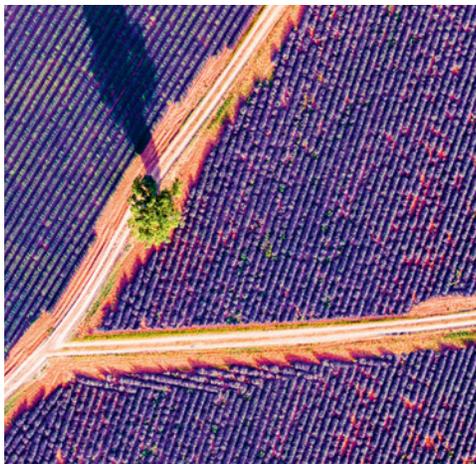
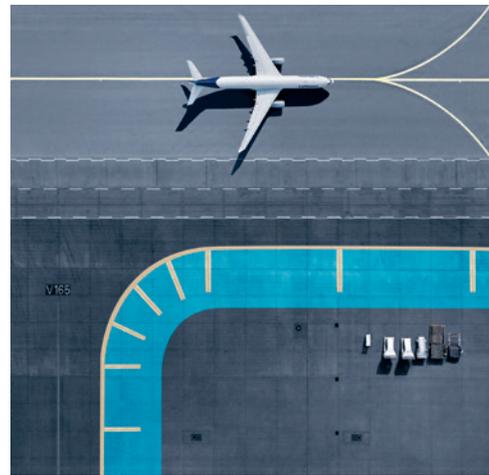




LUFTHANSA GROUP

# BALANCE

Sustainability report 2019



25th issue

**Maintaining balance.  
Out of responsibility.**

# CONTENT

- 1\_ About this report
- 2\_ At a glance
- 3\_ Editorial
- 4\_ The Lufthansa Group

## COVER STORY: MAINTAINING BALANCE. OUT OF RESPONSIBILITY.

- 8\_ Focus on climate and the environment from early on
- 10\_ 20 years of active noise abatement
- 11\_ 25 years of climate research on scheduled flights
- 12\_ Pioneer for environmentally friendly aircraft
- 13\_ Flying responsibly
- 14\_ Growing responsibly
- 15\_ Diversity as a basic principle
- 16\_ 20 years of help alliance
- 17\_ Balance over time
- 18\_ Responsibility is our leitmotif
- 20\_ Future-oriented solutions



### COMPANY & RESPONSIBILITY

- 26\_ Strategy and management
- 35\_ Compliance and human rights
- 41\_ Sustainability along the supply chain
- 42\_ Fleet management
- 46\_ Sustainable innovation, research and development



### CLIMATE & ENVIRONMENT

- 50\_ Environmental management
- 54\_ Fuel consumption and emissions
- 65\_ Energy and resource management
- 69\_ Active noise abatement



### EMPLOYEES & SOCIETY

- 74\_ The ability to transform
- 76\_ Diversity and equal opportunities
- 82\_ Employment policy based on partnership
- 85\_ Talent management
- 88\_ Occupational safety and health management
- 90\_ Corporate citizenship



### PRODUCT & CUSTOMER

- 98\_ Product and services
- 103\_ Operational stability
- 105\_ Flight safety and health protection
- 108\_ Data protection and data security



### SERVICE & INFORMATION

- 111\_ Scope of consolidation
- 112\_ Environmental/Personnel data
- 118\_ Glossary
- 122\_ GRI Content Index
- 128\_ Editorial information
- 129\_ Overview: Noise standards
- 130\_ The operating fleet
- 132\_ Prizes and awards
- 134\_ Contact

# ABOUT THIS REPORT

Balance, the Lufthansa Group's Sustainability Report, informs stakeholders and the interested public about the Group's goals, activities and advances in the areas of business, social responsibility, environment, product and corporate citizenship. It thus complements and expands the information in the Annual Report.

Across the Lufthansa Group, Corporate Responsibility is understood to comprise the following dimensions:

- Economic sustainability
- Corporate governance and compliance
- Climate and environmental responsibility
- Social responsibility
- Product responsibility
- Corporate citizenship

This report has been prepared in accordance with the GRI Standards: Core option. This publication also serves as a progress report concerning the implementation of the ten principles of the UN Global Compact, which the Lufthansa Group joined in 2002 and to which it has been committed as "Participant" since 2018. The Group determined the most significant topics related to sustainability in 2018 in the context of an aggregated materiality analysis, which is based on the results of a stakeholder survey (see page 29).

## Scope of consolidation and comparability

Unless noted otherwise, the data in this report refers to the financial year 2018. You will find explanations concerning the scope of consolidation and calculation methods used to determine the absolute and specific resource consumption at the Lufthansa Group on page 111. This report covers the activities of the Lufthansa Group. Under the aspect of materiality, reporting focuses on the product of "flying" without upstream and downstream processes. Reporting restricted to individual Group companies is indicated in the text. Due to changes in the portfolio over recent years, the figures for personnel and environmental performance cited in this report are only to a limited extent comparable with those reported for previous years. For example, Brussels Airlines, which is part of the Lufthansa Group, was first included in this report's coverage during the reporting year 2017. In the reporting year 2018, Luftverkehrsgesellschaft Walter was included in the coverage. There are also certain differences in approach compared to the Annual Report when calculating passenger numbers and their derivative performance indicators (see explanations relating to the overview on page 2, At a glance).

## Publication dates of this report

Balance, the Lufthansa Group's Sustainability Report, is published once a year in German and in English. The preceding edition was published on June 6, 2018. The Group has regularly reported about its environmental performance since 1994 and has continuously expanded its reporting to the other dimensions of entrepreneurial responsibility.

## Additional information on the Internet

In addition to this report, the Lufthansa Group informs readers via the Internet about its activities in the area of sustainability:

➔ [www.lufthansagroup.com/responsibility](http://www.lufthansagroup.com/responsibility)

## Disclaimer in respect of forward-looking statements

The data included in this report has been collected and processed with the utmost care. Nevertheless, errors in transmission cannot be ruled out entirely. Information published in this report with regard to the future development of the Lufthansa Group and its subsidiaries consists purely of forecasts and assessments and not of definitive historical facts. Its purpose is exclusively informational, identified by the use of such forward-looking terms as believe, expect, forecast, intend, project, plan, estimate, count on, can, could, should or endeavor. These forward-looking statements are based on all the discernible information, facts and expectations currently available.

Numerous factors affect the facts and forecasts published in this report, which are in large part outside the Lufthansa Group's sphere of influence. This includes, among others, changes in national and international laws and regulations or fundamental changes in the economic or political environment.

It is possible that the Group's actual results and development may differ materially from the forward-looking statements implied by the forecasts. The Lufthansa Group assumes no obligation for and does not intend to adapt forward-looking statements to accommodate events or developments that may occur at some later date. Accordingly, it neither expressly nor conclusively accepts liability, nor does it give any guarantee for the actuality, accuracy and completeness of this data and information.

<sup>1</sup> Taken from the Annual Report 2018 of the Lufthansa Group. The figures for 2017 and 2018 shown here include effects from the first-time application of new accounting standards and other accounting changes.

<sup>2</sup> Previous year's figures have been adjusted. <sup>3</sup> For the reporting year 2018, the following companies have been included in Balance: Lufthansa (including Lufthansa CityLine and Air Dolomiti), Lufthansa Cargo, SWISS (including Edelweiss Air), Austrian Airlines, Eurowings (including Germanwings and Luftfahrtgesellschaft Walter) and Brussels Airlines. Excluding the services of third parties, i.e. airlines outside the scope of consolidation of Balance, but that take over services from Lufthansa, for example in the event of capacity bottlenecks (see page 112, table "Share of third parties") <sup>4</sup> Types of flights taken into account: all scheduled and charter flights. <sup>5</sup> See page 112, table "Fuel consumption". <sup>6</sup> Balance: segments (operational perspective); Annual Report: distance (customer perspective). One distance can include several segments, e.g. in the event of stops en route. <sup>7</sup> Balance: on the basis of all passengers aboard; Annual Report: on the basis of all revenue passengers. <sup>8</sup> Companies referred to as in 3, but including the services of third parties, as these contribute to the Group's results. Types of flights as in 4, but including ferry flights, as these represent costs.

