



Clean Power for Transport

The European Political Framework for electromobility

**"Electromobility in the context of regions"
Conference**

Kemal ÖNEL

Leipzig, 27 October 2014

The Clean Power for Transport package

- A **Communication laying out a comprehensive European alternative fuels strategy**
- A **Directive on the deployment of alternative fuels infrastructure**
- A **Staff Working Document on Actions towards a comprehensive EU framework on LNG for shipping**
- An **Impact Assessment evaluating cost and benefits** of different policy options



The European alternative fuels strategy (1)

→ *What are the main policy drivers?*

- **Reduce** the EU transport systems **oil dependence** in order to diversify and secure energy supply
- **Reduce** EU **GHG emissions** in line with the 20-20-20 Climate and Energy Package and the 2011 White Paper on Transport
- **Improve** the **air quality** in urban areas in order to meet EU air quality obligations
- **Enhance** the **competitiveness of the European industry**, boost innovation and generate economic growth



The European alternative fuels strategy (2)

→ *What are the most important aims?*









- **Establish a coherent policy framework** that meets the long-term energy needs of all transport modes by building on a comprehensive mix of alternative fuels
- **Support the market development of alternative fuels** in a technologically neutral way by removing technical and regulatory barriers
- **Guide technological development and private investments** in the deployment of alternative fuels vehicles, vessels and infrastructure **and give confidence to consumers**

The European alternative fuels strategy (3)

→ *Which alternative fuels are being addressed?*

- **Electricity**
- **Hydrogen**
- **Liquid biofuels**
- **Synthetic and paraffinic fuels** (e.g. Gas-To-Liquid)
- **Liquefied Petroleum Gas (LPG)**
- **Natural gas, including bio-methane, in gaseous (CNG) and liquefied form (LNG)**

The European alternative fuels strategy (4)

MODE		ROAD PASSENGER			ROAD FREIGHT			WATER			RAIL	AIR
						 HGV						
<i>Range</i>		<i>Short</i>	<i>Medium</i>	<i>Long</i>	<i>Short</i>	<i>Medium</i>	<i>Long</i>	<i>Inland</i>	<i>Short-sea</i>	<i>Maritime</i>		
F U E L T Y P E S	LPG											
	Natural gas	LNG										
		CNG										
	Hydrogen											
	Electricity											
	Biofuels (liquid)											

The Directive on the deployment of alternative fuels infrastructure (1)

→ *What is the current state of play?*

- 20 March 2014: informal **trilogue agreement** between the Council, the European Parliament and the Commission
- 15 April 2014: **EP plenary approval**
- Summer 2014: **linguistic check/finalisation of text**
- 29 September 2014: **Council approval of the final version**
- Before the end of 2014: **publication** in OJ

The Directive on the deployment of alternative fuels infrastructure (2)

→ Tackles the following missing links of the single transport market:

- The build-up of an **EU-wide network of recharging and refuelling points** (→ economies of scale)
- The development of **harmonized EU-wide standards and common technical specifications** (→ interoperability)
- The provision of relevant, consistent and clear **consumer information** (→ awareness-raising)

The Directive on the deployment of alternative fuels infrastructure (3)

→ *Subject matter [Article 1]*

"This Directive sets out minimum requirements on alternative fuels infrastructure build up, **to be implemented through Member States' national policy frameworks**, including common technical specifications for **recharging points for electric vehicles** and **refuelling points for natural gas (LNG and CNG) and hydrogen**, and user information requirements."

- **Targets to be set by MS in the NPFs** (→ flexibility)
- **Obligation of means**: EC assessment and recommendations
- **Obligation of results**: minimum infrastructure

The Directive on the deployment of alternative fuels infrastructure (4)

→ *National policy frameworks [Article 3]*

The Directive requires Member States to **adopt national policy frameworks and notify them** to the Commission **two years after the entry into force of the Directive**.

