



**SBB CFF FFS**

# Energy efficiency @ SBB.

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# Content.

1. SBB: Backbone of sustainable mobility in Switzerland.
2. Energy strategy of SBB.
3. Energy saving at SBB.
4. Innovative examples incl. adaptive control (ADL).
5. Outlook: Automatic train operation.





# We move Switzerland – every day.

**Passenger Division**  
1 210 000 passengers  
per day

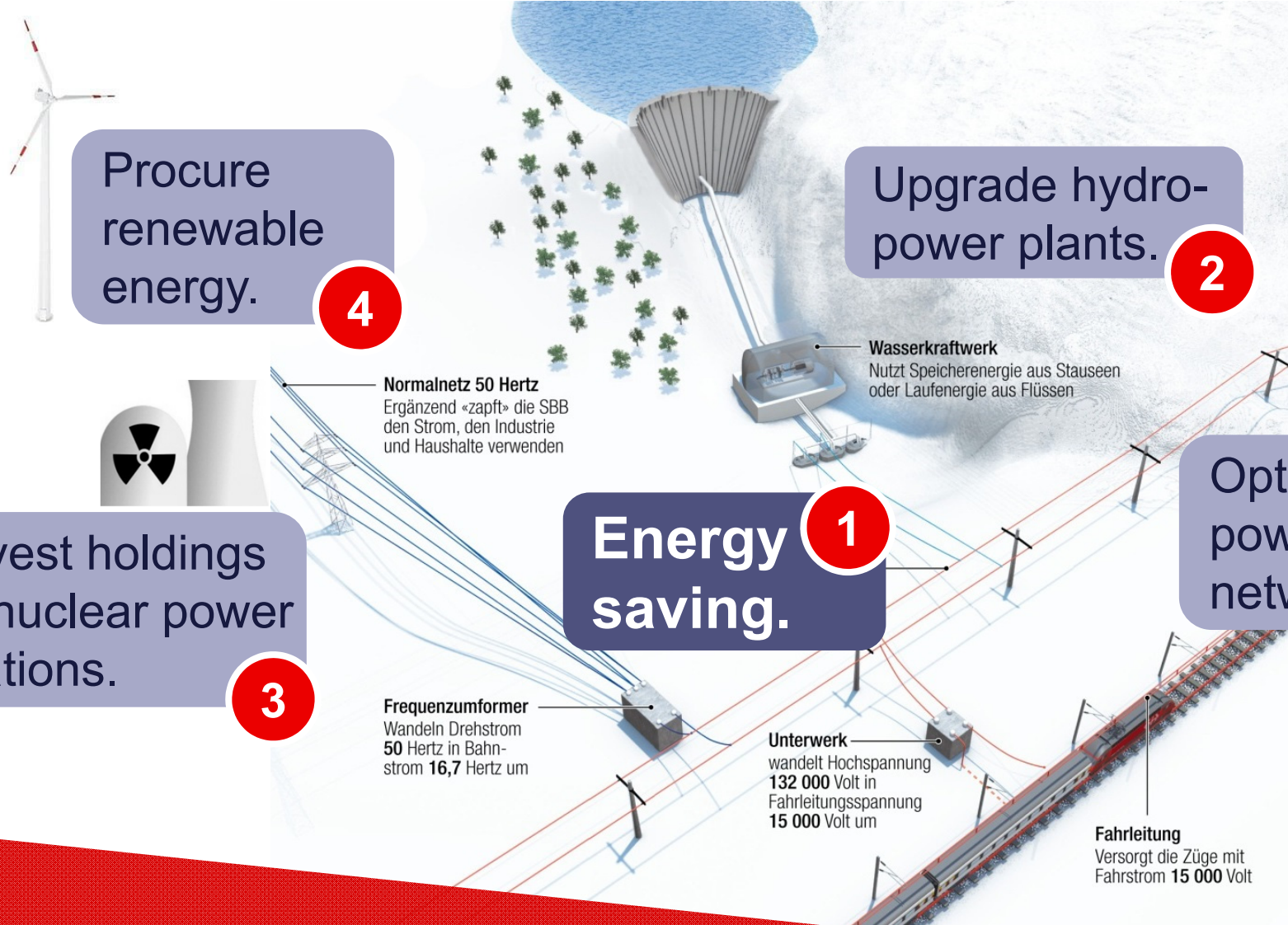
**Real estate**  
3 500 buildings

**SBB Cargo**  
210 000 t of freight  
per day

**Information  
technology**

**Infrastructure**  
3 173 km of network





## Energy strategy of SBB.





**Efficiency on the move:  
Target of 600 GWh/year from 2025.**

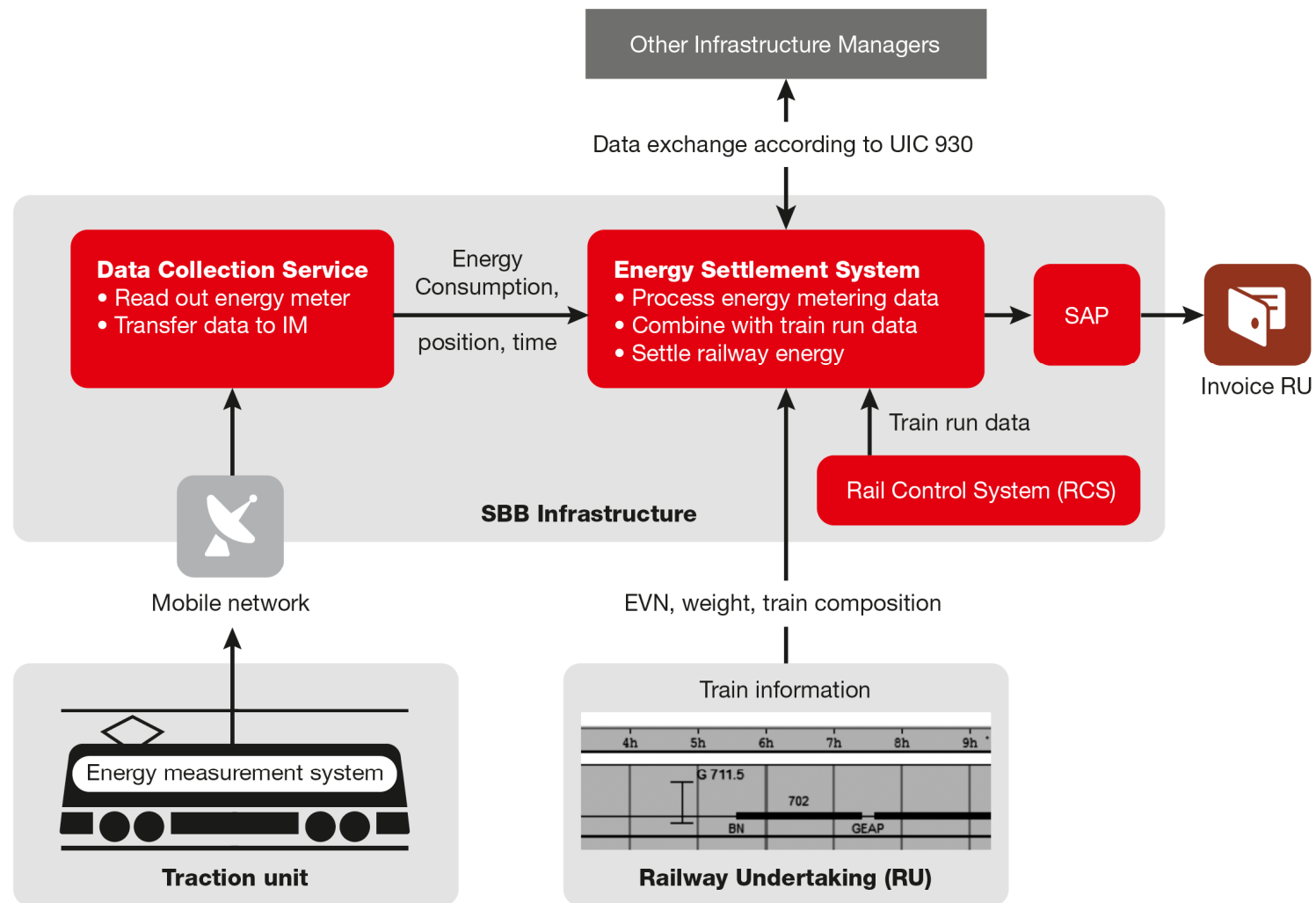


Anchor energy efficiency in the company.

Create transparency and manage energy consumption.

