



## Sustainable energy saving

Energy costs make up the bulk of life-cycle costs for railway operation. With its expertise in rail systems, DB Systemtechnik offers a broad range of services to reduce energy consumption. Furthermore, broad segments of the population welcome and support measures aimed at reducing energy consumption. The increasing importance of the carbon footprint will demand a reduction in transport emissions. Lower energy consumption helps cut costs, and reduce pollutant and CO<sub>2</sub> emissions.

### Our services:

- Individual system analysis
- Development of energy savings potential
- Implementation of solutions
- Simulation of energy consumption
- Measurement of energy consumption

Examples of our services for the main consumers: traction, electricity supply system and air conditioning system

### Drive technology / electricity supply system

- Definition of consumption cycle and measurement of energy
- Optimisation of energy management for the system, comfort functions and auxiliary systems
- Optimisation of energy consumption during stabling
- Retrofitting Driver Advisory System
- Advice on energy-saving running profile supported by simulation
- Substitution of old technology with modern, energy-efficient technology
- Simulation of the drive train and its energy consumption

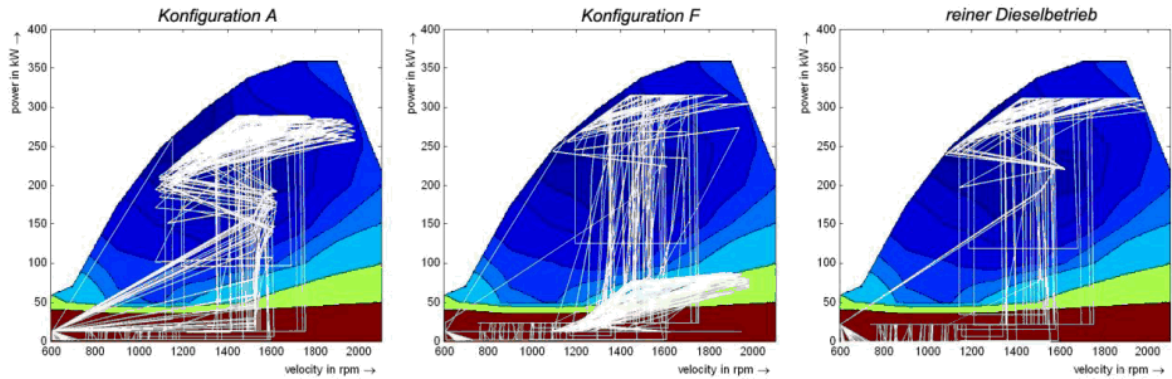


Photo: DB Systemtechnik GmbH

## HVAC

- After traction, the air conditioning system is the largest energy consumer (accounts for up to 25%)
- Optimisation of HVAC: operation in the partial load range, for instance
- Provisioning of a consumption cycle for HVAC:
  - Suitable for demonstrating implemented measures and as proof of contractual guarantee with new acquisitions
- Simulation of energy consumption of HVAC
- Energy measurement of air conditioning system consumption in the MEikE climatic chamber
  - Measurements for deriving optimisation measures
  - Proof of optimisation measures

In addition to the main consumers, we will also look at all other issues for you, such as aerodynamics (i.e. optimisation of ventilation grille positioning, underfloor and roof design, interconnecting gangways...) and the rail system as a whole.

### Your benefits:

- Leveraging new energy-saving potential
- Reduced emissions
- Implementation of energy-saving concepts
- View of the entire system and not just a single part
- Long-term cost saving both for new and old vehicles
- Risk minimisation thanks to experience in large projects (e.g. ICE 4)
- Image improvement

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