The Durchmesserlinie is a major rail project that significantly increased the transport capacity of Zurich main station. Alongside additional tracks, Switzerland's largest train station was also expanded to include 45 shops and restaurants. ABB ensures that the appropriate amount of power is available in the right voltages and frequencies for traveling from point A to point B or enjoying a day of shopping.

Located within the main station, the new underground transit station Löwenstrasse is the heart of the Durchmesserlinie and offers passengers access to faster and more direct train connections. The transit station has reduced traffic volume from the main station, and offers expanded shopping in the new area.

ABB powers the central train station
In addition to detailed planning by SBB, the Swiss Federal Rail company, as well as both the city and canton of Zurich, this ambitious project also required enough energy to power the construction phase and beyond. For example, the aging transformer station, which supplied power to the majority of the shops, restaurants and other areas, had to be renewed and expanded simultaneously.

ABB delivered the entire electrical power supply system, both for the 16.7 Hertz traction current on the new tracks and for the 50 Hertz train station infrastructure.

With close to 2,900 trains per day, Zurich main station is one of the most trafficked train stations in the world. Every day, crowds of commuters and travelers pass through Zurich main station while exiting and boarding countless suburban, regional and long-distance trains. There are close to half a million visitors to the station on workdays. At the end of 2015 the Altstetten-Zürich-Oerlikon cross-city line, known as the Durchmesserlinie, was completed as a project to relieve part of the traffic burden on the city’s main station.
Four transformer stations feed into the central train station to power the infrastructure in the Löwenstrasse transit station. The modular, air-insulated switchgear and the hermetically sealed oil transformers from ABB now provide the 50 Hertz power for the smoke exhaust system, the boarding lighting system, escalators and shops.

**Impressive low-voltage system**
A total of three low-voltage distributors from ABB handle the main and fine power distribution. These ensure that power reaches every shop, lift and ticket counter. Tracks 7 and 8 at the train station Oerlikon in the city were expanded as part of the Durchmesserlinie project, and are also equipped with ABB medium- and low-voltage systems. The logistics for these orders were particularly challenging, because each required installation without any interruptions in power.

![Image of Löwenstrasse Station © SBB](image)

**New developments for railway electrification**
The 16.7 Hertz railway electrification system also had to meet demanding requirements. ABB delivered the metal-clad, air-insulated single-phase medium-voltage switchgear for the four tracks that lead from the Löwenstrasse transit station to Oerlikon. A total of 33 switchboards are installed in two switch posts in the Löwenstrasse station and the Weinberg tunnel, which forms part of the Durchmesserlinie. The system was specifically developed for indoor railway use, with 15 kilovolts of voltage and a frequency of 16.7 Hertz. The systems are robust, require very little maintenance and can be integrated into existing installations with ease.

**ABB gets rail traffic moving**
Supplying power to railway infrastructures and trains is a key business segment for ABB. ABB ensures that railway traffic is always supplied with sufficient power in the right voltages and frequencies. Most tracks and railways in Europe and many railway infrastructure projects and trains worldwide are equipped with essential power supply elements manufactured by ABB.

This makes SBB one of ABB’s most important customers. In 2014, SBB awarded ABB with a close to 70 million Swiss franc order to deliver the latest generation of drives. The type RE 460 locomotive – colloquially known as the “Lok 2000” – is a prime example of energy efficient rail transport. This locomotive type has been in use at SBB for close to 20 years and travels a good 300,000 kilometers annually. Retrofits provided by ABB, like those used in SBB’s current locomotive fleet, will help improve energy efficiency and locomotive reliability while lengthening service life by up to 20 years. Thanks to new traction converters and modernization efforts, the fleet is saving around 27 gigawatt hours of energy each year – this roughly corresponds to the average power consumption of a small Swiss town.

In the ABB Group, ABB Switzerland plays a leading role for rail industry components and is a world market leader in transformers, medium-voltage switchgear and frequency converters.

**About the Durchmesserlinie**
After years of construction and costs of over two billion Swiss francs, the Durchmesserlinie was completely inaugurated at the end of 2015. The 9.6 kilometer route is an integral part of the west-east axis of Swiss rail traffic. The Durchmesserlinie traverses the city of Zurich across two new bridges and the new Weinberg Tunnel. The new Löwenstrasse transit station is the heart of the Durchmesserlinie. It is located underground, under tracks 4 through 9 of the Zurich main station. The Löwenstrasse transit station relieves part of the burden on the main station and offers passengers faster travel times and more direct train connections.