This is not a new thing. Indeed, Berlin has a long tradition of innovation in the field of transport. Throughout history, the city has been – and will continue to be – a "first mover" with regard to new mobility concepts. With the electromobility strategy "Berlin-Brandenburg is going electric – Action Plan for Electromobility 2020" first published in 2011 and updated in 2014 aims, focus areas and measures have been defined. The Berlin-Brandenburg region is a laboratory for electromobility where practical applications can be tested while at the same time being converted to sources of added value for industry. Strategies that are successful here can be applied abroad. The aim for the year 2020 is therefore to become an internationally recognized model for electromobility. This aim will be achieved via a focus on two core objectives for regional electromobility [1]:

- Increasing regional economic power by generating further added value and creating more jobs; and
- Supporting the region's transport, energy, climate, and environmental policy goals in order to improve the quality of the environment and of life.

These two core objectives form the basis for the electromobility strategy's guiding principle and structure. Measures are being developed and put into practice across an entire range of fields, including education and research, development and production of vehicles and components, production and storage of "green" energies, and the application of innovative mobility strategies.

This electromobility strategy covers all variants of electric vehicles that can be charged externally: plug-in hybrids, range extenders, pure battery electric vehicles. It covers not only passenger cars but also the entire range of electric vehicles: rail, bus, lightweight and heavy-duty commercial vehicles, bicycles and threewheelers, boats and ships.

All the sustainable mobility threads are woven together by the Berlin Agency for Electromobility eMO, the central point of contact that advances electromobility together with partners from business, science, and public administration. eMO was founded at the end of 2010 as an agency of the State of Berlin. It operates under the aegis of Berlin Partner for Business and Technology. eMO bundles the competencies of regional key actors and wins partners for regional, national and international projects. Since about three years eMO coordinates the "Berlin-Brandenburg International Showcase for Electromobility", that is sponsored by the federal government and the states of Berlin and Brandenburg.

2 A Pioneer in Innovative and Sustainable Mobility

2.1 Electromobility Facts

The Berlin capital region is already a pioneer in innovative and sustainable mobility. Since a couple of years the city is an important e-mobility lab for further R&D, testing and demonstration. Electromobility is an integral component of Smart City Berlin. Many e-mobility projects have been realized together by numerous institutions from industry, science and politics. With more than 100 running transfer and collaborative **projects**, about 3,000 electric **vehicles** and over 650 publicly accessible **charging** points, it is the country's largest laboratory for electromobility.

These **projects** cover a broad spectrum of applications for integrated mobility options and future-oriented drive systems: from motorized vehicles for private households to corporate fleets, public transportation and commercial vehicles, as well as electric freight transport by truck, van and cargo bike. Concepts and strategies integrate vehicles into transportation and energy systems, i.e. they go beyond individual automobiles to pursue user-friendly, multi-modal systems linked with the use and storage of renewable energies. Intermodality and the intelligent networking of the different modes of transport are playing an increasingly important role. Particularly in view of current events, electromobility is an opportunity to restore trust in the automotive industry, but most of all it can make an important contribution to the energy transition. The mobility of the future will be dominated by the interplay of a variety of sustainable means of transport, the integration of renewable energies, and their intelligent coordination. The question will no longer be, "Which means of transport will I buy?" but "What is the fastest, easiest and cheapest means of transport to get from point A to B?" Smartphones, apps and online services will be increasingly helpful. Electromobility fits perfectly into this type of locomotion.

The capital region has the largest number of electric **vehicles** in a metropolitan area in Germany. The vast majority of the electric vehicles registered in the region (about 75%) are used for commercial purposes. In addition, approximately 14,000 vehicles with a hybrid drive are registered. Berlin is with more than ten providers a hot spot of carsharing and the place to be for carsharing in Europe. In Berlin carsharing was founded and developed up to series maturity. Many of the providers add electric vehicles to their fleets to make them available for the city. Most of the electric vehicles on the street are commercial vehicles or are part of corporate fleets.