**Energy saving at SBB:  
20% savings by 2025.**





**Energy settlement and billing @SBB:  
Transparent energy consumption**





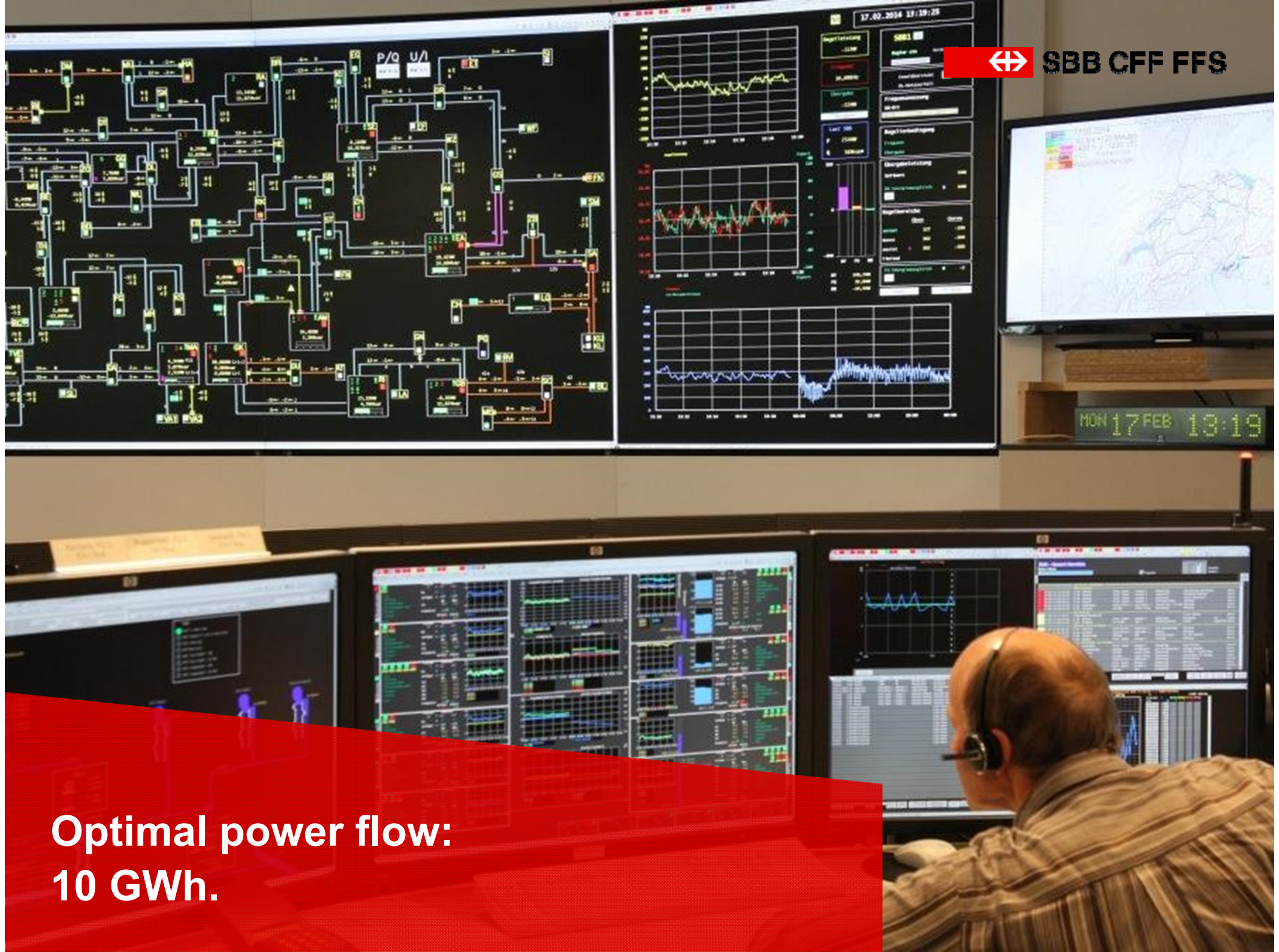
**Technical optimization of Re 460:  
29 GWh.**



A photograph of a railway worker in a snowy environment. The worker is wearing a bright orange high-visibility suit with reflective stripes, an orange hard hat, and work gloves. He is using a long-handled tool to clear snow from the tracks. In the background, there are railway tracks, overhead power lines, and a signal post with the number "659".

**Optimization of railway switches:  
13 GWh.**





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Optimal power flow:  
10 GWh.



A photograph of a railway track leading into two tunnels. The tracks are flanked by gravel and have overhead power lines. In the background, there are steep, rocky mountains and a small town. A red banner is at the bottom.

