

Minutes: FAMN Roundtable – Charging infrastructures

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Moderator: Mathieu SARAIVA, FAMN

Speakers: Guido SACCHETTO, European Commission DG RTD ; Uroš SALOBIR, EGVIafor2Zero ; Nicolas HAUTIERE, UGE ; Jean-Baptiste HAHN, CARA

This European Roundtable was organised by the [French Automotive & Mobility Network \(FAMN\)](#). The objective of the discussion was to underline the importance of funds dedicated to R&I to support French actors in the development of innovative recharging infrastructures on the European territory, for example through the 2Zero partnership. In addition, the aim was to highlight the points of convergence between the French sector vision and the perspectives of the European players (European Commission, PPP), to move forward together towards cleaner, safer and more sustainable mobility.

1. Introduction and Presentation of FAMN

➤ Mathieu SARAIVA – FAMN, EU Correspondent in Brussels

FAMN brings together the French Automotive Platform - including the French large groups in the sector – as well as 4 competitiveness clusters located on French territory (CARA, ID4CAR, NextMove, PVF). In total, FAMN has more than 1450 members including SMEs, large companies, universities, research centres and local authorities.

FAMN is involved in various fields of action with the general ambition to support the transition to green mobility, smart and digital mobility, and safer mobility. Electric mobility is one of these key areas. FAMN is carrying out concrete actions at European level to increase the visibility of the French industry, particularly with European institutional interlocutors. This meeting is part of this strategy.

2. Vision of the French mobility sector

➤ Jean-Baptiste HAHN – CARA Cluster, Head of EU Affairs – Static charging

The position of the [CARA](#) competitiveness cluster is based on the vision developed within the Working Group Electric Mobility of the [Four Motors for Europe \(4M\)](#). As a reminder, 4M is a European network bringing together several European regions (Auvergne-Rhône-Alpes, Baden-Württemberg, Catalonia, and Lombardy at the outset) and which is active in various sectors of activity. Concerning transport, the vision of the 4M is as follows:

- Support and shape the transformation process of the automotive industry;
- Contribute to the necessary reductions in CO2 emissions from the sector.

The transport sector is impacted by the European Green Deal. Forced to drastically reduce their CO2 emissions, the long-distance freight transport industry wants to develop more electric trucks and high-voltage recharging infrastructures in the coming years.

For freight transport, a European vision is needed. Battery technology is a real alternative because it can be implemented quickly, is already ready for the market and is suitable for rest periods of 45 minutes every 4 hours.

The aim is to set up a **European charging infrastructure** for long-distance electric trucks along the main **freight corridors** in Europe. Firstly, this ambition will go through a phase of analysis and evaluation of existing flows and infrastructure. This will lead to the development of an intelligent charging tool (interoperable parking and charging reservation system) and the implementation of high-speed charging stations along the identified corridors.

Roadmap proposed by CARA:

- Identification of the busiest roads;
- Identification of potential sites for recharging infrastructure;
- Establishment of charging infrastructure along the corridors;
- Collection of data by test vehicles and charging solutions

Next steps: Strategic exchange with European stakeholders on the implementation of the vision and possible funding. Translate the vision into concrete actions with industry and science.

➤ **Nicolas HAUTIERE – Université Gustave Eiffel, Components and Systems Department – Dynamic charging**

To achieve the objectives of decarbonisation of road transport, solutions exist but they have certain limitations (LPG, biofuels, batteries, hydrogen). Electrified Road Systems (ERS) aim to overcome the existing constraints. ERS are systems that allow the powering of vehicles running on an equipped network (interurban, high traffic motorways). They can provide propulsion and/or recharge vehicle batteries.

At this stage, there are **three main families of technologies**:

- Catenary conduction (Siemens, Powerlines);
- Ground conduction (Alstom, Elways, Elonroad);
- Induction power (Primove, KAIST/OLEV, Vedecom).

Several issues currently constrain the deployment of these solutions, including fleet selection, interoperability, cost-effectiveness thresholds, efficiency, etc. Each technology has different advantages and disadvantages in terms of efficiency, cost, resilience and durability, installation and maintenance.

From a European perspective, Sweden is the most advanced country with several test sites on open roads and a planned deployment of over 2000 km. In Germany, three trials on motorways (5 to 10 km) have been carried out to date.

In France, following discussions between stakeholders, **three working groups** were set up in early 2021 by the Ministry of Transport, leading to the **publication of ministerial reports**. In addition, France is undertaking to relaunch the Franco-Swedish dialogue (February 2022), is discussing with the European Commission (DG Climate, DG GROW, DG MOVE), and is seeking consensus on technology, interoperability, and harmonisation for car manufacturers.

[WG1](#) recommendations - **Decarbonising road freight transport:**

- Start European work on the ERS in early 2022, taking advantage of the EUIP¹;
- Obtain a pan-European decision on the choice of technical solution by the end of 2023;
- Establish a structure capable of preparing studies, public debates and governance proposals for the implementation of an ERS programme.

WG2 recommendations - **Technical solutions, potentials and barriers:**

- At this stage, reserve induction for urban use and static fast charging;
- Experiment with the APS² solution on open roads and over several kilometres;
- Catenary technology can meet the main requirements, but has greater operating constraints than other technology families;
- Catenary technology will be considered if a sufficient TRL level is not achieved elsewhere.

WG3 recommendations - **Large-scale experimentation in France:**

- Publish a call for projects covering the whole value chain of ERS, and addressing:
- Testing of interoperable charging technologies on motorways;
- Barriers, including non-technological barriers;
- Tools for the design, construction and operation of ERS in order to enable accelerated replication of the first demonstrators;
- Skills of all the actors of the territory.