# AT A GLANCE

<b>BUSINESS PERFORMANCE DATA <sup>1</sup></b>		<b>2018</b>	<b>2017</b>	<b>Change</b>
Revenue	million €	35,844	35,579	+ 0.7%
of which traffic revenue	million €	28,103	28,399	- 1.0%
EBIT	million €	2,974	3,297	- 9.8%
Adjusted EBIT	million €	2,836	2,969	- 4.5%
Adjusted EBITDA	million €	5,016	5,009	+ 0.1%
Net profit/loss for the period	million €	2,163	2,340	- 7.6%
Total assets	million €	38,213	35,778	+ 6.8%
Cash flow from operating activities	million €	4,109	5,368	- 23.5%
Capital expenditure (gross)	million €	3,757	3,474	+ 8.1%
Equity ratio	percent	25.1	25.5	- 0.4 PP

<b>PERSONNEL DATA</b>		<b>2018</b>	<b>2017</b>	<b>Change</b>
Number of employees (on December 31, respectively)		135,534	129,424	+ 4.7%
of these, in Germany		72,716	69,142	+ 5.2%
of these, outside Germany		62,818	60,282	+ 4.2%
Staff costs	million €	8,811	8,172	+ 7.8%
Revenue/employee	€	266,835	276,114 <sup>2</sup>	- 3.4%
Staff costs/revenue	percent	24.6	23.0	+ 1.6 PP
Average age	years	41.5	42.2	- 0.7 years
Part-time ratio, absolute	percent	28.8	28.6	+ 0.2 PP
Part-time ratio, men	percent	14.9	14.4	+ 0.5 PP
Part-time ratio, women	percent	45.3	45.3	± 0.0 PP
Share of women in management (worldwide)	percent	15.9	15.1	+ 0.8 PP
Share of women in management (Germany)	percent	17.7	16.5	+ 1.2 PP

<b>ENVIRONMENTAL DATA <sup>3,4</sup></b>		<b>2018</b>	<b>2017</b>	<b>Change</b>
<b>Resource consumption</b>				
Fuel consumption <sup>5</sup>	tonnes	10,254,365	9,618,095	+ 6.6%
Fuel consumption, specific, passenger transportation	l/100 pkm	3.65	3.68	- 0.8%
Fuel consumption, specific, freight transport	g/tkm	213	215	- 0.7%
<b>Emissions</b>				
Carbon dioxide emissions	tonnes	32,301,249	30,296,998	+ 6.6%
Carbon dioxide emissions, specific, passenger transportation	kg/100 pkm	9.19	9.27	- 0.8%
Nitrogen oxide emissions	tonnes	161,427	151,402	+ 6.6%
Nitrogen oxide emissions, specific, passenger transportation	g/100 pkm	45.8	46.1	- 0.7%
Carbon monoxide emissions	tonnes	23,197	21,922	+ 5.8%
Carbon monoxide emissions, specific, passenger transportation	g/100 pkm	7.1	7.2	- 2.1%
Unburned hydrocarbons	tonnes	2,310.9	2,226.1	+ 3.8%
Unburned hydrocarbons, specific, passenger transportation	g/100 pkm	0.7	0.7	- 4.3%

<b>TRANSPORT PERFORMANCE DATA</b>		<b>Balance <sup>3,4</sup></b>	<b>± 2017</b>	<b>Annual report<sup>8</sup></b>	<b>± 2017</b>
Flights <sup>6</sup>		1,115,714	+ 12.6%	1,228,920	+ 8.9%
Passengers carried <sup>7</sup>	thousand	134,743	+ 13.3%	142,335	+ 10.0%
Seat kilometers offered, SKO	million pkm	334,231	+ 9.6%	349,489	+ 8.2%
Freight tonne kilometers offered, FTKO	million tkm	16,883	+ 10.0%	16,431	+ 4.3%
Passenger kilometers transported, PKT <sup>7</sup>	million pkm	277,462	+ 9.8%	284,561 <sup>2</sup>	+ 9.0%
Freight tonne kilometers transported (including third-party performance), FTKT	million tkm	10,118	- 0.5%	10,907	+ 0.8%



## Dear Readers,

It is with great pleasure that I introduce the 25th issue of our sustainability report Balance to you. There is also a little bit of pride in doing so because we were among the first in our industry when we started reporting about this topic in 1994. The environmental report of yesteryear has evolved into a comprehensive sustainability report covering all dimensions of corporate responsibility.

Being an aviation group, we are aware of the fact that the past years' growth in passenger numbers also implies growing responsibility for us to ensure that future mobility will be shaped in environmentally compatible ways. It is no coincidence that the title of this report is "Maintaining balance. Out of responsibility." To reach this goal, we continuously invest in new and especially efficient aircraft – we took delivery of 46 aircraft during the past year; in 2019 we will receive more than 30.

During the past year, our aircraft needed a mere 3.65 liters of kerosene on average to fly one passenger over a distance of 100 kilometers. This is a new record! While enormous changes have been realized in this area over the past 25 years, we will not rest on our laurels. We intend to take a leadership role within the aviation industry on the topic of responsibility.

Our report is also intended as a comprehensive basis for dialogue with our interest groups. For this reason, we talk openly not only about success stories, but also about challenges: despite the financial success we achieved in 2018, it was not an optimal year for our customers. The disproportionate growth in air transport revealed the infrastructure bottlenecks affecting the entire industry, especially during the summer months of 2018 – both on the ground and in the air.

We have taken action immediately and are maintaining close dialogue with our system partners, industry representatives and politicians because this is a challenge we can only surmount together.

All our activities are guided by the ten principles of the UN Global Compact, which have helped us since 2002 in positioning our actions; the same is true of the Sustainable Development Goals.

I would like to recommend our cover story particularly warmly to you. It illustrates by means of examples what we have been able to achieve over the last quarter of a century with regard to sustainability. Our path will not come to an end for a long time yet. And we will pursue it with responsibility and from a perspective of conviction – for the benefit of those generations that will follow us.

I thank you for your interest and wish you a captivating read.

A handwritten signature in black ink, appearing to read 'C. Spohr'.

**Carsten Spohr**

Chairman of the Executive Board and CEO  
Deutsche Lufthansa AG

# THE LUFTHANSA GROUP

The Lufthansa Group is an aviation company with worldwide operations and more than 550 subsidiaries and affiliated companies. The portfolio comprises the Network Airlines, Eurowings and the Aviation Services.

The Lufthansa Group's goal is to be the first choice in aviation for shareholders, customers, employees and partners while continuing to play a significant role in shaping the global aviation market. The Lufthansa Group pursues this standard in the knowledge that only responsible business practices, oriented by the principles of sustainability, can be successful over the long term.

In 2018 the Group's airlines set a new record: With more than 142 million passengers, the Lufthansa Group is the number one in Europe.

➔ [www.lufthansagroup.com](http://www.lufthansagroup.com)



Corporate headquarters  
**Cologne**



Legal form  
**Stock corporation**



Total revenue 2018  
**35.8 billion euros**



Number of employees  
on 31.12.2018  
**135,534**



Number of nationalities  
**176**



Hubs  
**Frankfurt, Munich,  
Zurich, Vienna**



Number of aircraft  
in the Group's fleet  
**763**



Number of passengers  
in 2018  
**142.3 million**

AT A GLANCE

## A DAY AT THE LUFTHANSA GROUP



**3,366**  
flights



**1.97 million**  
meals



**1,700**  
aircraft supported



**389,958**  
passengers

## THE SET-UP OF THE LUFTHANSA GROUP

### NETWORK AIRLINES



The business segment Network Airlines comprises the companies Lufthansa, SWISS and Austrian Airlines. They offer their customers a premium product via their respective hubs and, thanks to the multi-hub strategy, a comprehensive route network combined with the highest degree of travel flexibility.

