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FLIRT H₂: SBCTA and Stadler strengthen sustainable rail transport in the USA

Stadler and San Bernardino County Transit Authority (SBCTA) are presenting Stadler's first hydrogen FLIRT at InnoTrans. The FLIRT H₂ for SBCTA is Stadler's newest addition to its alternative drive portfolio. It will start operations in California in 2024 as the first hydrogen train in American passenger transport. The multiple unit is equipped with a modular power pack that is capable of powering four-car train. The power pack accommodates the entire hydrogen technology, from the fuel cells and batteries to the hydrogen tanks. This means that hydrogen technology is spatially clearly separated from the passenger compartments of the train.

Rail transport is the most sustainable mobility solution of all. In the fight against climate change, shifting transportation of passengers and goods to the rails therefore plays a key role. However, in many countries the rail networks are only partially electrified or not electrified at all. In the United States for example, less than one percent of rail lines are equipped with an overhead catenary. Infrastructure electrification is time consuming and costly. Therefore, to create a more sustainable railway in countries like the United States, a different approach is needed.

SBCTA recognised this challenge. Since the transit authority in Southern California is already deploying Stadler's FLIRT diesel multiple unit (DMU) on the Redlands passenger rail corridor for its Arrow service and has the need to convert the DMUs to a zero-emissions technology, SBCTA decided to stay with Stadler's bestselling FLIRT for their passenger transportation service: In November 2019, SBCTA partnered with Stadler to design and build the first hydrogen-powered FLIRT.

The contract marks an important milestone for Stadler, as it plays a significant part in the effort to bring zero-emissions technology to passenger rail in the United States. The new FLIRT H₂ is the first ever hydrogen-powered train for passenger service in the US and on the American continent. The FLIRT H₂ is scheduled to start operation in 2024.

More about the train

The first FLIRT H₂ consists of two electrically powered end cars and a power pack in the middle. This power pack contains the fuel cells and hydrogen tanks. The fuel cells convert hydrogen into electricity. This electricity is sent to a traction battery. The battery then supplies the drive of the vehicle with the power required at any given time. This configuration also allows for recuperation of brake energy back to the battery. Therefore, the battery stores both braking power and power from the hydrogen cells. Thanks to Stadler's innovative propulsion solution, the FLIRT H₂ is able to operate all day without re-fueling. The train offers seating for 108 passengers and additional generous standing room. The maximum speed is 130 km/h (79 mph). Furthermore, the train is designed to handle operation in high ambient temperatures of up to 49 degrees Celsius (120 degrees Fahrenheit).

“Stadler is incredibly proud to be able to contribute to the decarbonisation of the world's largest rail network in the USA. With the delivery of the first hydrogen train, we are initiating a turnaround in the American passenger transport system, which is currently almost entirely powered by diesel. The state of California is clearly leading the way in public transport and we congratulate the California Transportation Authority and SBCTA for their visionary and courageous decisions”, says Dr Ansgar Brockmeyer, Executive Vice President Sales & Marketing and Deputy Group CEO of Stadler.

Presentation at InnoTrans

The FLIRT H₂ for SBCTA is one of seven Stadler vehicle highlights on display at InnoTrans and can be viewed in the outdoor area on track T09/40. The official presentation of the FLIRT H₂ vehicle by Stadler and SBCTA will take place at 2 p.m. on 20 September 2022. Pictures of the vehicle presentation can be found from around 3 p.m. under this [link](#). The data sheet for the FLIRT H₂ as well as further media material from Stadler can be found [here](#).

About Stadler

Stadler has been building trains for the last 80 years. The headquarters of the supplier of mobility solutions to the railway vehicle sector are located in the town of Bussnang, in eastern Switzerland. More than 13,000 employees work on the production and engineering sites, as well as over 70 service sites. The company is aware of its social responsibility for sustainable mobility and therefore stands for innovative, sustainable and durable quality products. The product range in the field of mainline railways and urban transport includes highspeed trains, intercity trains, regional and suburban railways, underground railways, light railways and trams. In addition, Stadler produces main-line engines, shunters and passenger carriages. Stadler is the world's leading manufacturer of cog railway vehicles.

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About SBCTA

Serving more than 2.1 million residents of San Bernardino County, the SBCTA is responsible for cooperative regional planning and furthering an efficient multi-modal transportation system countywide. The SBCTA administers Measure I, the half-cent transportation sales tax approved by county voters in 1989, and supports freeway construction projects, regional and local road improvements, train and bus transportation, railroad crossings, call boxes, ridesharing, congestion management efforts, and long-term planning studies.

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