



2017 Environmental Report Deutsche Bahn **"For a greener future"**

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Source: Deutsche Bahn AG, Max Lautenschläger



Foreword

Dear Reader,

We are living at a time when climate change is affecting a growing number of people and making a noticeable impact on the environment. And I don't only mean storms like Friederike and Xavier, which we experienced in the past year.

As Germany's largest mobility and logistics company, we have been greatly affected by climate change, and by extension, so have many thousands of passengers. At the same time, DB has a special responsibility to protect the climate and our environment. We embrace this responsibility, which means taking action.

Our first electric train, powered by electricity from a hydroelectric power plant, went into operation back in 1905. Today some 140 million passengers travel on our long-distance trains using 100% renewable power. In other words, taking the train protects the environment.

All DB travel will be completely CO₂-free by 2050.

The next important step is to cut CO₂ emissions in half by 2030.

But actively protecting the environment goes even further. We believe it is a task that needs to look at every angle. That's why we're equipping all of our freight trains with "whisper brakes" by 2020 to reduce noise. That's why we've already launched over 18,000 individual nature and wildlife conservation measures. And that's why we've already achieved a recycling rate of over 95%.

In other words, environmental protection is in our DNA.

This is green.

Andreas Gehlhaar



2017 highlights

Our new DB Climate Target 2030

As of 2018, some 140 million passengers travel on our long-distance trains using 100% renewable power. This is just a beginning. Our new DB Climate Target 2030 aims to cut specific CO₂ emissions by more than half by 2030. To achieve this target, we will increase the share of renewable energy sources to 70% by 2030. We want to be entirely CO₂-free by 2050.

Our biggest nature conservation project: VDE8

As of the timetable change in late 2017, our ICE trains travel between Berlin and Munich in under four hours, which benefits up to 3.6 million passengers a year. The new Germany Unity Transport Project 8 (VDE8) line is also our biggest environmental protection and nature conservation project to date. We restored landscapes, planted 600,000 trees, and created hundreds of nesting boxes, dens and reserves for birds, bats and lizards over an area some 5,500 soccer fields long – for a total of some EUR 200 million.

CO₂-free to the 23rd United Nations Climate Change Conference

On November 4, 2017, the German government's delegation, headed by then-environment minister Dr. Barbara Hendricks, as well as DB CEO Dr. Richard Lutz and other guests traveled CO₂-free to the UN Climate Change Conference. This was the third time that DB took a special climate train to the conference with the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety.






This is green.

DB's commitment to protecting the environment has been an integral part of the company's identity for over 100 years. We launched an initiative with the slogan "This is green." In Autumn 2017, we launched to showcase the achievements of our green projects. With initiatives as diverse as using green energy in our trains, building climate-neutral train stations, building noise barriers, installing beehives in DB's green spaces and recycling ballast and concrete ties, Deutsche Bahn works to protect the environment from every angle. Our green projects are showcased at [deutschebahn.com/green](https://www.deutschebahn.com/green).

Our achievements in 2017 at a glance

	Targets reached	in 2016	in 2017	
CLIMATE PROTECTION	Reduction of specific greenhouse gases	-27.5%	-29.6%	↗ 2.1%
	Percentage of renewable energy in DB's traction current mix	42%	44%	↗ 2%
NOISE CONTROL	Lower-noise freight cars	32,396	39,604	↗ 7,208
	Lines with noise mitigation	1,600 km	1,700 km	↗ 100 km
RESOURCE EFFICIENCY	Recycling levels	97.3%	98%	↗ 0.7%
AIR QUALITY CONTROL	Reduction of absolute particulate emissions from diesel vehicles	-42.2%	-44.5%	↗ 2.3%
NATURE CONSERVATION	Nature conservation-minded construction at and on our rail installations	2,000 projects with 8,600 individual measures	3,094 projects with 18,476 individual measures	↗ +1,094 projects and +9,876 individual measures