➤ [www.lufthansa.com](http://www.lufthansa.com) | [www.swiss.com](http://www.swiss.com) | [www.austrian.com](http://www.austrian.com)

### EUROWINGS



The business segment Eurowings comprises the flight operations of Eurowings, Germanwings as well as Brussels Airlines. Furthermore, the equity investment in SunExpress is part of this business segment. Together, these airlines are characterized by an innovative and competitive product for price-sensitive and service-oriented customers in the growing direct-traffic segment.

➤ [www.eurowings.com](http://www.eurowings.com)

### AVIATION SERVICES

The Aviation Services strengthen the Lufthansa Group's portfolio and are leaders in their respective worldwide markets. This includes the business segments Logistics, MRO (Maintenance, Repair and Overhaul), Catering and Aviation Training as well as other companies and Group functions.

#### **Lufthansa Cargo**

Lufthansa Cargo AG, with headquarters in Frankfurt, is the Lufthansa Group's specialist for logistics and Europe's leading cargo airline. The company serves a worldwide network and is known for short transport times and the highest quality standards. In addition to its own and chartered freight capacities, Lufthansa Cargo also markets those in the freight compartments of the passenger aircraft operated by Lufthansa, Austrian Airlines, Brussels Airlines, SunExpress and Eurowings on long-haul routes.

➤ [www.lufthansa-cargo.com](http://www.lufthansa-cargo.com)

#### **Lufthansa Technik**

Lufthansa Technik AG, with headquarters in Hamburg, is the world's leading manufacturer-independent provider of maintenance, repair and overhaul services for civil commercial aircraft operated by more than 850 customers.

➤ [www.lufthansa-technik.com](http://www.lufthansa-technik.com)

#### **LSG**group

The LSG Group is the industry leader for high-quality in-flight catering. With its established LSG Sky Chefs brand, it offers a comprehensive portfolio of products and services in all areas of in-flight service. The group's parent company, LSG Lufthansa Service Holding AG, is headquartered in Neu-Isenburg.

➤ [www.lsgskychefs.com](http://www.lsgskychefs.com)



#### **Lufthansa Aviation Training**<sup>1</sup>

Lufthansa Aviation Training GmbH (LAT) is one of the leading companies in the field of flight training with its competence in the training and further education of cockpit and cabin personnel at twelve training locations. In addition, LAT bundles all Lufthansa Group flight schools in Germany, Switzerland and the USA under the European Flight Academy (EFA) brand.

➤ [www.lufthansa-aviation-training.com](http://www.lufthansa-aviation-training.com)

<sup>1</sup> Company profile updated on 19 June 2019.





## Cover story

# MAINTAINING BALANCE. OUT OF RESPONSIBILITY.

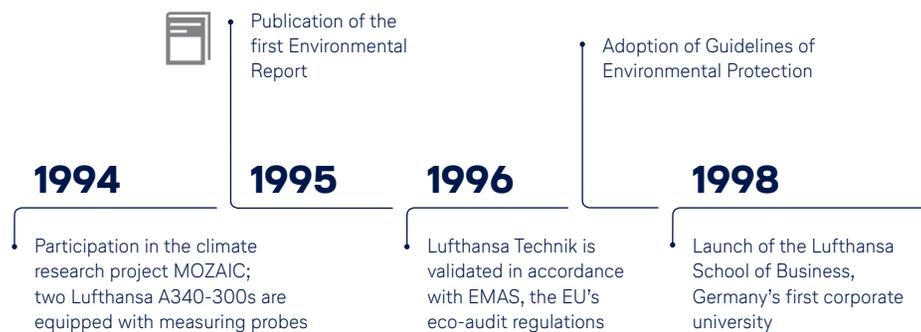
Air transport connects people, countries and cultures around the world. Its economic importance is enormous, it drives employment and it ensures the fast and reliable flow of goods. At the same time, it has undesirable effects on climate and the environment, similar to other modes of transport. Therefore, sustainable and environmentally compatible forms of mobility are among the key challenges of the 21st century. The Lufthansa Group is aware of its responsibility to protect and maintain the basis of life. For 25 years the Group has published key data of its environmental performance in its sustainability report Balance, which covers progress as well as challenges in all dimensions of the company's corporate responsibility. What are the Group's achievements in the area of corporate responsibility over the past quarter of a century? What are the success stories and milestones, and where are the opportunities for the Lufthansa Group to improve even further in order to maintain a balance in the future as well? The following pages provide insights into this story.

# FOCUS ON CLIMATE AND THE ENVIRONMENT FROM EARLY ON

The Lufthansa Group has declared its support for sustainable and responsible corporate policies for decades. Already, the introduction of the Environmental Report's first issue, Balance 1994, stated: "At Lufthansa, we see making a contribution to the preservation of ecological balance as one of our most important tasks. Therefore, we strive to keep the environmental burdens caused by air transport as limited as possible and to handle reserves of raw materials with great care."

Even at that time, the Group identified continuous fleet modernization as the central switch lever: "We will continue to demand that manufacturers of aircraft and engines pursue improvements through which our aircraft – and ultimately all aircraft – can achieve lower emissions of pollutants." A successful approach: thanks to ever-more efficient aircraft and numerous efficiency programs, the Lufthansa Group has been able to significantly reduce the specific consumption of its Group fleet since 1994 from 5.2 liters to today's value of 3.65 liters per passenger and 100 kilometers, a reduction of 30 percent.

## Sustainability in the Lufthansa Group – Milestones from 25 years<sup>1</sup>

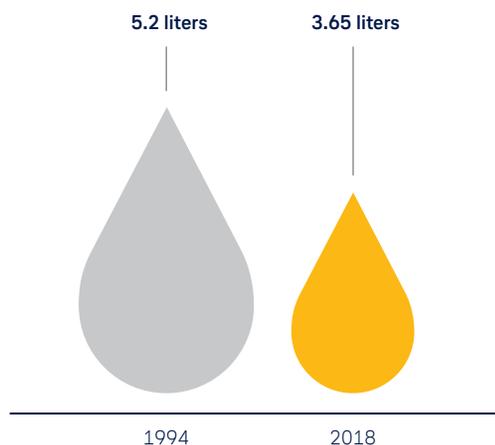


<sup>1</sup> selection



## DEVELOPMENT OF SPECIFIC FUEL CONSUMPTION

IN LITERS PER PASSENGER AND 100 KILOMETERS (L/100 PKM)



REDUCTION SINCE 1994:

# -30%

## Pioneer work for alternative fuels

Over the past years, the Lufthansa Group has been intensively involved in researching, testing and using sustainable alternative fuels. It has thus done important pioneer work:

- 2011 Lufthansa became the first airline worldwide to test the use of biosynthetic fuel for about six months under regular operating conditions. Under scientific oversight the airline completed 1,187 flights between Hamburg and Frankfurt using a biokerosene mixture. With this test run Lufthansa demonstrated that alternative fuel can be used in everyday operations without problems, lowering CO<sub>2</sub> emissions at the same time.
- 2013 The Lufthansa Group and the German Armed Forces Research Institute for Materials, Fuels and Lubricants started the EU research project "Blending Study". In this project, important insights were gained concerning the blending properties of conventional fossil fuels and different new biokerosenes.
- 2016 The Lufthansa Group refueled its aircraft at Oslo Airport with a fuel mix containing 5 percent alternative fuel. A total of about 5,000 flights were operated with this blend.
- 2019 Lufthansa and the Refinery Heide signed a joint declaration of intent concerning the future production and acceptance of synthetic kerosene that is to be produced with electricity generated by wind power.

Participation in the interdisciplinary research project "Quiet Traffic"

**1999**

Foundation of the employees' aid initiative help alliance e.V.



