



EV CONNECT: Interconnecting Electric Vehicle Infrastructure Roadmap

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Unit Innovation Policy for Growth



About Ascamm



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

- Industrial R&D: Materials, Intelligent Systems, Process and Manufacturing Technologies, Product Development.
- 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



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



- **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.



- **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)



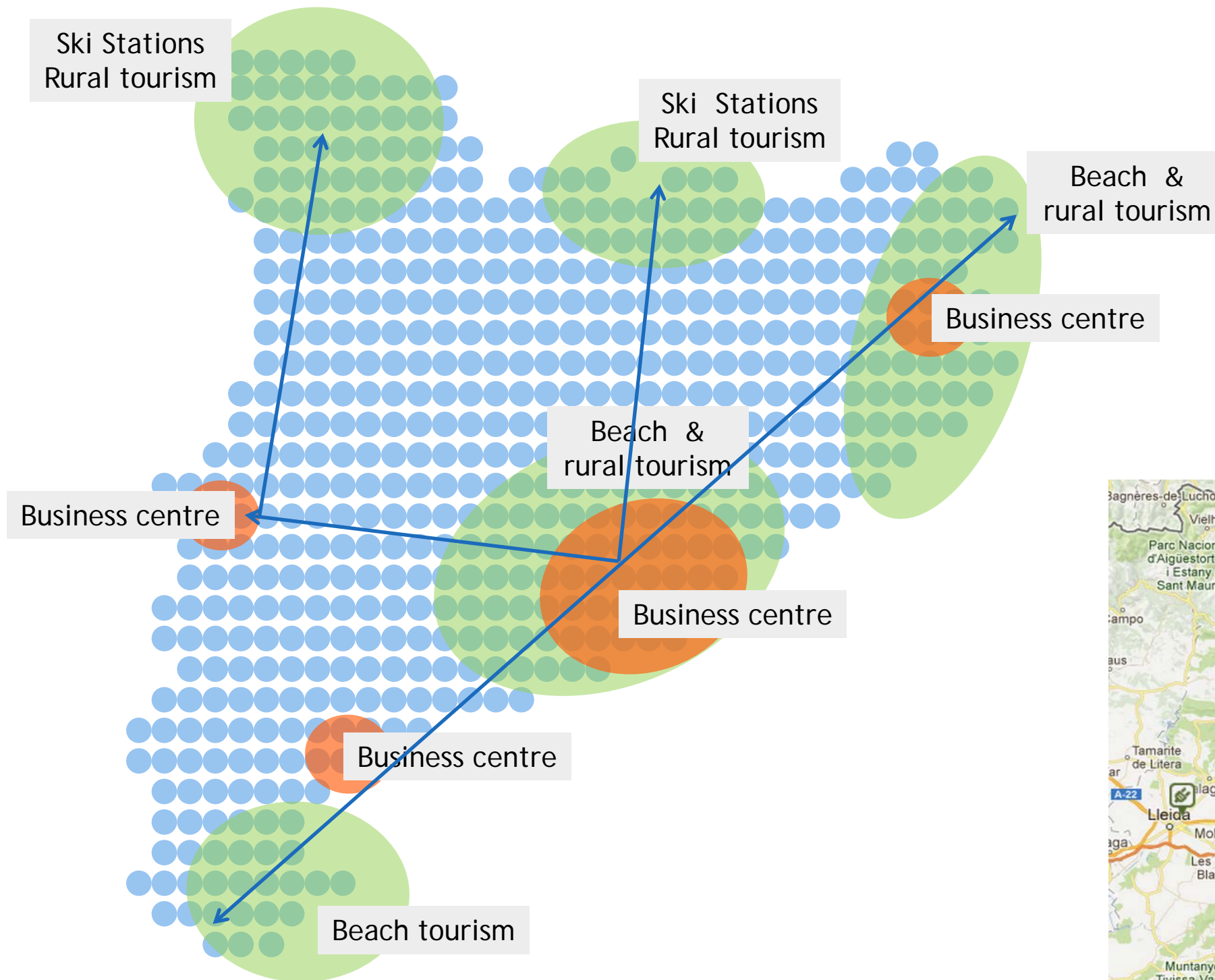
Needs and Constraints

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

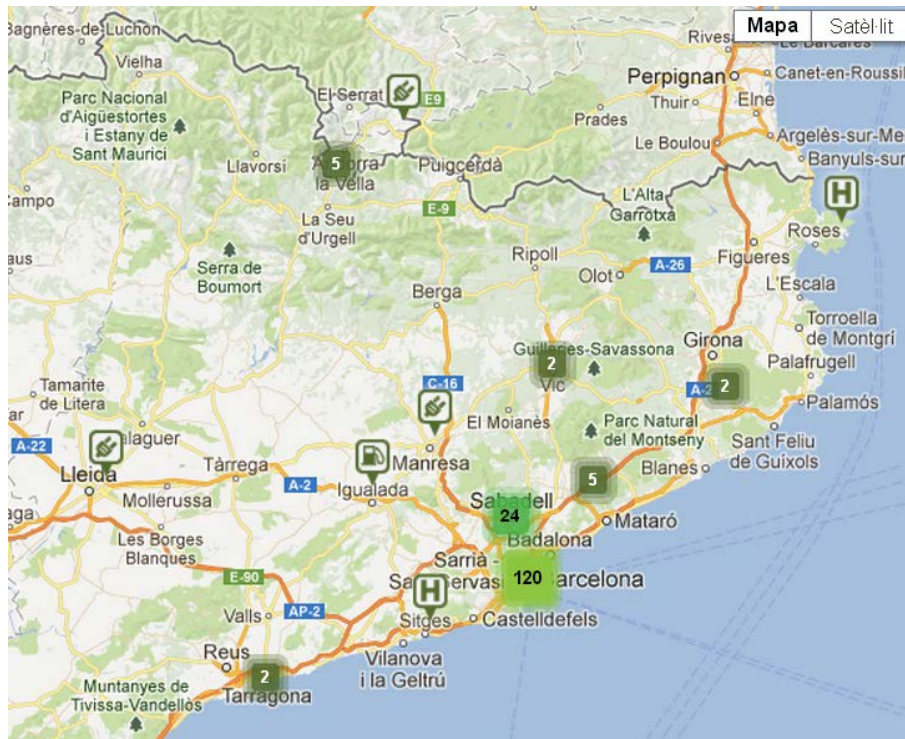


Roadmap focus

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

Catalonia

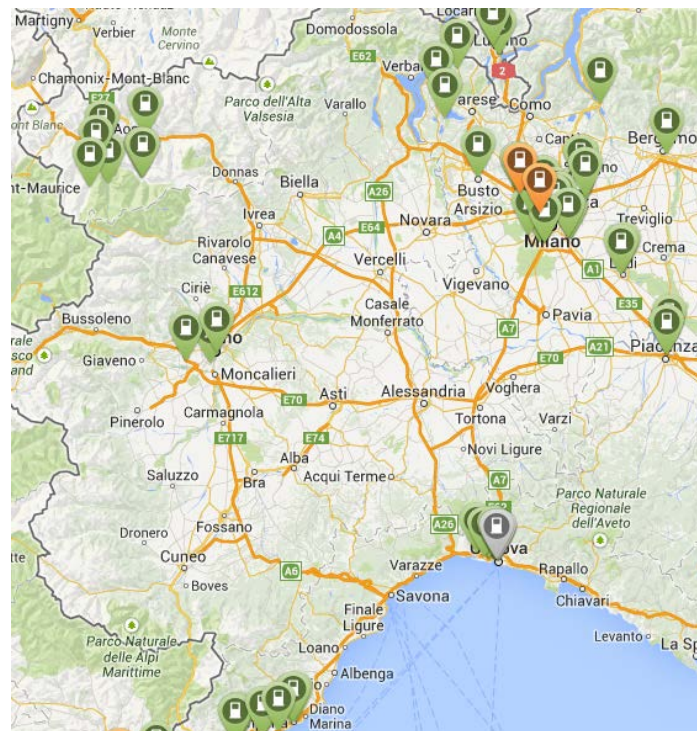
Area: 32,106.5 km²
Census: 7,539,618
GDP: €200.3 billion



