

Empowering e-fleets for business and private purposes in cities

Programme:

STEER

Project number:

IEE/12/713/SI2.644746

Factsheet

EUROPEAN TRANSFERABILITY

Date:

March 2014

Main author:

Carla Piñeiro – INOVA

e-mail: c.pineiro@inovaportal.com

Project coordinator:

Aida Abdulah – CHOICE

e-mail: abdulah@choice.de

ebridge-project.eu



Co-funded by the Intelligent Energy Europe
Programme of the European Union



Table of contents

1. AT A GLANCE.....	3
2. THE eBRIDGE PROJECT	4
3. THE eBRIDGE COUNTRIES.....	5
4. SELECTED RESULTS	8
4.1. POTENTIAL CAR DRIVERS IN THE eBRIDGE COUNTRIES	8
4.2. POPULATION DISTRIBUTION BY CITY SIZE	8
4.3. MOBILITY PATTERNS	9
4.4. eBRIDGE CARPOOLS	9
eBRIDGE Motorisation rate 2011	9
eBRIDGE EV Motorisation rate 2008-2012	10
Cumulative registrations of EVs 2008-2012	10
Ranking of registrations and sales market 2012.....	11
4.5. CHARGING INFRASTRUCTURE	11
4.6. CARBON FOOTPRINT OF ELECTRICITY GENERATION	12
4.7. MAIN DRIVERS AND CONSTRAINTS OF ELECTRIC MOBILITY	12
4.8. SUPPORTING POLICIES AND INCENTIVES FOR EV ADOPTION	13
5. ANNEX I: RELATED EUROPEAN PROJECTS	14
6. ANNEX II: RELATED INTERNATIONAL EVENTS	17
7. REFERENCES.....	18

Index of figures

Figure 1 Share of potential car drivers	8
Figure 2 Share of cities by size class	8
Figure 3 Modal share.....	9
Figure 4 eBRIDGE Motorisation Rate 2011	9
Figure 5 eBRIDGE EV Motorisation Rate 2011	10
Figure 6 Evolution of the cumulative registrations of electric vehicles 2008-2012.....	10
Figure 7 Most sold / registered vehicles 2012.....	11
Figure 8 CO ₂ emissions per kWh from electricity generation.....	12

Index of tables

Table 1 Existing charging points vs EU 2020 proposed targets.....	11
Table 2 Drivers and constraints of electric mobility	12
Table 3 Supporting measures and policies for EV adoption	13
Table 4 Related European projects.....	14
Table 5 Related international events.....	17

1. AT A GLANCE

Electric mobility is a highly promising technology that can help address severe global challenges such as climate change and fossil fuel dependency; it can contribute to cutting local CO₂ emissions and noise pollution coming from transport and enable synergies with smart grids and so favour a greater percentage of renewable energies production.¹

The large potential of electric vehicles in urban fleets includes (a) improving electric mobility markets through niche development, thus accelerating mass market adoption of electric vehicles; (b) supporting the achievement of energy and climate protection goals; and (c) contributing to tackling global recession by revitalising the industrial fabric and fostering innovation, growth and job creation.

The EU has called for the need to drastically reduce world greenhouse gas (GHG) emissions, with the goal of limiting climate change below 2°C. A reduction of at least 60% of GHGs by 2050 with respect to 1990 levels is required from the transport sector. Accordingly, the White Paper on Transport (2011) establishes as first goal to halve the use of conventionally fuelled cars in urban transport by 2030; phase them out in cities by 2050; achieving essentially CO₂-free city logistics in major urban centres by 2030.²

Moreover, the European Union's ten-year growth strategy, Europe 2020, established a set of targets including climate, energy and sustainability targets. The EU targets are translated into national targets in each EU country.

To achieve these targets, the European countries are implementing mobility plans to promote the use of the electric vehicle (demonstration projects, infrastructures, incentives, etc). However, despite the policies and incentives introduced, the market is developing slowly.

The main market barriers for the successful integration of electric mobility into European transport systems include technological (battery technology), infrastructural (recharging infrastructure) and cost-related aspects (business case of large scale introduction). The main potential drivers detected are the environmental benefits of the EVs (energy efficiency, low emissions, absence of noise, etc), the introduction of actions to promote their implementation (special regulations, financial incentives, etc) and the commitment of the automotive industry with the R&D on EVs.

The eBRIDGE countries (Germany, Austria, Spain, Italy, Portugal and United Kingdom), represent the 53% of EU population, 59% of its GDP and 58% of its passenger carpool.

Considering the total carpool (passenger vehicles and light commercial vehicles³) and the number of potential car drivers in the eBRIDGE countries, the number of cars per driver is almost 1. Cars and motorbikes are the preferred means of transport (53 %), followed by walking and cycling (25%) and public transport (13%).

In 2012 Toyota led the market of registered and/or sold electric vehicles in the eBRIDGE countries. The top five models were Toyota Prius Hybrid, Toyota Auris Hybrid, Toyota Yaris, Lexus CT 200h and Opel Ampera.

¹ Council of the European Union. 2010.

² European Commission (2011) WHITE PAPER

³ Commercial carrier vehicle with a gross vehicle weight not exceeding 3.5 tonnes.

2. THE eBRIDGE PROJECT

eBRIDGE is a co-funded EU project to promote electric fleets for urban travel in European cities. The project aims to bring innovation and new technologies to make today's mobility cleaner, more efficient and sustainable.

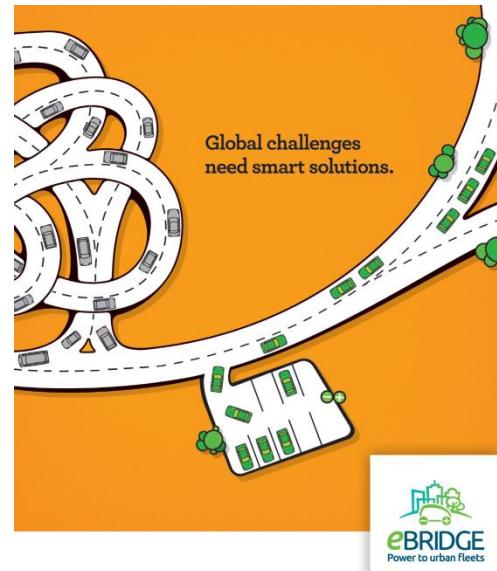
During eBRIDGE, alternatives to current mobility patterns will be explored in order to analyse whether electric mobility is a feasible option to make cities cleaner and more sustainable.

