

PROJECT

## CoachHyfied

# Coaches with hydrogen fuel cell powertrains for regional and long-distance passenger transport with energy optimized powertrains and cost optimized design - “CoachHyfied”

**Funding:** European (Horizon 2020)

**Duration:** Jan 2021 - Dec 2025

**Status:** Ongoing

**Total project cost:** €7,329,180

**EU contribution:** €4,999,442



**Call for proposal:** H2020-JTI-FCH-2020-1

[CORDIS RCN : 232667](#)

### Background & policy context:

In the past, fuel cell (FC) systems have been successfully developed for city buses. No activities towards the development of coaches are known in Europe so far. The target of this project is both to carry the experience from the development of FC city bus systems one step further into the more challenging constraints of typical coaches as well as to strengthen the European vehicle manufacturing base and supply chain of hydrogen components.

### Objectives:

The project presents two coach solutions to solve the challenges of longer driving distances of regional and long-distance coaches (400-800 km), the more stringent packaging constraints, less favourable driving patterns (lower recuperation) and higher auxiliary powers (air conditioning & heating) and demonstrates the coaches at two regions in 2 to 3-year demo phases.

The project is based on a coherent structure and balanced partnership, addresses all call specific requirements and aims for the highest benefits from a technological and market perspective:

- both coach types being equally addressed by applying a common hybrid system concept and preparing for the development of FC drive system synergies
- comparing different and modular FC packaging concepts by the use of multiple and single FC units being tested in fulfilment of the 100 kW power requirement
- one set of coaches to develop an OEM-based new-built FC coach and another one an existing coach retrofit to also provide answers for the second life use of environmentally outdated coach chassis
- partnering with established FC manufacturers promising to reach the required 25,000 operating hours minimum, and validated in the project possibly with used stacks
- an experienced composite tank manufacturer to discuss the design option of potentially applying 350 bar and 700 bar technology for the coaches in fulfilment of targeting the required driving ranges at lowest costs and
- experienced automotive system developers to search for operational minimum energy consumption patterns.

### Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

**Institute type:** Public institution

**Institute name:** European Commission

**Funding type:** Public (EU)

**Other programmes:** FCH-01-5-2020 Demonstration of FC Coaches for regional passenger transport

### Lead Organisation:

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**Fev Europe Gmbh****Address:**

Neuenhofstrasse 181  
52078 Aachen  
Germany

**EU Contribution:** €624,718

**Partner Organisations:****Coventry University****Address:**

Priory Street  
Coventry  
CV1 5FB  
United Kingdom

**EU Contribution:** €133,039

**Sia Dobeles Autobusu Parks****Address:**

UZVARAS 12 A  
DOBELE 3701  
Latvia

**EU Contribution:** €419,565

**Ballard Power Systems Europe As****Address:**

MAJSMARKEN 1  
9500 HOBRO  
Denmark

**Organisation Website:**

<https://www.ballard.com/>

**EU Contribution:** €489,487

**I See Mobility Gmbh****Address:**

REICHSWALDSTR 52  
90571 SCHWAIG BEI NURNBERG  
Germany

**EU Contribution:** €803,780

**Rheinisch-Westfaelische Technische Hochschule Aachen****Address:**

Templergraben  
52062 Aachen  
Germany

**Organisation Website:**

<http://www.rwth-aachen.de>

**EU Contribution:** €128,230

**Trezors****Address:**

AUSTRAS IELA 7  
LIELVARDE 5070  
Latvia

**EU Contribution:** €67,582

**Plastic Omnium New Energies Wels Gmbh****Address:**

MARIA THERESIA STRASSE 46 2  
4600 WELS  
Austria

**EU Contribution:** €377,937

**Nprox Bv****Address:**

VOGT 21  
6422 RK HEERLEN  
Netherlands

**EU Contribution:** €465,688

**Kiwa Nederland Bv****Address:**

WILMERSDORF 50  
7327AC APELDOORN  
Netherlands

**EU Contribution:** €146,461

**Otokar Otomotiv Ve Savunma Sanayi As****Address:**

AYDINEVLER MAH SAYGI CAD NO 58  
MALTEPE  
Turkey

**EU Contribution:** €599,878

**Engie Energie Services****Address:**

1 PLACE SAMUEL DE CHAMPLAIN - FAUBOURG DE L'ARCHE  
92930 PARIS LA DEFENSE CEDEX  
France

**EU Contribution:** €111,377

**Ford Otomotiv Sanayi Anonim Sirketi****Address:**

AKPINAR MAH HASAN BASRI CAD NO 2 SANCAKTEPE  
34885 ISTANBUL  
Turkey

**EU Contribution:** €181,272

**Hypport****Address:**

1 PLACE SAMUEL DE CHAMPLAIN  
92930 PARIS  
France

**EU Contribution:** €450,428

**Technologies:**

Fuel cells and hydrogen fuel

Development of new Fuel Cells and Hydrogen (FCH) technologies

**Development phase:** Demonstration/prototyping/Pilot Production

**STRIA Roadmaps:** Vehicle design and manufacturing

**Transport mode:** Road transport

**Transport sectors:** Passenger transport

**Transport policies:** Other specified

**Geo-spatial type:** Other