

# ABB and railways



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## Dear Reader,

Mobility is a central aspect of our lives and activities. Whether we are commuting to work, travelling for business or taking a vacation, we depend on a reliable and affordable means of locomotion. Furthermore, transportation does not just affect us as individuals: The mechanized movement of goods has permitted the concentration of industry and hence modern manufacturing methods. Similarly, the existence of large cities depends on the ability to reliably and continuously supply them with food and other necessities.

Just as transportation helped create and develop many aspects of modern society, insufficient transportation can be detrimental to it. If goods cannot be delivered or people cannot reach their destination in a reasonable and predictable time, economic and other repercussions can be heart felt. This challenge is accentuated by ongoing developments: Growing urbanization is increasing strain on infrastructure and adding to congestion. At the same time, concerns over air quality, CO<sub>2</sub>, limited reserves of fossil fuels and also the spatial footprint of transportation are calling for cleaner and more efficient solutions.

Railways are well positioned to meet these requirements. Within city areas, suburban railways and metros make an important contribution to relieving road congestion while offering a low carbon footprint, and if electrified, zero emissions at point of delivery. Whereas cities such as London or Paris are expanding existing systems, many booming metropolises in developing countries are facing the challenge and opportunity of creating new systems from scratch.

High-speed trains can provide an attractive alternative to both driving and short-haul flights. They are relatively weather-independent and offer passengers a comfortable environment in which to relax or work. Whereas the first generation of high-speed trains ran in Japan and Europe, they have considerably broadened their appeal. Soon high-speed trains will be running on five continents.

The freight sector is also experiencing exciting developments. In Europe especially, more and more countries are opening their rail freight markets to competition, leading to high levels of traffic growth.

While not a train manufacturer as such, through its expertise in the power and automation sectors, ABB can offer many products and technologies to the railway industry. Electric railways are major consumers of electricity, and this consumption can fluctuate strongly and in short time periods. ABB's grid management technologies ensure power is delivered reliably while maintaining the stability of the supplying grids. To transfer power from grids to railways and to support the operation of both, ABB provides substations and components (including transformers, frequency converters, switchgear and FACTS devices). For the trains themselves, ABB's offering includes traction transformers, switchgear, motors, converters and turbochargers. This issue of *ABB Review* looks at these product types.

ABB has grown its rail activities considerably in recent years, growing from the position of an outsider to a major supplier for several of the leading train manufacturers. To present a broader industry perspective, *ABB Review* interviewed Michael Clausecker, Director General of UNIFE (Union of European Rail Industries).

Besides supplying the rail sector, ABB plays a part in the broader spectrum of sustainable transportation and electrical mobility. Activities presented in this edition of *ABB Review* include charging technology for electric cars and a power supply to reduce the operating hours of ship engines while in port.

Enjoy your reading

A handwritten signature in blue ink that reads "Peter Terwiesch". The signature is fluid and cursive, with a long horizontal stroke at the end.

Peter Terwiesch  
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ABB Ltd.