

# Fuel Cell Electric Bus Deployment Data in Europe



ZERO EMISSION

## JIVEs / MEHRLIN projects



@fuelcellbus

[www.fuelcellbuses.eu](http://www.fuelcellbuses.eu)



## Context

With the increasing pressure on city authorities to work towards the Paris Agreement goals and tackle air pollution, fuel cell buses (FCBs) are one of the few zero emission transport solutions. Under development for some years and gaining traction ever since, due to the short refuelling times and long range of the vehicles, FCBs are a viable option for decarbonising public transport networks. The Joint Initiative for hydrogen Vehicles across Europe programme, known as the JIVE and JIVE 2 projects, in conjunction with the MEHRLIN project, are funded by the EU and are introducing new fleets of FCBs and associated hydrogen refuelling infrastructure in cities and regions across Europe. UITP is a partner in these projects.

## About JIVE and JIVE 2 Projects<sup>1</sup>

The underlying objective of the JIVE and JIVE 2 projects is to support the transition of FCBs to becoming a more mainstream choice for public transport authorities and operators across Europe. Therefore, the JIVE and JIVE 2 projects focus on preparing the market for wider scale roll-out of FCBs. This will involve addressing several outstanding challenges for the sector, such as reducing vehicle ownership costs, increasing the choice of hydrogen fuel cell bus models and proving the feasibility of operating large fleets of fuel cell buses. As the next phase in the FCB transition, the JIVE and JIVE 2 projects will deploy around 290 new buses which will be operated for extended periods in standard commercial operations at numerous, different sites. The overall vision is to pave the way for full commercialisation of fuel cell buses in Europe in the 2020s by sharing information and stimulating further uptake. In the JIVE and JIVE 2 projects the local fleets range from five to 50 FCBs, typically 10 to 20. Some of the Hydrogen Refuelling Stations (HRSs) are implemented and operated within the MEHRLIN project, which is funded under the Connecting Europe Facility (CEF) for Transport.

<sup>1</sup> For more information about JIVE projects please see projects website: <https://www.fuelcellbuses.eu/>  
For more information about how to set up a FCB project in your city please see [UITP – JIVE Fuel Cell Bus Knowledge Brief](#) summarising best practices and commercialisation approaches obtained in JIVE projects



## About this Brief

In view of the public transport authorities' and operators' bus fleet renewal plans in view of Clean Vehicles Directive<sup>2</sup> in the coming years, UITP has been receiving requests from its membership about the FCB deployment data in Europe. In order to satisfy this demand the current document provides the snapshot projections about the number of FCBs which are in full commercial operation today (as of February 2021) as well as future deployments in the coming 18 months thanks to the bus order announcements by various European cities.

Summary Table<sup>3</sup> of the FCBs in Operation and Contracted for Delivery in the next 18 Months:

City	Buses in Operation as of Feb 2021			Buses Ordered and to be deployed		
	Number	Supplier	Year	Number	Supplier	Year
Austria				40	Solaris	2022
Aalborg, DK	3	Van Hool	2020			
Aberdeen, UK	15	Wrightbus	2014, 21	10	Wrightbus	2022
Artois-Gohelle, FR	6	Safra	2019			
Auxerre, FR				5	Safra	2021
Barcelona, ES				8	Caetano	2021
Birmingham, UK				20	Wrightbus	2021
Bolzano, IT	4	Daimler	2015	12	Solaris	2021
Cologne, DE	35 / 1	VH/Sol.	2019,21	14	Solaris	2021
Dundee, UK				12	Optare	2022
Gelderland, NL				10	Solaris	2021

<sup>2</sup> [https://ec.europa.eu/transport/themes/urban/clean-vehicles-directive\\_en](https://ec.europa.eu/transport/themes/urban/clean-vehicles-directive_en)

<sup>3</sup> Summary Table FCBs Deployment Data obtained by [Element Energy](#), JIVE and JIVE 2 projects coordinator.



Groningen, NL	2	Van Hool	2017	30	Van Hool	2021
London, UK	8	Van Hool	2015	20	Wrightbus	2021
Pau, FR	8	Van Hool	2019			
Riga, LV	10	Solaris	2020			
Rotterdam, NL	4	VDL	2020	20	Solaris	2021
San Remo, IT	3	Van Hool	2018			
Toulouse, FR				5	Safra	2021
Versailles, FR	2 / 5	VH/Safra	2020			
Wiesbaden, DE				10	Caetano	2021
Wuppertal, DE	10 / 1	VH/Sol.	2019,21	9	Solaris	2021

According to above table, there are 110 buses in full commercial operation today. This data takes account of a lot of the older generation of demonstrator vehicles, which came to the end of their lifetime, being taken off the road last year which are coming to the end of their lifetime.

Taking into account the FCBs which are contracted in the past months, there will be another 230 buses to be operational in the next 18 months in European cities.

Most of the buses shown in above table are deployed thanks to the efforts of JIVE and JIVE 2 projects. In case there will be further announcements for FCB contracts, the number of bus projections for the next 18 months will be updated.

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Project coordination:

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Project dissemination:



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