**Speed reduction for freight trains in new  
Gotthard Base Tunnel at night: 4 GWh.**



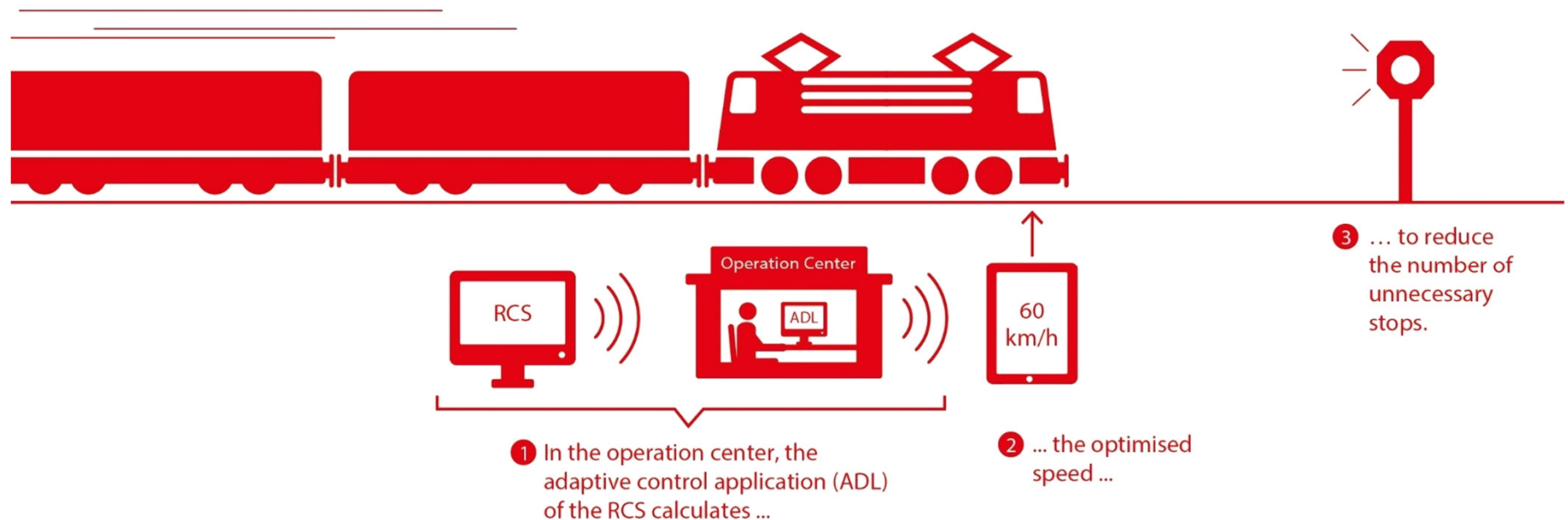
**Adaptive control (ADL):  
72 GWh.**



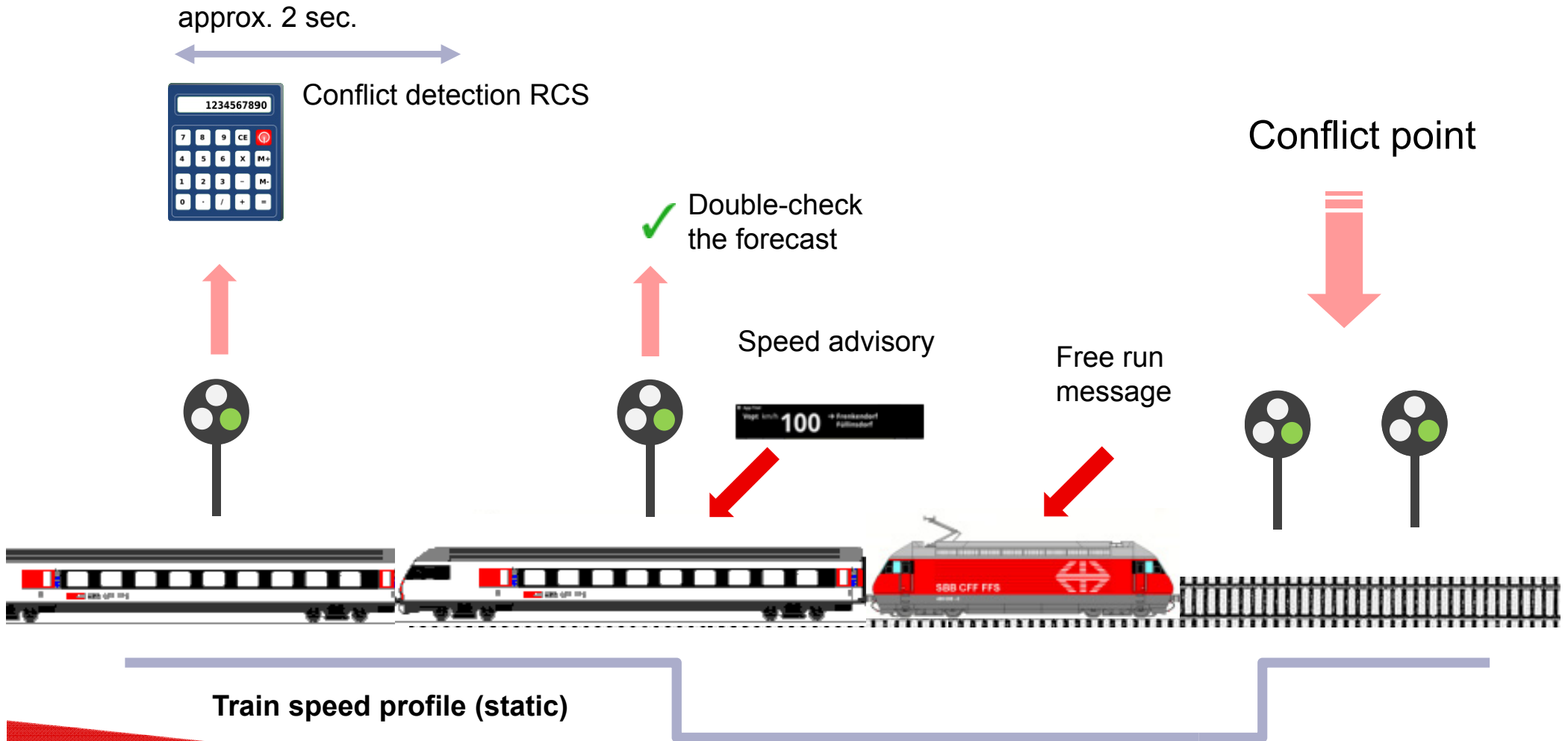
# Rail Control System (RCS) with ADL: the “green wave”.