Although electric vehicles fulfil all the requirements to be among the most important players in urban transport systems of the near future – they are clean, efficient, silent and incur low running costs – significant barriers to a wider diffusion and use of electric vehicles remain to be addressed, including low user acceptance and higher purchase costs compared to conventional cars.

Against this background, eBRIDGE aims to demonstrate how the introduction of electric vehicles in fleets for business and private urban travel can efficiently contribute to the improvement of market conditions for the electric mobility sector.

The eBRIDGE team involves technical experts, academics, associations, public administrations, mobility providers and public transport and car sharing operators.

Seven case studies located in Berlin (Germany), Milan (Italy), Lisbon (Portugal), Vigo (Spain), Valencia (Spain), a selection of Austrian municipalities and Carmarthen (Wales) are developing actions to optimise operational fleet performance, test and launch solutions to increase the convenience and ease of use of car sharing offers and finally, raise awareness on the suitability of electric mobility for urban transport and commuting.



European Transferability

The factsheet "European Transferability" shows at a glance the main results of the six country analysis carried out in Germany, Austria, Spain, Italy, Portugal and United Kingdom.

In addition, European ongoing projects and next events in the field of electric mobility are shown to foster cooperation and networking.

3. THE eBRIDGE COUNTRIES

GERMANY

Germany aims to become world's leading supplier and market for electric mobility by 2020. The opportunities and challenges embedded in this vision are worthwhile: developing the leadership position in the industry, science and technology sectors can help to create up to 30,000 new jobs and contribute to achieving a climate-friendly and energy-efficient transport system.



The National Platform for Electric Mobility (NPE) established by the federal government brings together representatives of the industry, research, politics, civil society and further stakeholders, which are crucial for the successful development of electric mobility. The NPE follows a systemic, market-focused, and technological-neutral approach with the goal of achieving one million electric vehicles on the roads by 2020.

Currently, Germany is still in the market preparation phase (foreseen until the end of 2014). Up to date, various R&D projects and showcases have been supported with national funding and progress is currently on track. As of 2012, the German carpool had a total of 52,183 electric vehicles (HEV, PHEV and BEVs). This figure represents the 5.22% of the national target of 1 million electric vehicles until 2020.

AUSTRIA



The Austrian government understands electric mobility to be an intermodal mobility system of railway, e-commercial vehicles, e-busses, and e-passenger cars, e-scooters, and e-bicycles. The set-up of intelligent power supply grids and charging infrastructures is to be an important prerequisite.

Therefore, a common strategy for electric mobility⁴ of three Austrian ministries (Agriculture and Forestry, Environment and Water Management (BMLFUW), Transport, Innovation and Technology (BMVIT) and Economy, Family and Youth (BMWFJ)) has been approved in June 2012. It covers measures in all fields of e-mobility and the production of clean energy.

A series of R&D-projects had been supported as well as 8 model regions for electric mobility with different key aspects of the implementation of e-mobility. After the first hype at the beginning of the decade now the mood has grown sober. However, e-mobility still has a strong support by the Austrian Climate and Energy Fund (Klima und Energiefonds) with the programme klima:aktiv mobil, the National Action Programme for Mobility Management, with a target of 250,000 electric vehicles by 2020. As of 2012, there were 9,489 EVs in Austria.

⁴ Electromobility in and from Austria. the common path!, June 2012

SPAIN

Since 2003, national policies to promote hybrid electric vehicles (HEV), plug-in hybrid electric vehicles (PHEV), and battery electric vehicles (BEV) have been developed. The Spanish Strategy for Energy Savings and Efficiency 2004–2012 includes the promotion of alternative fuels and vehicle technologies (liquefied petroleum gas - LPG, natural gas, HEV, PHEV, BEV, hydrogen and fuel cells) as a key action line.



In 2010, the Spanish government presented the “Action Plan for the Electric Vehicle” (Plan MOVELE), part of the “Comprehensive Strategy to Promote the Electric Vehicle 2010-2014” which established a target of 250,000 electric vehicles (BEVs and PHEVs) by end of 2014. In 2012, the Spanish carpool had 10,497 EVs.



In order to achieve this, the National Plan for Renewable Energies 2011–2020 sets targets for the introduction of renewable energies of 8% biofuels and 2% of electricity of the total final energy consumption in transport. Of this 2%, 0.5% is assigned to railways and 1.5% is assigned to PHEVs and BEVs according to the following proportions by 2020: 80% for

PHEVs (2,000,000 vehicles) and 20% for BEVs (500,000 vehicles).

ITALY

The introduction of EVs in Italy has been driven by a series of temporary environmental control actions and the increasing share of renewable energy sources within a heterogeneous energy mix.

The governmental bodies are formally committed to the European Union targets for CO₂ emission reductions and increased use of alternative fuels and are currently proposing and discussing new legislation, regulations, and supporting measures to significantly reduce the environmental and energy impact of the transport sector. In 2012, the Italian carpool had 8,418 EVs.



At central level, the Authority for Electric Energy and Gas has released the “Piano Nazionale infrastrutturale per la ricarica dei veicoli alimentanti ad energia elettrica (National infrastructural Plan for charge of electric vehicles)”. This plan was foreseen by the 134/2012 national law; it provides specific guidelines to promote an homogeneous development of recharging services and it states that the starting point has to be identified in the urban areas.

PORUGAL



Under the Directive 2009/28/EC (EC, 2009), Portugal has committed itself to a target of 31% of gross final energy consumption coming from renewable sources by 2020; in its National Energy Strategy 2020 (Portuguese Gov., 2010), it also sets the objectives of achieving 60% of electricity production and 10% of the energy consumption in transport coming from renewable sources by 2020.

