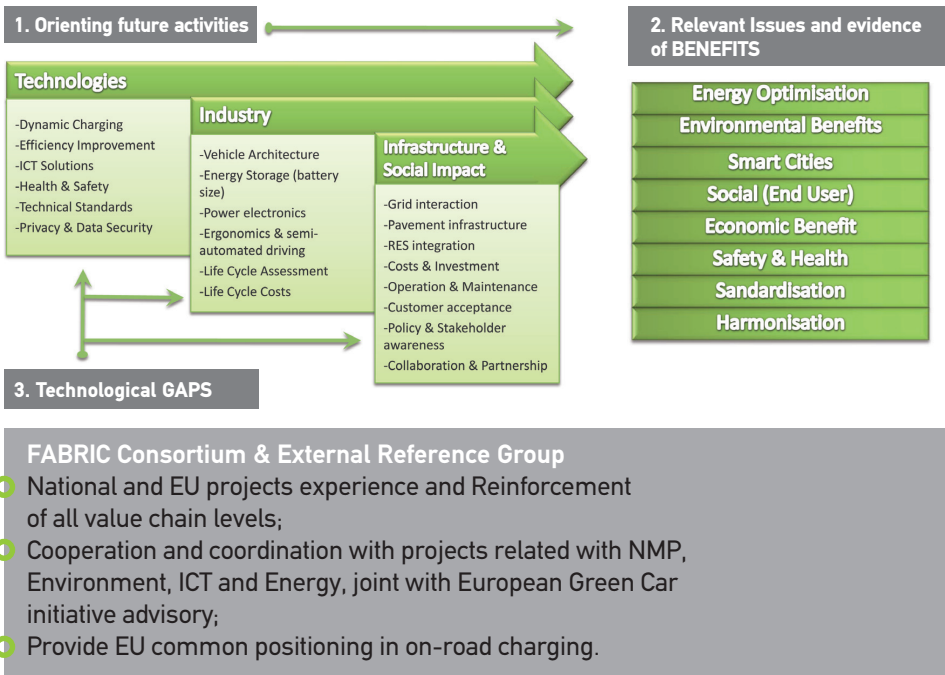


EXPECTED IMPACT

FABRIC will pave the way for future Electromobility. By addressing important challenges related to charging and supporting ICT solutions for electric vehicles, FABRIC will both increase the market share for EVs and will contribute in meeting the environmental demands by future mobility.

To achieve the foreseen impact, FABRIC has brought together all the stakeholders that are needed to evaluate the feasibility of the different EV dynamic charging solutions as well as industrial partners that have the capability to take immediate action for the future industrialisation of the most promising solutions.

Expected Impact Steps Chain



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Feasibility analysis and development of on-road charging solutions for future electric vehicles

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OUR VISION

Pave the way for Large scale Deployment of Electromobility

In the pursuit of the decarbonisation of road transportation and mobility, it is widely recognised that Electromobility will prove to be an essential component. The vision of FABRIC is the large-scale adoption of pure Electric Vehicles (EVs) in future transportation systems. This wide deployment requires mature EV technology and advanced charging solutions that provide a user experience similar to today's cars.

CHALLENGES

The main challenge that FABRIC is tackling is the "range anxiety" that is caused by the limited range current EVs are suffering from. In the long term, electric vehicles might be able to collect energy from the road in a conductive or contactless mode. Compared to the current paradigms of larger installed storage capacity, fast charge or switchable batteries, advanced on-road charging solutions will improve the driving range and battery lifetime of the Fully Electric Vehicles (FEV) as well as their energy efficiency and price, given the need for a smaller battery.

OBJECTIVES

The main scientific and technological objective of FABRIC is to conduct feasibility analysis of on-road charging technologies for long term electric vehicle range extension. In more detail, FABRIC will address the following objectives:

- Collection of end-user requirements and industry demands that determine the potential of success of such technologies in various application sectors.
- Identification of technology drivers and challenges that impact the implementation of wireless charging technology and the widespread installation of wireless charging infrastructure.
- Determination of product and technology development activities by technology developers, EV manufacturers and other key stakeholders.

- Proposal of partnerships and collaboration between key stakeholders for implementation of technology.
- Survey of governmental policies, regulations and public and private funding activities impacting the progress of wireless charging infrastructure.
- Evaluation of technology penetration potential for wireless charging in public transportation in addition to the passenger car segment.
- Bridging the technological gaps and proposal of a rational solution for both the grid and the road infrastructure.

Project's goal is to provide a pivotal contribution to the evolution of Electromobility in Europe

TEST SITES

FABRIC targets various types of vehicles, including passenger cars, light weight duty vehicles and heavy vehicles and buses. Appropriate charging solutions will be integrated and tested in different sites, covering an extensive part of Europe from Italy in the South, through France, to Sweden in the North. In general the project will focus on two different inductive technological approaches wich are representative of two families of solutions.

- Installation of coils under the road surface (in variable coil lengths, frequencies, materials and performances) up to more than 20 meters length. This will create a reduced couplings with a longer interaction between the ground coils and the vehicle receiving one.
- Installation of several charging spots along the lane ("manholes"). The coils embedded in the road surface are concentrated, thus resulting in a high frequency of coupling/decouplings and in an impulsive charging.



1. Inductive test site in France 2. Conductive rail test site in Sweden 3. Inductive test site area in Italy