The NPFs should include *inter alia*:

- **an assessment of the state and future development of the alternative fuels market** in the transport sector
- national targets, objectives, and supporting measures for the deployment of alternative fuels, including **a minimum level of infrastructure to be put in place**

The Directive on the deployment of alternative fuels infrastructure (5)

→ *National policy frameworks [Article 3]*

The Directive requires the European Commission to:

- **facilitate the development and implementation of the NPFs** through the exchange of information and best practices
- **assist MS in the reporting** on the NPFs
- **assess and report on the coordination and coherence of the NPFs** at EU level
- **publish and update the information on the national targets and the objectives** submitted by each Member State on a regular basis

The Directive on the deployment of alternative fuels infrastructure (6)

→ *Overview of reporting and review obligations*

<i>Timing</i>	Member States	European Commission
<i>2nd half 2016</i>	Notify National Policy Frameworks (NPFs) to the European Commission	
<i>1st half 2017</i>		Report on the assessment of the NPFs and their coherence at Union level , including an evaluation of the level of attainment of the national targets and objectives
<i>2nd half 2018</i>		→ Report on the delegation of power bestowed upon the EC by the CPT Directive → Adopt, if considered appropriate, an Action Plan for the implementation of the " Strategy on Clean Power for Transport "
<i>2nd half 2019</i>	Report on the implementation of the NPF and every 3 years thereafter, including information set out in Annex I	
<i>1st half 2020</i>		Report on the application of the CPT Directive
<i>2nd half 2020</i>		Review of the implementation of the CPT Directive

The Directive on the deployment of alternative fuels infrastructure (7)

→ *Electricity supply for transport – EV [Article 4]*



- **Member States shall ensure**, through their NPFs, **that an appropriate number of recharging points accessible to the public are put in place by 31 December 2020**, in order to ensure that electric vehicles can circulate at least in urban/suburban agglomerations.
- **1 recharging point/10 cars is indicated in recital (11)**. The number of these recharging points shall be established taking into consideration inter alia the number of electric vehicles estimated to be registered in 2020.



The Directive on the deployment of alternative fuels infrastructure (8)

→ *Electricity supply for transport – shore-side [Article 4]*

- **Member States shall ensure that the need for shore-side electricity supply** for inland waterway vessels and sea-going ships in maritime and inland ports **is assessed in their NPFs.**
- Such shore-side electricity **supply shall be installed as a priority in ports of the TEN-T Core Network, and in other ports, by 31 December 2025**, unless there is no demand, and the costs are disproportionate to the benefits, including environmental benefits.



The Directive on the deployment of alternative fuels infrastructure (9)

→ *Hydrogen supply for transport [Article 5]*

- **Those Member States which decide to include hydrogen refuelling points accessible to the public in their NPF shall ensure that an appropriate number of such points are available** to ensure the circulation of hydrogen powered motor vehicles, including fuel cell vehicles, within networks determined by those Member States, including cross-border links where appropriate, **by 31 December 2025 at the latest.**





The Directive on the deployment of alternative fuels infrastructure (10)

→ *Natural gas supply for MARITIME transport [Article 6]*

- **Member States shall ensure**, through their NPFs, **that an appropriate number of refuelling points for LNG are put in place...:**
 - ✓ **at maritime ports** to enable LNG inland waterway vessels or sea-going ships to circulate throughout the TEN-T Core Network **by 31 December 2025 at the latest.**
 - ✓ **at inland ports** to enable LNG inland waterway vessels or sea-going ships to circulate throughout the TEN-T Core Network **by 31 December 2030 at the latest.**



The Directive on the deployment of alternative fuels infrastructure (11)

→ *Natural gas supply for ROAD transport – LNG [Article 6]*

- **Member States shall ensure**, through their NPFs, **that an appropriate number of LNG refuelling points accessible to the public are put in place by 31 December 2025 at the latest**, at least along the existing TEN-T Core Network, in order to ensure that **LNG heavy-duty motor vehicles** can circulate throughout the Union, where there is demand, unless the costs are disproportionate to the benefits, including environmental benefits.
- **Approximate distance of 400 km** between refuelling points indicated in recital (23).










The Directive on the deployment of alternative fuels infrastructure (12)

→ *Natural gas supply for ROAD transport – CNG [Article 6]*

- **Member States shall ensure**, through their NPFs, **that an appropriate number of CNG refuelling points accessible to the public are put in place...:**
 - ✓ **by 31 December 2020**, in order to ensure that **CNG motor vehicles** can circulate in urban/suburban agglomerations.
 - ✓ **by 31 December 2025 at the latest**, at least along the existing TEN-T Core Network, to ensure that **CNG motor vehicles** can circulate throughout the Union.
- **Approximate distance of 150 km** between refuelling points indicated in recital (20).