The strategy underlined by these objectives⁵, combined with the possibility of making greater use of wind power generation installed capacity (with the potential to drastically cut CO₂ emissions from transport), convinced Portugal to start its electro-mobility initiative in 2008 with the creation of the MOBI.E Program. The pilot initiative is nationwide and involves 25 of the largest Portuguese municipalities and a number of different stakeholders: from research centres, to energy and IT companies.

The number of EVs is expected to reach 200,000 by 2020, in view of wide user adoption fostered by convenience of vehicles for certain categories of users and penetration of new mobility services incentivized by public authorities. As of 2011, the Portuguese carpool had 9,693 EVs.

UNITED KINGDOM



Based on the Committee on Climate Change (2010) recommendations, the UK Government should aim for 1.7 million EVs on the road by 2020, in order to move towards the carbon emissions reduction target of 50% by 2025. This means that over 250,000 new EVs per year must be introduced in the UK. In

2012 the national carpool comprised of 129,402 EVs.

To promote electric vehicle implementation, in 2011, the UK government committed to supporting a national recharging network for electric and plug-in hybrid vehicles. The Plug-In Vehicle Infrastructure Strategy includes a Plugged-In Places (PIP) programme with a budget of £30 million to match-fund eight pilot projects (east of England, Greater Manchester, London, Midlands, Milton Keynes, north east England, Northern Ireland, Scotland) installing and trialling recharging infrastructure in the UK to support the Carbon Plan commitment to install up to 8,500 charging points.

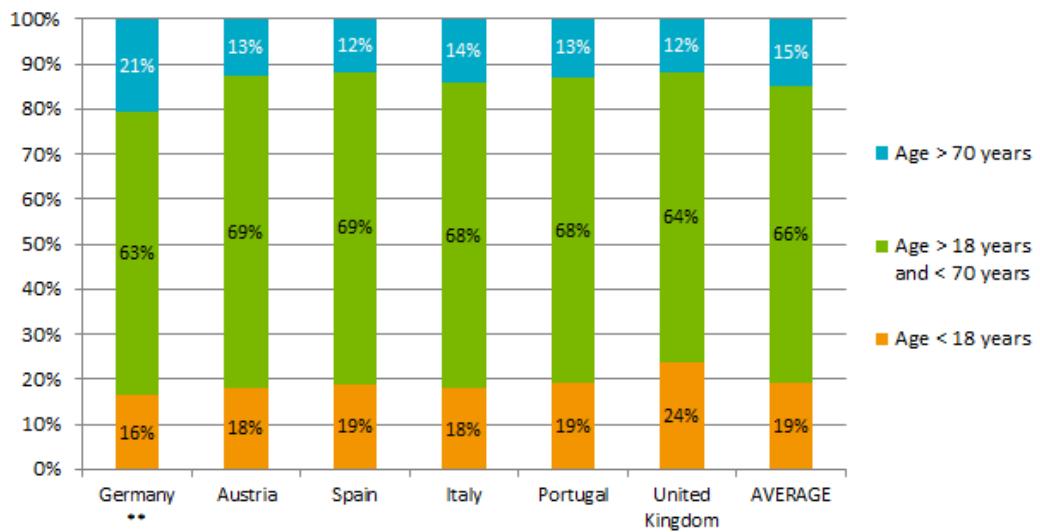
⁵ National Action Plan for Energy Efficiency 2020 (PNAEE); Portugal2020 - National Reform Programme (2011).

4. SELECTED RESULTS

4.1. Potential car drivers in the eBRIDGE countries

In 2011, potential car drivers (population cohort aged 18-70 years) represented in average two thirds of total population (65.94%). No significant differences are seen, showing Spain the highest percentage (69.37%) and Germany the lowest (63.02%).⁶

Figure 1 Share of potential car drivers

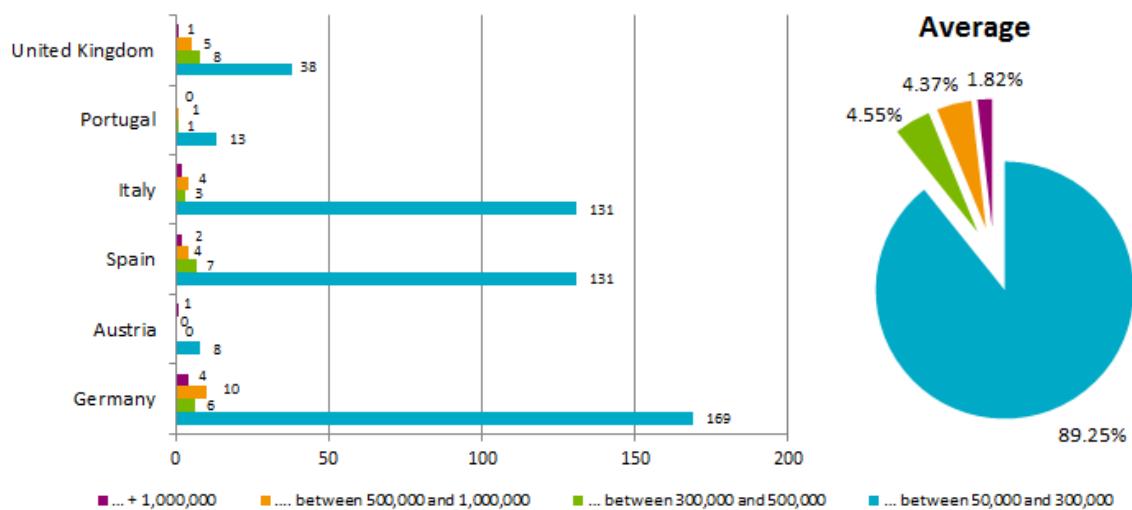


Source: Own graphic based on national sources. See references section.

4.2. Population distribution by city size

Population is distributed mostly in small-sized cities (50,000 - 300,000 inhabitants).

