



# Mireo. A train that **intelligently combines it all**

Proven commuter and regional train – and the basis for our pioneering battery and hydrogen trains

At once energy-efficient, flexible, highly responsive, and profitable: The Mireo intelligently combines all the requirements of operators, buyers, and passengers. At the same time, it offers a lower weight, greater freedom of movement, shorter construction time, and optimized components. Our innovative platform provides maximum added value for mass-transit and regional service.



## Mireo Plus H – The next generation of hydrogen trains



With Mireo Plus H, Siemens Mobility is continuing the Mireo success story. This hydrogen train is the smart alternative to diesel multiple units and a trailblazer for emission-free operation on long-distance routes without an overhead contact line. At the same time, it features all the qualities of Mireo, including energy efficiency, a flexibly adaptable interior design, and low maintenance and lifecycle costs.

[Mireo Plus H <](#)

## Mireo Plus B – A pioneering step into the future



The Mireo Plus B battery hybrid train features operation that is extremely cost- and energy-efficient as well as locally emission-free. This makes it ideal for modern, European regional transport as a smart alternative to conventional diesel multiple units, especially on non-electrified or only partially electrified lines.

[> Mireo Plus B](#)

## Operate sustainably with hydrogen – thanks to a higher power density

Hydrogen is an excellent energy source with a high power density. In other words, a very large amount of energy per volumetric unit can be stored in hydrogen and recovered in the fuel cell as electricity. This means that within the Siemens Mobility portfolio of hybrid drive systems for commuter and regional trains, Mireo Plus H is the one most suited for long-distance routes.



Hydrogen System



[Mireo Plus H <](#)

## Save significantly on CO<sub>2</sub> by substituting diesel for battery power

A major advantage of the hybrid battery-powered Mireo Plus B compared to diesel multiple units is that there are no local CO<sub>2</sub> emissions in operation. It is also much more energy-efficient because its batteries are recharged via regenerative braking. This makes it extremely cost-effective over its entire service life.

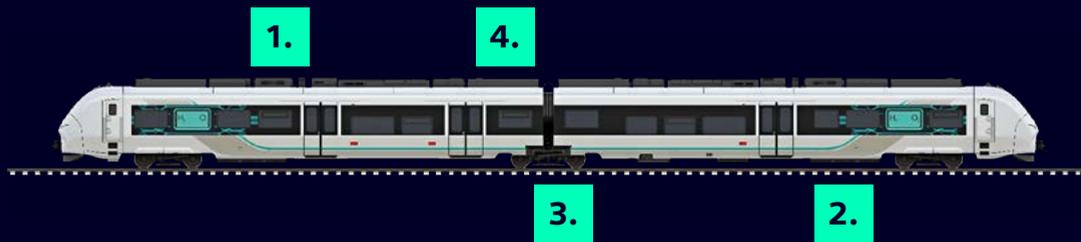


Long-term tests confirm that the battery system is robust, reliable, and long-lasting



[> Mireo Plus B](#)

-  EMU performance
-  High energy efficiency / low power consumption thanks to SiC
-  Vmax 160 km/h
-  Low lifecycle costs



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| <p><b>1.</b><br/>Highly efficient fuel cell – long ranges possible</p> <p><b>3.</b><br/>Intelligent system for rapid refueling</p> | <p><b>2.</b><br/>LTO technology for long battery life</p> <p><b>4.</b><br/>Low power consumption, e.g. through use of waste heat from fuel cell for passenger air-conditioning</p> |
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**Mireo Plus H** <

-  EMU performance
-  High energy efficiency / low power consumption thanks to SiC
-  Charging below overhead catenary and quick charge
-  Low lifecycle costs



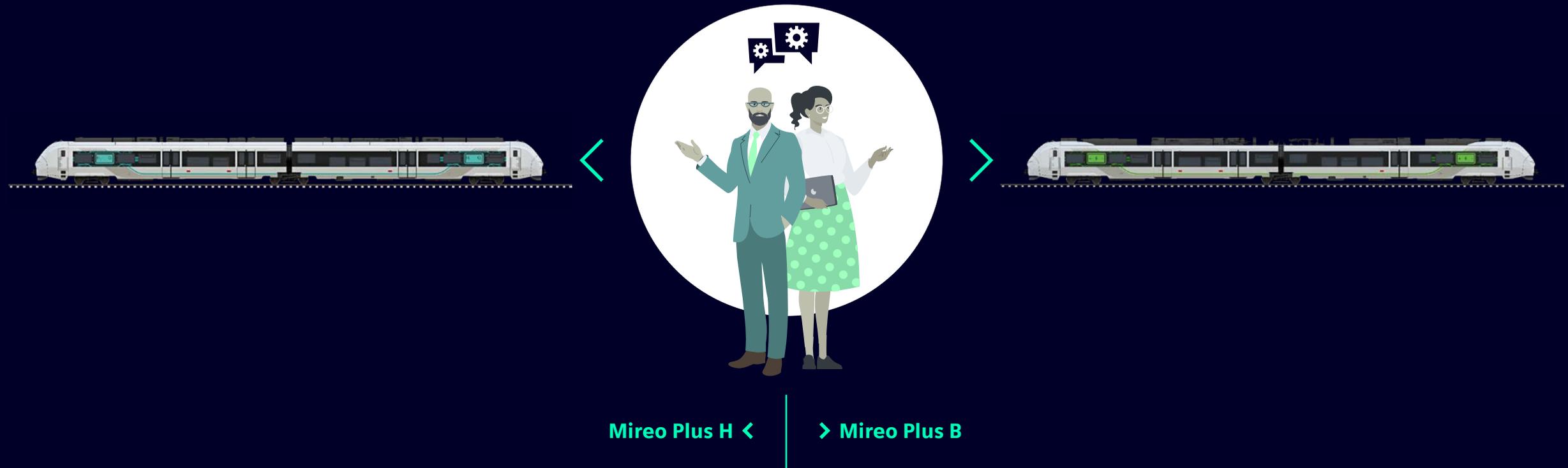
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|---|--|
| <p><b>1.</b><br/>Flexible battery size – long ranges possible</p> <p><b>3.</b><br/>160 km/h in both overhead catenary and battery operation</p> | <p><b>2.</b><br/>LTO technology for long battery life</p> <p><b>4.</b><br/>Overhead catenary operation at 15 kV/16.7 Hz or 25 kV/50 Hz</p> |
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> **Mireo Plus B**

# The choice of technology is a specific decision based on different criteria

Maintenance and Infrastructure      Connecting electrified lines  
Extensive networks      Last mile      Total Cost of Ownership  
Power provision for H<sub>2</sub> and battery      Local funding landscape  
Topographical situation      Operation concept

## Decision dependent on needs



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