The Directive on the deployment of alternative fuels infrastructure (13)

→ *Overview of deadlines [Articles 4 to 6]*

MODE		ROAD		WATER		
		<i>Motor vehicles</i>		<i>Heavy duty motor vehicles</i>	<i>Maritime ports</i>	<i>Inland ports</i>
		Urban/suburban agglomerations	TEN-T Core Network			
F U E L	Natural gas	LNG		 LNG 2025	2025  2030	
		CNG	2020  2025			
T Y P E S	Hydrogen			2025 		
	Electricity	  2020			 2025	

The Directive on the deployment of alternative fuels infrastructure (14)

→ *Standards and technical specifications [Article 4-6]*

1. For recharging points:

- **Normal and high power recharging points for EVs and shore-side electricity supply installations** for maritime and inland waterway transport **shall**, as from 3 years of the date of entry into force of the Directive, **at least comply with the technical specifications set out in Annex III.**



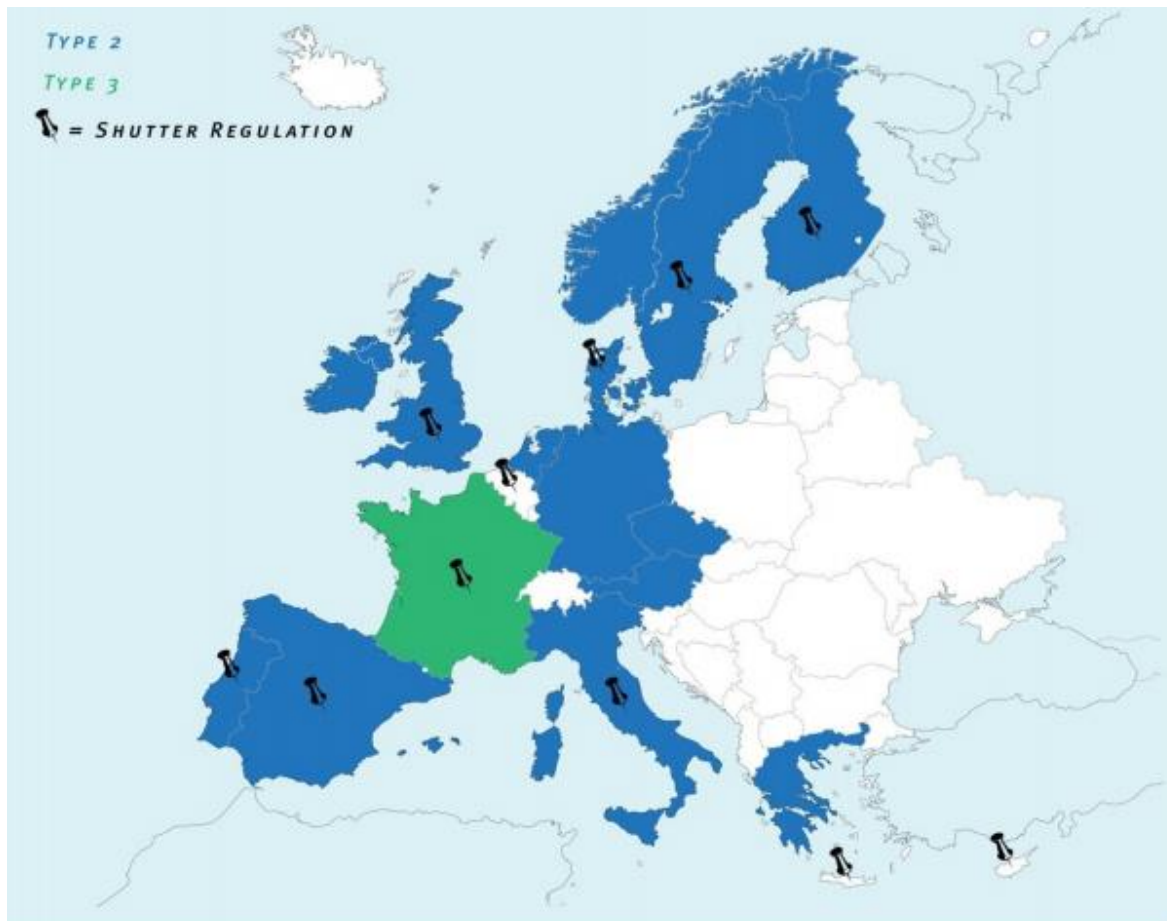
The Directive on the deployment of alternative fuels infrastructure (15)