Figure 2 Share of cities by size class



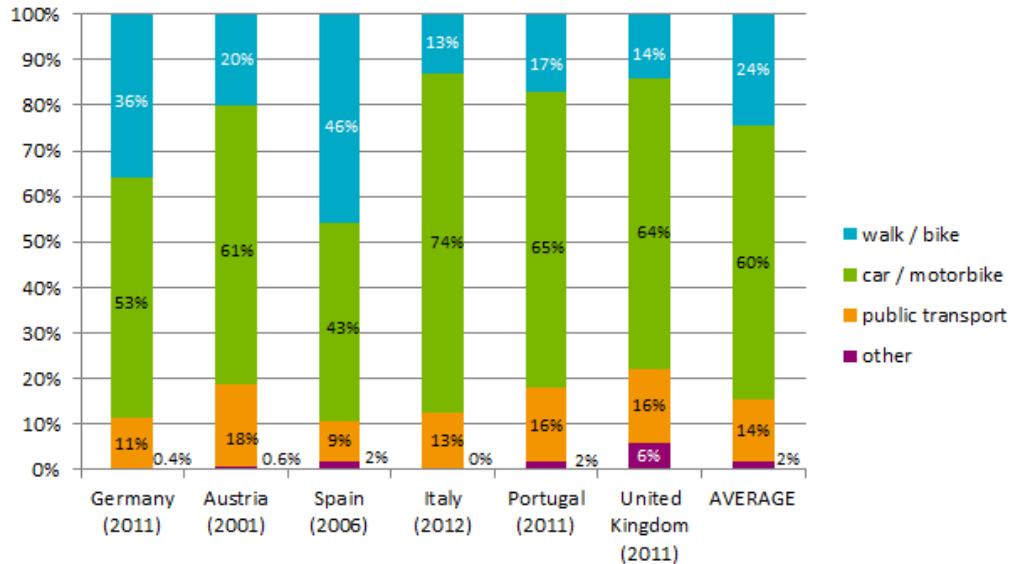
Source: Own graphic based on national sources. See references section.

⁶* United Kingdom: Age > 20 years and < 70 years. ** Germany: Age > 15 years and < 65 years.

4.3. Mobility patterns

Trips are made mostly by car and motorbike, followed by walking and cycling and public transport.

Figure 3 Modal share



Source: Own graphic based on national sources. See references section.

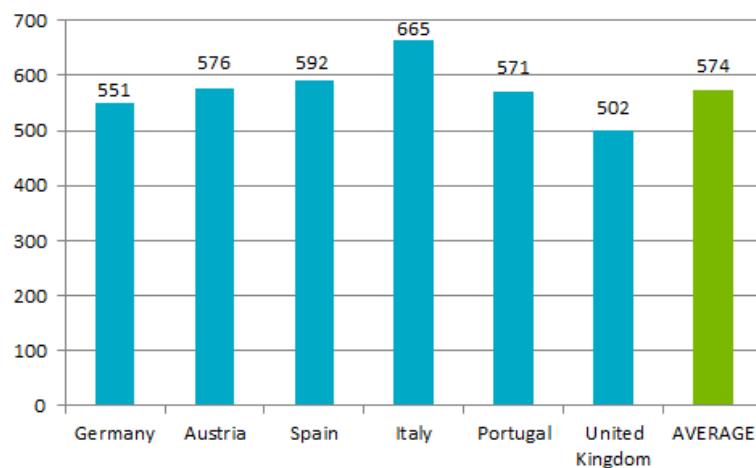
4.4.eBRIDGE Carpools

eBRIDGE MOTORISATION RATE 2011

The motorisation rate indicates the number of passenger cars per 1,000 inhabitants.

Based on the 2011 total number of registered vehicles (passenger and light commercial cars)⁷, the eBRIDGE average was 574 vehicles per 1,000 inhabitants, with the highest rate in Italy (665 vehicles) and the lowest in United Kingdom (502 vehicles).

Figure 4 eBRIDGE Motorisation Rate 2011



Source: Own graphic based on national sources. See references section.

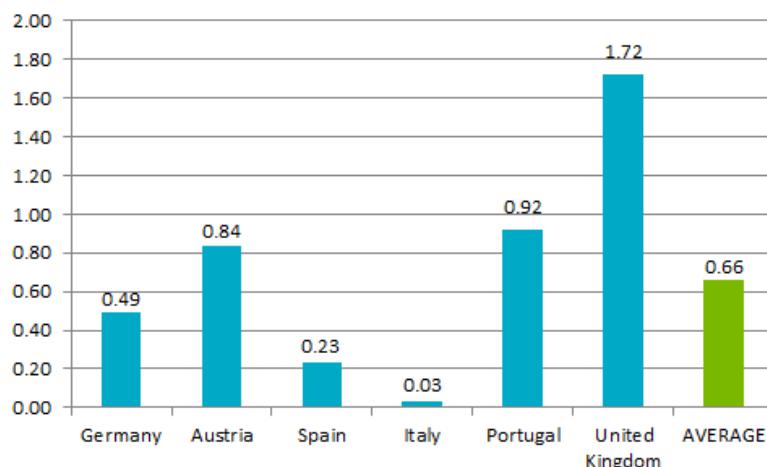
⁷ Passenger vehicles and light commercial vehicles (commercial carrier vehicle with a gross vehicle weight of not more than 3.5 tonnes.)

eBRIDGE EV MOTORISATION RATE 2008-2012

This indicator is defined as the number of total registered EVs per 1,000 inhabitants.

In 2011, the eBRIDGE average was 0.66 vehicles per 1,000 inhabitants, with the highest rate in United Kingdom (1.72 vehicles) and the lowest in Italy (0.03 vehicles).