Catalonia

Piedmont

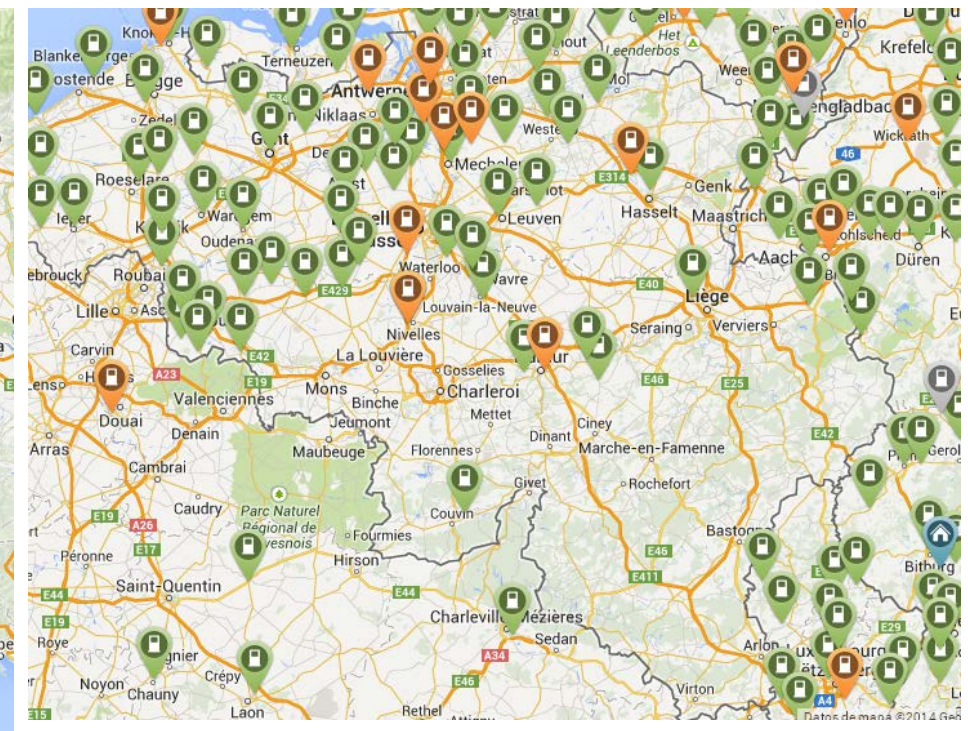
Area: 25,402 km²
Census: 4,646,251
GDP: €127.0 billion



