

SITAV | EXPO Ferroviaria Outdoor Area

The FENHYCE (Fuel cell ENergy HYdrogen Converted Engine) project was born with the aim of developing an innovative, low-environmental-impact solution for the rail freight and last-mile rail transport market. The project's development led to the creation of a prototype locomotive powered by hydrogen fuel cells to validate the technological solutions adopted (including an innovative 30-bar low-pressure storage system) and to address the approval phases for future series.

Characteristics of FENHYCE prototype - 4-axle locomotive	
Max continuous power	450 kW
Max Slope	4%
Towable mass	1.700 ton
Maximum slope with a full load	0,5%
Configuration	H2 + batteries



Figura 2 prototype locomotive developed by SITAV

The project's goal is to address two market needs:

- Modernize the vast fleet of existing locomotives;
- New locomotives adapted to the actual type of operation.

Thanks to its vertical expertise in design, structural steelwork, assembly, plant engineering, and maintenance, SITAV can meet this need with various high-tech solutions, such as hydrogen, or more traditional ones, such as HVO. Modularity, the foundation of the project's rationale, allows for solutions with up to 900 kW of continuous power output.

With a view to offering innovative and cutting-edge solutions, SITAV's locomotives are equipped with diagnostics that allow real-time monitoring of the vehicle's condition, thus facilitating the planning of all types of maintenance activities.

Thanks to the strategic collaboration with DAKO-CZ, the locomotive will be on display in Milan equipped with the DAC device, which was designed and built specifically for ExpoFerroviaria.