Our targets

	Targets	Current, 2017	By 2020	By 2030	By 2050
 Climate protection	Specific greenhouse gases compared with 2006	- 29.6%		- 50%	CO ₂ -free
	Percentage of renewable energy in the DB traction current mix	44%		70%	
	CO ₂ reduction by shifting traffic to rail	9 million metric tons			
	CO ₂ -neutral growth at DB Schenker		2020 to 2030		
 Noise control	Reduction of train noise		- 10 dB(A)		
	Lower-noise freight cars in the DB Cargo fleet	39,604	64,000		
	Lines with noise mitigation	1,700 km	2,000 km		
 Resource efficiency	Global recycling rate	98%	95%		
 Air quality control	Absolute particulate emissions from diesel vehicles compared with 2010	- 44.5%	- 55%		
 Nature conservation	Nature conservation-minded construction at and on our railroad installations	3,094 projects with 18,475 measures			

Over 300 DB employees working to protect the environment

Numerous employees from our different organizations dedicate themselves day in and day out to helping to increase environmentally friendly traffic and transport. Over 300 of these employees are responsible for organizing environmental protection work at DB. They develop our environmental targets and offer environmental services. The Group Committee on the environment pools DB's green activities. Environmental units and on-site environmental coordinators are responsible for environmentally friendly implementation of measures at the business units, sites and maintenance depots.

Climate protection

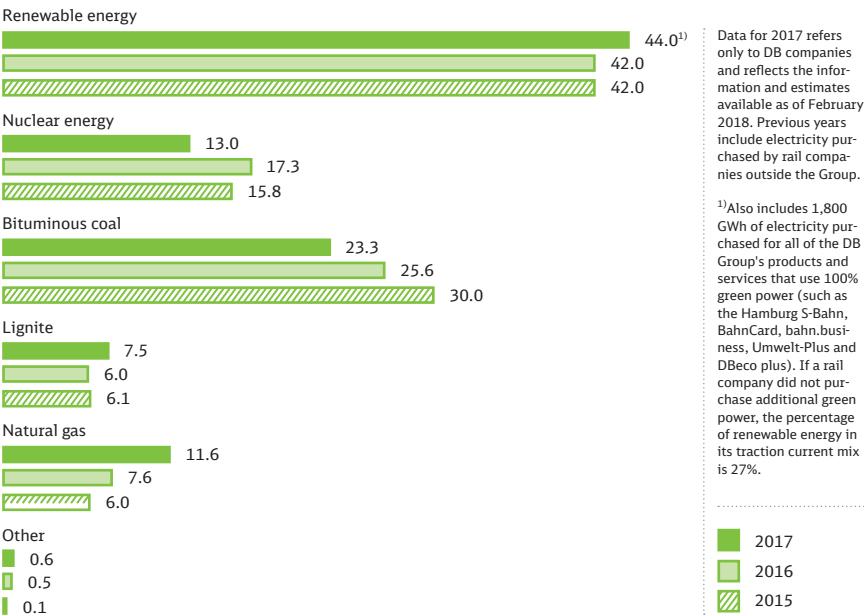
Active climate protection means shifting more traffic to green rail. We use energy efficiently and consume as little as possible to keep our greenhouse gas emissions as low as we can. We're also increasing the percentage of renewable energy. We aim to cut the total volume of our greenhouse gas emissions by more than 50% by 2030.

- As of January 1, 2018, some 140 million passengers travel on our long-distance trains using 100% renewable power.
- We further reduced specific green-

house gas emissions in 2017 by 29.6% compared with 2006 levels.

- Renewable energy sources accounted for 44% of DB's traction current in 2017.
- By recovering braking energy from our electric trains, which convert braking energy into electricity and supply it to the overhead line, we were able to save 1,245 gigawatt hours of electricity in 2017.
- DB Energie, DB Regio, DB Fernverkehr, DB Station & Service, the Berlin S-Bahn and the Hamburg S-Bahn introduced an energy management system in 2016.