Most of the publicly accessible **charging** points are operated by the utility companies Vattenfall and RWE. The mentioned number of charging points includes 31 fast charging points: 15 CHAdeMO and 16 CCS. As

part of a showcase project, up to 1,100 additional charging points will be built by the consortium Alliander, Allego and The New Motion. It takes about 20 minutes to charge electric vehicles up to 80% at the fast charging points. The existing hydrogen infrastructure will be expanded to more fuel stations. This means the capital region will have the densest network of hydrogen fuel stations in Germany.

2.2 Competencies in the Region

The German capital is off to a flying, sustainable start: No other region has more new companies and start-ups than Berlin. It has a growing number of young entrepreneurs with business around new and innovative e-mobility solutions and services and is an open-air laboratory for e-mobility solutions on the way to industrial-scale rollout. Many of which are in electromobility, such as smart solutions for charging at light poles from ubitricity and ebee. Even young companies like eMio are showing pioneer spirit with e-scooter sharing. And Berlin is also internationally attractive, as demonstrated by the US company Local Motors that opened a subsidiary in 2015. Using crowd engineering, innovative vehicles are designed and manufactured in small series using 3D printers.

About 500 companies and institutions from all added value sectors are currently directly involved in the field of electromobility in Berlin and Brandenburg. Among the regional players are research institutions as well as large, medium and small companies and numerous start-ups. The players are involved in development and demonstration projects, and/or are already involved with products and services on the market.

Best practice examples in industrial added value are:

- *Continental AG*... with the installation and development of electric motors for the electrification of the powertrain, including for the entire electric fleet of PSA Peugeot Citroën.
- *Bombardier Transportation GmbH*... with the development and testing of inductive charging systems for electric road vehicles (including the e-buses on BVG line 204).
- *BMW Motorrad*... with the serial production of the electrically powered maxi scooter "C evolution" in Berlin-Spandau.

Best practice examples in electromobile applications are:

- *"Multicity" e-car sharing*... with flexible e-carsharing with 250 electric vehicles that are charged using green electricity from 100% renewable energy. Available for flexible use in the Berlin metropolitan area since 2013.
- *KV-E-CHAIN (showcase project)*... with the integrated electromobility transport chain for intermodal transport. Goods are hereby delivered in containers by train to Berlin Westhafen and then distributed to their final destination over their "last mile" entirely by electricity on a 40-ton electric truck.
- *e-scooter sharing, e.g. "eMio"*... The free-floating e-scooter sharing was launched in Berlin in spring 2015. As with carsharing, the free-floating short-term rental concept is offered within the Berlin S-Bahn ring – well under the price of carsharing providers and without the quest for parking space, any CO₂ emissions or noise.

Best practice examples of innovative start-ups from Berlin are:

- *ubitricity Gesellschaft für verteilte Energiesysteme mbH*... enables a 90% cost reduction for EV charging infrastructure by using smart mobile metering technology. Drivers simply bring their mobile meter integrated in the charging cable or electric vehicle with them to every charging point. All that is necessary on site is an identifiable and switchable system socket that can be installed practically anywhere, such as mounted on a wall, or built into a street light pole.
- *Hubject GmbH*... is a joint venture between the BMW Group, Bosch and Daimler, EnBW, RWE and Siemens. It operates a cross-industry business and IT platform that networks and provides charging

infrastructure as well as service and mobility providers. More than half of all publicly accessible charging stations in Germany already operate under interchange.

- *ebee Smart Technologies GmbH*... is a successful start-up for the energy supply and automotive industry. With the "Berlin" charging point, a fully-fledged charging station for the public charging of electric vehicles at street lights (RFID standard) has been developed. Production and development is taking place in Berlin.