Lufthansa CityLine becomes the first airline worldwide to be validated in accordance with the strict EMAS standards

**2000**

Participation as a founding member in the initiative "Pro Recycling Paper"

Launch of "AIRail", a cooperation between Lufthansa and Deutsche Bahn

**2001**



Participation in the UN Global Compact, the largest initiative for sustainable corporate governance worldwide

**2002**

Lufthansa Technik inaugurates the world's largest and most modern noise-protection hangar in Hamburg

**2003**

Lufthansa Technik becomes founding member of Environmental Partnership Hamburg

# 20 YEARS OF **ACTIVE NOISE ABATEMENT**



**Dr. Gerd Saueressig**  
 Manager Group Environmental Issues,  
 Lufthansa Group

Making commercial aviation continuously quieter is a complex task that requires the cooperation of different players. The Lufthansa Group has therefore worked closely over the past 20 years with partners in the aviation industry, public administration and science, including the Joint Research Project Quiet Traffic.

## HOW AND WITH HOW MUCH SUCCESS IS THE LUFTHANSA GROUP COMMITTED TO ACTIVE NOISE PROTECTION?

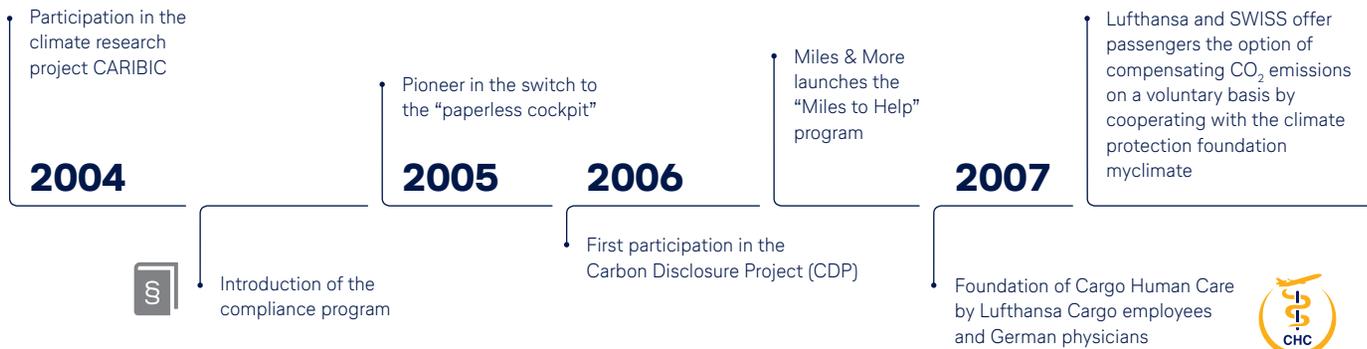
The most important point is to make continuous investments in ever quieter aircraft. Additionally, we retrofit aircraft in the existing fleet to reduce noise emissions, optimize approach and departure procedures and actively participate in noise research. We also place great emphasis on actively taking part in dialogue forums. Research and development create the foundations for successful measures in active noise protection. They lead to quieter aircraft and engine generations as well as optimizations within the existing fleet. It is essential for the Lufthansa Group to contribute to shaping this approach, which consists of intensive research as well as new technologies and products in order to achieve further efficiency increases.

In this spirit, Lufthansa and the German Aerospace Center (DLR) demonstrated already in 2001 that a so-called chevron nozzle reduces the exhaust jet noise of an Airbus A319 engine by about 1 dB(A). At the beginning of 2014, Lufthansa became the first airline worldwide to put an Airbus A320 equipped with noise-reducing vortex generators into service. These devices are also based on research results produced by the Lufthansa Group and DLR. They make our aircraft up to 4 decibels quieter during the approach phase.

# 99.6%

**OF THE AIRCRAFT IN THE OPERATIVE GROUP FLEET MEET THE STRICT MINUS-10-DB CRITERIUM OF THE ICAO CHAPTER 4 STANDARD**

↓ **fact check**



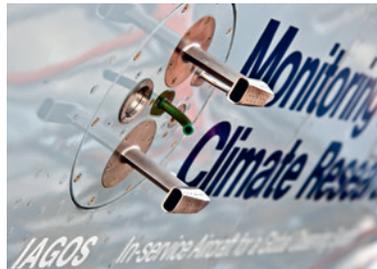
# 25 YEARS OF **CLIMATE RESEARCH ON SCHEDULED FLIGHTS**

Since 1994, the Lufthansa Group has been a reliable partner for climate research and has continuously expanded this commitment.

Currently, three Lufthansa aircraft are equipped with special measuring instruments in the context of the projects CARIBIC and IAGOS (see page 51, Balance 2017), tasked with measuring atmospheric trace substances and cloud particles. Data collected at cruising altitude is of particular importance for the understanding of the earth's climate. Scientists use data generated by research projects supported by Lufthansa to make existing climate models more accurate and improve weather forecasting models. Starting with the project MOZAIC, the predecessor of IAGOS, all projects taken together have been successful in creating a unique database on the highly important greenhouse gases, water vapor and ozone.



01 MOZAIC FROM 1994 TO 2014



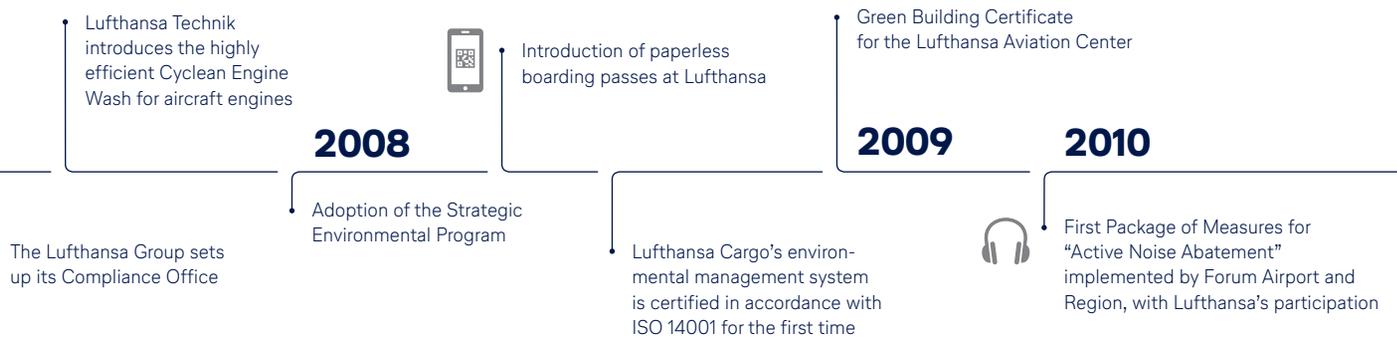
02 IAGOS SINCE 2011

# 500

ABOUT 500 SCIENTISTS AROUND THE WORLD USE THE IAGOS DATABASE

## What the Lufthansa Group contributes to climate research:

- modifications of aircraft, which simultaneously operate scheduled flights and serve the goals of climate research.
- measurements of climate-relevant trace gases – daily and on a global scale.
- aircraft are ideal platforms for carrying out measurements in the upper troposphere and lower stratosphere.
- the Group's worldwide route network offers extensive coverage of the earth's most important regions.

