

THE TALENT CHALLENGE IN ELECTRO MOBILITY

e-go
motion

Agenda

- **Project Overview**
- Framework Conditions
- Project Activities

Project Overview

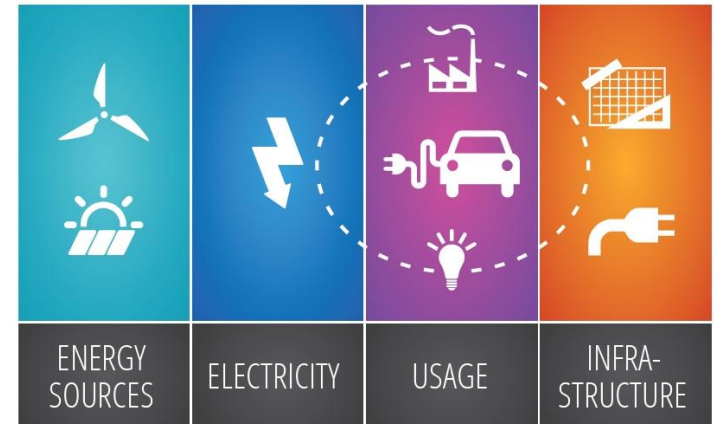
Key Information

Project Goal:

*Raising awareness of job opportunities
and education paths within electro mobility*

Project Facts:

- Coordination and Support Action (CSA) in FP7
- Duration: 36 months (01/2011-12/2013)
- Total Budget: € 1 406 046
- Consortium: Five leading Universities
- Advisory Board: 10 leading automotive actors
- Target Groups: High school students (15-18),
University students
Young Professionals

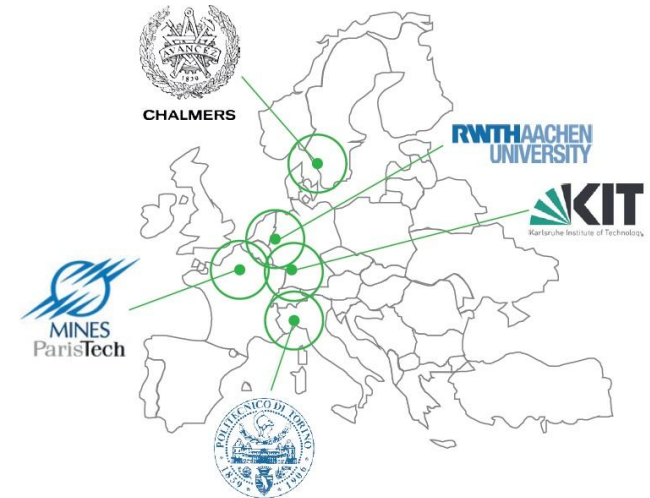


Project Overview

Project Partners

University Core Team Partners

- Chalmers University of Technology
- ARMINES, École des Mines de Paris
- Karlsruhe Institute of Technology
- Politecnico di Torino
- RWTH Aachen University



Industry Advisory Board



CENTRO
RICERCHE
FIAT

DAIMLER



ThyssenKrupp



Project Overview

Project Structure

e-go_{motion}

SCENARIOS

Identify and analyse the future job profiles and career trends in the electrification industry

e-go_{motion} CHALLENGE

- Regional electrification **concept competitions** for high schools with European final

e-go_{motion} ACADEMY

- European electrification **web school**

e-go_{motion} TOUR

- **Roadshow** visiting European high schools
- Electrification **conference sessions**
- **Student fairs** and career days

