



Electromobility in the frame of the EU Energy and Transport policy

Partnership for Electromobility Regions

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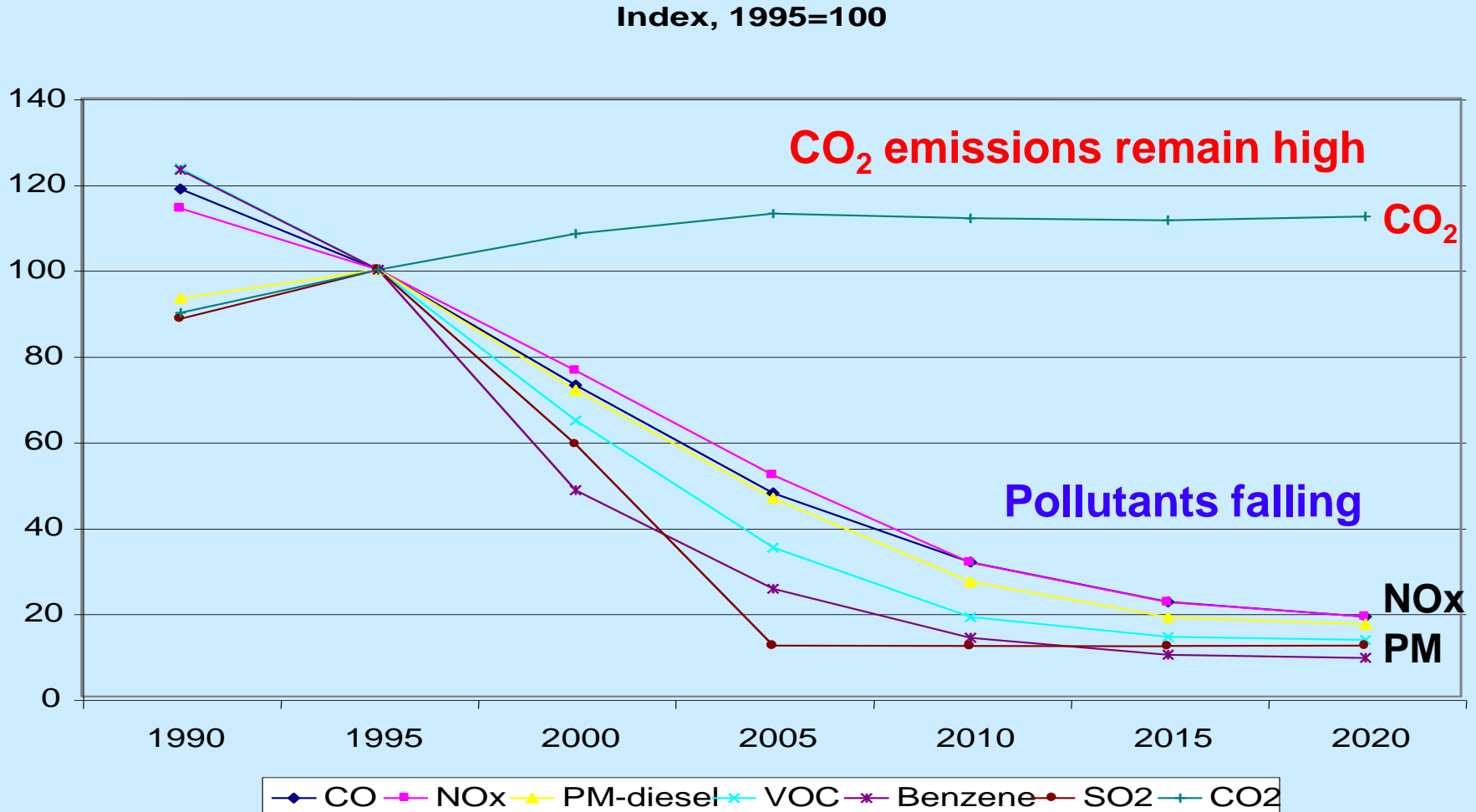


EU Actions to reduce GHG and pollutant emissions from transport

- **The policy drivers**
- **Recent policy initiatives and actions**
- **RTD and Demonstration of Alternative Fuel Vehicles**



Trends in EU Transport Emissions





Sustainable transport & energy efficiency in Europe: a priority for cities and towns