Figure 5 eBRIDGE EV Motorisation Rate 2011

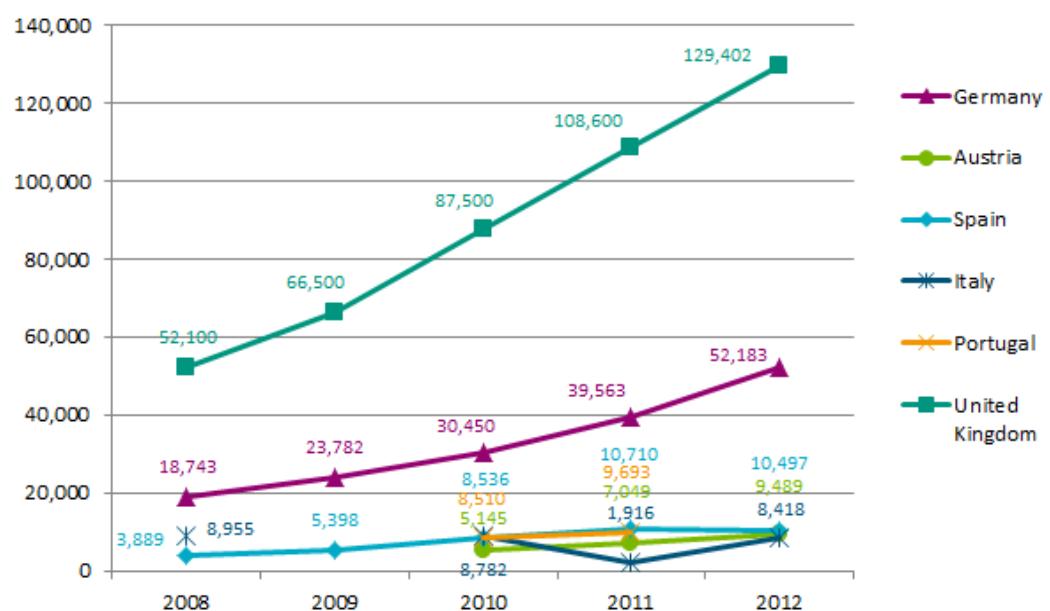


Source: Own graphic based on national sources. See references section.

CUMULATIVE REGISTRATIONS OF EVS 2008-2012

From 2008 to 2012, the registrations of electric vehicles (BEVs, HEVs and PHEVs) have increased significantly in Germany (284.72%), Spain (169.92%) and United Kingdom (148.37%). Registrations in Austria and Portugal have increased as well (84.43% and 13.90% respectively); only Italy shows a slight decrease (6.00%).⁸

Figure 6 Evolution of the cumulative registrations of electric vehicles 2008-2012



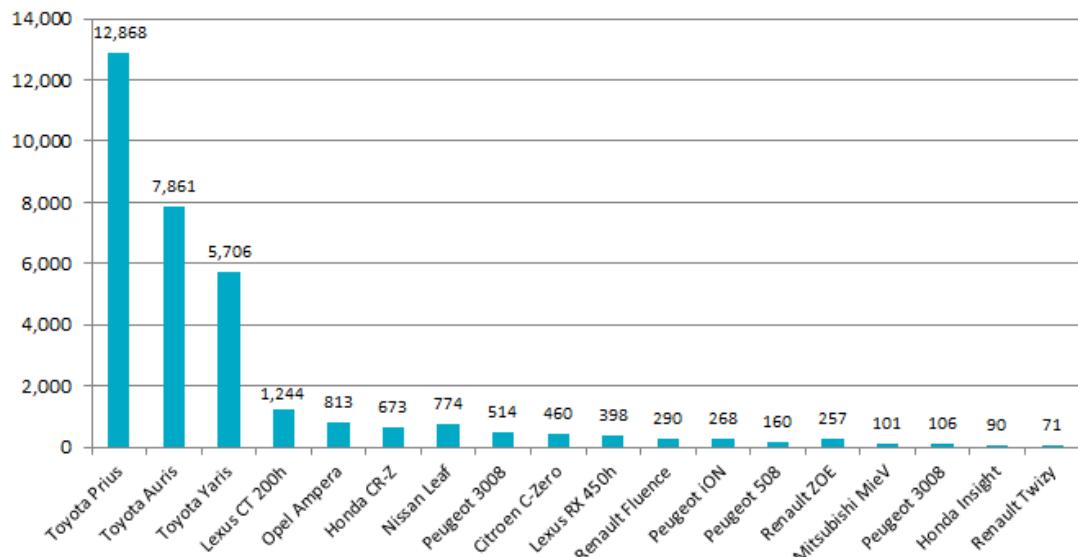
Source: Own graphic based on national sources. See references section.

⁸ No data available for Austria 2008 and 2009; for Italy 2009; for Portugal 2008, 2009 and 2012.

RANKING OF REGISTRATIONS AND SALES MARKET 2012

In the eBRIDGE countries Toyota leads by far the registrations and sales market with the models Toyota Prius, Auris and Yaris. Lexus and Opel follow with the models CT200h and Ampera.

Figure 7 Most sold / registered vehicles 2012



Source: Own graphic based on national sources. See references section.

4.5.Charging Infrastructure

On January 2013, the European Commission announced a set of measures to ensure the build-up of alternative fuel stations across Europe with common standards for their design and use. Within these measures, the European Commission proposed targets of infrastructures for clean fuels such as electricity, hydrogen and natural gas per country that shall be put in place by 2020.