2.3 Awareness Campaigns

Communication campaigns play an important role to raise awareness to the topic electromobility. Advantages and functionality need to be shown. It is necessary that people get access to the new type of mobility, get information and have the chance to experience it. Berlin put a lot of emphasis in this, e.g. through the yearly "Hauptstadtkonferenz Elektromobilität" (Capital conference electromobility) with more than 500 participants from business, science and politics every year, through cooperation with media (radio, online and print), through promotion campaigns, through organizing driving events to give people the possibility to test electric vehicles and by using social media to live the exchange with the different target groups.

The travelling exhibition "Berlin is going electric" was created that shows everyday life in Berlin with electromobility and the value added by Berlin-based companies. So-called "Electromobility Sites" have been chosen and partly visibly marked. They are intended to serve as places of playful discovery where people can experience electromobility up close. Examples for "Electromobility Sites" in the city are the Smart Mobility Station Südkreuz, the EUREF Campus in Schöneberg, the Potsdamer Platz and the eMobility Lounge Berlin at nh Hotel Friedrichstrasse.

An image film informs about electromobility in the region. To get people's attention also a couple of little films for social media have been created, partly by students, to raise awareness to the topic from a different perspective. This includes also self-made films where business professionals talk about their experiences with electromobility and why they added electric vehicles to their corporate fleet.

From May to October last year a big campaign called „AUTOTAUSCH 2015“ raised a lot of attention to electromobility. The objective of the campaign was to give commuters the possibility to experience electric cars, to inspire them and to show them advantages and functionalities of this sustainable technology. A radio station and the press were involved. About 2,000 people applied for the project. At the end 100 private person but also representative from politics and media participated. They changed their car for 10 days and took an electric car instead. Most of the participants wrote in a blog about their experiences. A lot of interviews, talks and articles around the topic took place in the radio and in the newspaper.

3 Berlin-Brandenburg International Showcase for Electromobility

In April 2012, the German Government selected four regions in the country to act as 'Showcase Regions for Electric Mobility'. Based on a decision by the German Bundestag, research and development into alternative drive systems is to take place across each of these regions. The Federal Government provided a total of €180 million in funding for these large scale demonstration and pilot projects. The aim was to test electromobility within the overlapping systems of energy, vehicle, and transport. Four showcase regions were chosen from a total of 23 bids due to their high level of innovation. These showcases are

- Living Lab BWe mobil (Baden-Württemberg),
- Electric mobility connects (Bavaria-Saxony),
- Our horsepower becomes electric (Lower Saxony) and the
- Berlin-Brandenburg International Showcase for Electromobility.

Figure 1: Logo of the Electromobility Showcase of the federal government and Logo of the Berlin-Brandenburg International Showcase for Electromobility

The Berlin-Brandenburg Showcase is funded by the federal government and the States of Berlin and Brandenburg. It serves to demonstrate and further develop the theme of electromobility. The goal was to show the concrete benefits and uses of sustainable mobility in the public sphere and allow the general public to experience these benefits in a tangible way. Over a period of three years, a number of questions have been examined in the projects as user acceptance, suitability for daily use, infrastructural requirements, and environmental impact. In this context, innovative mobility concepts and new business models involving different user demands have received just as much focus as regulatory frameworks.

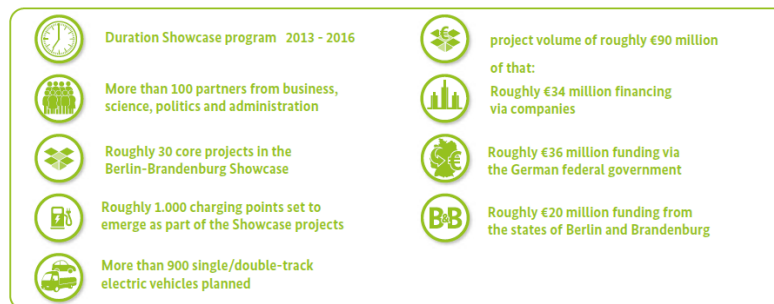


Figure 2: Facts and figures about the Berlin-Brandenburg Showcase [2]