→ *Standards and technical specifications [Article 4-6]*

1. For recharging points:

- The European Commission shall pursue the development of **a single European standard** containing detailed technical specifications **for wireless recharging, battery exchange for motor vehicles, recharging points for L-category motor vehicles and electric buses** and supplement or update the Directive accordingly by means of delegated acts.

The Directive on the deployment of alternative fuels infrastructure (16)



The Directive on the deployment of alternative fuels infrastructure (17)

→ *Standards and technical specifications [Article 4-6]*

2. For hydrogen refuelling points for motor vehicles:

- **Publicly accessible hydrogen refuelling points shall**, as from 3 years of the date of entry into force of the Directive, **at least comply with the technical specifications set out in Annex III.**
- If new standards are adopted by the relevant standardisation organisations, **the Commission is empowered to update the references to the standards** referred to in the technical specifications **by means of delegated acts.**

The Directive on the deployment of alternative fuels infrastructure (18)

→ *Standards and technical specifications [Article 4-6]*

3. For natural gas refuelling points:

- **CNG refuelling points for motor vehicles shall**, as from 3 years of the date of entry into force of the Directive, **at least comply with the technical specifications set out in Annex III.**
- The Commission shall pursue the development of **a single European standard for LNG refuelling points** for maritime and inland waterway transport **as well as for LNG and CNG motor vehicles** and supplement or update the Directive accordingly by means of delegated acts.

The Directive on the deployment of alternative fuels infrastructure (19)

→ *User information [Article 7]*

- Shall be made available by the Member States **as to which motor vehicles can be regularly fuelled with individual fuels** put on the market **or recharged by recharging points**
- ✓ **applies to new vehicles** put on the market as from 2 years after the entry into force of the Directive
- ✓ will be **based on** the **standardized labelling provisions** regarding fuel compliance
- ✓ shall be made available in **motor vehicle manuals, dealerships** as well as on the **refuelling and recharging points** themselves

The Directive on the deployment of alternative fuels infrastructure (20)

→ *User information [Article 7]*

- **Data on the geographic location of the publicly accessible refuelling and recharging points** shall be made available by the Member States to all users in an open and non-discriminatory manner.
- In order to increase consumer awareness, and to provide for fuel price transparency and comparison for the different alternative and conventional fuels in a consistent way across the Union, the Commission has the power to adopt a **common methodology for alternative fuels unit price comparison** through the implementing acts procedure.

The Directive on the deployment of alternative fuels infrastructure (21)

→ *Reporting and review [Article 10]*

- Each Member State **shall submit** to the Commission **a report on the implementation of its NPF** *3 years after the deadline of notification* and every three years thereafter. Those reports **shall cover the information set out in Annex I.**
- The Commission shall submit to the European Parliament and the Council, within *3 years from the date of entry into force of the Directive*, **a report on the assessment of the NPFs** and their coherence at Union level, including an evaluation of the level of attainment of the national targets and objectives

The Directive on the deployment of alternative fuels infrastructure (22)

→ *Reporting and review [Article 10]*

- The Commission, *if it considers appropriate*, shall adopt an **Action Plan** for the implementation of the strategy on "Clean Power for Transport" *by 31 December 2018*.
- The Commission shall **review the implementation** of this Directive *by 31 December 2020 at the latest*.