Table 1 Existing charging points vs EU 2020 proposed targets

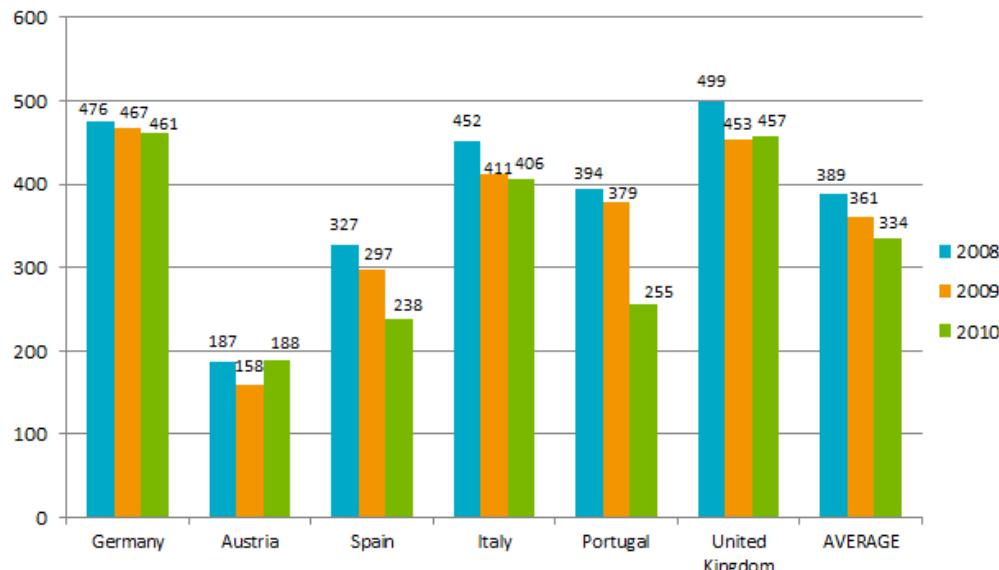
Country	Existing infrastructure (charging points) 2011	Proposed targets of publicly accessible infrastructure by 2020
Germany	1,937	150,000
Austria	489	12,000
Spain	1,356	82,000
Italy	1,350	125,000
Portugal	1,350	12,000
United Kingdom	703	122,000

Source: Own graphic based on European Commission, EU launches clean fuel strategy, Press release (2013)

4.6. Carbon footprint of electricity generation

The CO₂ emissions associated to electricity production show a decreasing trend from 2008 to 2010, which can be considered a positive development with regards to electric mobility.

Figure 8 CO₂ emissions per kWh from electricity generation



Source: Own graphic based on CO₂ Emissions from Fuel Combustion Highlights, IEA (2012)

4.7. Main Drivers and Constraints of electric mobility

The main market barriers for the successful integration of electric mobility into European transport systems include technological, infrastructural and cost-related aspects. Finding integrative solutions to overcoming the current challenges concerning battery technology, standardisation of the recharging infrastructure, interaction with electricity generation systems and cost and business case of large scale introduction is crucial for the development of the electric mobility market in the short and long term.

The increased demand for EVs, along with the sharing of best practice and extensive public and organisational awareness-raising activities, will help encourage infrastructure and technological investments and reduce costs.

Table 2 Drivers and constraints of electric mobility

Potential Drivers	Constraints
<ul style="list-style-type: none"> Environmental aspects: less noise pollution, less air pollution. Energy and climate goals: high energy efficiency, low local CO₂ emissions. Scarcity of fossil fuels Development of public and private charging infrastructure. New urban mobility concepts, vehicle-to-grid concepts. New sharing concepts to support co-modality. 	<ul style="list-style-type: none"> Technological development in the electrical storage capacity (battery R&D), which implies limitations of autonomy. Lack of an integrated charging network. Lack of business models charging & billing, and leadership among electric utilities. Effects on electricity grid: production and demand. Range anxiety, the user does not have a clear vision of where, how, when and at what cost can charge the EV.

<ul style="list-style-type: none"> • Awareness raising measures for promoting EVs among potential users. • Introduction of special regulations for EVs: less or no parking fee in the city centre, free charging in public places, etc. • Financial incentives for purchase EVs and tax exemptions. • Innovative, strengthened automobile industry. Commitment of the industry to R&D on EVs. 	<ul style="list-style-type: none"> • Public acceptance, due to the lack of experience of the users about the real possibilities and benefits offered by EVs. • Reduced amount of EVs models in the market with higher purchase costs in comparison to conventional cars. • Doubts about the residual value of the EV.
---	--

Source: Own table based on national sources.

4.8. Supporting policies and incentives for EV adoption

Table 3 Supporting measures and policies for EV adoption

Measure	Germany	Austria	Spain	Italy	Portugal	United Kingdom
Electric Mobility Plan or Strategy	✓	✓	✓	✓	✓	✓
EV Specific regulations	✓	✓	✓	✓	✓	-
EV Purchase subsidies	-	-	✓	-	✓	✓
Subsidies for development of infrastructure	-	✓	-	-	✓	✓
R&D&D Funding	✓	✓	✓	✓	✓	✓
Exemption of road taxes	✓	-	✓*	✓	✓	✓
Free parking	-	-	✓*	-	-	✓*
Free congestion charge	-	-	-	✓*	-	✓

Source: Own table based on national sources.

* Some of these measures are implemented only at a regional and local level.

5. ANNEX I: RELATED EUROPEAN PROJECTS

Table 4 Related European projects

Project	Objective / Description	Period	Coordinator	Partners	Budget
<u>Electric Vehicles For Sustainable Cities (EVUE)</u>	Develop integrated and sustainable strategies and dynamic leadership techniques for cities to promote the use of electric vehicles. Exchange and disseminate solutions to key barriers such as public resistance. Involves 10 European cities: Beja, Lisbon, Katowice, Madrid, Frankfurt, Oslo, Stockholm, Suceava, Zografo and London	2009 - 2012	Westminster City Council (London)	10	0.7 million EUR
<u>Smart Vehicle To Grid Interface (SMARTV2G)</u>	Connect the electric vehicle to the grid by enabling controlled flow of energy and power through safe, secure, energy efficient and convenient transfer of electricity and data, through the development of a new generation of technologies allowing the seamless and user-friendly energy load of electric vehicles in urban environments.	2011 - 2014	Asociación Instituto Tecnológico de la Energía (Spain)	7	3.27 million EUR
<u>Eco Stars Europe (ECOSTARS)</u>	Promote more energy efficient and cleaner freight movements by providing recognition, guidance and advice to operators of goods vehicle fleets.	2011 - 2014	Transport & Travel Research Ltd (United Kingdom)	7	2.42 million EUR
<u>GREEN EMOTION</u>	Define Europe-wide standards. Practical research conducted in different demo regions all over Europe with the aim of developing and demonstrating a commonly accepted and user-friendly framework that combines interoperable and scalable technical solutions with a sustainable business platform.	2011 - 2015	Siemens AG (Germany)	43	42 million EUR
<u>E-mobility life cycle assessment recommendations (ELCAR)</u>	Assess the environmental impact of electric vehicles through the design of a set of guidelines derived from the ILCD Handbook and adapted to the specific requirements of the projects of the Green Cars PPP. This set of guidelines will be benchmarked according to applicability, practicability and ease of use and disseminated in an up to date fashion relying on interactive and online training materials.	2012 – 2013	Rheinisch-Westfälische Technische Hochschule Aachen (Germany).	4	0.54 million EUR
<u>Mobility Based On Electric Connected Vehicles In Urban And Interurban Smart, Clean, Environments (MOLECULES)</u>	Demonstration project with three large scale pilots in Barcelona, Berlin and Grand Paris aiming to use ICT services to help achieve a consistent, integrated uptake of Smart Connected Electromobility (SCE) in the overall framework of an integrated, environmentally friendly, sustainable mobility system.	2012 - 2014	Etra Investigación y Desarrollo S.A. (Spain)	10	4.28 million EUR