DB traction current mix in percent

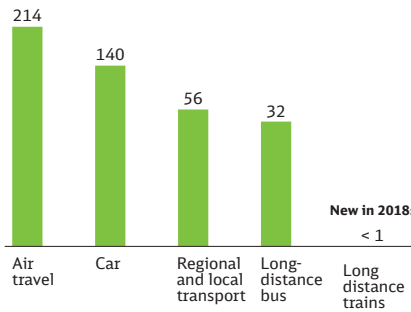


We already reduced stationary consumption by 7% in 2017.

- The first CO₂-free ICE maintenance depot opened in Cologne-Nippes in early 2018. It operates without the use of any fossil fuels at all, and instead relies on solutions such as geothermal power and highly efficient air-conditioning systems.
- DB Schenker began testing the first electric light commercial vehicles in intracity transport in 2018. The first was delivered in December 2017. Depending on the model, the eCanter can carry up to 4.5 metric tons. The Fuso eCanter electric truck generates 16 metric tons less CO₂ emissions over its service life than a combustion engine.

Greenhouse gas emissions from passenger transport

Grams per person and km (Pkm)



Sources: Air travel, car, long-distance bus: Federal Environment Agency 2018 (TREMOS 5.72, 2016 data); rail: DB AG (regional and local transport: 2017 data, long-distance: 2018 data); air travel: including all effects of air transport on the climate (emission weighting factor = 2)
*Excluding non-electrified journeys (< 2%)



This is green.



Source: Deutsche Bahn AG, Faruk Hosseini

Noise control

Noise has become a burden for many people. That's why we have set out to reduce train noise in half by the end of 2020. Together with the German Federal Government, we have already invested more than a billion euros in noise control measures.

- We implemented noise mitigation measures, such as installing noise barriers and soundproofing windows in homes, along some 1,700 kilometers of track by 2017. We will have mitigated noise on some 2,000 line kilometers by 2020.
- DB Cargo is equipping its entire freight wagon fleet with noise-reducing brake blocks, or "whisper brakes," by 2020 to reduce noise from freight trains.

Some 40,000 DB Cargo wagons, or two-thirds of the entire fleet in Germany, were already making less noise by the end of 2017.

- DB is collaborating with the Federal Ministry of Transport and Digital Infrastructure on the new and application-oriented noise control trials initiative (I-LENA), which tests innovative products to reduce noise and will run until 2020. The first projects will be implemented this year.

Additional details can be found in the report from the Head of Noise Management:

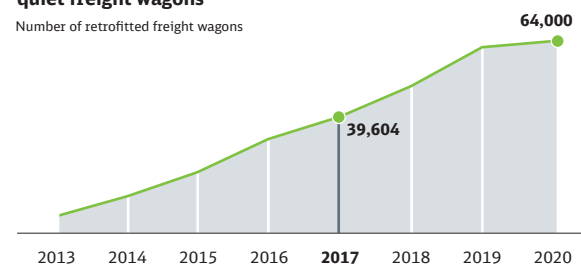
www.deutschebahn.com/laermbericht

Noise mitigation and noise pollution prevention in Germany as of Dec. 31

	2017	2016	2015
NOISE MITIGATION (EXISTING NETWORK)			
Noise barriers built, in km ¹⁾	50	38	52
Homes with passive measures	1,634	1,495	1,853
Total lines with noise mitigation measures ²⁾ (rounded), in km	1,700	1,600	1,500
NOISE POLLUTION PREVENTION (NEW AND UPGRADED LINES)			
Noise barriers built, in km	23	44	17
Homes with passive measures ³⁾ (rounded)	1,400	—	—

Path to achieving the noise reduction targets – quiet freight wagons

Number of retrofitted freight wagons



¹⁾ Calculated based on funds spent.