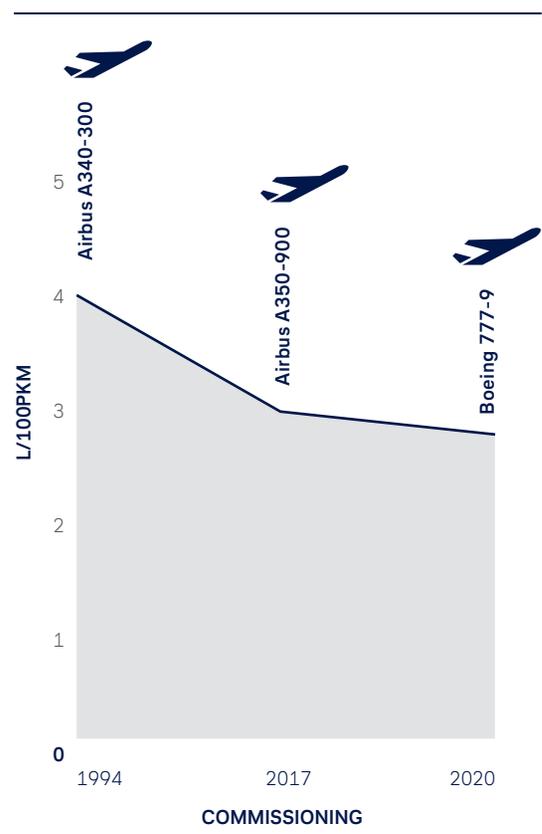


# PIONEER FOR ENVIRONMENTALLY FRIENDLY AIRCRAFT

The Lufthansa Group invests continuously in a modern and efficient fleet, and for decades has made significant contributions to developing new types of aircraft. Sustainability considerations play an important role in this context. The Group has been the launch customer for the introduction of new, fuel efficient and quieter aircraft multiple times. In 2016, it was the C Series at SWISS and the Airbus A320neo at Lufthansa. In the long-haul segment as well, the Lufthansa Group has set the trend with regard to climate and environmental responsibility for many years by putting especially economic aircraft in service. New entries to the fleet were the A380 in 2010, the Boeing 747-8 in 2012, the Boeing 777F in 2013 and the Airbus A350-900 at the end of 2016. In summer 2020 Lufthansa expects its first state-of-the-art Boeing 777-9 long-haul aircraft. From the end of 2022, the Boeing 787-9 will become part of the Lufthansa Group's fleet. By replacing four-engined aircraft with new twin-engined models, the Group creates a basis for the future over the long term: fuel consumption and noise emissions decline, operating costs fall and customer comfort increases.

Currently, the Lufthansa Group has 210 new aircraft with delivery dates up to 2027 on order.<sup>2</sup>

CONTINUOUS INVESTMENTS IN FUEL-EFFICIENT AIRCRAFT<sup>1</sup>



Three special CARIBIC flights to measure the concentration of airborne ashes after a volcano eruption in Iceland



**2011**

Start of the first long-term trial worldwide of biokerosene in regular flight operations

Start of replacing about 30,000 standard trolleys with lightweight models

Participation in the climate research project IAGOS for long-term investigation of the earth's atmosphere

Lufthansa refits the engines of the Frankfurt-based B737 fleet with acoustic panels

Project management for MODAL in the framework of the aviation research program of Germany's Federal Ministry for Economic Affairs and Energy

**2012**



Start of trials with electric-powered taxiing for aircraft on the ground (eTaxi)

<sup>1</sup> Values based on a standardized mission (manufacturers' data) and generic, comparable layouts, in each case with full payload (including cargo).  
<sup>2</sup> as of May 7, 2019

# FLYING RESPONSIBLY



## Helping with miles

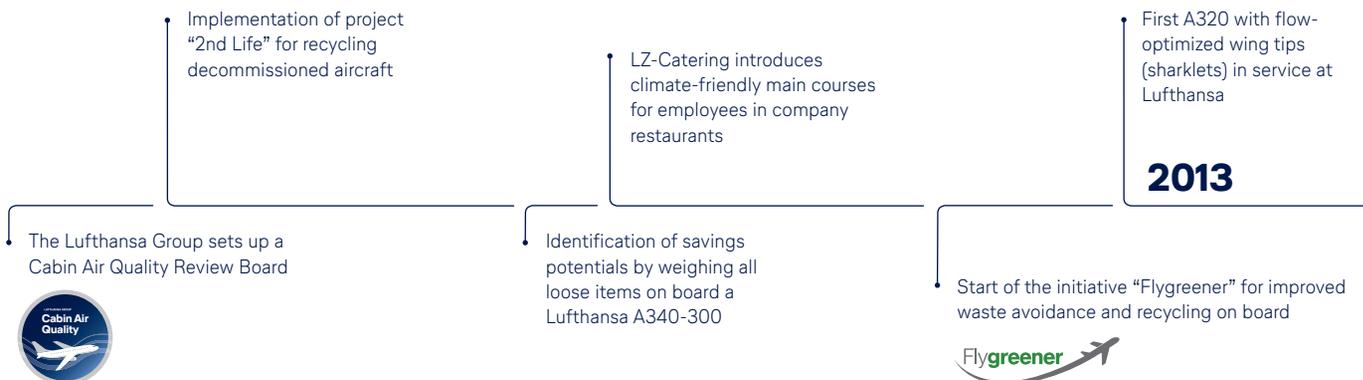
Since 2006, the participants of Europe's leading frequent flyer and awards program, Miles & More, have been able to donate award miles to charitable causes through the initiative "Miles to Help". The help alliance, the Lufthansa Group's charitable aid organization, uses donated miles to support disadvantaged children in Africa, Asia and South America with food, health care and education. For example, 5,000 miles ensure the salary for an additional teacher in Africa for one month. And 10,000 miles make sure that ten children in Asia get meals for one month. Miles & More participants decide themselves which specific project is to benefit from the value of their award miles or if they want to support the help alliance with an unassigned donation.



## Compensating CO<sub>2</sub> emissions on a voluntary basis

The Lufthansa Group offers its customers the option to compensate on a voluntary basis a large part of the CO<sub>2</sub> emissions that are unavoidably caused by their flights and thus to make a personal contribution to climate protection. Since 2007, Lufthansa and SWISS have cooperated with the climate protection foundation myclimate for this purpose. An emissions calculator on dedicated Internet pages indicates an appropriate amount for the customer's climate donation. In the end, passengers decide themselves how much they wish to give. Donations are channeled to certified projects that support climate-friendly energy sources. This offer is to be integrated into the booking masks.

Latest measure: Since January 1, 2019 all official air travel for Lufthansa Group staff is now CO<sub>2</sub>-neutral. The Group compensates these CO<sub>2</sub> emissions through myclimate as well. Furthermore, the Lufthansa Group is developing similar offers for its distribution customers and has already launched a successful test run.



# GROWING RESPONSIBLY

The Lufthansa Group is growing – and has done so for many years. Today, the Group airlines transport almost four times more passengers than 25 years ago. Even though the number of aircraft and flights per year have more than doubled since 1994, the Company’s determination to meet its responsibility and to put this principle into practice every day has remained unchanged.

## COMPARISON 1994 AND 2018



Introduction of “Luftkisse”, a day-care program for children of employees during the summer holidays

Beginning of the partnership between Lufthansa Cargo and the emergency-aid alliance “Aktion Deutschland hilft”

Lufthansa Cargo successfully implements replacement of about 5,500 freight containers with more lightweight models

Inauguration of the Lufthansa Innovation Hub in Berlin



## 2014

Scientifically guided study on the analysis of cabin air

Start of the electromobility initiative E-PORT AN at Frankfurt Airport



Introduction of the “New Work Space” concept with open office landscapes

Operation of the world's first A320 equipped with noise-reducing vortex generators

<sup>1</sup> Deutsche Mark (DM) converted at a rate of 1.95583

## DIVERSITY AS A BASIC PRINCIPLE

The Lufthansa Group underscored the importance of diversity and equal opportunities over 20 years ago by creating the management function “Change Management and Diversity”. Further evidence is the responsibility for promoting equal career opportunities for men and women, already defined in the 1990s. In 1997, for example, Lufthansa was honored by the association “Total E-Quality”. Today, the Lufthansa Group is more diverse than ever. Expanded continuously over the past years, the Group’s commitment to numerous initiatives related to the topic of diversity is an established element in the orientation of its corporate culture.



**Juliane Grauer**  
Equal opportunity officer,  
Lufthansa Group

### WHAT IMPORTANCE DOES THE TOPIC OF DIVERSITY HAVE FOR THE LUFTHANSA GROUP?

For a cosmopolitan company like the Lufthansa Group, diversity is important and natural – both as an employer and as a service provider. Our employees quite literally come from all over the world; currently, people from 176 nations work in our Group. We are proud of this diversity within the workforce. It is our lever for creativity, innovation and agility. Esteem for people – independent of their gender, age, origin, religion, sexual identity and orientation – shapes our conduct, be it vis-a-vis employees, customers or suppliers.