The Directive on the deployment of alternative fuels infrastructure (23)

→ *Transposition and entry into force [Articles 11 & 12]*

- Member States shall bring into force the laws, regulations and administrative provisions that are necessary to comply with the Directive by **[24 months from the date of the entry into force of this Directive]**.
- **The Directive shall enter into force on the 20th day following that of its publication** in the OJ of the EU



The Directive on the deployment of alternative fuels infrastructure (24)

- Reduction of overall GHG
 - Reduction of local pollution
 - Improvement of quality of life
 - Reduction of the impacts of congestion
- > Cities benefit strongly from EU clean transport policies



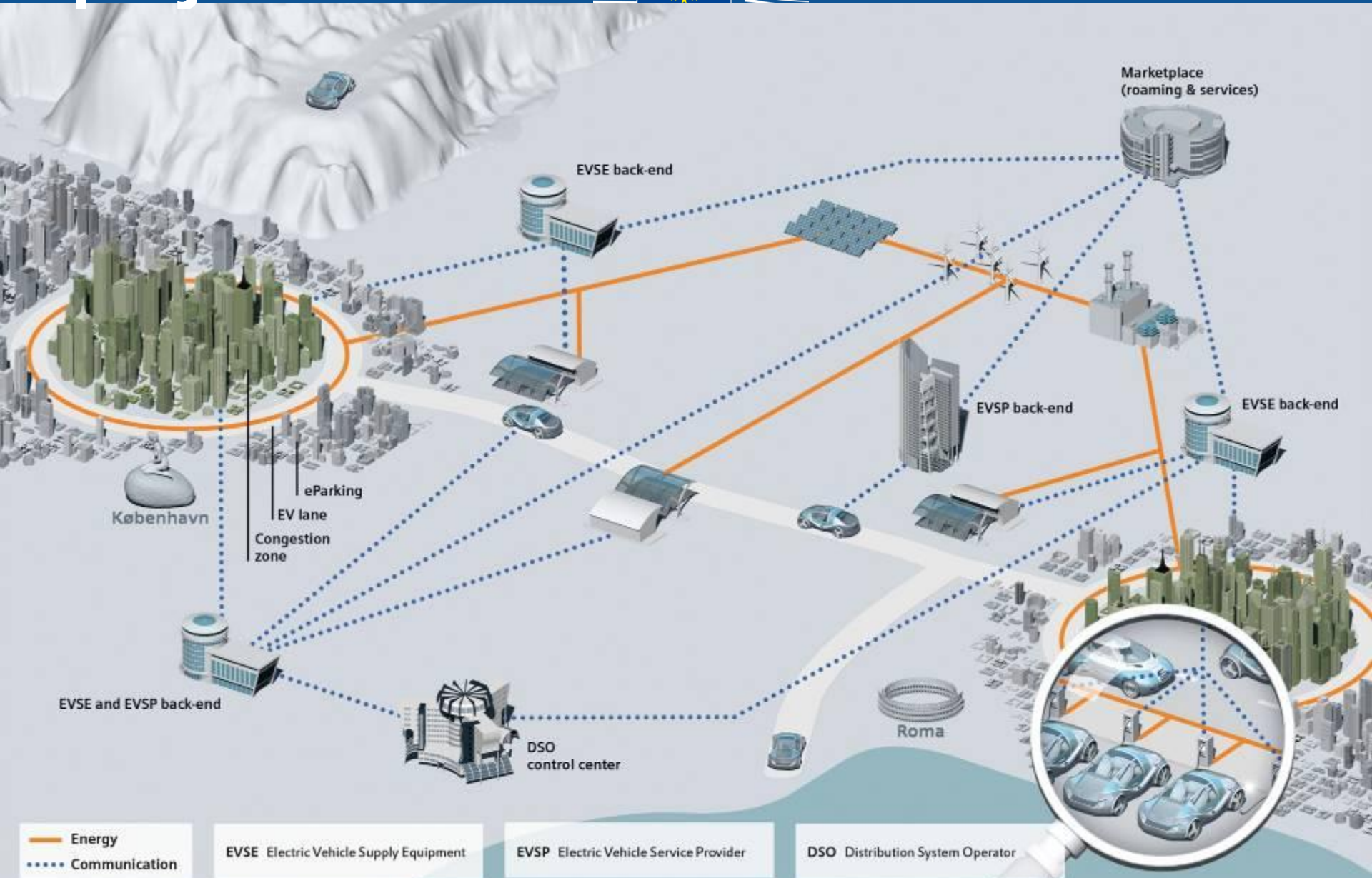


EU funding for Urban Mobility and Clean Transport

Funding for projects

- Most important source: **European Structural and Investment Funds** (ERDF, ESF, Cohesion Fund)
 - 7,9 billion Euros were allocated for urban mobility projects over 2007-2013