Transport and energy efficiency are of highest priority for local authorities

- 72% of the Europe's citizens live in towns and cities
- 85% of Europe's GDP is generated in cities
- Some 40% of Europe's CO₂ emissions from road transport and 70% of other pollutants are due to urban traffic





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EU-Activities on Alternative Fuels

- **Communication on alternative fuels (11/2001)**
Biofuels, natural gas, hydrogen
- **Directive on the market share of biofuels (5/2003)**
market share 2% in 2005, rising to 5.75% in 2010
- **Directive on the taxation of energy products (10/2003)**
lower taxation of alternative fuels enabled
- **Renewable Energy Directive**
Binding target: 10% share by 2020 (April 2009)
- **Technology Platforms, Joint Technology Initiatives**
Hydrogen/fuel cells(TP:2004; JTI:2008), Transport(2004), Biofuels(2005)
- **Green Cars Initiative of European Economic Recovery Plan**
Electromobility projects (selection by July 2010)

Market Regulation



- **Regulation of pollutant emissions**
Reduction of pollutant emissions through EURO standards
- **Regulation of CO₂ emissions**
Cars: 130g/km by 2015; 95g/km by 2020
Light Duty Vehicles: 175 g/km by 2017
- **Renewable energy Directive**
10% share of renewable energy sources in motor fuels by 2020
- **Fuel quality Directive**
Reduction of CO₂ intensity of fuels by 6 % by 2020
- **Promotion of clean and energy efficient vehicles in public procurement**
Directive requiring to include energy consumption, CO₂, and pollutant emissions in the purchase decision
- **Urban mobility actions**
CIVITAS programme; Urban Mobility Action Plan



Funding

- **R+D Community Framework Programme**
Priority support to clean vehicles and alternative fuels
Urban mobility projects in CIVITAS (since 2002: 180 M€)
Green Cars Initiative in FP-7 (500 M€)
- **Structural and Cohesion Funds**
Dedicated support for clean vehicles
- **European Investment Bank**
Loans for clean vehicles in Green Cars Initiative (4 b€)
- **State aid**
Community guidelines on state aid for environmental protection



Clean Vehicle Directive 2009/33/EC

- **Aim**
Stimulate the market introduction of clean and energy efficient vehicles to improve the environmental performance of transport; reduce their costs through economies of scale
- **Scope**
Road transport vehicles purchased by public authorities or entities and operators under public service obligation for passenger transport
- **Approach**
Inclusion of life-time impacts in vehicle purchase on energy consumption, CO₂ and pollutant emissions



Communication on clean & efficient vehicles (1)

- **EC strategy on clean and efficient vehicles adopted in April 2010**
- **Addresses the competitiveness of EU automotive industry**
- **Improving fuel efficiency of ICE vehicles**
- **Support to innovative technologies (e.g. electro mobility including batteries and hydrogen fuel cell vehicles)**



Communication on clean & efficient vehicles (2)

Specific actions for electric cars

- **Promote common standards to allow electric vehicles to be charged in whole EU (mandate to CEN)**
- **Infrastructure: encourage installation of public accessible charging points, work with MS/Regions and explore EIB funding**
- **Promote the development of smart electricity grids**
- **Update the legislation and promote research and development on recycling and reusing of batteries**
- **Ensure safety (at least as safe as conventional ones) by proposing electric safety requirements for vehicle type approval**



EU Actions to reduce GHG and pollutant emissions from transport

- The policy drivers
- Recent policy initiatives and actions
- Perspectives for alternative fuels
- **RTD and Demonstration of Alternative Fuel Vehicles, European Green Car Initiative (ECGI)**



Fuel Cells and Hydrogen Joint Undertaking

- Public-Private-Partnership– established June 2008;
Commission / Industry/ Research
- EU support: 470 M€ (2007-2013);
- Overall objective: accelerate market deployment – 2015-2020 horizon
- Autonomous Programme Office
- Responsible for Annual and Multi-Annual Implementation Plans – organisation, execution of annual calls and contracts
- Scope: Fuel Cells and Hydrogen for Transport, CO₂ free Hydrogen Production, Stationary Fuel Cells, Portable and early markets; Cross-cutting, incl standards;



European Green Cars Initiative (EGCI) FP7

- **Three groups of topics**
 - » Electric vehicles
 - » Heavy duty vehicles
 - » Logistics & co-modality



