The present booklet presents an overview of the developments in the electric mobility sector in Germany until June 2016 and provides recommendations for political decision-makers to help achieve the defined goals.

Further information and publications by the NPE:

www.nationale-plattform-elektromobilitaet.de/en
@NPEmobilitaet

Guide to Electric Mobility
Recommendations for action
by the German National Platform for Electric Mobility

June 2016
Executive Summary

Electric mobility is an integral part of the global mobility transition. Experts from the National Platform for Electric Mobility (NPE) expect a significant breakthrough of electric mobility between 2020 and 2030. Around the world, the market is already highly dynamic, particularly in countries with according framework conditions.

In Germany, industry, academia, politics, trade unions and society have closed ranks to win the country the technology leadership and make it leading supplier (target: leading supplier) as well as lead market (target: lead market) by 2020, thus also keeping up the high level of employment along the entire value chain (target: employment). The current state of development is the result of joint efforts in the areas of research and development, standardisation, training and qualification, as well as regarding the establishment of a publicly accessible charging infrastructure and the introduction of a legal basis for electric mobility.

The German industry is one of the leading providers worldwide, offering high-quality products, services and solutions. Germany’s registration rate of new electric vehicles is developing very dynamically.

The relevant players in Germany are working hard to increase the efficiency of the electric mobility system as a whole. By 2020, German automotive manufacturers will have significantly expanded the range and availability of competitive vehicles in the different segments. The NPE recommends the implementation of the following accompanying measures between 2017 and 2020:

1. Jointly expand research and development efforts.
2. Support the entrepreneurial decision for an integrated cell and battery production in Germany.
3. Set up a joint investment programme to establish a publicly accessible charging infrastructure.
4. Create a legal framework which will allow for the establishment of privately and publicly accessible charging infrastructure.
5. Monitor the market ramp-up and adjust funding as needed.
Seizing opportunities!

Mobility of people and goods creates prosperity and quality of life. However, mobility also causes congestion, noise and air pollution. We therefore need new mobility concepts and products that meet the societal conception of environmental protection, efficiency and urban and spatial quality standards while ensuring a powerful economy.

Electric mobility is the key to a sustainable transformation of mobility: It is climate-friendly, environmentally compatible, efficient and saves resources. For Germany, moreover, electric mobility represents the opportunity and challenge to secure and expand its position as a top location for industry, science and technology. The development of electric mobility is a challenge to society as a whole and touches upon various policy fields:

<table>
<thead>
<tr>
<th>Policy Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate policy</td>
<td>Regeneratively generated power replaces long-term fossil fuels for mobile applications.</td>
</tr>
<tr>
<td>Energy policy</td>
<td>Electrical vehicles used as mobile intermediate storage units and the intelligent use of the charging process stabilise the energy systems.</td>
</tr>
<tr>
<td>Industrial policy</td>
<td>Electric mobility dissolves classic sectoral boundaries, thus promoting new vehicle concepts and business models.</td>
</tr>
<tr>
<td>Transport policy</td>
<td>Electric mobility is a key element of a sustainable transport system.</td>
</tr>
<tr>
<td>Labour and social policy</td>
<td>Electric mobility secures and creates jobs while requiring new standards for training and qualification.</td>
</tr>
<tr>
<td>Innovation policy</td>
<td>Electric mobility provides new stimulus for industrial and scientific research</td>
</tr>
</tbody>
</table>
Goals and recommended measures until 2020
Target: Leading Supplier

By 2020, the German industry has become international leader in the field of electric mobility.
Recommended measure

Jointly expand research and development efforts.

Project volume for research and development
2017 to 2020

- 2,880 million euros (2017–2020 total amount)
- 1,140 million euros (Vehicle technology)
- 990 million euros (Battery)
- 750 million euros (ICT and infrastructure)
Recommended measure

Support the entrepreneurial decision for an integrated cell and battery production in Germany.

Scenario for the establishment of a battery cell production in Germany

Investments 2020 to 2025:
1,3 billion Euros for 13 GWh

Cell technology generation 3a or following

<table>
<thead>
<tr>
<th>Year</th>
<th>Expansion Level</th>
<th>Approx. Capacity per annum</th>
<th>Number of Battery Cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>1</td>
<td>0.3 Gwh</td>
<td>2.3 Mio.</td>
</tr>
<tr>
<td>2021</td>
<td>2</td>
<td>1 Gwh</td>
<td>6.8 Mio.</td>
</tr>
<tr>
<td>2022</td>
<td>3</td>
<td>5 Gwh</td>
<td>34.6 Mio.</td>
</tr>
<tr>
<td>2023</td>
<td>4</td>
<td>9 Gwh</td>
<td>62.4 Mio.</td>
</tr>
<tr>
<td>2025</td>
<td>5</td>
<td>13 Gwh</td>
<td>90.2 Mio.</td>
</tr>
</tbody>
</table>

Further information:
NPE (2016): Roadmap for an Integrated Cell and Battery Production in Germany
Target: Market Leadership

By 2020, Germany is the international lead market for electric mobility.
Recommended measure

Implementation of a joint investment programme to establish a publicly accessible charging infrastructure.

Expanding the publicly accessible charging infrastructure

- **51,600 vehicles** today
- **1,000,000 vehicles** by 2020

**Investments required**: 550 million euros

- **5,800** AC charging points today
- **70,000** AC charging points by 2020
- **150** DC fast charging stations today
- **7,100** DC fast charging stations by 2020

Further information:

*Cumulative new registrations since 2010

Last update: December 2015
Recommended measure

Creation of a legal framework allowing for the establishment of a privately and publicly accessible charging infrastructure.

Legal framework conditions

§ Improve the framework conditions of landlord and tenant law regarding the installation of private charging points.

§ Include the installation of the prerequisites for charging infrastructure in new buildings and reconstructions as a mandatory requirement in the building regulations of the Länder.

§ Obligations to designate parking spaces with according charging infrastructure – e.g. in road construction, petrol and service stations as well as in airports, train stations and the public housing sector.

§ Align the regulations of the calibration law for AC and DC charging at the national level, thus introducing clear and practicable provisions for a certificate of conformity for measuring devices.

§ Authorising the commercial use of charging stations in residential areas.
Recommended measure

Observe market ramp-up and adjust the funding as necessary.
Germany is the international lead market for electric mobility, boasting high export shares. Germany is the international lead market for electric mobility, with the registration rate of new electric vehicles developing very dynamically.

By focusing on electric mobility, Germany secures its high level of employment along the entire value chain.
Market overview
Market overview

More than 40 vehicle models across all vehicle segments are currently available on the market (last update: May 2016). The range includes the vehicles the NPE focuses on, i.e. battery electric vehicles, plug-in hybrids and range extenders. By 2020, the range of competitive vehicles in the various segments will have further grown.
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