### fact check



**NATIONALITIES REPRESENTED IN THE LUFTHANSA GROUP**

1994 **91**

2018 **176**



Signing of the Charter of Diversity

First parent-and-child office for employees with childcare bottlenecks

### 2015

Flyover measurements on Lufthansa Cargo MD-11 freight aircraft to test noise-reducing modifications on engines and landing gear

### 2016

All Lufthansa Group aircraft fly for one year from Oslo with a five-percent share of biokerosene

Introduction of eJournals

Lufthansa Cargo signs cooperation contract with German Red Cross



World premieres: Lufthansa puts the first A320neo aircraft into service; SWISS the first CS100

# 20 YEARS OF **HELP ALLIANCE**

Two Lufthansa employees had the idea of founding the charitable employees' organization help alliance; 13 colleagues eventually made it a reality in September 1999. For 20 years, the help alliance – active under the roof of the Lufthansa Group as a charitable limited liability company since 2017 – has given disadvantaged people around the world access to education.



■ Countries in which the help alliance is active.

## PROJECTS

1999 **9**  
2018 **41**

**17 million €**

invested in aid projects since 1999

**150**

projects since 1999, of which:

**55** in Asia  
**50** in Africa  
**25** in South America  
**20** in Europe

**1,500**

continuous donors worldwide

**80**

employees became involved over the past 20 years as voluntary project managers

Start of the program Health Management@Lufthansa Group



**Lufthansa Group**  
Health Management

Beginning of a two-year test run to check the durability of riblet structures in flight operations

Lufthansa receives the first Airbus A350-900, one of the most environmentally-friendly aircraft worldwide

First fully-electrified catering lift truck ("eLift") of LSG Group put into service

**2017**

Participation in "Initiative Chefsache" ("A Matter for the Boss") to promote equal opportunities

First aircraft tow-truck with diesel-electric hybrid propulsion system ("eTug") worldwide put into service

Transformation of employee organization help alliance into a charitable limited liability corporation

Adoption of the Lufthansa Group Code of Conduct

*help* alliance

# BALANCE OVER TIME



**Andreas Bartels**  
Senior Vice President & Head of Corporate Communications, Lufthansa Group



## HOW MUCH EMPHASIS IS PLACED ON THE TOPIC OF CORPORATE RESPONSIBILITY IN COMMUNICATIONS?

Sustainability topics are on an equal footing with financial, corporate and product topics in our communications work. Our approach is and remains to inform comprehensively, openly and transparently about our activities – including challenges. Because of its regular publication rhythm, our sustainability report has allowed us to accompany longer-term processes, document progress and cast a light on significant topics. Simultaneously, the report also reflects the changes in the requirements of our internal and external stakeholders. And incidentally, with this edition it is published for the first time only as a digital version on our website.

Lufthansa selected the title “Balance” for its reporting on the topic of the environment and later on sustainability. It signifies responsibility for a world of reconciliation between the Group’s interests and those of its stakeholder groups. Shortly after the publication of the first environmental report, the “Initiative Balance” was launched too, which Lufthansa used to explain its position on socio-political topics, both within the Company and in public. The guiding motto “maintaining balance” remains valid today.

Starting with the 1998 / 99 edition, the report was presented in a new format: in addition to the facts-and-figures part containing all the important data on environmental protection, for the first time there was also a magazine part with articles and features focusing on the topic of aviation and the environment. From 2006, Balance was again published as a one-part report and has since evolved into a comprehensive Group sustainability report. Coverage at first followed the internationally acknowledged guidelines of the Global Reporting Initiative (GRI) and has been in accordance with the GRI Standards since the reporting year 2017.

Lufthansa Technik launches efficient method of cleaning engines with CO<sub>2</sub> dry ice

**2018**

Lufthansa’s Munich hub validated for the first time according to EMAS and certified according to ISO 14001

Launch of the LGBTI network “Diversify” at the Lufthansa Group

**2019**



Implementation of the central eHealth platform for health-care provision

Declaration of intent by Raffinerie Heide and Lufthansa concerning production and delivery of environmentally-friendly synthetic kerosene

Lufthansa Group employees fly CO<sub>2</sub> neutral when traveling on business



Test run of CO<sub>2</sub> compensation for corporate customers in Germany, Austria and Switzerland

# RESPONSIBILITY IS OUR LEITMOTIF

Interview with **Carsten Spohr**,

Chairman of the Executive Board and CEO, Deutsche Lufthansa AG

## **CORPORATE RESPONSIBILITY IS AMONG THE LUFTHANSA GROUP'S TOP FOCUS TOPICS IN 2019. IS THE GROUP FOLLOWING A TREND IN DOING SO?**

Responsibility for the environment and society has been a central strategic topic for us for some time, so this is certainly not new. Just think of our long-term fleet modernization and efficiency programs. When it comes to introducing new technologies we have always had a leading role. And we have been committed to social concerns for quite some time now. The help alliance, our aid organization, celebrates its 20th anniversary this year and has supported thousands of disadvantaged young people around the world since 1999. Even if we are already doing a lot of "good", we want to consider corporate responsibility much more strongly in our future decisions. It is my goal to strengthen our leading role in the airline industry in this area as well.

## **WHY IS THIS TOPIC SO IMPORTANT FOR THE LUFTHANSA GROUP?**

Over the long term, we can only be successful if the interests of our customers, employees and shareholders are in balance. At the same time, we also must and want to assume our responsibility for social issues as well as that for the environment. Without this balance, success is not sustainable. Our customers as well as our investors increasingly consider criteria of sustainability and climate protection, and young talents now also prefer companies that act sustainably. Corporate responsibility thus makes a decisive contribution to securing the Lufthansa Group's future potential in a comprehensive way.

## **WHAT DO YOU EXPECT FROM THE GROUP'S EMPLOYEES AND MANAGERS IN THIS RESPECT?**

Responsibility is a guiding principle for all employees and executives at the Lufthansa Group. From our employees I expect that they internalize the aspect of sustainability in everyday working life and act responsibly as a result. Our managers must be models for their staff in this respect and always include all dimensions of entrepreneurial responsibility in their decisions.

## **WHAT ARE THE LUFTHANSA GROUP'S PLANS IN THE AREA OF SUSTAINABILITY?**

The Executive Board has approved a large package of measures. Retroactively from January 1, 2019, all flights our employees take for business purposes are made CO<sub>2</sub>-neutral. On the ground, we will switch our mobility in Germany, Austria and Switzerland to CO<sub>2</sub>-neutral mode by 2030 and will use eco-electricity in these countries whenever possible. As the third important measure, we have increased annual donations to our help alliance because we want to get much more involved at our large locations, to begin with in Germany. In the future, our employees at these locations are to have an option for voluntary duties during working hours.

Our goal is to meet increasing demand for mobility as environmentally compatible as possible and fulfill our social responsibility even better while doing so.



## FUTURE-ORIENTED **SOLUTIONS**

All entrepreneurial activities at the Lufthansa Group are guided by responsible thinking. The following statements illustrate how this mindset guides the individual Members of the Executive Board of Deutsche Lufthansa AG. In this context, responsibility also implies meeting complex challenges resolutely and with farsightedness, and creating future-oriented solutions that work well for the Company, stakeholders and society in equal parts.



## Thorsten Dirks

Member of the Executive Board, Eurowings

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Eurowings is Europe's fastest-growing airline. In 2018, following the insolvency of Air Berlin, we hired more than 3,000 employees in record time and integrated 77 aircraft into our fleet. Together we have thus achieved an extraordinary result and made an investment in a future that will be successful for many stakeholder groups over the long term. Now we want to intensify our commitment to society, climate and the environment. Airlines that are active in the price-sensitive market segment also have an obligation to make their flight operations as sustainable and environmentally efficient as possible. This is the kind of responsibility that is applied to assess us and our competitors. The essential prerequisite for greater sustainability is a strong economic foundation. Therefore, it is our goal to build up and expand the Eurowings Group into an innovative travel platform and a leading Europe-wide provider of direct flights. Our particular focus will remain on operational stability, as our customers rightly expect flights that are safe and comfortable as well as punctual and reliable.