 - This support continues over 2014-2020
 - The amount for urban mobility projects is unknown at this stage but is expected to be higher than over 2007-2013
 - Urban mobility can be addressed especially under:
 - Thematic Objective 4 "Low-carbon economy" (promotion of sustainable multi-modal mobility)
 - Thematic Objective 7 "Sustainable transport"
 - There is no ex-ante conditionality to have a SUMP but it is strongly recommended when applying for funds
 - The Commission and the Member States develop national operational programmes based on the specific situation of each region and country

Example I for EU-co-funded e-mobility projects: Green eMotion





The Green eMotion project is part of the European Green Cars Initiative (EGCI) that was launched within the context of the European Recovery Plan (FP7).

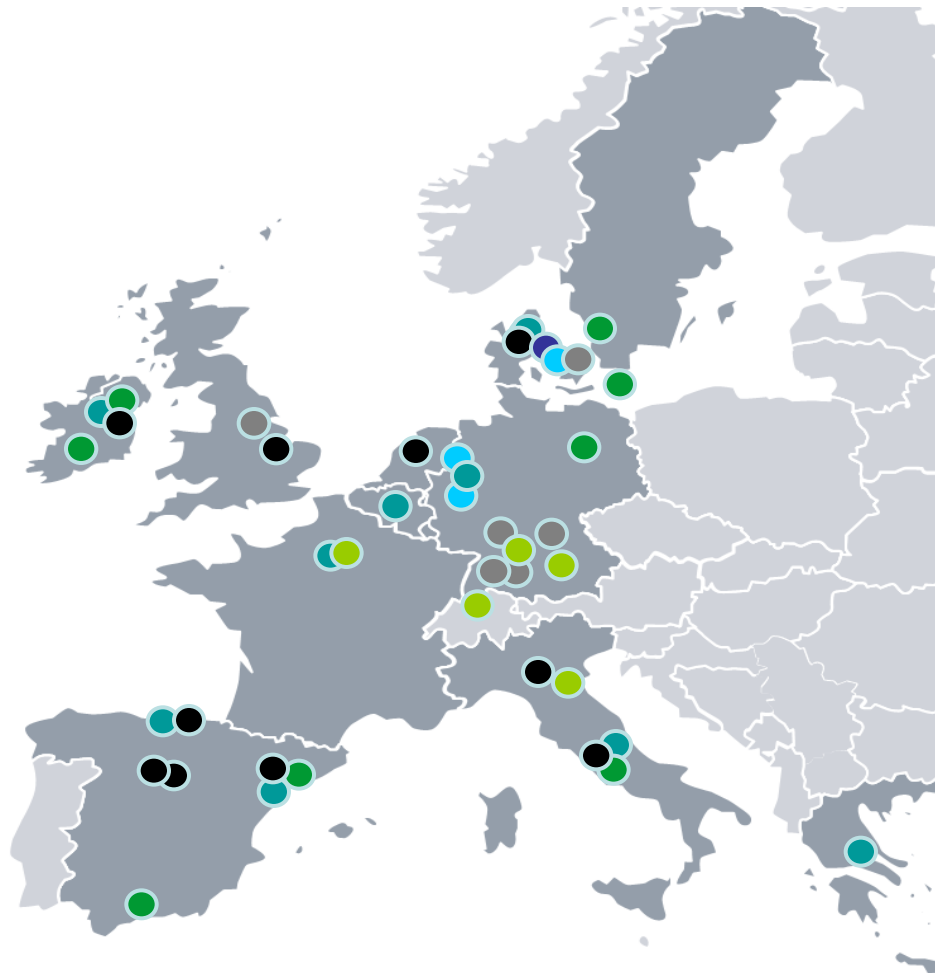
It supports the achievement of the EU's ambitious climate goals, such as the reduction of CO2 emissions by 60 percent by the year 2050.