Piedmont

Belgium

Area: 32,106.5 km²
Census: 11,099,554
GDP: €353.6 billion



Belgium

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

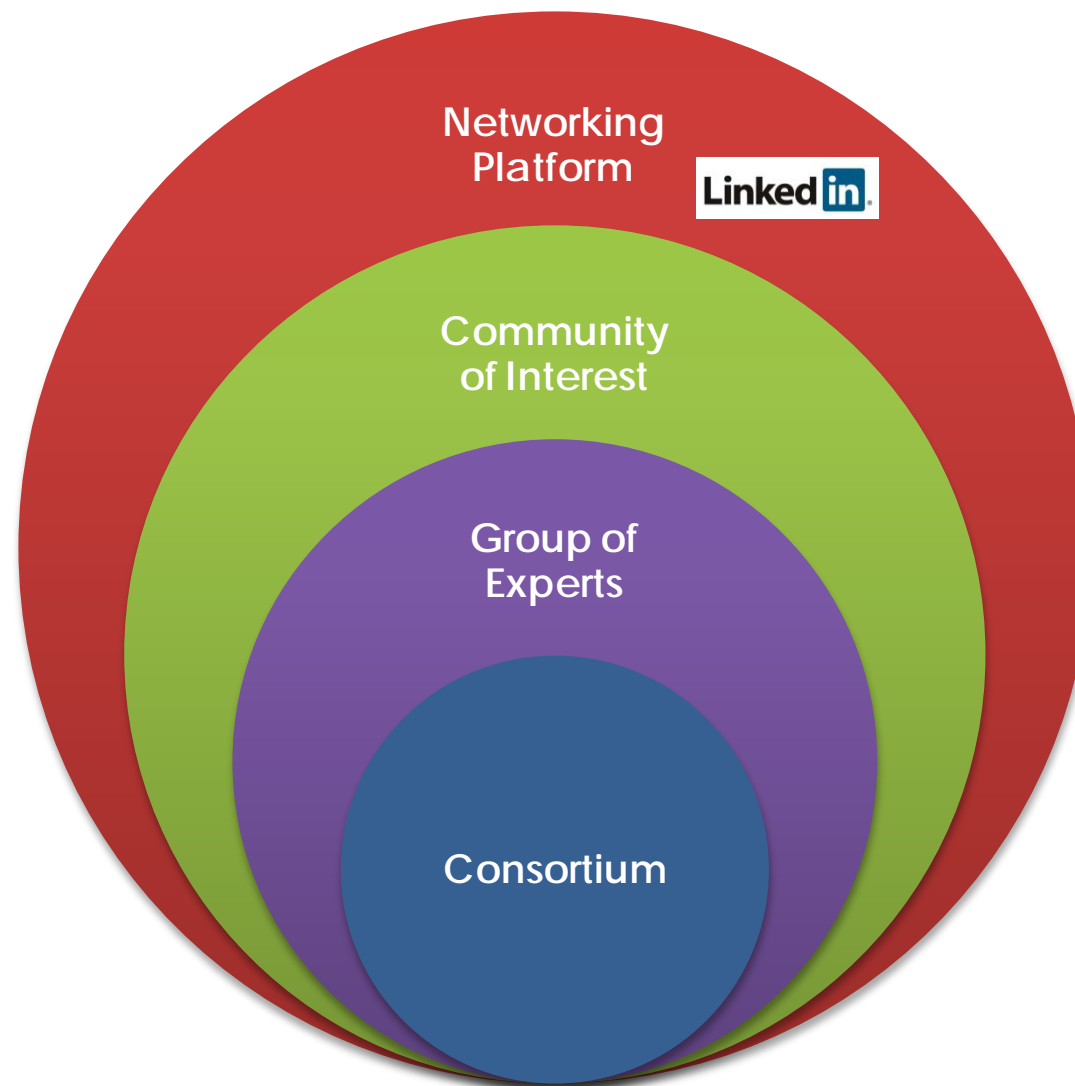
Università degli Studi di Napoli Federico II