With around 30 projects, over 100 partners and a project volume of 83 million euros, the Berlin-Brandenburg showcase is up to go full speed with electric cars in carsharing and corporate fleets, commercial vehicles and pedelecs. Couriers and parcel services use electric utility vans and cargo bikes for deliveries. Battery-powered commercial vehicles collect waste, and social services test electric cars for everyday life. Commuters between Brandenburg and Berlin are also encouraged to switch to Pedelecs with the help of a Pedelec corridor. In addition, a battery-electric powered bus line is set to drive through the city of Berlin and charge at the final station inductively. The world's largest all-electric truck legally permitted to drive on the street distributes goods throughout the city. A “micro smart grid” and load management for wind power are being tested. A “mobility driving school” is providing proper training along with education programs for automotive and electrical trades. Delegations and media from around the world can find out more about it at the defined and chosen “Electromobility sites”.

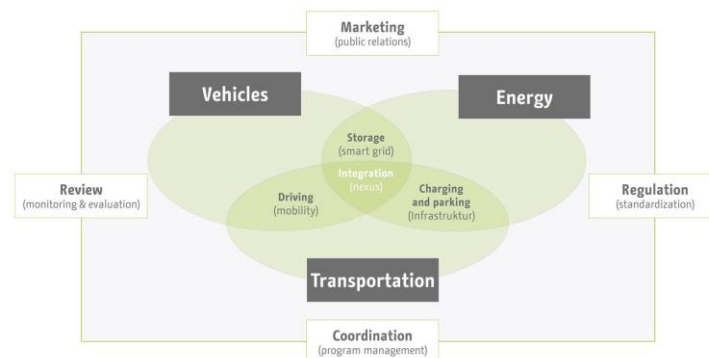


Figure 3: Focal areas of the Berlin-Brandenburg showcase [2]

At the heart of the showcase are four application-oriented focal points, all of which represent intersections of the sub-systems of vehicles, energy and transport (see Fig. 3):

- Driving - Emission-free mobility in passenger and freight transport, intermodality, fleets, electric carsharing,
- Charging & Parking - Sustainable expansion of the public infrastructure,
- Storage - Electromobility as part of a Berlin-Brandenburg smart grid and
- Integration - Connecting mobility solutions with the power grid and innovative business models using information and communication technology, training and ongoing education.

3.1 Findings and Experiences in the Field of Activity “Energy and Charging Infrastructure”

Electromobility in the region has been put on a sustainable footing thanks to the utilization of renewable sources of energy and the active role played by electrically powered vehicles in a smart power grid. In the process, a high-performance, requirement-led and innovative charging infrastructure is not only making an important contribution to the continued spread of electric vehicles, it is also an integral part of the data and network management as well as performance optimization. The smart infrastructure required for this in the region is undergoing significant expansion through partnership with industry. Establishing and expanding a need-based, high-performance, and unrestricted charging infrastructure as part of the intelligent energy grid in the Berlin-Brandenburg region follows a clear locational strategy.

A single central office at the Senate Department for Urban Development and the Environment has been set up to handle applications and government subsidies for the publicly accessible charging infrastructure. This will serve further expansion of the charging infrastructure in Berlin and Brandenburg in demand-based and coordinated form.

Different core projects of the Berlin-Brandenburg showcase focused on the subject “Energy and Charging Infrastructure”, for example:

- Expansion of the Charging Infrastructure in Berlin (*coordinated by the Berlin Senate Department for Urban Development and the Environment*)
- Micro Smart Grid EUREF – The goal is to expand the Micro Smart Grid to form a research and testing network (*coordinated by Innovation Centre for Mobility and Societal Change InnoZ*)
- SMART Capital Region – A Grid Concept for the capital region, real-world laboratory tests in the 5MW class, load assessment of a low CO₂ fleet (*coordinated by BTU Cottbus-Senftenberg*)



Figure 4: Energy and Charging Infrastructure

Findings and experiences of the subject “Energy and Charging Infrastructure” within the Berlin-Brandenburg showcase are:

- The „Landscape“ of the charging infrastructure is very heterogeneous and less user friendly.
- There is a lack of interoperability regarding processes and standards.
- There are no proven business models for public charging infrastructure and for smart grids yet available.
- So far vehicles available on the market do not support „controlled charging“ and vehicle-to-grid functionalities.