e-go_{motion} ONLINE

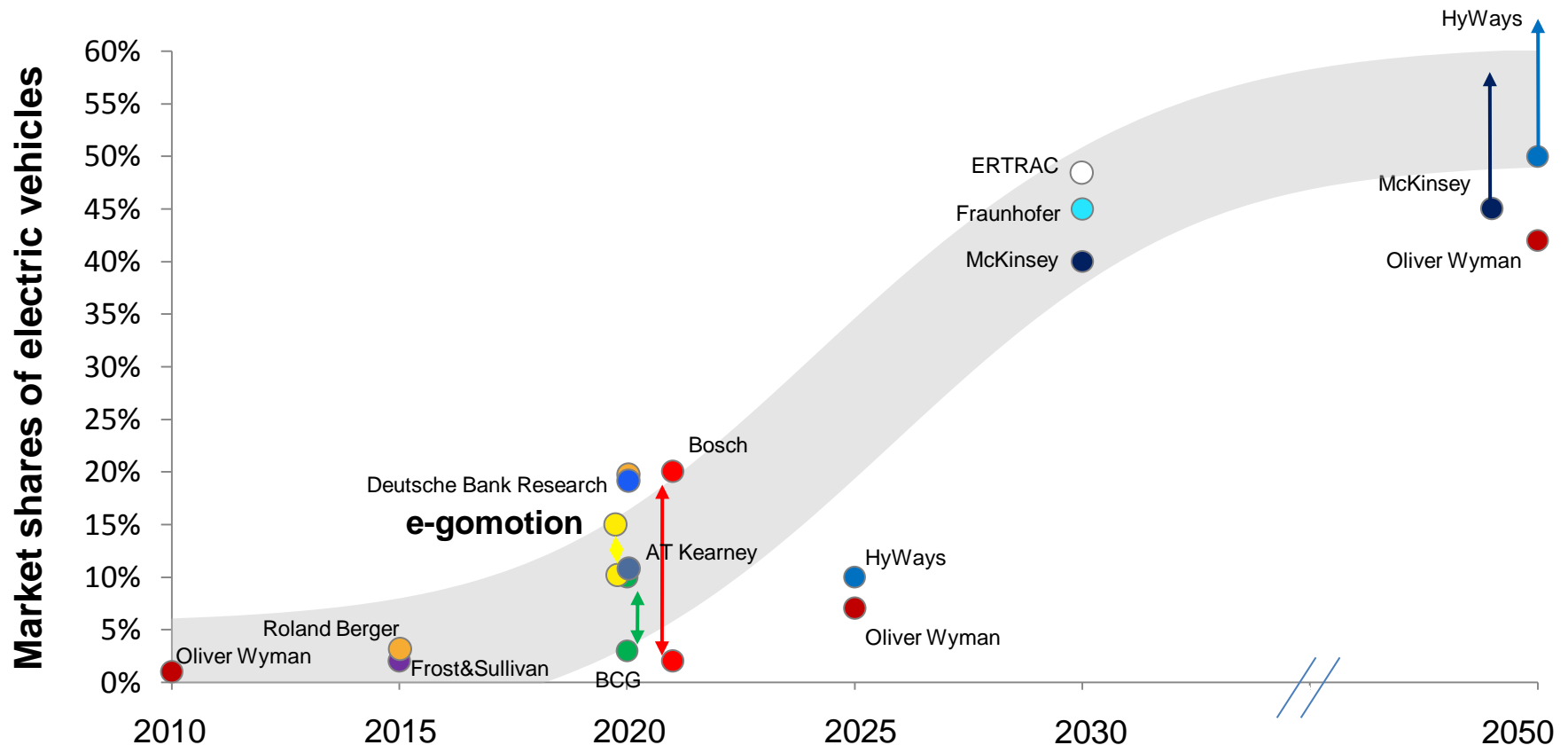
- **Web portal** as central hub for general information, web school, competition etc.