## Harry Hohmeister

Member of the Executive Board,  
Chief Commercial Officer Network Airlines

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Lufthansa is the first and only airline in Europe with a five-star rating and ranks among the ten best premium airlines worldwide. This award underscores the Lufthansa Group's commitment to offer its customers an excellent product. Today our three Network Airlines Lufthansa, SWISS and Austrian Airlines are already at the top of European hub traffic. To ensure that this position can be maintained we continuously invest, particularly in efficient and quiet aircraft, product innovations and service optimizations. It is also part of our quality standard to strengthen our position as the leading airline group in the area of sustainability. Our aim is not to have as many aircraft as possible taking off at all costs; this does not correspond to our understanding of sustainable and responsible mobility. We will resolutely continue our numerous fuel-efficiency programs and assess very meticulously how we can further improve our on-board product in the light of sustainability considerations.





## **Dr. Detlef Kayser**

Member of the Executive Board,  
Airline Resources & Operations Standards

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Following the operational challenges of the preceding year, it is our first priority to make the flight operations of our Group airlines more punctual and reliable. We owe this to our customers who were not satisfied with our performance in 2018 in particular. We are therefore working with great intensity on increasing our operational stability by means of focused qualitative growth over the long term. To this end we have not only launched numerous programs, but also consistently seek our system partners' cooperation. As delays and flight cancellations are usually caused by many factors, it will take coordinated solutions to improve the situation in the future. The same applies to the reduction of fuel consumption and thus CO<sub>2</sub> emissions. The most effective environmental levers by far are and remain the avoidance of unnecessary holding patterns in the air – and by making more direct routes over Europe available. It is the politicians' task to accelerate the implementation of the Single European Sky.

## Ulrik Svensson

Member of the Executive Board,  
Chief Financial Officer

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In its entrepreneurial activities the Lufthansa Group places great emphasis on applying responsible and sustainable principles. Therefore, our financial strategy is based on the clear concept of value-based management: by investing our capital specifically in areas with the highest expected yield, we are able to actively shape our industry and remain competitive, so that the Group remains in a favorable position in the future as well. In doing so we want to increase our profitability, secure the Group's financial stability and as a rule have our shareholders participate in the Company's success on a continuous basis. At the same time, we constantly invest in our Company, our products and the quality of our offer. It is in particular the modernization of the fleet that allows us to increase efficiency levels, reduce our CO<sub>2</sub> emissions and use scarce resources in more responsible ways. Our overriding goal is to be number one for customers, employees, shareholders and the environment.



## Dr. Bettina Volkens

Member of the Executive Board,  
Corporate Human Resources and Legal Affairs

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We are proud that the Lufthansa Group has been one of Germany's most popular employers for many years. It is of great importance to me that this will remain so. We want to continue to find the right talented people who will successfully steer our fascinating company into the future. This also implies that we will have to become even more international with regard to our employees. We are working on this task as resolutely as we are developing leaner and more flexible structures, which give the necessary dynamism and speed to the Lufthansa Group's transformation process. The ongoing evolution of market conditions also demands that our employees have to further develop their know-how and abilities on a continuous basis. We support this need with diverse digital and non-digital training options. At the same time, managers are expected to act responsibly. Serving as examples and compasses for their teams, they are indispensable for the success of our cultural development process.





01

Key points on  
COMPANY &  
RESPONSIBILITY

V164

V165

Developments in society have a profound influence on the business activities and sustainability agenda of the Lufthansa Group. Among the worldwide megatrends and challenges are population growth, increasing mobility, technological progress and the advancing digitalization of numerous processes. Concurrently, climate and environmental protection are becoming increasingly important. For the Lufthansa Group, facing up to these developments means acting sustainably and responsibly. In this context, the Group places the focus on those aspects that allow it to achieve significant effects. In particular, this includes limiting environmentally relevant effects from flight operations by making comprehensive investments in new aircraft, technologies and products.

The Lufthansa Group is a service company whose economic success depends to a significant extent on the commitment and motivation of its employees. Applying a responsible and sustainable approach to dealing with resources, the environment and employees secures not only long-term financial stability, but also acceptance for its business model inside and outside of the Company as well as attractiveness for customers, employees, shareholders and partners. This also includes the attentive management of opportunities and risks, consistent supply chain management and a constructive dialogue with diverse stakeholder groups. In this way, the Group underscores the goal of further strengthening its role as a leader in the aviation industry with regard to its corporate responsibility. (→ PAGE 26 FF.)

# STRATEGY AND MANAGEMENT

The Lufthansa Group pursues an extensive sustainability agenda, which comprises different dimensions and ensures responsible corporate governance in all business segments (see illustration below). Value-based management is an integral component of sustainable governance for the Group. The Company's financial strategy aims at increasing its value sustainably. At the center of attention are the three dimensions of increasing profitability, focused use of capital and safeguarding financial stability. The concept and related ratios are described in detail in the chapter Financial strategy and value-based management in the Annual Report 2018 (see page 16 ff.). The key ratios are also shown in this report (see page 2, At a glance).

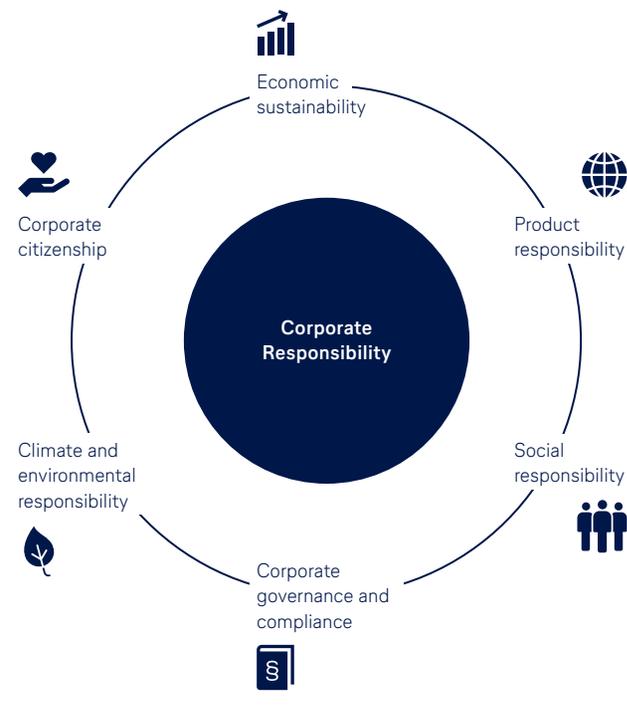
Sustainable management allows the Lufthansa Group to seize opportunities that present themselves, and also to minimize or entirely avoid risks, including those that might result from more rigorous regulatory requirements. Managing opportunities and risks is integrated into all business processes. The Lufthansa Group risk management system has included the dimension "effects from business activities on non-financial aspects" since the reporting year 2017. An update was carried out in 2018 (see page 63, Annual Report 2018).

## New package of corporate responsibility measures

In March 2019, the Lufthansa Group's Executive Board defined new areas of emphasis for society and the environment:

- All business-related air travel by Lufthansa Group employees has been made CO<sub>2</sub>-neutral since January 1, 2019.
- Switch to CO<sub>2</sub>-neutral ground operations in its home markets (Germany, Austria and Switzerland) by 2030.
- Expansion of social commitment in Germany and opportunities for corporate volunteering.

## The Corporate Responsibility dimensions of the Lufthansa Group



## Management structure and organization

The highest monitoring body in the area of sustainable management is the Supervisory Board. The coordination and further development of activities and initiatives relevant for sustainability within the Lufthansa Group is the task of the Corporate Responsibility Council (CRC), which is chaired by the Head of Group Strategy and reports to the Chairman of the Executive Board. This interdisciplinary and Group-wide body was established at the senior management level. The CRC consists of the heads of Group Strategy, Policy, Environmental Issues, Investor Relations, Controlling, Legal, Human Resources, Communications and Corporate Sourcing. Individual managers are responsible for implementing concrete activities and projects. They bundle and organize the topics within their respective areas of responsibility.