This leads to the following needs:

- An accelerated implementation and simplification of the regulatory framework is necessary.
- There is still RTD demand for smart grid (integration of renewable energy, bidirectional charging concepts still considerable).
- There is RTD demand for inductive charging required.

3.2 Findings and Experiences in the Field of Activity “Passenger Transportation”

The general aim is to enable greater mobility with a lower transport volume which at the same time is more environmentally friendly. As such, the field of activity of “Passenger transportation” concentrates on networking private vehicles and public transportation in intelligent ways (intermodality, multi-modality). New mobility strategies and products that link traditional public transportation, individual forms of public transportation (such as e-carsharing and bike sharing), and private vehicles are being tested and refined in the region. In addition, two and three-wheeled electric vehicles are freeing up public space for other uses that enhance the quality of urban life.

Different core projects of the Berlin-Brandenburg showcase focused on the subject “Passenger Transportation”, for example:

- E-Bus Berlin – Fully electric bus operations including inductive recharging infrastructure (*coordinated by Berliner Verkehrsbetriebe BVG*)
- Electric Fleets for Berlin-Brandenburg (*coordinated by DB FuhrparkService GmbH*)
- Intelligent Mobility Station – Themed train station “Networked Mobility and Energy” (*coordinated by DB Station&Service AG*)
- EBikePendeln: Driving fun with tail wind – Electric bikes replace commuter cars in Berlin-Brandenburg (*coordinated by German Institute of Urban Affairs Difu*)



Figure 5: Passenger Transportation

Findings and experiences of the subject “Passenger Transportation” within the Berlin-Brandenburg showcase are:

- Total cost of ownership for electric cars is still not competitive (even for commercial fleets) and financial incentives are still lower than for conventional vehicles.
- The spectrum of vehicles for different user groups are still very limited (i.e. for craftsmen, commercial vehicles in general).
- There are additional costs for electric carsharing compared to conventional vehicles (vehicle costs, charging logistics).
- The cost effectiveness of standard e-bus for urban transport is not yet foreseeable.
- There are still too much doubts about suitability for day-to-day use (lack of knowledge, driving range, charging) in the public awareness.

This leads to the following needs:

- Incentives for purchasing electric vehicles for specific user groups (e.g. trade, taxi, carsharing, busses, public authority) to be introduced are necessary.
- Improve and expand public relations campaigns are important to raise public awareness.

3.3 Findings and Experiences in the Field of Activity “Freight and Logistics”

While freight transport is invaluable for the capital region’s services and quality of life, it is also responsible for a large part of the pollution in the area (such as noise, CO₂, particulate matter). The field of action of “Freight transportation” therefore promotes the electrification of commercial vehicles and the testing of viable logistics strategies that are both compatible with urban life and economically feasible. In particular, use of low-emission, quiet delivery vehicles and cargo bikes by messenger, express, and parcel services for the “last mile” of inner-city deliveries, namely to end customers and retail stores, offers great and locally effective potential for the region.

Different core projects of the Berlin-Brandenburg showcase focused on the subject “Freight and Logistics”, for example:

- DisLog – Resource-efficient distribution logistics for urban areas using electric drive delivery vehicles (*coordinated by Fraunhofer IPK – Institute for Production Systems and Design Technology*)
- ElektroAES – The use of three electric waste disposal vehicles (*coordinated by Hüffermann Transportsysteme GmbH*)
- KV-E-Chain – Comprehensive electric transportation chain for combined transit (*coordinated by Technical University of Applied Sciences Wildau*)
- Nanu! – Multi-shift operations and nighttime deliveries with electric vehicles (*coordinated by Fraunhofer IPK – Institute for Production Systems and Design Technology*)



Figure 6: Freight and Logistics

Findings and experiences of the subject “Freight and Logistics” within the Berlin-Brandenburg showcase are:

- There is almost no availability of electric commercial vehicles in mass-production > 3.5 t
- The total cost of ownership are very high. There are clear disadvantageous with electric vehicles - in particular when considering high cost sensitivity in the logistics sector.
- The capacity of batteries for commercial vehicles are currently too limited.
- The charging infrastructure for commercial vehicles with high-power battery are not sufficiently available.