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Framework Conditions

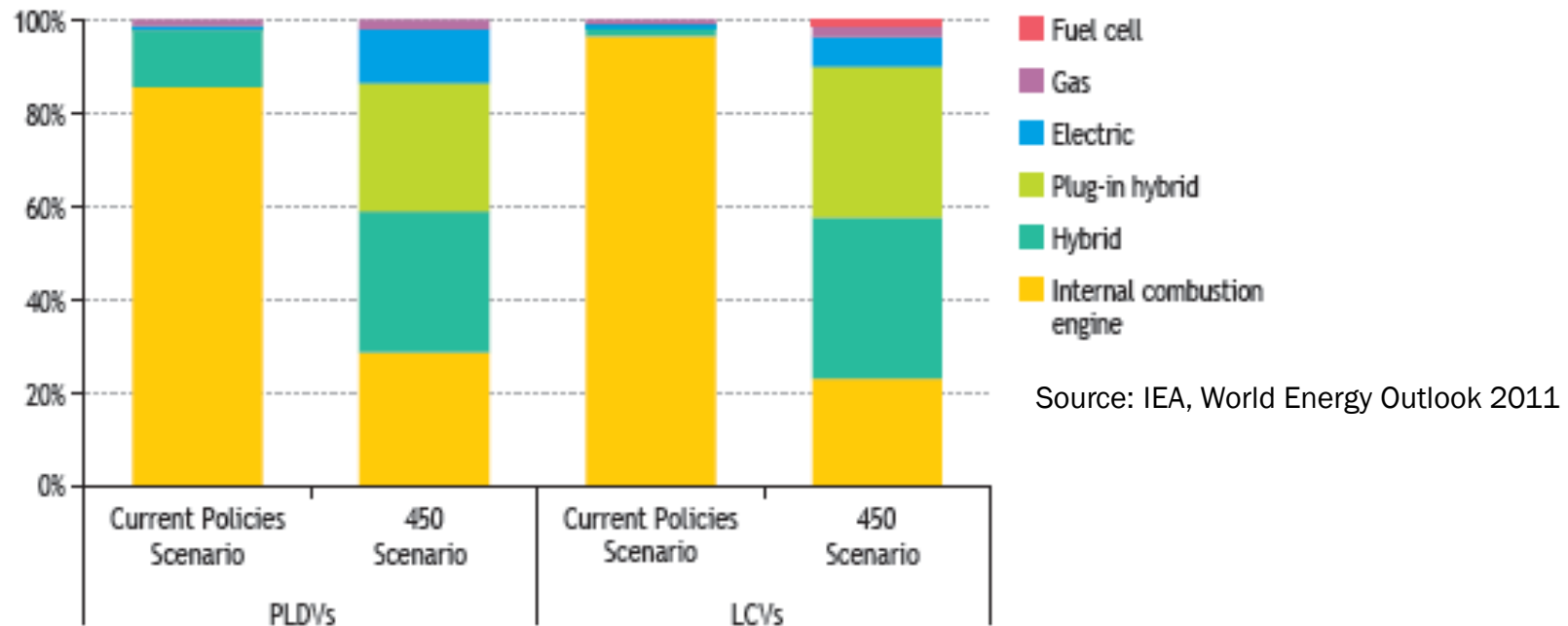
Market Share Projections for EVs



Sources: ika/fka analysis, BCG, Roland Berger, McKinsey, Oliver Wyman, Bosch, Fraunhofer, HyWays, AT Kearney, Frost & Sullivan, Deutsche Bank Research, ERTRAC

Framework Conditions

Vehicle sales by 2035



450 Scenario: By 2035, about 70% of PLDV sales are advanced vehicles (electric cars, hybrids and plug-in hybrids).

Almost 60% of vehicles sold still primarily use internal combustion engines, but either in hybrid vehicles or in highly-efficient flex-fuel vehicles.