1b€ total cost + 4b€ EIB loan

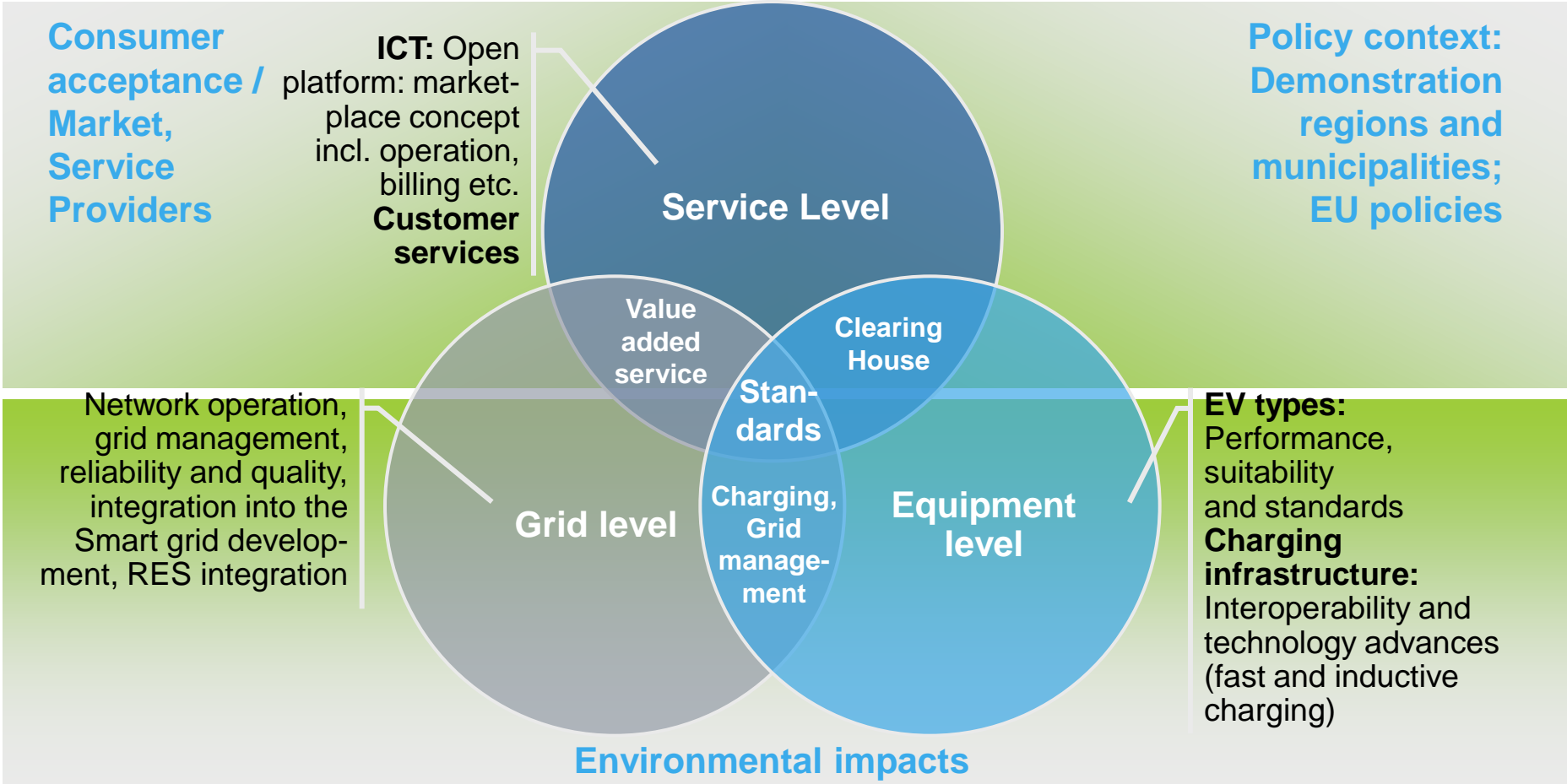


Electromobility Demonstration Project (Green e motion project: under nego.)

