SIEMENS

Ingenuity for life

Vectron Dual Mode

Keeps going where the wire ends

Whenever an overhead wire is available, it should be used. Electrical operation is much more cost-effective and environmentally friendly than diesel operation. But because Germany will continue to have many non-electrified sections of track for a long time to come, many diesel locomotives continue to operate under a contact line. This makes very little economic or ecological sense. What if there were a real alternative – a locomotive that excels at both operating modes?

When subsections become a unified whole

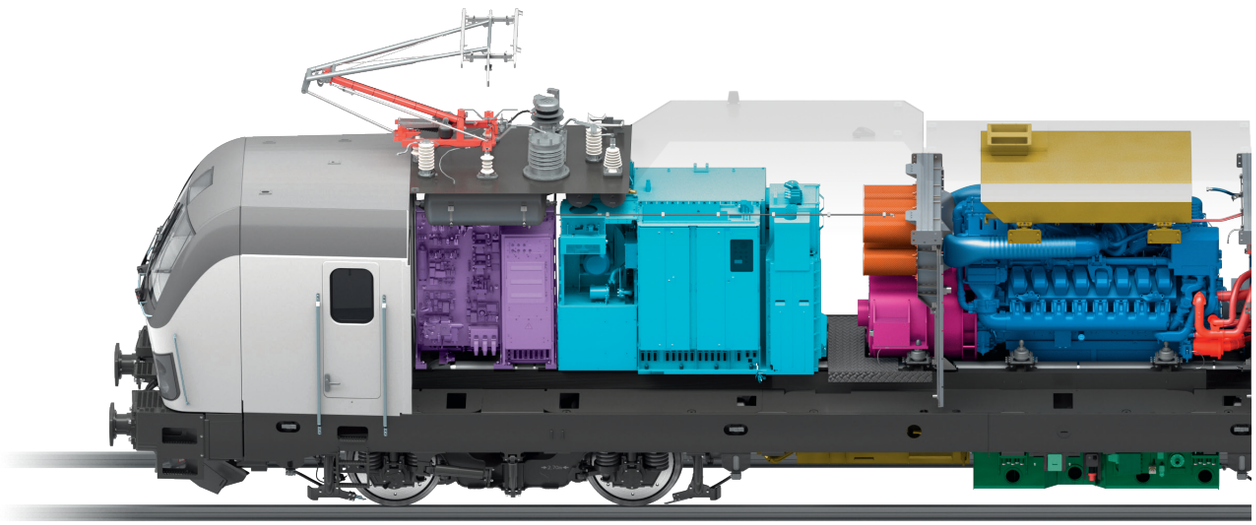
Vectron® Dual Mode adapts itself to the route. With powerful diesel traction as well as equipment for using the overhead wire, you're free to change at any time. You can operate extremely efficiently and economically under catenary for long sections of track. When necessary, just switch over – and keep moving, whatever the conditions.

Longer subsections without an overhead wire, unplanned detours, the reduction of fine particulates in metropolitan areas: There are many reasons to opt for flexible traction. Vectron Dual Mode combines the benefits of a full-featured diesel locomotive with those of an electric locomotive, with verifiably profitable results. So drive ahead!

siemens.com/vectron-dual-mode

When savings open up new paths

By choosing Vectron Dual Mode today, you're opting for proven technology that you can continue to rely on tomorrow and beyond – while also enjoying maximum flexibility, saving money, and protecting the environment. You benefit from extreme availability and planning reliability, even when conditions change.



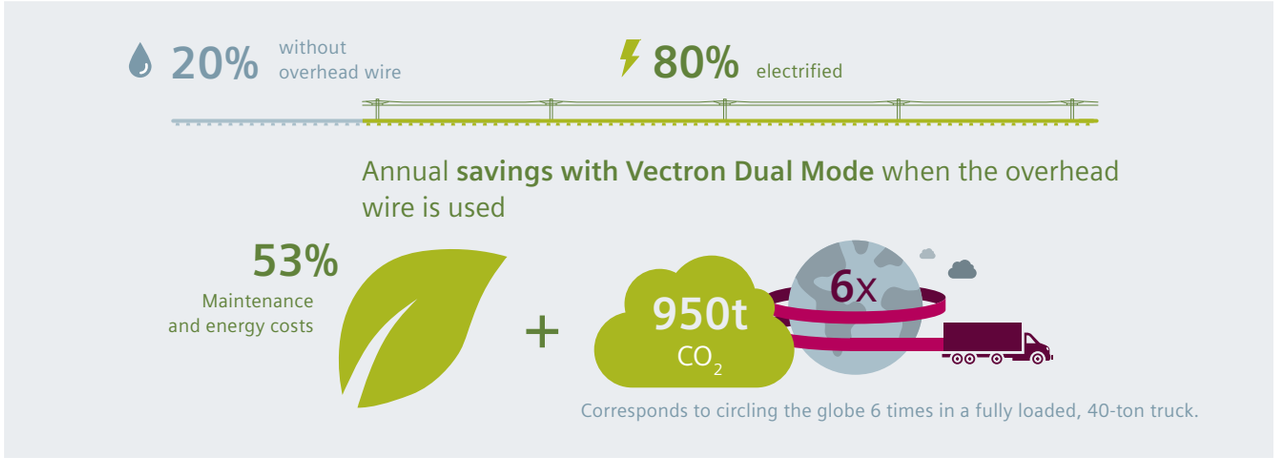
Components

- Dynamic braking resistor
- Train-protection cabinet
- Engine cooling plant
- Diesel engine
- Particle filter
- Engine air intake system
- Alternator
- Electric cabinet with central blower and switching equipment
- Brake rack
- Fuel tank
- Main transformer
- Pantograph

Drastically reduce costs

With Vectron Dual Mode, running on electricity alone when on electrified track sections is a matter of course. Every kilometer saves fuel and thus reduces energy costs. You also reduce the number of hours your diesel generator set is operating, which in turn decreases maintenance outlay. Consequently, Vectron Dual Mode handles a wide range of traction tasks much more economically than a standard diesel locomotive. So why not use electric power when it's available?

Example application: Vectron Dual Mode compared to pure diesel operation*



*with an average annual mileage of 150,000 kilometers and 4,000 operating hours per freight locomotive

Improve environmental performance

Vectron Dual Mode protects the environment. It enables you to make an important contribution and cut down on emissions – factors that are becoming increasingly important in cities and metropolitan areas. By taking advantage of electricity wherever possible, you demonstrably reduce carbon dioxide, nitrogen oxide, and particulate matter emissions, thereby improving your fleet's environmental performance.

Technical data

Diesel engine power (at the crankshaft)	2,400 kW As per UIC 623-2:2010	Vehicle length (length over buffers)	19,975 mm
Voltage system	15 kV / 16.7 Hz	Track gauge	1,435 mm
Starting tractive effort	300 kN	Fuel tank volume (usable)	2,500 l
Traction power at the wheel rim	2,000 kW	Wheel diameter	1,100 mm new / 1,020 mm worn
Electric braking effort	150 kN	Weight (max.)	90 t when fully loaded
Electric braking power at the wheel rim	E-mode: 2,100 kW Diesel mode: 1,700 kW	Double traction	Via WTB ÖBB: with same-type vehicles as well as Vectron E, Vectron DE, and ER20
Max. speed	160 km/h	Train protection	PZB, ready for ETCS
Wheelset arrangement	Bo'Bo'	Axle load	22.5 t
Area of application	Freight transport		

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