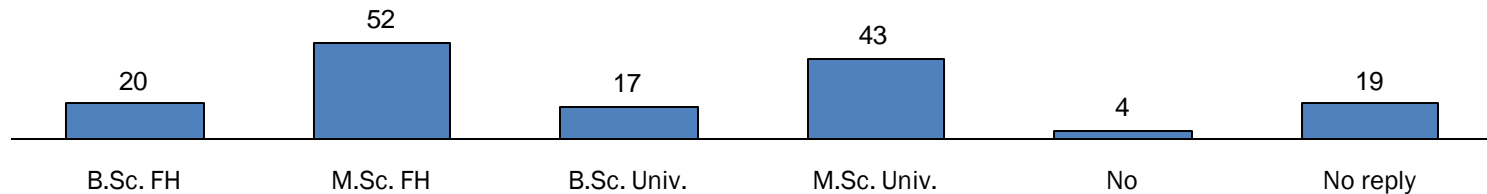
Link to infrastructures

Framework Conditions

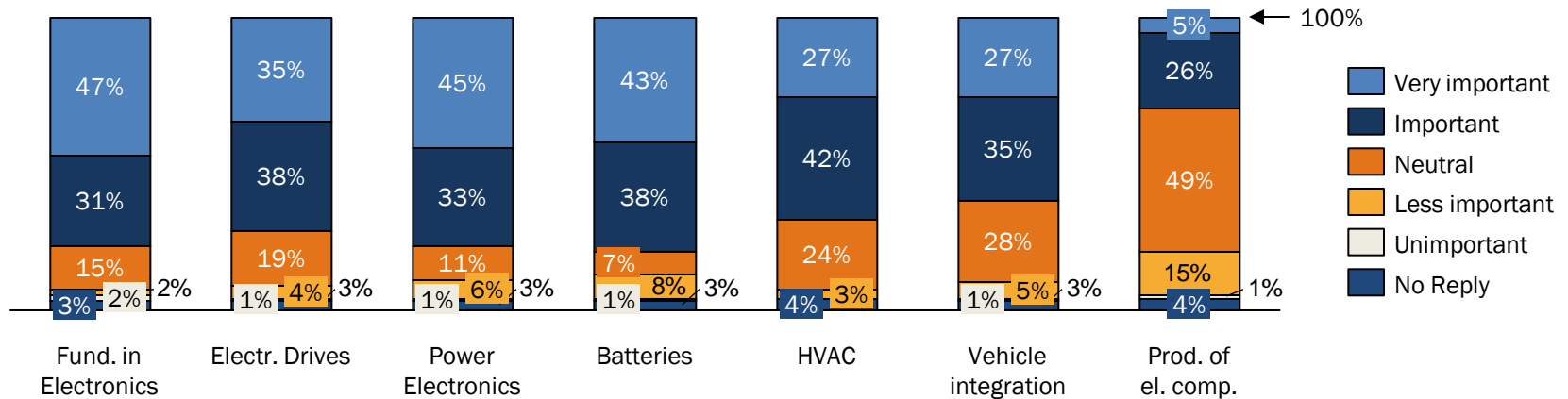
Electro Mobility Education: Industry Perspective

Survey at „Electronics in Automotive“ conference, Germany, June 2011: Industry requests electro mobility education

Do you request a course of study „Electric Vehicle Engineering“?



What should be content of education / qualification in „Electric Vehicle Engineering“?



(*)FH: University of applied sciences

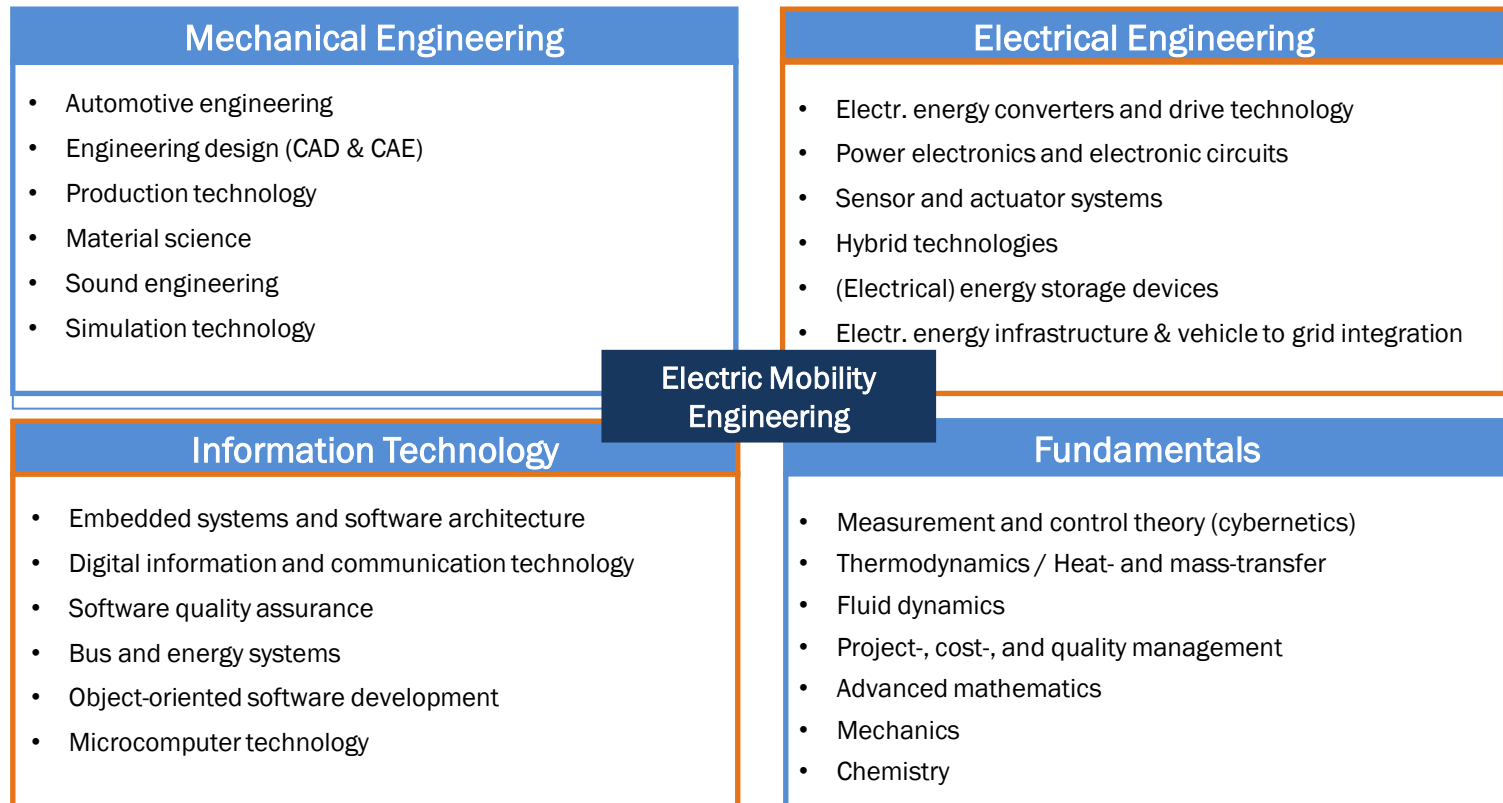
(**)HVAC: heating, ventilation, and air conditioning