- Part of Green Cars Initiative
- Scope: Demonstration and validation of Vehicles (2-wheelers to heavy duty vehicles)
- Infrastructure (charging, information transfer)
- Standards (charging, information transfer)
- Call closed in January 2010, negotiation started in July 2010
- EU contribution: 24.4 M€

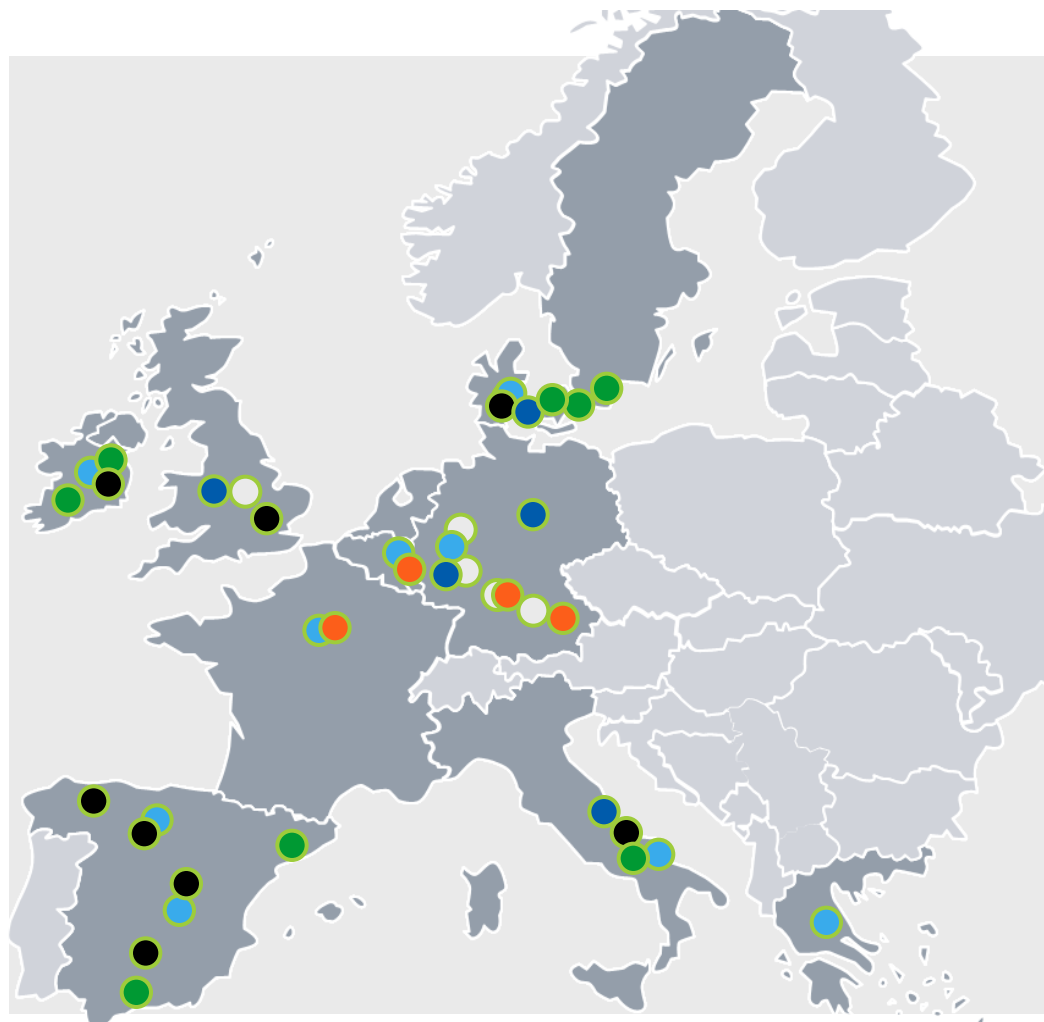


Conceptual Understanding of Electro-Mobility System





The Project Consortium



- **Industries:** Siemens , Bosch, SAP, AREVA T&D, IBM, Better Place
- **Utilities:** ESB, Dansk Energy, EDF, Endesa, Enel, Iberdrola, Eurelectric, RWE, PPC
- **OEM:** BMW, Daimler, Renault, Nissan
- **Municipalities:** Dublin, Cork, Copenhagen, Bornholm, Malmö, Malaga, Rome, Barcelona, Berlin
- **Research institutions and universities:** Imperial, Cidaut, ECN, LABEIN, TCD, ERSE, DTU, IREC, Cartif
- **EV technology institutions:** Micro-Vett, DTI, TÜV Nord, FKA



Demonstration Regions



Ireland (Dublin, Cork)

