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

Fact Sheet

Project Information

**CoacHyfied**
Grant agreement ID: 101006774

**Funded under**
SOCIETAL CHALLENGES - Smart, Green And Integrated Transport

**DOI**
10.3030/101006774

**Start date**
1 January 2021

**End date**
31 December 2025

**Total cost**
€ 7,329,180.25

**EU contribution**
€ 4,999,441.75

**Coordinated by**
FEV EUROPE GMBH
Germany

Project description

Optimising the infrastructure of fuel cell solutions for city transport

Despite the fact that fuel cell (FC) technology has, so far, been successfully designed and implemented for European city bus fleets, little has been done towards the development of coaches. The EU-funded CoacHyfied project will introduce two coach solutions to solve the challenges of longer driving distances of regional and long-distance coaches, more stringent packaging constraints, less favourable driving
patterns and higher auxiliary powers. CoacHyfied aspires to contribute to the innovative improvement of FC city bus systems and to fortify the European vehicle manufacturing base and supply chain of hydrogen components.

**Objective**

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. 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.

**Fields of science**

- engineering and technology > materials engineering > composites
- engineering and technology > environmental engineering > energy and fuels > fuel cells

**Programme(s)**
H2020-EU.3.4. - SOCIETAL CHALLENGES - Smart, Green And Integrated Transport

H2020-EU.3.4.6. - FCH2 (transport objectives)

**Topic(s)**

FCH-01-5-2020 - Demonstration of FC Coaches for regional passenger transport

**Call for proposal**

H2020-JTI-FCH-2020-1

See other projects for this call

**Funding Scheme**

FCH2-IA - Innovation action

**Coordinator**

FEV EUROPE GMBH

Net EU contribution

€ 570 521,00

Address

Neuenhofstrasse 181
52078 Aachen

Germany

Region

Nordrhein-Westfalen > Köln > Städteregion Aachen

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation  
Website  
Participation in EU R&I programmes  
HORIZON collaboration network

Other funding

€ 284 166,50
THIRD-PARTY

FEV TR OTOMOTIV VE ENERJI ARASTIRMAYA MUHENDISLIK LIMITED SIRKETI

Türkiye

Net EU contribution
€ 54 197,00

Address
Itu Ayazaga Kampusu Ari Teknokent Ari-1 Binasi 4 Maslak
34469 Istanbul

Region
İstanbul > İstanbul > İstanbul

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 27 303,00

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BALLARD POWER SYSTEMS EUROPE AS

Denmark

Net EU contribution
€ 489 487,00

Address
Majsmarken 1
9500 Hobro

Region
Danmark > Nordjylland > Nordjylland

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network
COVENTRY UNIVERSITY

United Kingdom

Net EU contribution

€ 133 038,75

Address

Priory Street
CV1 5FB Coventry

Region

West Midlands (England) > West Midlands > Coventry

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

Other funding

€ 0,00

PLASTIC OMNIUM NEW ENERGIES WELS GMBH

Austria

Net EU contribution

€ 377 937,00

Address

Maria Theresia Strasse 46 2
4600 Wels

Region

Westösterreich > Oberösterreich > Linz-Wels

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation  Participation in EU R&I programmes
I SEE MOBILITY GMBH
Germany
Net EU contribution
€ 803 780,00
Address
Reichswaldstr 52
90571 Schwaig Bei Nurnberg
SME
Yes
Region
Bayern > Mittelfranken > Nürnberger Land
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network
Other funding
€ 400 745,00

FORD OTOMOTIV SANAYI ANONIM SIRKETI
Türkiye
Net EU contribution
€ 181 272,00
Address
Akpınar Mah Hasan Basri Cad No 2 Sancaktepe
34885 Istanbul
Region
İstanbul > İstanbul > İstanbul
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 90 378,00

OTOKAR OTOMOTIV VE SAVUNMA SANAYI AS
Türkiye
Net EU contribution
€ 599 878,00

Address
Aydinevler Mah Saygi Cad No 58
Maltepe

Region
İstanbul > İstanbul > İstanbul

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 299 084,50

RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN
Germany
Net EU contribution
€ 128 230,00

Address
Templergraben 55
52062 Aachen

Region
Nordrhein-Westfalen > Köln > Städteregion Aachen
Higher or Secondary Education Establishments

Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

Other funding
€ 0,00

**ENGIE ENERGIE SERVICES**

France

Net EU contribution
€ 111 377,00

Address
1 Place Samuel De Champlain - Faubourg De L’arche
92930 Paris La Defense Cedex

Region
Ile-de-France  Ile-de-France  Hauts-de-Seine

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Contact the organisation  Participation in EU R&I programmes  HORIZON collaboration network

Other funding
€ 55 529,25

**HYPORT**

France

Net EU contribution
€ 450 428,00

Address
1 Place Samuel De Champlain
92930 Paris

Region
Ile-de-France > Ile-de-France > Hauts-de-Seine

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 224 572,00

KIWA NEDERLAND BV
Netherlands
Net EU contribution
€ 146 461,00

Address
Wilmersdorf 50
7327AC Apeldoorn

Region
Oost-Nederland > Gelderland > Veluwe

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 73 022,75

SIA DOBELES AUTOBUSU PARKS
Latvia
Net EU contribution
€ 419 565,00

Address
Uzvaras 12 A
3701 Dobele
Latvija > Latvia > Zemgale

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 209 185,00

NPROXX BV
Netherlands
Net EU contribution
€ 404 197,20

Address
Vogt 21
6422 RK Heerlen

Region
Limburg (NL) > Zuid-Limburg

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 173 227,80

THIRD-PARTY
NPROXX JULICH GMBH
Germany
Net EU contribution
€ 61 490,80

Address
Stettenericher Staatsforst
52428 Julich
TREZORS
Latvia
Net EU contribution
€ 67 582,00
Address
Austras Iela 7
5070 Lielvarde
Region
Latvija > Latvija > Pieriga
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network
Other funding
€ 33 694,25