Framework Conditions

Electric Mobility Education: Program Content



An education program in EV engineering should combine “traditional” and “new” contents

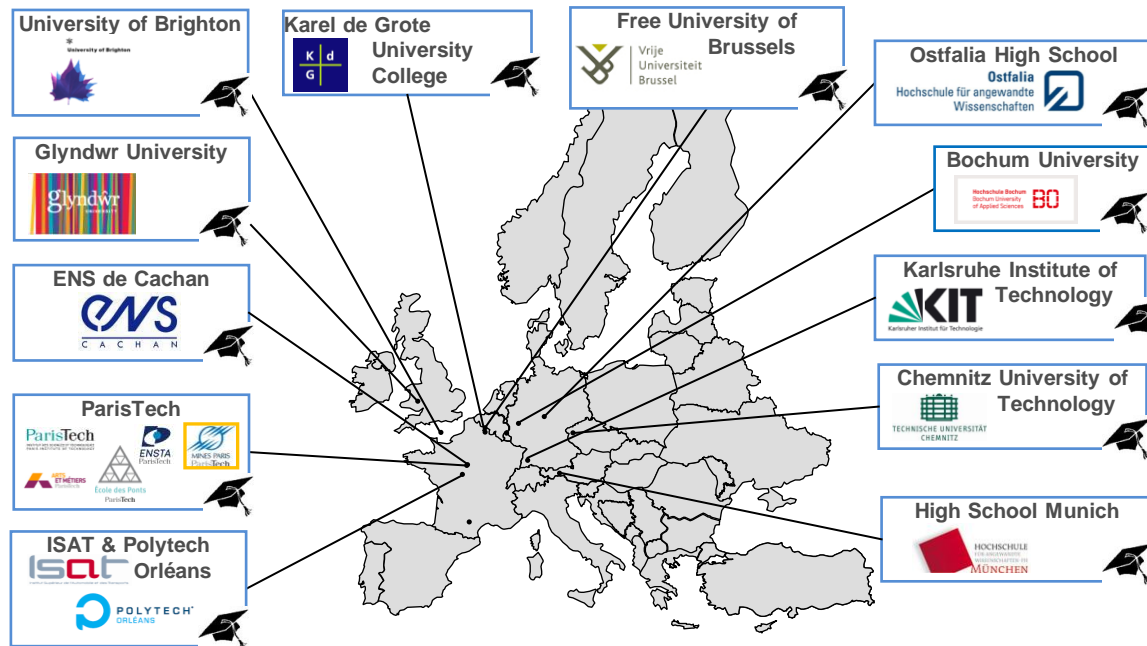


Sources: BMW, ATZ online, Denso, Fraunhofer Institute for Systems and Innovation Research, Arbeitsagentur