²⁾ Cumulative route length of areas with noise mitigation measures carried out (as per Appendix 1 of the noise mitigation program) from noise mitigation projects with active noise control measures (noise barriers) and initiated passive noise control measures (noise control in homes), including route sections where noise mitigation measures will be carried out as part of new and upgrade measures.

³⁾ Previous year's figures are under review.



Source: Deutsche Bahn AG, Faruk Hosseini

This is green.

Turning old sleepers.
Into new ones.
Recycling at DB.

no. 73

Source: Deutsche Bahn AG, Faruk Hosseini

Resource efficiency

Our goal is to achieve a recycling rate of 95% by 2020 to protect natural resources. We had already exceeded our target by 2017, when we achieved a recycling rate of 98%. We're also making greater use of recycled materials and are optimizing the service life of our products. Thanks to all of these efforts, we're playing a major role in protecting natural resources.

- In 2017, we reused 207,000 recycled concrete ties. By reconditioning the ties, DB saved around 10,000 metric tons of CO₂.
- In addition, we recycled some 885,000 metric tons of ballast in 2017.
- 14.7 million smartphone tickets were booked using DB Navigator in 2017, which is equivalent to an average of roughly 40.000 bookings a day, for an increase of around 47% over the previous year. Since smartphone tickets do not need to be printed out, our customers saved nearly 72 metric tons of paper.
- Every hour, some 320,000 disposable cups are used and thrown away in Germany. We introduced our DB reusable cup at our Bahnshop in Summer 2017 to help put a stop to this. The green alternative saves timber, energy and water and reduces waste compared with disposable cups.

What's more, our reusable cup is 100% recyclable.

- We've introduced new corporate clothing, which uses much less water in its production than cotton clothing. The short-sleeved shirts are made from a

wood-fiber textile and an improved high-tech polyester. They are 100% biodegradable and are Cradle-to-Cradle certified.

Volume of waste by type in 2017

in thousand metric tons



Total volume of waste: 12.642 million metric tons

Air quality control

Clean air is one of our main concerns. That's why we are continuously reducing harmful emissions. Our goal is to reduce emissions of particulate matter by DB's rolling stock in Germany by 55% by 2020, as compared with 2010 levels. We are achieving this primarily by modernizing our rail and road vehicle fleets.

■ We already reduced particulate emissions by 44.5% by 2017.

■ DB Netze Energie had opened 18 AdBlue gas stations by the end of 2017. AdBlue fuel reduces nitrogen oxide emissions by up to 90%.

■ The number of emission-free buses at DB Arriva is growing. 411 buses powered by biogas, 610 hybrid buses and 71 electric buses are on the roads in the UK, Czech Republic and Netherlands.





This is green.

Grasing goats.
For habitat protection.
Nature conservation.

no. 70

Source: Deutsche Bahn AG, Faruk Hosseini

Nature conservation

When building or operating railway installations, we make sure to treat nature with the utmost possible care, even in the planning phase. If this is not possible, we take action specifically to preserve the habitats of rare plant and animal species or to create new ones. DB is committed to providing permanent protections for the habitats

of animals and plants living near railway installations.

- By the end of 2017, we had implemented 3,094 nature and wildlife conservation projects with 18,475 measures in Germany. 4,649 of these measures are dedicated solely to wildlife conservation.

- At a cost of over EUR 200 million, the new Berlin-Munich line is the largest nature conservation project in Deutsche Bahn's history.
- To help protect honeybees, DB gives private beekeepers free use of its land. 1,100 private beekeepers have requested land so far. Nearly 700 spaces have already been made available for bee hives.

- DB promotes sustainable tourism with "Fahrtziel Natur" (Destination Nature) in collaboration with three major environmental associations – BUND, NABU, and VCD. They campaign for environmentally friendly mobility to 23 natural sites in Germany, Switzerland and Austria. As of early 2018, customers can now also travel to Kellerwald-Edersee National Park.



This is green.

More bees.
More flowers.
Nature conservation.

no. 10

Source: Deutsche Bahn AG, Faruk Hosseini

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