“Adaptive Control” (ADL) saves energy and improves punctuality.

- The objective of the ADL module is to reduce energy consumption by preventing trains from making unplanned stops.
- ADL calculates the optimum speed and sends this to a tablet used by the engine driver. ADL greatly reduces unplanned stops at signals, saving energy and enhancing passenger comfort.







**Adaptive control (ADL):  
Avoiding conflicts.**



*"The Watt d'Or 2016 in the category 'energy-efficient mobility' goes to SBB for the innovative ADL system – a system like no other in the world."*



GEWINNER DES

**watt  
d'or  
2016**

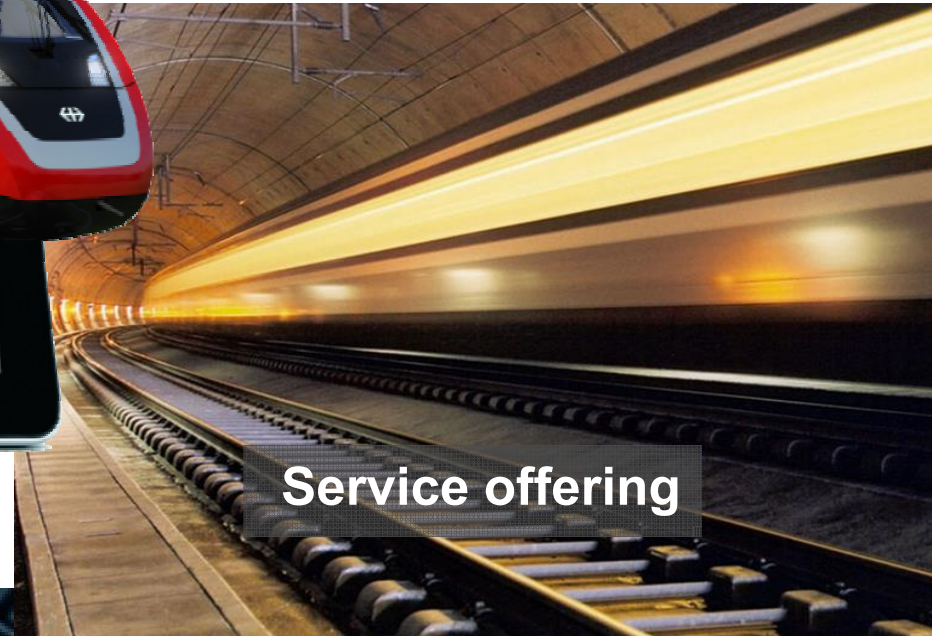


**Watt d'Or 2016:  
Energy-efficient mobility.**





**Technology of  
rolling stock**



**Service offering**



**Production**



**Digitisation**

**Outlook:  
Automation and technology.**



# Thank you!

For questions or comments  
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