Framework Conditions

E-Mobility Education Programs in Europe

13 special degree programs “e-Mobility”



29 programs with e-Mobility courses

- Chalmers University of Technology
- Politecnico di Torino
- RWTH Aachen University
- Technische Universität Graz [AUS]
- Metropolia University of Apl. Sc. [FIN]
- Universität Hannover [GER]
- DHBW Ravensburg [GER]
- Otto v. Guericke University Magdeburg [GER]
- Technische Universität Darmstadt [GER]
- Technische Universität Dresden [GER]
- Technische Universität München [GER]
- Universität Kassel [GER]
- Universität Ulm [GER]
- Technische Universität Berlin [GER]
- Budapest University of Technology [HUN]
- Università di Modena e Reggio Emilia [ITA]
- Eindhoven University of Technology [NED]
- Wrocław University of Technology [POL]
- Porto Superior Institute of Engineering [POR]
- Transilvania University of Brasov [ROU]
- Linköping University [SWE]
- Lund University [SWE]
- Royal Institute of Technology [SWE]
- Uludag University [TUR]
- Staffordshire University [GBR]
- City University London [GBR]
- Oxford Brookes University [GBR]
- University of Greenwich [GBR]
- University of Warwick [GBR]

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Project Activities

Tour



On the e-gomotion Roadshow, high school students can meet their local university and industry and learn more about electro mobility



Tour Key Facts

- Visit of high schools all over partner regions in 2012 and 2013
- Presentation of educational paths in electro mobility , university student experiences and professional experiences of industrial partners
- Demonstration of electric or hybrid vehicles



Project Activities

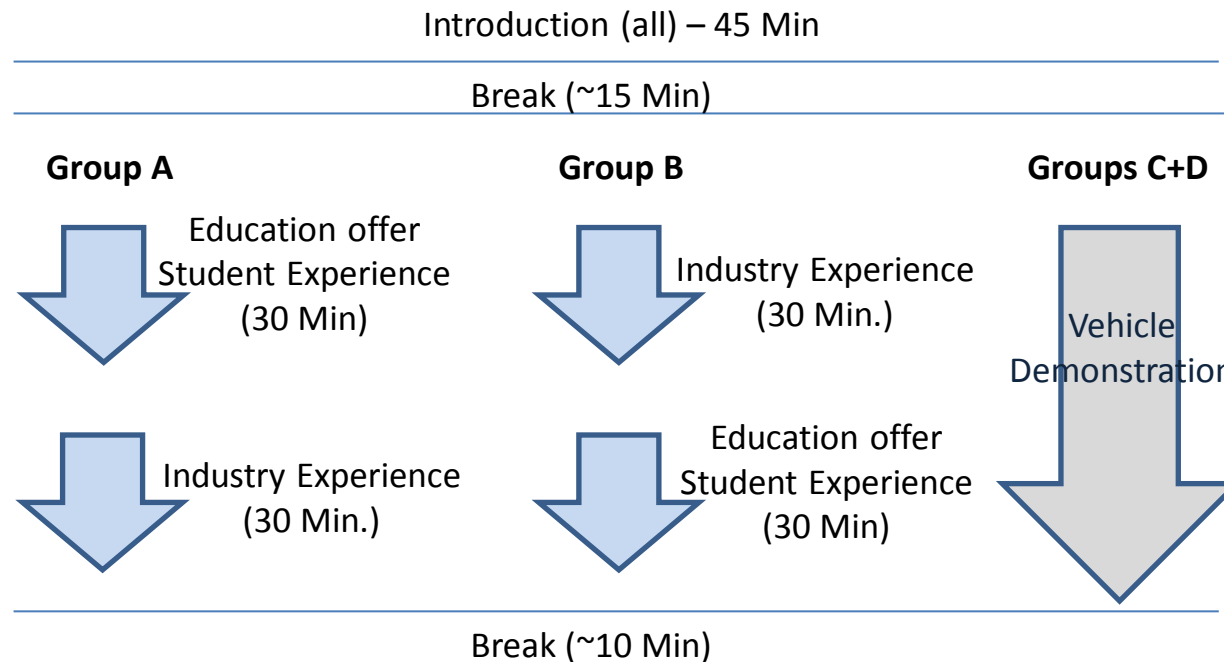
Road show structure



e-gomotion Roadshows (2012) in all partner regions: organized to reach high-school students and raise their awareness of vehicle electrification



High-school students at university



Project Activities

Road Show structure



e-gomotion Roadshows (2012) in all partner regions: organized to reach high-school students and raise their awareness of vehicle electrification



At high-schools

- Four events in selected classes (groups of about 20 students)
- Mobility carbon footprint
- Overview of vehicle technologies
- Energy and environmental motivation for new vehicle technologies and new mobility systems
- How to improve your mobility carbon footprint?