<u>Co-Operative ITS Systems For Enhanced Electric Vehicle Mobility (MOBILITY 2.0).</u>	Develop and test an in-vehicle commuting assistant for FEV mobility, addressing the main bottlenecks of urban FEV mobility: 'range anxiety' related to the limited FEV range, scarcity of parking spaces with public recharging spots, and the congestion of urban roads	2012 - 2015	Broadbit Slovakia Sro (Slovenian Republic)	9	2.69 million EUR
<u>Smart mobility in smart city (MOBINCITY)</u>	Optimization of FEV autonomy range and the increase in energy efficiency through to the development of a complete ICT-based integrated system able to interact between driver, vehicle and transport and energy infrastructures, taking advantage of the information provided from these sources in order to optimize both energy charging and discharging processes (trip planning and routing).	2012 - 2015	Asociación Instituto Tecnológico de la Energía (Spain)	13	3.92 million EUR
<u>Efficient Cooperative Infrastructure For Fully Electric Vehicles (ECO-FEV)</u>	Develop an integrated IT platform that enables the connection and information exchanges between multiple infrastructure systems that are relevant to the FEV such as road IT infrastructure, EV backend infrastructure and EV charging infrastructure.	2012 - 2015	Hitachi Europe Limited (France)	13	4.26 million EUR
<u>CLEAN FLEETS</u>	Accelerate a broad market introduction of vehicles with higher energy and environmental standards and thereby reduce energy consumption, noise, CO ₂ and pollutant emissions, assisting public authorities and fleet operators with the implementation of the Clean Vehicles Directive and the procurement or leasing of clean and energy-efficient vehicles	2012 - 2015	ICLEI – Local Governments for Sustainability (Germany)	13	1.45 million EUR
<u>Dynamic citizens @ctive for sustainable mobility (DYN@MO)</u>	Four European cities. Aachen (DE), Gdynia (PL), Koprivnica (HR) and Palma (ES) will jointly develop "Mobility 2.0" systems and services, implement city and citizen-friendly, electric mobility solutions and vehicles, and engage in a dynamic citizen dialogue for mobility planning and service improvement.	2012 - 2016	Stadt Aachen (Germany)	27	11.97 million EUR
<u>Electric City Transport (Ele.C.Tra.)</u>	Promote a new urban mobility model, characterized by: -Standard structure with common characteristics to the project cities (Genoa, Florence and Barcelona), suitable to transfer to other cities or regions and to develop in the future enhancing other means of transport. -Specific characteristics, suitable for every cities involved, highlighting demand mobility flows, local buses and metros networks, etc.	2013 - 2015	Municipality Of Genoa (Italy)	11	1.26 million EUR
<u>Global opportunities for SMEs in electromobility (GO4SEM)</u>	Give policy, spread awareness of global market trends and opportunities, and trigger the creation of dedicated professional networks. Lead single European companies to consider an adaption of their dedicated technology to the requirements of electric mobility markets abroad, and to seizing the related economic opportunities.	2013 - 2015	Vrije Universiteit Brussel (Belgium)	13	1.18 million EUR

People centric easy to implement e-mobility (FREE-MOBY)	Implementation of easy to deploy micro fully electrical vehicles (450-650kg and speeds up to 90+ km/h) and city EVs (650-1000kg). Develop smart photovoltaic modules for parking and integration of simplified overall electric architectures by adopting the ICT advancements in portable devices.	2013 - 2016	Bitron Spa (Italy)	14	6.16 million EUR
Promoting electrical bicycles and scooters for delivery of goods and passenger transport in urban areas (PRO-E-BIKE)	E-bike market uptake and promotion of policies that stimulate the usage of E-bikes in urban transport. The project aims for a change in behaviour of target groups in urban areas to replace their conventionally fuelled vehicles with E- bikes. Pilots demonstrate the effects in terms of CO ₂ emission reduction and energy savings.	2013 - 2016	Energy Institute "Hrvoje Pozar" (Croatia)	10	1.3 million EUR
Building Energy Decision Support Systems For Smart Cities (BESOS)	Enhance neighborhoods with a decision support system to provide coordinated management of public infrastructures in Smart Cities, and provide citizens with information to promote sustainability and energy efficiency. The platform will be tested in Lisbon and Barcelona.	2013 - 2016	Etra Investigación y Desarrollo S.A. (Spain)	10	4.61 million EUR
Promoting Smart Mobility To Employees (MOBI)	Encourage employers and their employees to use energy efficient and sustainable transport modes for their commute and business travel journeys, through the implementation of MOBI: 'ProMOting Smart MoBILITY to Employees', an award winning sustainable mobility online game.	2013 - 2016	DTV Consultants B.V. (Netherlands)	13	0.97 million EUR
Addressing Key Challenges Of Sustainable Urban Mobility Planning (CH4LLENGE)	Develop transferable solutions to the common challenges faced when developing and implementing Sustainable Urban Mobility Plans: participation of stakeholders; institutional cooperation; effective measures; monitoring and evaluation the plan making process.	2013 - 2016	Rupprecht Consult - Forschung & Beratung GmbH (Germany)	16	2.39 million EUR
Freight Electric Vehicles in Urban Europe (FREVUE)	Demonstrate to industry, consumers and policy makers, how the current generation of large electric vans and trucks can offer a viable alternative to diesel vehicles. 127 electric freight vehicles in Amsterdam, Lisbon, London, Madrid, Milan, Oslo, Rotterdam and Stockholm will be exposed to the day to day rigors of the urban logistics environment.	2013 - 2017	Westminster City Council (London)	30	14.2 million EUR