The Green eMotion project was officially launched by Vice-president Siim Kallas at a high-level kick-off meeting in Brussels on **March 31st, 2011.**

For four years, the project will prepare the foundation for the mass deployment of Europe-wide electro-mobility.

The project has a total budget of **€42 million**; EU co-financing represents € 24 million.

43 partners



- **Industries:**
Alstom, Better Place, Bosch, IBM, SAP, Siemens
- **Utilities:**
Danish Energy Association, EDF, Endesa, Enel, ESB, Eurelectric, Iberdrola, RWE, PPC
- **Electric Vehicle Manufacturers:**
BMW, Daimler, Micro-Vett, Nissan, Renault
- **Municipalities:**
Barcelona, Berlin, Bornholm, Copenhagen, Cork, Dublin, Malaga, Malmö, Rome
- **Research Institutions and Universities:**
Cartif, Cidaut, CTL, DTU, ECN, Imperial, IREC, RSE, TCD, Tecnalia
- **EV Technology Institutions:**
DTI, FKA, TÜV Nord



Green eMotion aims at enabling mass deployment of electro-mobility in Europe, by:

- Setting a framework for pan-European interoperable electro-mobility regarding: policies, software architecture, standards
- Validation of the performance of EV technology
- Development of DC, inductive and battery swapping infrastructure
- Demonstrating the interoperability of the various demo regions
- Implementation of an European clearing house pilot solution

➤ **End of the Project in February 2015**

Funding for projects

- **Connecting Europe Facility (CEF) funds for TEN-T projects (Trans-European Transport Network)**
 - Objective 2: enabling all modes of transport to be decarbonised through transition to low-carbon and energy-efficient technologies
 - Objective 3: Optimising the integration and interconnection of transport modes, including at urban nodes of the core network
 - Objective 4: Focus on cohesion countries, for all objectives including objective 2 and 3

➤ **Calendar for calls:**

	2014	2015	2016
publication of call	11-Sep-14	01-May-15	01-May-16
deadline for submission	31-Jan-15	30-Sep-15	30-Sep-16
individual decisions	Oct-Dec 15	Apr-Jun 16	Apr-Jun 17

Funding for projects

Other sources:

- **EIB (European Investment Bank)**
 - ELENA programme
 - Loans and guarantees
- **INTERREG programme**, for regional sustainable development projects
One of four themes is low-carbon economy
- **URBACT III programme**, for exchanges and learnings
The first call will be published in 2015
- **LIFE programme**, for environmental projects
The 2014-2017 work programme includes a Thematic priority on "Air quality and emissions, including the urban environment"

FP7 Project Example II: FREVUE

("Freight Electric Vehicles in Urban Europe")

The project running from 2013-2017

- *brings together 8 cities and companies that are introducing 127 electric freight vehicles for city logistics*
- *aims to demonstrate that "last mile" freight movements in urban centres by electric vehicles offer significant and achievable decarbonisation of transport*
- *will demonstrate solutions to the barriers currently inhibiting uptake of EVs in the sector and*
- *includes leading European researchers who will design and then implement a common pan-European assessment framework to understand the impacts of these solutions.*

For more info

- ESI Funds: http://ec.europa.eu/regional_policy/index_en.cfm
 - View the eligible zones in your country
 - Get the contact details of the managing authority in your country
- CEF funds for TEN-T projects:
<http://ec.europa.eu/transport/themes/infrastructure/>
<http://inea.ec.europa.eu/en/cef/cef.htm>
http://inea.ec.europa.eu/en/cef/cef_transport/apply_for_funding/cef_transport_call_for_proposals_2014.htm
 - Find out about the priority projects in your country
 - Access the latest calls for proposals
- EIB:
<http://www.eib.org/products/elena/index.htm>
<http://www.eib.org/index.htm>
<http://www.eib.org/infocentre/publications/all/eib-transport-lending-policy.htm>
- INTERREG: <http://www.interreg4c.eu/interreg-europe>
- URBACT III: <http://www.urbact.eu>
- LIFE: <http://ec.europa.eu/environment/life/about/>