University of Rome

Politecnico di Torino

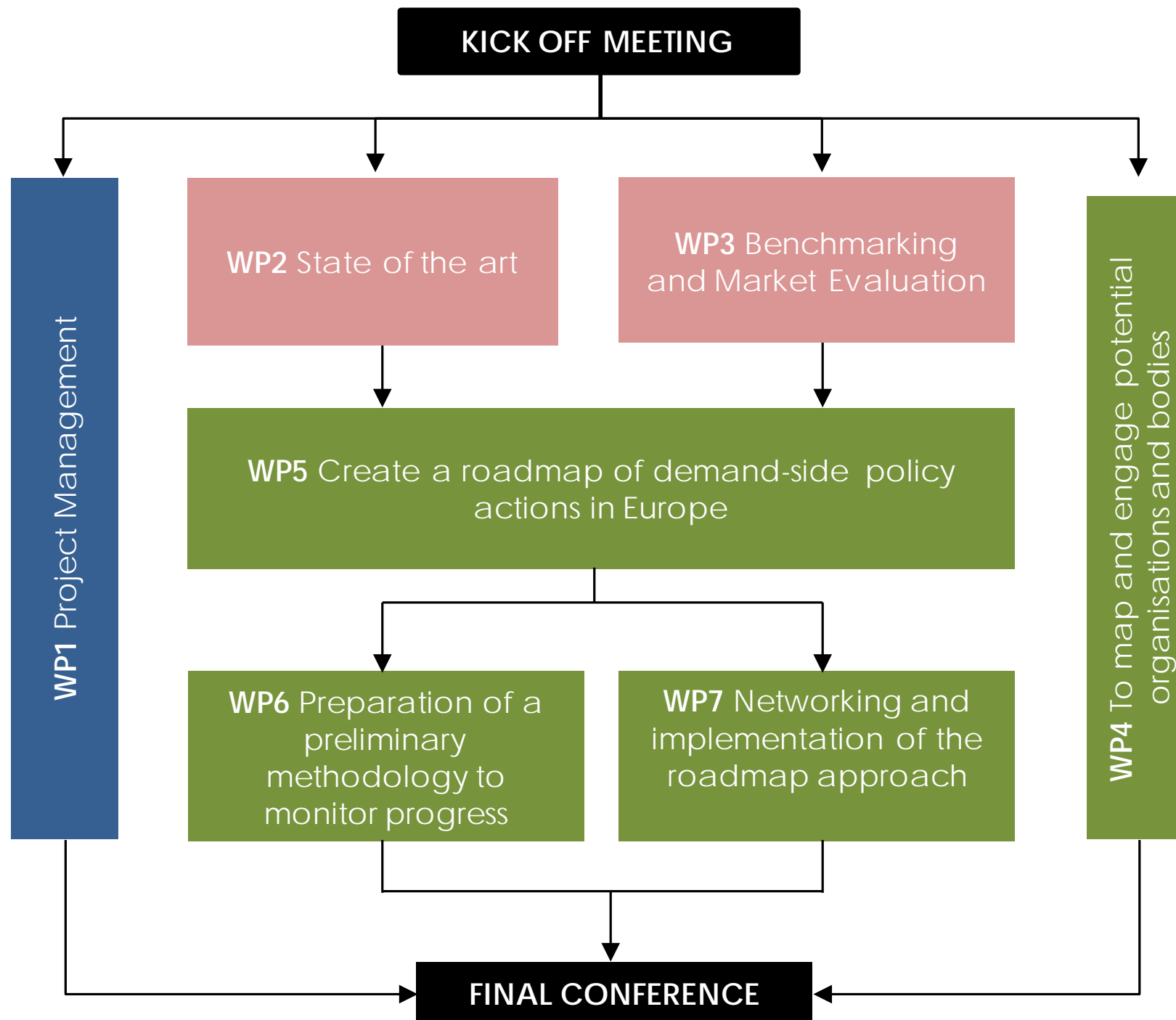
Project Overview

Project supporting Structures



Project Overview

Dependencies between activities



Project Overview

WP 2 State of the art



EU Policies and
National
initiatives

European policies, regulations and initiatives in order to assess the impact on the deployment of charging infrastructures:

- Standardization and implementation of norms.
- Financial Instruments

Socio-
economic
Mobility and
Exploitation

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

Technologies

- 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

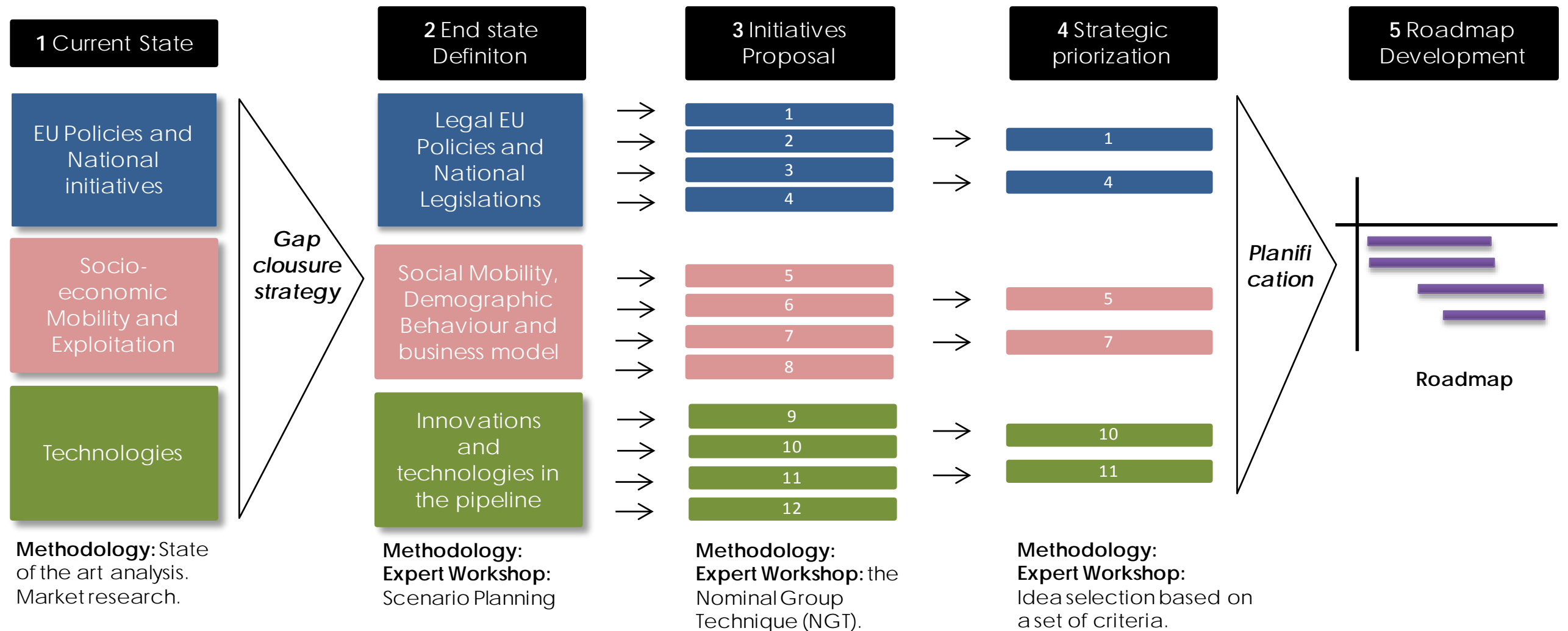


- EV Manufacturers
- Systems and components producers
- Manufacturers of infrastructure for energy supply
- Electric utilities
- Transportation Authorities
- Electric Vehicle Association
- Research Institutions
- Standardization Bodies
- Universities



