EV CONNECT: Interconnecting Electric Vehicle Infrastructure Roadmap

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ASCAMM TECHNOLOGY CENTRE is a leading private, non-profit organization specialized in INDUSTRIAL TECHNOLOGIES:

- Knowledge Transfer.
- Knowledge Exploitation.

- 165 highly qualified staff.
- 48 Patents.
- 6 Spin-offs.
- 12M€ revenues (2013).
- 37 (FP7 + FP6 projects) 12 Led by ASCAMM.
Project Partners

**ascamm technology centre**
- **Experience:** Battery Lab, Mobility Projects, Business Modelling and R&D Projects.
- **Focus:** Socio-Economic Mobility and Exploitation
- **Main Tasks:** Project and Workshops Coordinator

**ATA**
- **Experience:** training activities, dissemination, Formula and ATA Coordinator.
- **Focus:** Technology
- **Main Tasks:** state of the art, mapping and engaging potential stakeholders as well as networking.

**Vrije Universiteit Brussel**
- **Experience:** National EV Pilots, Range Anxiety, EV Value and Chain analysis.
- **Focus:** EU policies and National initiatives
- **Main Tasks:** Benchmarking and market evaluation, preliminary methodology to monitor progress.
Project Topic and Objective

Shifting from the current random and isolated charging infrastructure to interconnected charging networks oriented to:

- market demand (holidays, business, public service, car sharing)

- in different operational positions (home, private installations, urban areas, motorways, parking facilities, rural locations)

- linked through ICT connection with vehicles/users and Mobility Management Operator

- Based on interoperable energy exchange technical facilities

- Design how Europe future charging network could be
Needs and Constraints

There are approximately 131,000 petrol station network in the EU

Filling Range about 2-3 minutes

Common charging standard

Fuel-injection vehicle can easily travel long distances, if necessary. (600 km)

3,071 charging stations in Western Europe.

Filling Range from 30 minutes to 6 hours depending on charging system

Four charging modes for electric vehicles, three types of connection cases, Six types of accessories for charging (3 for AC, 3 for DC)

Short/Mid range. (100 km)
Needs and Constraints

New mobility requires a new business model. Replicating the petrol station model is totally inefficient as a business model.

Europe must face a new paradigm of mobility since EV drivers are adopting a different attitude and behavior.

For example, a petrol station in the middle of the road makes no sense for an EV driver, however, a mall may attract clients by offering free charging for EV.
Needs and Constraints

- Ski Stations
- Rural tourism
- Beach & rural tourism
- Business centre

Catalonia
Focused on 3 different regions... The geographic scope will then be extended

- **Catalonia**
  - Area: 32,106.5 km²
  - Census: 7,539,618
  - GDP: €200.3 billion

- **Piedmont**
  - Area: 25,402 km²
  - Census: 4,646,251
  - GDP: €127.0 billion

- **Belgium**
  - Area: 32,106.5 km²
  - Census: 11,099,554
  - GDP: €353.6 billion
Expected impact on the target groups

List of target groups and collaborators

Car Manufacturers and supply chain

IVECO is an Italian industrial vehicle and bus manufacturer based in Turin of CNH Industrial.
LITHOP: Italian battery component manufacturer
FICOSA is a multinational corporation (Tier 1) devoted to the research, development, production and commercialisation of systems and parts for the automobile, as well as for both commercial and industrial vehicles.
SEAT is a Spanish automobile manufacturer. Today it is a Volkswagen Group subsidiary.
NISSAN
TOYOTA
Expected impact on the target groups

Trade Associations & others
ASBE (Belgian section of the European AVERE)
APVE (Portuguese Electric Vehicle Association)
AVELE (Spanish Association of Clean & Electric Vehicle)
AVERE (European Association for Battery, Hybrid & Fuel Cell Electric Vehicles)
CEI-CIVES (Italian Commission for Electric, Battery-powered, Hybrid and Fuel-cell) Vehicles
ENEA (Italian National Agency for new technologies, Energy and sustainable economic development)
Fondazione Telios-onlus - for the promotion and dissemination of renewable energy, energy saving, sustainable mobility
VOLT-TOUR (Catalan Association of Electric Vehicle)
Expected impact on the target groups