Selection of teams for e-gomotion challenge

Project Activities

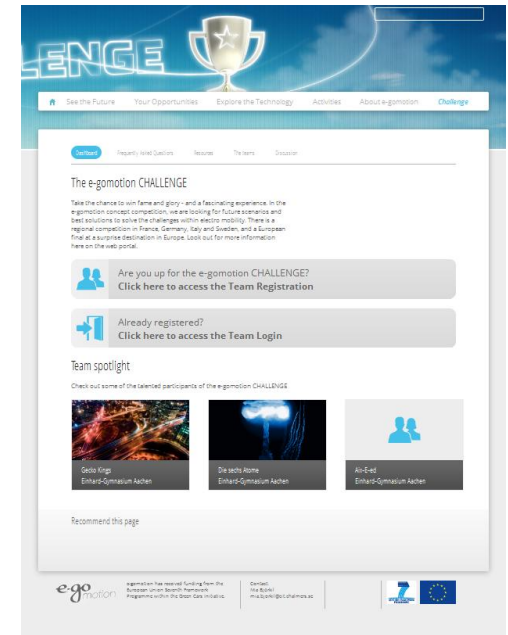
Challenge



Regional electrification concept competitions for high schools with European final

Challenge Key Facts

- Student competition for high school pupils
- Regional competitions in France, Germany, and Italy
- European final at EVS27 conference in Barcelona
- Challenge: future scenarios and best solutions to solve the challenges within electro mobility.



Project Activities

Challenge Structure



Regional electrification concept competition (2012-2103)



At university

- Three preparatory events:
 - Explanation of competition rules
 - Meeting with public authorities (municipalities, regional authorities)
 - Meeting with experts



Through e-gomotion Webportal

- Phase 1 and 2 of the competition (under tutor and expert supervision)



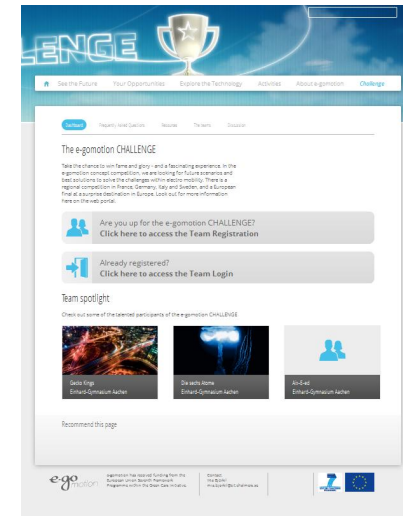
At university

- Regional finals, with involvement of advisory board and public authorities



At high school

- Event in each school, where the teams discuss with the other students about their experience of e-gomotion challenge



Project Activities

Challenge Structure



Final EU competition (2103): Barcelona



At university

- Final competition, with involvement of advisory board and public authorities



At EVS 27

- Conference session in which the results of the project are presented

Project Activities

Academy



Web school - Online education offer with web-based lectures in specific technical topics of electro mobility as a general information basis



Academy Key Facts

- Information regarding technical challenges and research activities in electro mobility
- Lecturers from academia and industry
- Participation is free of charge
- No accredited degree
- Target groups: high-school teachers, educators (electrification ambassadors)
- Available online from July 2013

Project Activities

Online



State-of-the-art, interactive information portal offering information regarding electro mobility