Cars: 2,000 (by 2011)
Charging spots: 3525 (private and public)
Special features: DC charging stations, kWh billing system, supplier choice

Newcastle

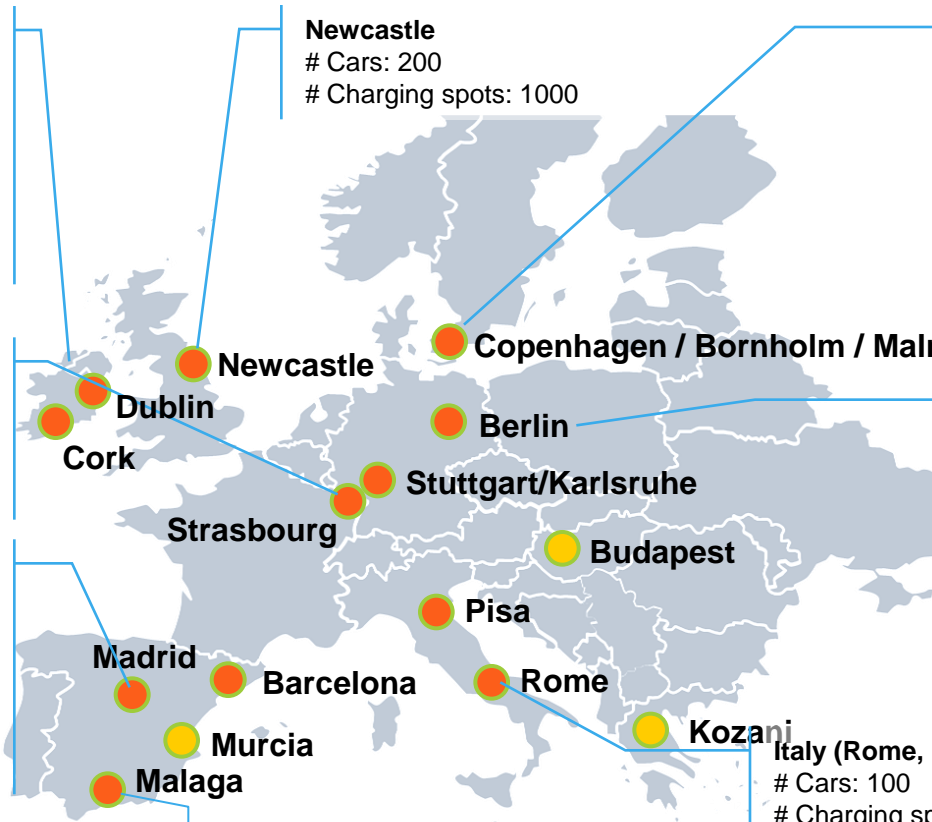
Cars: 200
Charging spots: 1000

Copenhagen, Bornholm, Malmö

Cars: 2,500 – 3,500 (in 2011)
Charging spots: 3300 - 4500
Special Features: Battery swopping, cross-boarder traffic

Strasbourg

Special features: Plug-in hybrid vehicles, cross boarder connection with Karlsruhe / Stuttgart



Berlin

Cars: 100
Charging spots: 3600
Special features: Largest integrated project worldwide testing business models and consumer behaviour

Madrid

Cars:
Charging spots: 210
Special features: Advanced RES integration studies, smart grid integration etc.

Italy (Rome, Pisa)

Cars: 100
Charging spots: 400
Special features: System approach enabling innovative services and user inter-aces, kWh billing system, alternative business models testing

