

## **Incentive to increase energy efficiency using the route price model Audit at the Federal Office of Transport, SBB AG and BLS AG**

### **Key facts**

---

The railways are among the biggest power consumers in Switzerland. The annual traction current consumption of the SBB network is around 2,400 GWh, which is similar to the power consumption of around 630,000 households. The Confederation sees a need for action in the rail transport energy efficiency improvements in the planned 2050 energy strategy. Direct financial incentives for efficiency gains should be created by including effective energy costs in the route price system, among other things. With the route price, the infrastructure costs, including traction current costs, are charged to the railway undertakings (RUs), thereby compensating the infrastructure operators. SBB Infrastructure charges the RUs in its network traction current costs averaging around CHF 220 million each year. This is approximately 20% of the route price proceeds of CHF 1.1 billion.

The Swiss Federal Audit Office (SFAO) checked whether or not incentives to increase energy efficiency are created for RUs by the route price system. The audit was carried out at the Federal Office of Transport (FOT), at SBB Infrastructure and at four RUs (SBB Passenger Traffic Division, SBB Cargo, BLS Passenger Traffic Division and BLS Cargo). The results relate to the 2016 route price system.

### **Incentive via traction current billing**

The prerequisites for a minimum degree of transparency concerning the measured energy consumption figures and energy costs and for implementing the "user pays" principle are met. A financial incentive can generally be created for RUs with a "user pays" billing practice.

The current traction current billing practice is only partially based on the "user pays" principle. Billing is via two types of services in the route price: basic and additional services. The implementation of billing based on the "user pays" principle is at different stages of advancement.

Regarding basic services, each year around CHF 215 million are billed for traction current obtained from the contact wire (traction and power supply to the train during the journey). At the system level, SBB Infrastructure has carried out the necessary adjustments in the route price settlement processes for traction current billing according to actual measured values. The new settlement process still has shortcomings, which results in an unsatisfactory billing rate. The SBB had already identified these deficiencies before the SFAO audit and had taken measures to eliminate them.

Via additional services, around CHF 17 million are billed annually for supplying power to parked vehicles and traction current supply for shunting services. Here, the SBB is conducting initial clarifications regarding the possible implementation of actual accounting.

Of the RUs, only BLS Cargo has created the prerequisites for billing based on the "user pays" principle. It has already equipped its vehicles with energy measurement appliances and is registered for basic service actual billing. The other RUs are planning comprehensive adoption by the end of 2018 at the latest. The BLS Passenger Traffic Division also sees considerable savings potential in additional services and is expecting to have billing based on the "user pays" principle also for these services soon.



### **Significant framework conditions**

As RUs, the SBB and BLS have identified big potential for increasing energy efficiency in traction current and are working actively on the development and implementation of economically feasible measures. Up to now, primarily image and sustainability goals of the companies have been the key driver for implementing efficiency measures, and not the route price system.

The incentive for imminent actual billing is different for the RUs given their framework conditions. In regional traffic, the incentive is muted due to the fact that uncovered costs of lines are covered by the customer. Cost reductions do not lead primarily to an improvement in results, but to lower compensation. In the case of goods transport, the incentive is big because the traction current proportion of the route costs is high at 20-30%. The proportion in passenger transport is about 15-20%.

The impact of the widespread introduction of actual billing on the traction current costs of the individual forms of transport (goods, long-distance and regional transport) cannot be quantified at present due to insufficient measurement values according to SBB. Overall, cost shifts of a currently unknown magnitude between train types and lines and additional services are to be expected.

### **The need for action in determining the price of traction current for deliveries to SBB Infrastructure**

The price of SBB Energy flows directly into the calculation of services in the route price with traction current. The FOT must in particular clearly regulate "traction current" system leadership with the SBB. SBB Energy is in a monopoly situation as the only traction current supplier in Switzerland. The framework conditions for operating the network and setting the price of traction current from SBB Energy must therefore be clearly identified and commissioned.

Furthermore, the FOT's requirements of SBB Infrastructure regarding traction current billing is sometimes unclear in the route price. It has to be ensured that the basis for determining and setting flat rate approaches is regularly examined and updated.

### **Original text in German**