Project Overview

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



● 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



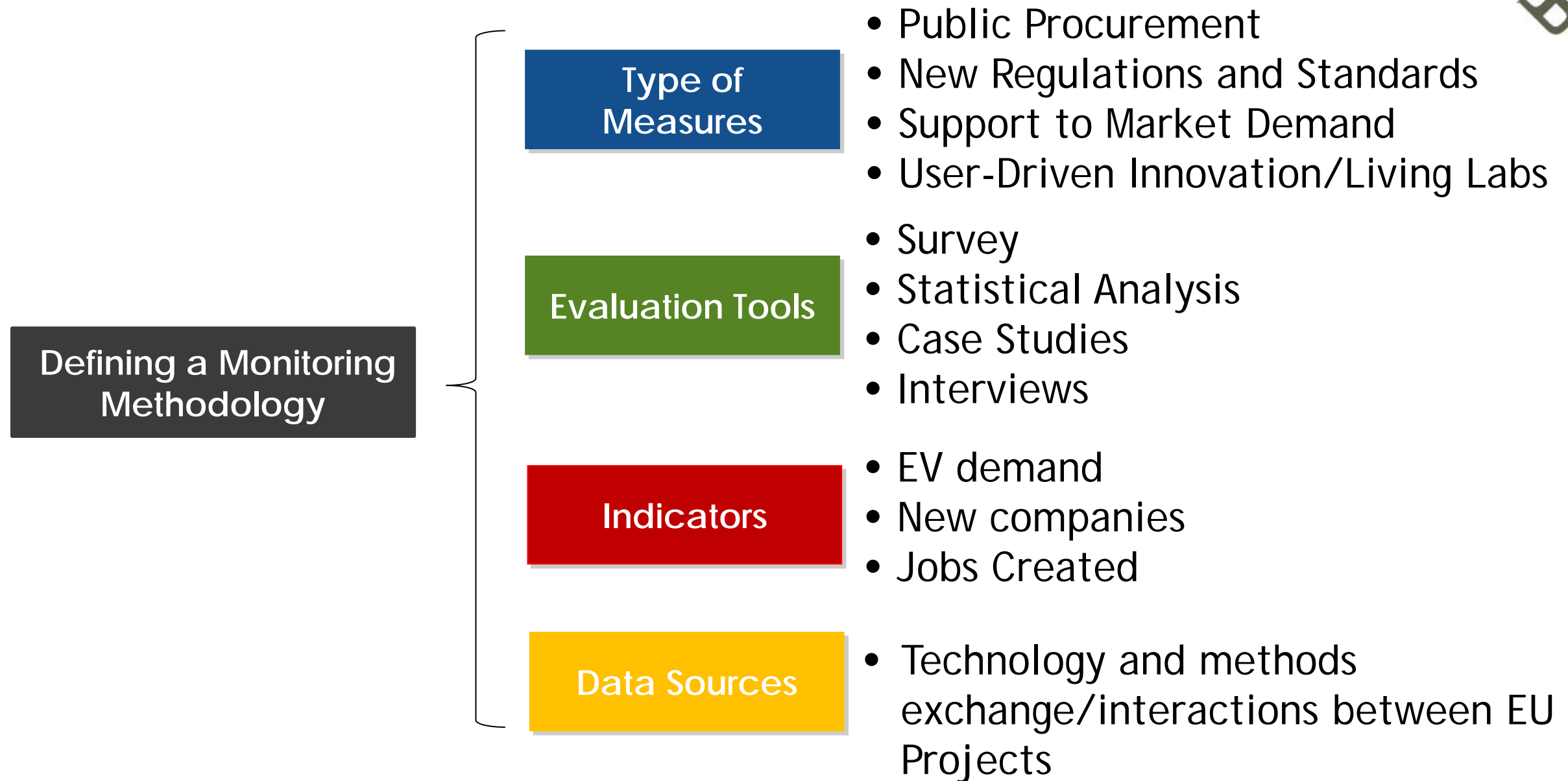
Main Tasks

- 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

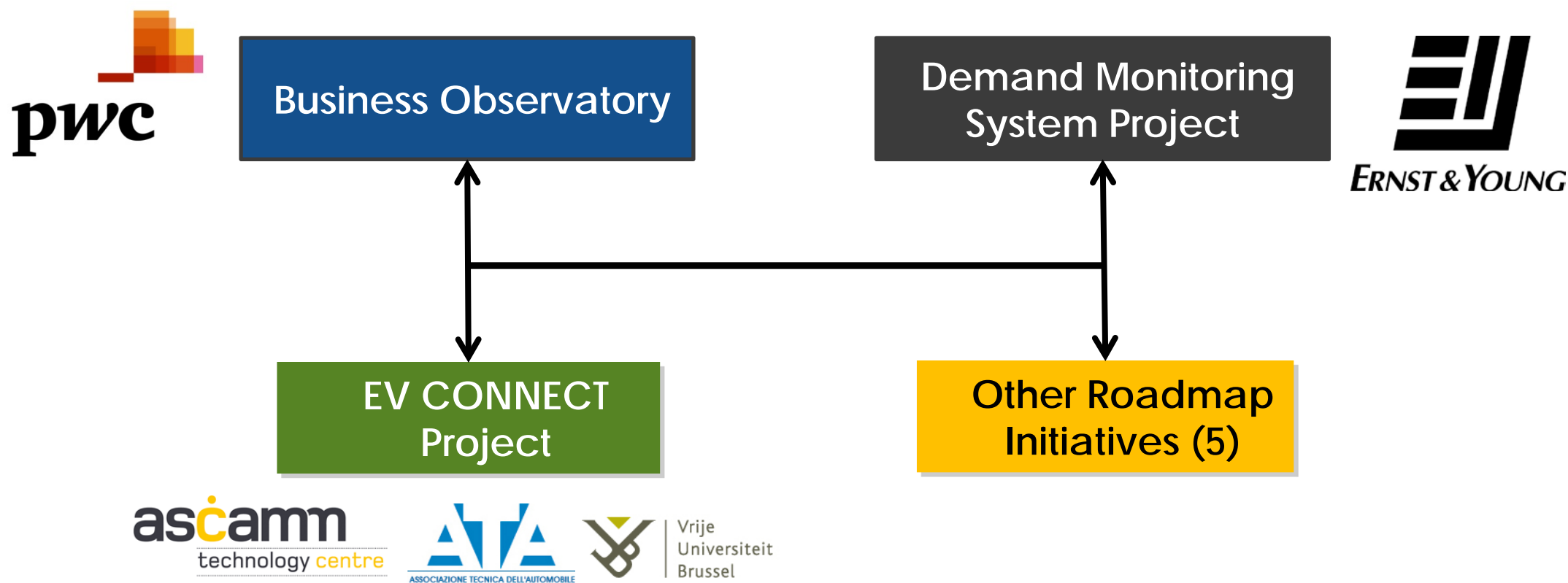
WP 6 Preparation of a preliminary methodology to monitor progress