Charging infrastructure and supply chain
ACS Servicios is a world leading company in building and construction of industrial and energy infrastructures and associated services.
Estebanell Energia: Regional Power Supplier
SIMON HOLDING (Electric components manufacturer)
IREN: Italian Energy Supplier

Public bodies
ICAEN (Catalan Institute of Energy) - Spain

Universities
Università degli Studi di Napoli Federico II
University of Rome
Politecnico di Torino
Project Overview

Project supporting Structures

- Networking Platform
  - Community of Interest
    - Group of Experts
      - Consortium
European policies, regulations and initiatives in order to assess the impact on the deployment of charging infrastructures:

- Standardization and implementation of norms.
- Financial Instruments

- Business scenario
- Electric vehicle user profile
- Deployment of EV infrastructure

- Charging Systems
- Range extension systems for battery
Project Overview

WP 3 Benchmarking and market evaluation

• Analyzing legal framework and regulatory challenges.
• Comparing the Charging infrastructure between Italy, Belgium and Spain.
• Validating market size and market forecast by geographic region.
• Determining the main market barriers and elements that difficult the EV uptake.
• Identifying market opportunities and challenges.
• Identifying new business models to meet this opportunities.

Main Tasks

• Identify Potential Stakeholders
• Survey Selected Stakeholders (30 face to face interviews)
• Experts Review
Project Overview

WP 4 Mapping and engaging potential organizations and bodies

- EV Manufacturers
- Systems and components producers
- Manufacturers of infrastructure for energy supply
- Electric utilities
- Transportation Authorities
- Electric Vehicle Association
- Research Institutions
- Standardization Bodies
- Universities
WP 5 Create a roadmap of demand-side policy actions in Europe

1. **Current State**
   - EU Policies and National initiatives
   - Socio-economic Mobility and Exploitation
   - Technologies

2. **End State Definition**
   - Legal EU Policies and National Legislations
   - Social Mobility, Demographic Behaviour and business model
   - Innovations and technologies in the pipeline

3. **Initiatives Proposal**
   - Methodology: State of the art analysis.
   - Methodology: Expert Workshop: Scenario Planning

4. **Strategic Priorization**

5. **Roadmap Development**
   - Planification

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VUB Vrije Universitat Brussel
ASCAMM FOUNDATION
ATA Associazione Tecnica dell'Automobile
Project Overview

WP 5 Create a roadmap of demand-side policy actions in Europe

Main Tasks

• Define a methodology
• Setting up a Group of Experts
• Develop the Roadmaps
  • **Workshop 1** on EV technology (**ATA**), Sep 2014
  • **Workshop 2** on Socioeconomic Mobility and Exploitation (**ASCAMM**), Nov 2014
  • **Workshop 3** on EU Policies and National Initiatives (**VUB**), Jan 2015
• Experts Validation
Project Overview

WP 6 Preparation of a preliminary methodology to monitor progress

Defining a Monitoring Methodology

- **Type of Measures**
  - Public Procurement
  - New Regulations and Standards
  - Support to Market Demand
  - User-Driven Innovation/Living Labs

- **Evaluation Tools**
  - Survey
  - Statistical Analysis
  - Case Studies
  - Interviews

- **Indicators**
  - EV demand
  - New companies
  - Jobs Created

- **Data Sources**
  - Technology and methods exchange/interactions between EU Projects

Note: the CE recommends to base this WP on a previous Study: “Developing an Evaluation and Progress Methodology”
WP 7 Networking and implementation of the roadmap approach
Project Overview
In which areas we need support?

• Communication of project activities.
  • Open a LinkedIn Group for all the Roadmaps.
  • One website
• Engaging Relevant Stakeholders (Big Players) with the workshops.
• Engaging EV Experts.
• Creating links between the roadmaps.
• Extent geographical scope (Open the Community of Interest).
• Share documentation and project results.
Thank you for your attention!

Any question?

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