This leads to the following needs:

- It is highly recommended to implement incentives/ advantages for electric commercial vehicles; for instance tax advantages, user benefits in urban areas compliant with low noise, zero emission characteristics.
- There is still comprehensive R&D demand in all relevant fields like vehicle, battery, charging infrastructure and operational concepts.

4 From the Showcase to “smart eMobility”: New Foci for Berlin

After more than three years, the showcase and all core projects will be completed by the end of this year. But the work of the Berlin Agency for Electromobility and the established network will continue. The Berlin government decided to enlarge the topic regarding the subjects digitization and automating. These two topics are an excellent combination with electromobility and offer a lot of potential for optimization regarding smart and sustainable mobility especially in urban areas. Digitalization has an integrating effect here. Until now, electric vehicles and the e-mobility system have been regarded as separate worlds – we are now overcoming this view. Digitalization and networking will make it possible to implement intermodal traffic solutions in the real world. User-friendly applications will ensure simple access to these services. This is the foundation for new user behavior when dealing with intermodal mobility services. When we think about a customer’s needs, there are many approaches for new business models.

The results and findings from the last couple of years will be considered for the further development of sustainable mobility in the German capital region. The further developed “smart eMobility” strategy is focused on three field of activities (see fig. 7):

- Vehicles
- Urban traffic
- Mobility and energy transition

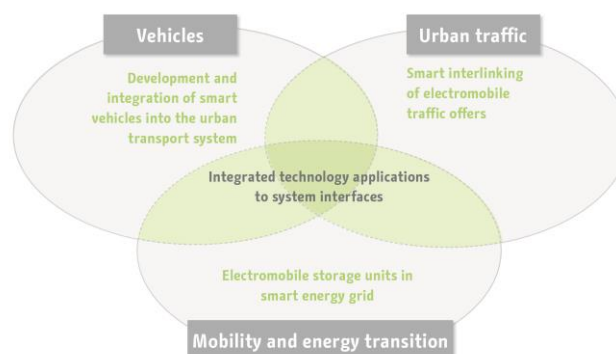


Figure 7: Focal areas of smart eMobility [3]

4.1 Vehicles

The field of activity „Vehicles“ is about development and integration of smart vehicles into the urban transport system. The digitization of vehicles allows new dimensions of efficiency, safety and utilization. Partially automated driving is already a reality thanks to the numerous driver assistance systems available today. The trend towards autonomous driving will continue to grow rapidly with the increased digitization of vehicles. Innovative software, new vehicle concepts and consumers' changing behavior towards mobility and usage are the main drivers of these developments. In the future, vehicles will communicate with the transport infrastructure (Vehicle2X) and integrate into the complex traffic system automatically. The automation and electrification of vehicles are therefore perfect complements.

The following key topics have been defined for the year 2016:

- Initiative for 100,000 cargo bikes from Berlin (development, production, marketing),
- Development and production of electric vehicles (light electric vehicles, commercial vehicles, ships),
- Automation of (electric) vehicles,
- Develop software for individually controlling functions in electric vehicles (automated driving / driver assistance systems).

Other focal points until 2020 will be:

- Development, demonstration and implementation of new e-commercial vehicle concepts and related services,
- Creating value in fuel cell technologies together with the cluster management activities of the region,
- Prototype factory for modular batteries.