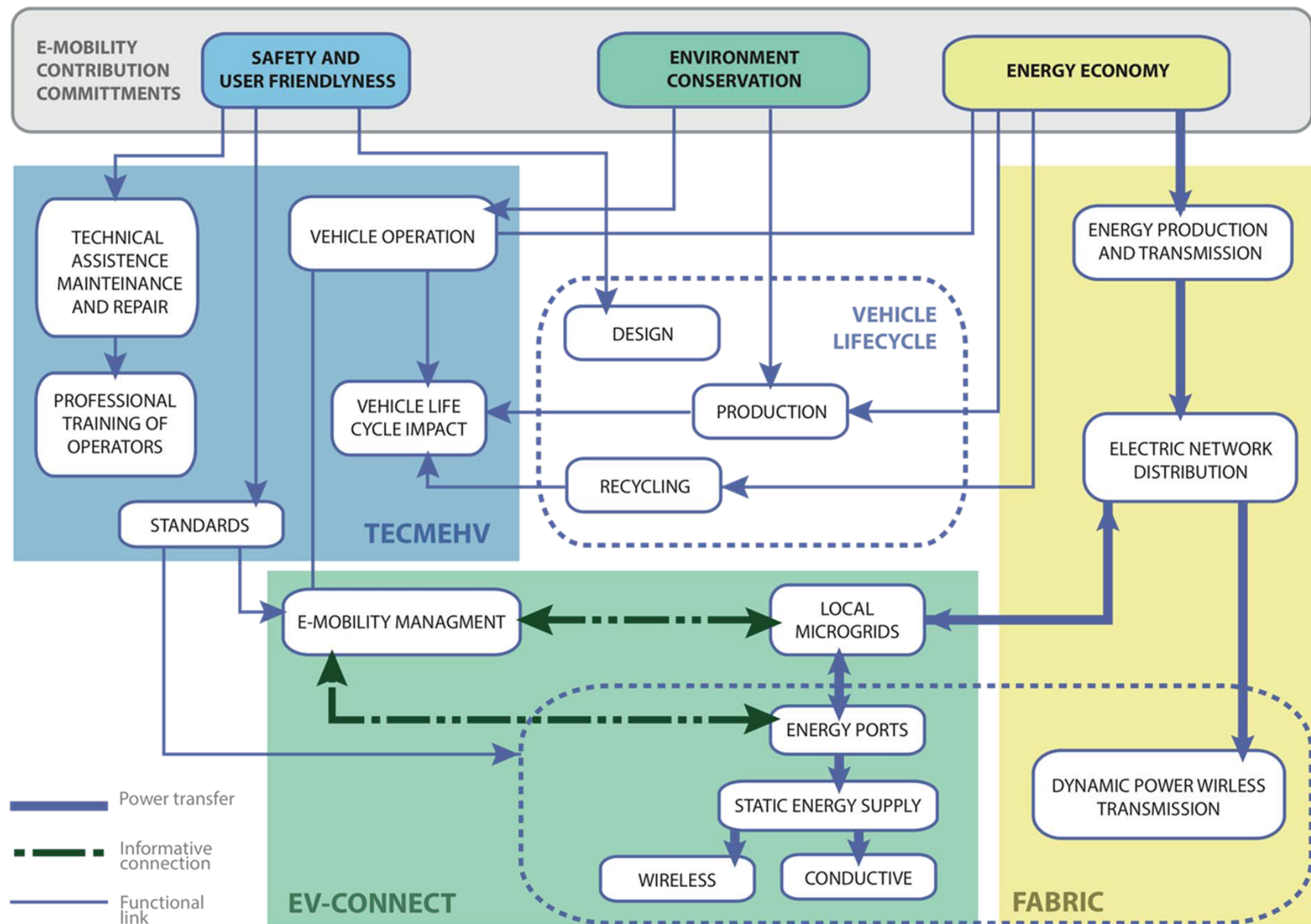
Note: the CE recommends to base this WP on a previous Study: “Developing an Evaluation and Progress Methodology”

Project Overview

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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EV-CONNECT

Roadmap

Partners



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