



Case Study: Power to the Line

One of the challenges of our modern society is the need to power our infrastructure quickly, at all times and in all places. Newave supports rail companies across the world with the guaranteed power supply of all elements relating to the smooth functioning of rail traffic. The application of cutting-edge technology and years of experience in rail technology allow Newave to develop individual system solutions for railways, based on technical and commercial synergies.

Client:

- European Railway Company

Industry:

- Transportation

Scope:

- Combining two energy sources
- Guaranteed power supply for control centres and signalling equipment

The following example of a European rail company shows how the backup power supply is guaranteed in rail technology and how traffic management systems and signal technology are backed up during power cuts and voltage fluctuations.

Today, automated rail traffic is primarily monitored via control centres. Signal boxes ensure that the points are set correctly for the train's journey and that the signals are green for the appropriate stretch of track. A guaranteed power supply is therefore absolutely essential for the control centres and the individual train station locations with signal boxes and signalling equipment.

Many European rail systems have a power supply with a frequency of 16.7 Hz instead of the usual 50 Hz. For this reason, the additional power drawn from the rail network must be transformed from 16.7 to 50 Hz. Newave Energy was tasked with working out an individual solution for combining the two different power frequencies and guaranteeing the stability of the power supply at over 200 locations.

Prerequisites were the use of standard solutions for a cost-effective project proposal as well as low operating and maintenance costs. Simple operation by railway personnel, modular equipment, a low spare parts inventory through the use of standard solutions, and reduced investment costs compared to traditional models were central issues in the implementation of the project.



Newave Energy used a modular standard product equipped with two module slots. Slot 1 is set permanently to the 16.7 Hz infeed and Slot 2 is set to the 50 Hz infeed. The batteries, able to operate autonomously for more than 30 minutes, and the isolating transformer are integrated in the UPS cabinets. During normal operation, 50% of the load is taken from the railway network and 50% from the local power supply network. Should the power supply of one of the modules now exceed the tolerance, the battery will switch on for the appropriate module. If one module is defective, the other module will take on 100% of the load. The battery can be configured together or separately for each module. This means complete autonomy is always available for the load. If the power supply of both infeeds should fail, the modules switch to battery operation.

By combining two energy sources and having the additional option of battery operation, a stable power supply is ensured locally at the signal boxes.

Newave put together an integrated total solution for the project. The project solution included all aspects of consulting and planning, construction and comprehensive testing of prototypes, as well as logistics service and installation at over 200 locations, and overseeing commissioning.

About Newave

Newave Energy is a leading manufacturer of uninterruptible power supply solutions that enable customers to protect their critical applications from operational losses and ensure business continuity. Innovation, quality, serviceability and environmental friendliness are key characteristics of our power protection solutions. Newave Energy has introduced modularity and transformer-less UPS-technology several years ago and these are the most important architectural trends in the UPS market today. Our mission is to help our customers from various industries to protect their critical applications efficiently and to lower environmental impact in a sustainable way. The company operates its own sales and service offices in eight countries and a worldwide network of business partners. Newave Energy continues its focus on development and manufacturing of leading power protection technology while worldwide we provide comprehensive services such as technical consultancy, maintenance and service packages. The company was established in 1993 and is headquartered in Quartino (Switzerland).

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