4.2 Urban Traffic

The field of activity „Urban traffic“ is about smart interlinking of electromobile traffic offers. Electric vehicles are an important part of the overall mobility possibilities. Intelligent mobility means both an environmentally and economically efficient form of transport that combines the strengths of different modes of transport. Building smart networks between individual and public mobility services through innovative information and communication technologies allows for optimized and short distances within the Smart City and helps growing cities meet the population's increasing mobility needs.

The following key topics have been defined for the year 2016:

- Networking, digitizing and automating traffic (communication between means of transport and infrastructure),
- Expand and increase efficiency of electric public transportation, including intermodal hubs and intelligent mobility stations,
- Strengthen future locations for integrated application and further development of smart city-oriented technologies.

Other focal points until 2020 will be:

- Develop mobility services for networking commercial offers and private users,
- Development, demonstration and application of new logistics concepts,
- Software solution development for efficient utilization of electric vehicles in commercial fleets and fleet applications,

- Creating sustainable tourism,
- Supporting development and operation of charging infrastructure in public and semi-public spaces.

4.3 Mobility and Energy Transition

The field of activity „Mobility and energy transition“ is about electromobile storage units in smart energy grid. Electric vehicles (cars, trucks and buses) can make an important contribution to the energy revolution by being used as mobile and decentralized storage systems. The objective of this field of activity is to stabilize the fluctuating wind and solar energy fed into the power grid by integrating flexible storage systems and thus to support the power grid's load management. In addition, electric vehicles can be charged and discharged in a resource efficient manner as needed via an intelligent control system. For smart home / smart building concepts, electromobility can contribute to making efficient and economical use of renewable energy sources.

The following key topics have been defined for the year 2016:

- Developing integrated smart grid concepts and testing flexible storage concepts,
- Developing and testing bidirectional and inductive charging concepts,
- Research and development of energy storage systems and technologies,
- Active participation in the WindNODE consortium for the tender "Smart Energy Showcases" from the Federal Ministry for Economic Affairs and Energy.

Other focal points until 2020 are:

- Generating, storing and supplying hydrogen from renewable sources.

5 International Perspective

Berlin is an open minded, creative and dynamic city. Many professionals and tourists from all over the globe come to the city every year for doing business or for visiting. The numbers are growing higher each year. The multicultural atmosphere combined with the historical paths give the city some sort of easiness and specialty that is difficult to find anywhere else. Due to the dynamic development of the city in the past recent years especially in the fields of ICT, mobility and sustainability as well as of the good general conditions many companies decided to open subsidiaries (like Local Motors) or to open their head office in Berlin (like HERE).

Cooperation with international metropolis and regions in Europe, America and Asia are getting more important over the last few years. eMO started cooperation in Europe for instance with cities like Amsterdam, Copenhagen and Oslo; in Asia with cities like Beijing, Seoul and Tokyo and is in contact with different players in the United States like from New York City, California and Oregon. The most relevant issues are e. g. to buildup and establish a sustainable information and best-practise exchange with other cities, to develop cross-national e-mobility projects, to support networking between companies and institutions, to promote new business and to promote sustainable mobility concepts and mobility solutions made in Berlin-Brandenburg. A special focus lies on EU projects within die framework program Horizon 2020.

In May 2016 the FIA Formula E race will be in town for the second season. Last year more than 20,000 visitors came to the show and have been inspired by sustainable mobility. They experienced that it is fun, reliable and contagious. The historic venue Tempelhof Airport was host to pure electromobility. The second highlight that day was the longest parade of electric vehicles around the globe. Electromobility pioneers and all Berlin residents were invited to take part in the attempt to break the world record and drive

their own or a rented electric vehicle around the track of the FIA Formula E DHL ePrix race. At the end the previous Guinness world record of 507 vehicles reached on September 22, 2014, in the Silicon Valley was broken. In Berlin 576 e-cars, Segways, e-scooters, e-motorbikes, e-trucks and e-trikes participated. Events like this bring a different attention and a worldwide awareness to the topic. Berlin is the place to be for sustainable mobility.

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