Source: Own table based on FP7 and CIP Programmes, European Commission (2013)

6. ANNEX II: RELATED INTERNATIONAL EVENTS

Table 5 Related international events

Event	Date	Place
<u>SAE 2014 Hybrid & Electric Vehicle Technologies Symposium</u>	February 11-13, 2014	California, USA
<u>Components, Systems and Power Electronics from Technology to Business and Public Policy (ITEC 2014)</u>	June 15-18, 2014	Michigan, USA
<u>FutureDRIVE 2014</u>	June 25-27, 2014	Denver, Colorado, USA
<u>eBRIDGE Public Conference</u>	October 7-8, 2014	Berlin, Germany
<u>eCarTec Munich 2014</u>	October 21-22, 2014	Munich, Germany
<u>EVVÉ2014 Conference and Tradeshow</u>	October 28-30, 2014	Vancouver, Canada
<u>5th Hybrid and Electric Vehicles Conference</u>	November 5-6, 2014	London, United Kingdom
<u>5th Annual Green Mobility Convention 2014</u>	November 5-7, 2014	Beijing, China
<u>European Electric Vehicle Congress (EEVC-2014)</u>	December 2-5, 2014	Brussels, Belgium
<u>Automotive Transmissions, HEV and EV Drives (CIT Symposium)</u>	December 8-11, 2014	Berlin, Germany

Source: Own table based on web page events (2014)

7. REFERENCES

- Council of the European Union (2010). Conclusions on clean and energy-efficient vehicles for a competitive automotive industry and decarbonised road transport. Brussels, 2010
http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/intm/114617.pdf
- European Commission (2011a) WHITE PAPER - Roadmap to a Single European Transport Area: Towards a competitive and resource efficient transport system (2011) COM/2011/0144 final.
- European Commission (2011b) Europe 2020 Targets
http://ec.europa.eu/europe2020/pdf/targets_en.pdf
- Eurostat, (2013a). Motorisation rate.
<http://epp.eurostat.ec.europa.eu/tqm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdpc340>

DEMOGRAPHY, POPULATION DISTRIBUTION BY SIZE CLASS AND MOBILITY PATTERNS:

- Zensus2011
https://www.zensus2011.de/DE/Home/home_node.html
- Federal Statistics Authority (2013)
<https://www.destatis.de/DE/Startseite.html>
- MOP (2012) Deutsches Mobilitätspanel – Wissenschaftliche Begleitung und erste Auswertungen Bericht 2012: Alltagsmobilität (Herbsterhebung 2011) Karlsruher Institut für Technologie (KIT).
http://daten.clearingstelle-verkehr.de/192/90/Bericht_MOP_11_12_Teil1.pdf
- Austrian Statistical Office (2013)
<http://www.statistik.at/>
- Federal Ministry for Transport, Innovation and Technology (BMVIT) (2011)
<http://www.bmvit.gv.at/en/index.html>
- Spanish Statistics Institute (INE) (2013)
www.ine.es
- Ministry of Public Works, "Survey mobility of persons resident in Spain" (Movilia 2006)
http://www.fomento.gob.es/MFOM/LANG_CASTELLANO/ESTADISTICAS_Y_PUBLICACIONES/INFORMACION_ESTADISTICA/Movilidad/Movilia2006_2007/
- Italian Statistical Office. (ISTAT) (2013)
www.istat.it/
- Portuguese Statistical Office (INE) (2013)
<http://www.ine.pt/>
- Portuguese National Mobility and Transports Authority (IMT) (2011)
<http://www.imt-ip.pt/>
- Office for National Statistics U.K. (2012)
<http://www.ons.gov.uk/>

NATIONAL CARPOOLS, ELECTRIC VEHICLES (BEVS, PHEVS AND HEVS) AND MOST SOLD / REGISTERED ELECTRIC VEHICLES 2012:

- Federal Motor Transport Authority (KBA) (2013)
<http://www.statistik.at/>
- Statistik Austria - Austrian Statistical Office (2013)
<http://www.statistik.at/>
- Spanish Association of Car and Truck Manufacturers (ANFAC) (2012)
www.anfac.com
- Automotive Research Institute (IDEAUTO) (2013)
www.ideauto.es
- Institute for Diversification and Saving of Energy (IDAE) (2012)
www.idae.es
- Automobile Club of Italy (ACI) (2013)
www.aci.it/
- National Union Representatives of Foreign Vehicles (UNRAE) (2013)
www.unrae.it/
- Automobile Association of Portugal (ACAP) (2013)
<http://www.acap.pt/>
- Portuguese Statistical Office (INE) (2013)
<http://www.ine.pt/>
- Department for Transport U.K. (2013)
<https://www.gov.uk/government/organisations/department-for-transport>
- Centre of Excellence for low carbon vehicle technologies, CENEX (2012)
www.cenex.co.uk/

CHARGING INFRASTRUCTURE:

- European Commission, EU launches clean fuel strategy, Press release (2013)
http://europa.eu/rapid/press-release_IP-13-40_en.htm

ENVIRONMENTAL PERFORMANCE:

- CO₂ Emissions from Fuel Combustion Highlights, IEA (2012)
<http://www.iea.org/media/statistics/CO2highlights.pdf>

RELATED EUROPEAN PROJECTS:

- FP7 and CIP Programmes, European Commission (2013)

RELATED INTERNATIONAL EVENTS:

- Web page events (2014)



eBRIDGE: Empowering e-fleets for business and private purposes in cities

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein.

ebridge-project.eu



Co-funded by the Intelligent Energy Europe
Programme of the European Union