3. Perspectives européennes

➤ **Guido SACCHETTO - European Commission DG RTD, Policy Officer - Expectations from 2Zero Partnership**

The 2Zero Partnership is a European public-private partnership (PPP) that will address the development of affordable, emission-free, user-centred solutions (technologies and services) for road transport. In concrete terms, it will aim to develop technologies and solutions to reduce all sources of vehicle emissions (e.g. tyres, brakes), noise and improve air quality. The PPP will also address the issue of recharging infrastructure (digitalisation, smart recharging solutions, efficient fast recharging).

The expected impacts of the PPP are:

- A carbon neutral Europe by 2050 (Green Deal);
- European technological leadership supporting growth and employment;
- Large-scale deployment of solutions;
- Reducing CO₂ emissions and improving air quality.

The PPP is based on **four pillars**:

- Vehicle technologies and propulsion solutions for BEV /FCEV ;
- Integration into the energy grid and recharging infrastructure;
- Innovative concepts, solutions and services for zero emission mobility;
- Life cycle assessment and circular economy.

The 2Zero Partnership is implemented with **interactions with other European partnerships**: Clean Hydrogen, BATT4EU, Key Digital Technologies, CCAM. Particularly close collaboration with Clean Hydrogen and BATT4EU.

¹ EU Council French Presidency

² Alimentation by ground

The European Commission considers that **user acceptance** of charging options is essential for the rapid development of the EV market. This includes making future charging solutions universal and easy to use. The Commission also expects smart charging, interoperable solutions and charging planning to be addressed.

The **governance of the 2Zero Partnership** is composed of a stakeholders association ([EGVIAfor2Zero](#)), the European Commission and a Member States representation group. Concretely, the role of the partnership, with this structure, is to provide guidance and advice for the forthcoming Work Programme, and more broadly to jointly develop a multi-annual roadmap between industry and research stakeholders and the European Union.

Under WP2021-22, €197 million is allocated to 2Zero projects. The calls for projects address recharging infrastructures and their integration into the grid (smart charging, Vehicle-to-Grid). For more information, the calls are available [here](#) and an [Info Day](#) will take place in February.

➤ **Uroš SALOBIR – EGVIAfor2Zero, VC Smart Grids Industry – Expectations from SRIA Pillar II**

The **2Zero Partnership is implemented according to a multi-annual roadmap** called Strategic Research & Innovation Agenda (SRIA). This agenda is structured by 5 areas of action which must be addressed (R&I actions, demonstration, implementation) simultaneously according to different degrees of priority:

- Infrastructures: demonstration phase from 2023
- Interoperability of infrastructures: demonstration phase from 2023
- Systems approach: demonstration phase in 2025
- BEV connectivity planning: demonstration phase in 2025
- High-power fast charging: demonstration phase in 2024

User acceptance of EVs still poses several challenges. Indeed, to enable their rapid sales growth, future recharging solutions should be available everywhere and easily usable: easy, available at any time, with a recharging time adapted to the user's needs.

To achieve this, **digital innovation** should help improve charging planning and display charging prices in a timely manner, giving the customer an accurate and real-time perception of the final cost of the service. Intelligent Vehicles-to-Grid (V2G) charging solutions will need to be progressively implemented, creating a flexible, sustainable, affordable, and efficient charging environment that meets the real needs of the integrated network operation, resulting in benefits for all.

High power fast charging should be developed to support the transition of freight transport. Strategic points are targeted: motorways, logistics terminals, multimodal hubs, truck stops.

The fields that remain to be explored:

- Study of the feasibility and viability of ERS (including optical and noise pollution).
- In-depth research on dynamic wireless recharging to prepare for market launch (electromagnetic compatibility, safety)

Priorities for the next Work Programmes:

- WP2021-22: Transparent integration of EVs into the network operation without losing comfort for the user (central issue), and with benefits for all.
- WP2023-24: Static charging, peak load solutions, and high-power charging.

4. Questions & Answers

Zariff MEIRA (VEDECOM) added to this by presenting VEDECOM's activities in the field of charging infrastructure. At this stage, VEDECOM is primarily interested in the acceptance of technologies by end users. Another priority topic is intelligent static charging stations and V2G. It is also interested in issues related to raw materials and interoperability. Finally, VEDECOM is interested in dynamic recharging infrastructures, particularly by induction.

Jean-Baptiste HAHN (CARA) asked the European Commission about the expectations of the [CEF programme](#) and a [Horizon Europe call](#), and how they correspond to CARA's vision. In particular, regarding the Horizon Europe call, its vision focuses on infrastructure, whereas the call addresses vehicles.

Guido SACCHETTO (European Commission) recalled that the CEF programme supports deployment and the 2Zero Partnership supports the development of innovative solutions using a systemic approach. In his opinion, the vision carried by CARA may correspond. According to Maurizio MAGGIORE (European Commission), the design of the truck also depends on the infrastructure, which is why innovation can cover both areas in the Horizon Europe call. 3-4 projects will be funded.

Mathieu SARAIVA (FAMN) returned to the sequencing of priorities in the 2Zero Partnership's SRIA and asked when more funding could be expected to address dynamic charging technologies.

Uroš SALOBIR (EGVIAfor2Zero) explained that this emerges from the state of progress of the industry on the development of the different technologies. The issue of static technologies is imminent, hence the choice to address them in WP2023-24. For the time being, there is a perceived form of industry resistance to the transition to ERS. Nevertheless, they are supposed to be addressed from 2025 onwards. Furthermore, regarding the equipment of long-distance corridors, the question of supply from the energy network will arise.