Funding for research and innovation

- The programme for 2014-2020 is called Horizon 2020 and includes:
 1. **Mobility for Growth - Urban (= CIVITAS 2020):** 100 M€ for 2014/2015
 2. **Mobility for Growth – Infrastructure:** 35 M€ for 2014/2015
 3. **Green Vehicles:** 160 M€ for 2014/2015
- The calls for 2014/2015 were published in Dec 2013
- In addition, there is support for research & innovation for hydrogen under the Fuel Cell and Hydrogen Joint Undertaking

FP7 Project Example III: ZeEUS

("Zero Emission Urban Bus System")

This most important European project focusing on electric buses running from 2013-2017, has 40 consortium participants, a budget in excess of 22 million Euros and aims to

- provide decision makers with guidelines and tools to support them on "whether", "how", and "when" to introduce electric buses in the core bus network*
- evaluate the economic, environmental and societal feasibility of electric urban bus systems through demonstrations and*
- facilitate the market uptake of electric buses in Europe with dedicated support tools and actions.*

Horizon 2020 Mobility for Growth

	Budget (€ Mio) 2014	Budget (€ Mio)* 2015
Call 'Mobility for Growth'	374,5	184
1. Aviation	70	36
2. Rail	52	-
3. Road	66	23
4. Waterborne	56	18
5. Urban	40	66,5
6. Logistics	32	18
7. ITS	31	-
8. Infrastructure	19	17,5
9. Socio-economic and behavioural research	8,5	5

** provisional*

Horizon 2020

Mobility for Growth - MG5 Urban

2015 TOPICS:

- MG 5.4 Strengthening the knowledge and capacities of local authorities (2 stages)
 - Promoting take up of SUMP through information exchange within large networked groups
 - Capacity building among local stakeholders on planning, implementation and financing
- MG 5.5a & 5.5b Demonstrating and testing innovative solutions for cleaner and better urban transport and mobility (2 stages and single stage)
 - City-led consortia composed of four to five cities, led by at least two 'leading cities'
 - Set of complementary and reinforcing mobility solutions – subset of CIVITAS measure categories
 - Impact and process evaluation using common framework on basis of clear baseline
 - Wide range of activities can be covered (incl. take up, research, support to local policy and planning)
 - Support Action to facilitate cooperation and evaluation for this topic, and across CIVITAS 2020

Submission deadline 31 March 2015 (2 stages, stage 1) or 27 August 2015 (single stage)

Horizon 2020

Mobility for Growth – MG8 Infrastructure

2015 TOPICS:

- MG 8.4a: Smart governance, network resilience and streamlined delivery of infrastructure innovation
Submission deadline 31 March 2015 (stage 1)
- MG 8.4b: Smart governance, network resilience and streamlined delivery of infrastructure innovation
Submission deadline 27 August 2015

Horizon 2020 Green Vehicles

	Budget (€ Mio) 2014	<i>Budget (€ Mio)* 2015</i>
Call 'Green Vehicles'	129	30

** provisional*

Horizon 2020 Green Vehicles

2015 TOPICS:

- GV 6: Powertrain control for heavy-duty vehicles with optimised emission
- GV 8: Electric vehicles' enhanced performance and integration into the transport system and the grid

Submission deadline 27 August 2015

Horizon 2020

CIVITAS – Ways to get involved

1. Submit a proposal under Horizon 2020
2. Join the Civitas Forum network of cities (free)
 - Over 200 member cities
3. Join a thematic group (free)
 - In 10 specific areas
4. Apply to the activity fund
 - Supports take-up activities (1st call was in Feb/April 2014)
5. Join a regional network 'CIVINET'
 - Spain+Portugal, French-speaking, Italy, UK+Ireland, Netherlands+Flanders, Slovenia+Croatia, German-speaking, Hungary, Czech Republic+Slovakia, Poland

For more information

- Horizon 2020 programme: <http://ec.europa.eu/research/horizon2020>
- Horizon2020 calls: <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/>
- Horizon 2020 participant portal: <http://ec.europa.eu/research/participants/portal/desktop/en/home.html>
 - View the rules for participation
 - find potential partners
- CIVITAS website: <http://www.civitas.eu>
- Fuel Cell and Hydrogen Joint Undertaking: <http://www.fch-ju.eu>

Thank you for your attention!

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