

COP21 – The View of the Suppliers

Interview Dr. Jochen Eickholt, CEO of Mobility Division, Siemens AG

1. As a railway supplier, what impact does COP21 have on your strategy?

It's important that the G7 has agreed on global decarbonisation and that this consensus will be emphasised by a global agreement in Paris. To help decarbonise the world economy, Siemens Mobility will contribute with electrification, modal shifts and energy efficiency.

In order to reach decarbonisation goals, more and more rail traffic will have to be electrified – and the power will have to come from renewable sources. There will have to be an increase in modal shifts from road to rail, both for passenger and freight – and around the globe. These two factors present new markets and business opportunities for us. Of course, this also means having more variants to address the regionally differing markets. Energy cost is already a key buying factor for our customers today. So our intensified R&D efforts for increasing energy efficiency will undoubtedly pay off.

Energy efficiency has long been a central topic for us, and our Mobility location in Krefeld, Germany, offers a good example of what can be achieved. We have invested around four million euros there in things like a combined heat and power plant, and building automation and energy management systems. These measures have paid for themselves after just four years.

<http://www.siemens.com/press/pool/de/feature/2015/corporate/2015-09-co2-neutral/infographic-four-steps-e.jpg>

To illustrate the importance of climate protection for Siemens, we are proud of having achieved the highest possible score in the Carbon Disclosure Project (CDP) for the transparency of the Siemens' reporting on the opportunities and risks associated with climate change. By 2030, Siemens intends to become the world's first major industrial concern to attain a neutral CO2 balance.

2. In your research and development strategy, what actions are specifically influenced by the objectives of sustainable development and climate change?

We have identified two major trends that drive the mobility business: urbanisation and demographic change. Both would lead to a major increase in energy consumption – unless we do something about it. Our efforts have begun with our rolling stock. We are steadily reducing the weight of car bodies and bogies, which makes them more energy-efficient and at the same time increases their payload. One good example here is our Desiro City train for the Thameslink line in Greater London. Through lightweight construction and intelligent systems, we were able to reduce the train's weight by 25 percent – which makes it more energy-efficient. In fact, the trains use up to 50% less energy than comparable existing platforms.

http://www.siemens.com/press/pool/de/pressebilder/2014/infrastructure-cities/rail-systems/300dpi/soicr1201416-02_300dpi.jpg

<http://www.siemens.com/press/en/feature/2015/mobility/2015-09-icx.php>

Similarly, in our new ICx train, sophisticated innovations such as the combined use of lightweight trailer bogies with inside bearings and weight-optimised power bogies help reduce weight and energy consumption. The ICx uses up to 30% less energy per passenger than the ICE 1 and has a superior weight-to-seat ratio.

3. What cooperation do you expect from rail operators in this context to ensure the success of trains in the future?

It has always been our goal to comply with our customers' wishes and to deliver the products they want. In our experience, railway operators care deeply about the future success of trains, and they know best what's needed to ensure that success. So we listen to them, and when it comes to the sustainable operation of trains, they tell us that two things are key: increased throughput and increased capacity.

Our goal, then, is to innovate according to our customers' wishes. One key factor in increasing a system's capacity and throughput is digitalisation. Modern, fully automated CBTC-based train control systems, increase throughput and transport capacity for existing as well as new metro lines. And on mainline train operation, the Driver Advisory System (DAS) helps drivers by continually providing them with recommendations for improving their train's operation. In the end, this improves the energy efficiency. In our Thameslink trains, for instance, which for the first time use a train control system combining ETCS level 2 and ATO, the DAS can combine wayside data such as permitted maximum speed, stations, and timetable data; and on the basis of this data, it calculates the optimal speed of a train and accordingly advises the driver visually and in real-time. The objective is to have each train driven on each route at an optimal speed in order to reduce energy consumption and wear on the trains. DAS achieves energy savings of around 15 percent.

We are convinced we have come nowhere near exhausting the potential of digitalisation in our business. Digitalisation offers unprecedented opportunities to make rail even more competitive and ecofriendly.