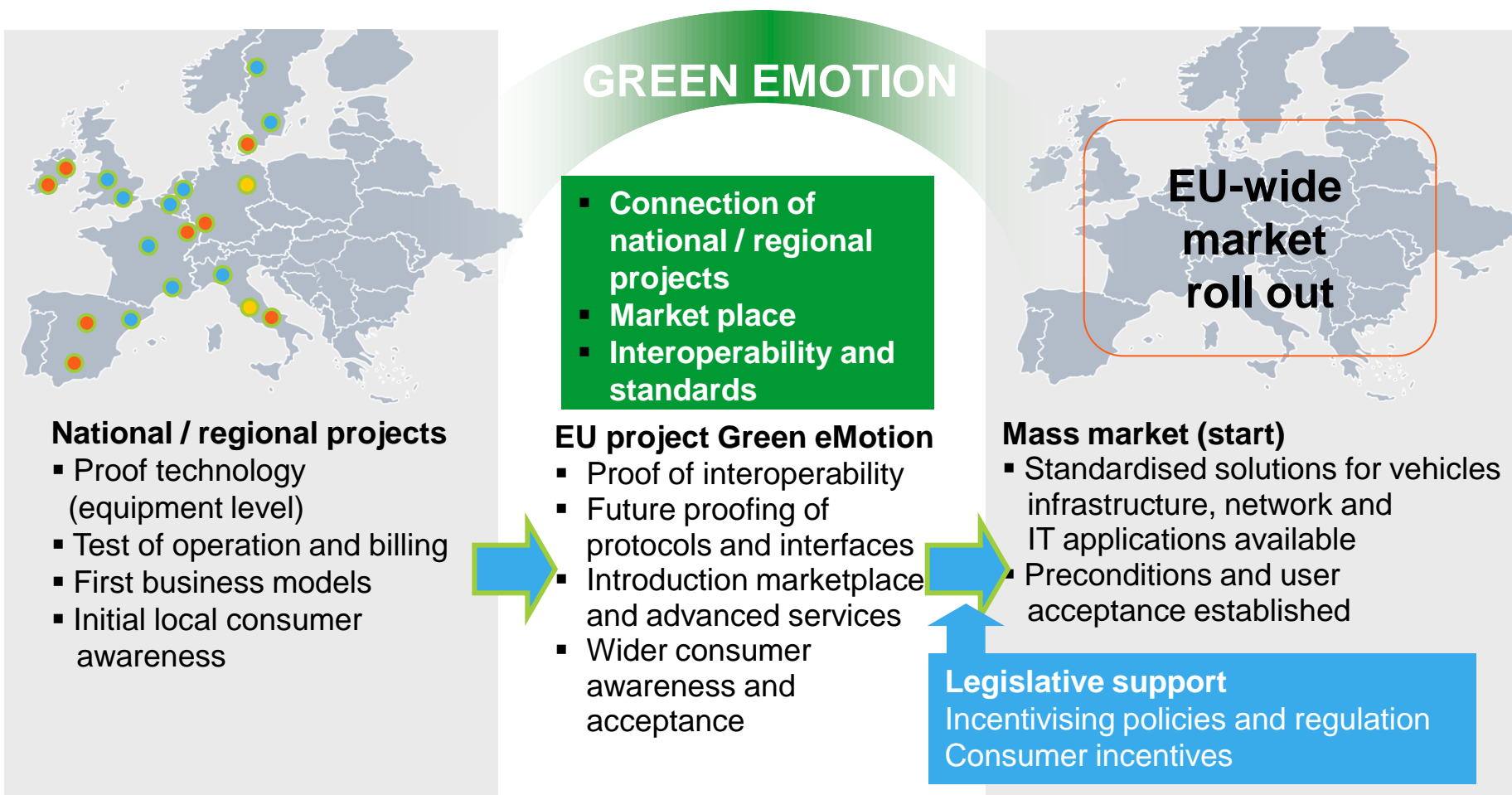
Malaga

Cars: 10 / # Charging spots: 10
Special features: Embedment in Smart City concept, V2G (bi-directional flows etc.)

● Existing demonstration region ● Potential replication region



The Concept of Green eMotion





Near Term Actions

- **White Paper on Transport:** aiming for adoption early 2011 - address perspectives for future transport fuels (all modes);
- **Expert Group on Alternative Fuels:** advise the Commission on the development of a comprehensive fuel strategy and concrete measures for substituting oil.
- **Strategic Transport Technology Plan:** strategy for European transport research and innovation based on policy needs. The STTP will address all transport modes and cover the full innovation cycle
- **Competitiveness and CARS 21:** follow up of the strategy on clean and energy efficient vehicles;
- **Clean Transport Systems Initiative:** main objective is the substitution of fossil fuels as major energy source for all mode of transport by alternative fuels



Contacts

Website Clean Transport and Urban Transport:

http://ec.europa.eu/transport/urban/index_en.htm

Europe 2020

http://ec.europa.eu/commission_2010-2014/president/news/documents/pdf/20100303_1_en.pdf

Clean Vehicle Portal

www.cleanvehicle.eu

CIVITAS Website:

www.civitas.eu

Action Plan on Urban Mobility

http://ec.europa.eu/transport/urban/urban_mobility/urban_mobility_en.htm