Web Portal Content

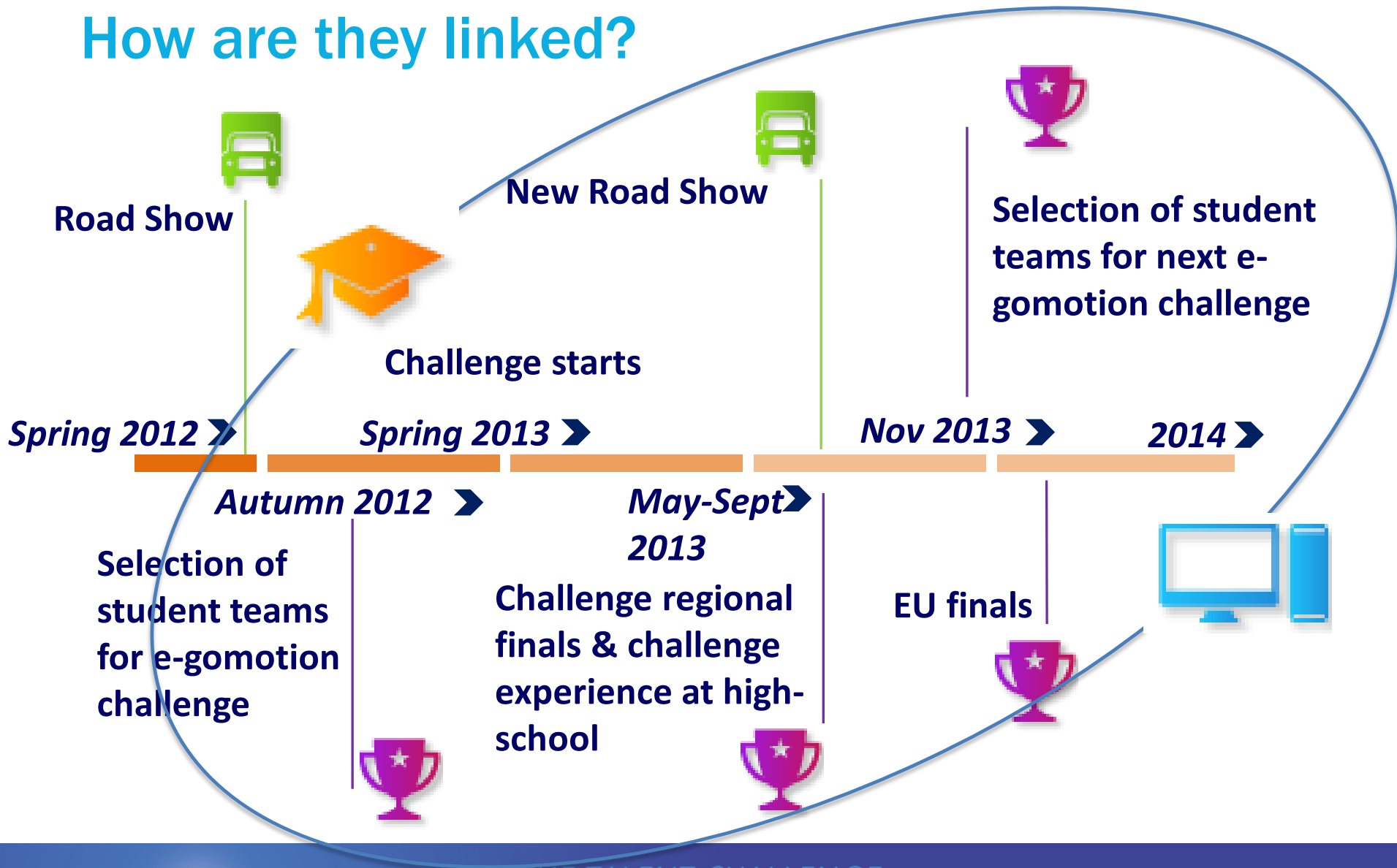
- General information about e-mobility
- Information about Education Opportunities
- Information about ongoing project events like Roadshow or Challenge
- Provision of e-learning material
- Platform to manage all project activities

www.e-gomotion.eu



Project Activities

How are they linked?



Project Activities

Some key numbers



2012: 1000 students reached in 5 regions



2013: 30 student teams (about 200 students) in 4 regions. Each team has to define a communication strategy (for instance through social networks) and reach a large number of contacts. The challenge is still ongoing, but some teams have already reached about 2000 contacts (each!) in their social network pages.



A community of young people with strong awareness of smart-mobility is growing



Long term impact can be achieved but endorsement/commitment of municipalities, local authorities and industrial advisory board is required to maintain the web platform and support the educators

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