Since the reporting year 2017, sustainability aspects have been even more strongly interlinked with Group strategy by prioritizing strategically relevant topics, which are then concretized and implemented by a working group managed by the department. The latter's members are experts from the same departments and staff units that form the CRC. The team meets twice a month and discusses current issues and challenges in the context of entrepreneurial responsibility. During the reporting year, one area of emphasis for the working group was again reporting in accordance with the CSR guideline relating to environmental topics, considering the topic of supply chains and the significance of human rights in an entrepreneurial context. The separately set up human rights project group was maintained in the reporting year 2018 (see page 38, Respect for human rights).

neighbors, NGOs and scientists, among others. The Group places great emphasis on an open, continuous and trusting dialogue with its internal and external interest groups, and actively seeks exchanges with them by using diverse formats (see page 28, Stakeholder dialogue: The most important activities in 2018 at a glance).

This dialogue allows the Group to gain a better understanding of needs, expectations and wishes held by different interest groups and enables it to incorporate these in its entrepreneurial activities. The Lufthansa Group also receives important input on key issues from stakeholder surveys on significant non-financial topics (see page 29 ff.) and from the Group-wide employee survey "involve me!" (see page 83). The Group develops action areas and measures from the results and open-ended commentaries.

## Stakeholder dialogue

➤ GRI 102-40, GRI 102-42, GRI 102-43, GRI 102-44

The continuous exchange with stakeholders makes an important contribution to the further development of the Lufthansa Group, its sustainability strategy and the annual reporting on significant topics related to corporate responsibility. The spectrum of stakeholders ranges from customers and employees, investors and suppliers to politicians, municipalities,

The short version of the employee survey, conducted during the reporting year 2018, yielded more than 25,000 open-ended commentaries for the Group, including on the topic areas working conditions, employee motivation, health, information technology and digitalization. One of the goals of this "quick check" is to evaluate if the action areas and measures derived from the comprehensive biannual employee survey – last conducted in 2017 – have had an effect. Key topics of that survey included the expansion of dialogue formats, staff

## The stakeholders of the Lufthansa Group



Customers  
Consumers



Investors  
Shareholders  
Analysts  
Rating agencies



Governments  
Legislators  
Politicians  
Authorities



Neighbors  
Publicity  
Social networks



Nongovernmental organizations (NGOs)  
Organizations  
Consortia



Science  
Research & Education



Employees  
Employee representatives



Suppliers  
Contractual partners

# Stakeholder dialogue: The most important activities in 2018 at a glance

➤ GRI 102-43, GRI 102-44

## CUSTOMERS

- Continuous, worldwide passenger surveys.
- Customer events, customer forums and participation in discussion forums.
- Monthly inflight magazine and regular newsletter.
- Lufthansa InTouch Service Centers ensure 24-hour reachability for all questions concerning flight reservations.
- Format “Lufthansa Flying Lab”: on selected flights passengers can experience innovative products and services live onboard, test them and provide feedback.
- Visitor service “Discover Lufthansa” assumes important function of customer care at largest location, Frankfurt. Tailor-made programs for national and international top customers, people living near the airport, associations, research institutions and partner universities. During the reporting year preparations were begun to extend “Discover Lufthansa” to the Munich location.
- Exhibition “Green Gate” by Lufthansa and Munich Airport in the satellite building that is part of Terminal 2. The experience area provides information about the two companies’ range of programs and initiatives to support sustainable mobility.

## EMPLOYEES

- Group-wide employee survey “involve me!”.
- “Pilots’ Convention” – pilots in a dialogue with representatives of management.
- Continuous communication via the formats pooled in the product group “One”: regularly published employee magazine “One”, news app “One”, “eBase One” (intranet news), “Connection One” (community on the social intranet) and the newly introduced large screens at central locations, “Screens One”.
- Continuation of dialogue forums for cabin and cockpit employees.
- Continuation of CabCons: dialogue events for flight attendants at Lufthansa.
- Continuation of the dialogue series “Frankly speaking ...” with the Lufthansa Group’s CEO at different Company locations and live transmission on the Intranet.
- Live chats, web casts and other personal dialogue events for different employee groups and managers.
- Continuation of the event format “Market conferences”: dialogue events with managers and the Lufthansa Group’s CEO in different business regions (2018 in Shanghai, New York and Cape Town).
- Workshops and information stands on the topic of sustainability as part of the group-wide initiative “Flygreener”.
- First Lufthansa Sneaker Day on August 24, 2018.
- #Danke-Tour by the Lufthansa Group’s Executive Board on December 13 and 14, 2018 at seven Group locations in Germany and Austria. At these dialogue events, the members of the Executive Board spoke with employees, thanked them personally for their commitment and answered questions from those attending and via webcast.

## SHAREHOLDERS, INVESTORS AND ANALYSTS

- Beyond the quarterly conferences, Executive Board and Investor Relations presented the Group’s latest developments in 2018 to institutional investors through 30 roadshows and 19 investors’ conferences.
- Four forums specifically aimed at private investors.
- “Shareholder information” for private shareholders.
- In addition to annual and interim reports, the capital markets are informed monthly about the latest traffic developments at the airlines of the Lufthansa Group.
- Participation in sustainability ratings, such as CDP.
- All publications, financial reports, presentations, background information and speeches, current news and relevant dates can be consulted at:  
➤ [www.lufthansagroup.com/investor-relations](http://www.lufthansagroup.com/investor-relations)

## LAW MAKERS AND PUBLIC ADMINISTRATIONS

- Continuous and intensive exchanges with representatives from politics and administrations as well as participation in numerous events and panel discussions.
- Participation in numerous events and panel discussions.
- “Policy Brief” and “Aeropolitics” are published by the Lufthansa Group and SWISS respectively to inform decision-makers in politics, media and business about developments in the aviation industry and topics related to aviation policy.
- Participation in the First Aviation Summit in Hamburg on October 5, 2018.

## SCIENCE AND RESEARCH

- Numerous cooperations with scientific research institutions.
- Participation in panel discussions and conferences.

## NEIGHBORS AND LOCAL COMMUNITIES

- Regular information events and discussion round-tables with representatives of state and municipal governments in municipalities surrounding the Lufthansa Group’s hubs.
- Participation in the “Forum Airport and Region” in Frankfurt as well as in the “Vienna Airport Dialogue Forum”.
- Participation in the German aircraft noise commissions.
- Since May 2015, LSG Sky Chefs has been a member of “LEEN 100” (Learning Energy Efficiency Network) initiated by the city of Frankfurt to help reduce CO<sub>2</sub> values in the Rhein-Main area and increase the share of renewable energies.
- Lufthansa CityLine has been a member of the fifth “Environmental Pact Bavaria” since September 2015. Its goal is to give incentives to sustainable development and continuous improvement of corporate environmental protection in Bavaria.
- Participation of Lufthansa Technik and LZ-Catering in “Environmental Partnership Hamburg” and of Lufthansa Technik in Frankfurt in “Environmental Alliance Hesse”.

leadership and employee appreciation, continuing education, focus on agile and digital work formats, promotion of talents and improvement of the IT infrastructure.

## Materiality analysis

➤ GRI 102-42, GRI 102-43, GRI 102-44, GRI 102-46, GRI 102-49

In October 2018, the Lufthansa Group again conducted a broad-based stakeholder survey that included customers, employees, neighbors, investors, business partners, politicians and NGO representatives, among others. For this purpose, the Group contacted about 10,000 external addressees in a personal format. The survey was also available to a broad public on the Company's Internet page and social-media channels. Employees were able to participate in the survey on the intranet. Separately from other stakeholders, all managers at the Lufthansa Group were contacted with an online survey. Overall, the participants in the stakeholder survey 2018 fully completed more than 2,500 questionnaires.

The findings of the stakeholder survey were analyzed by management particularly in terms of the materiality criteria

defined in Section 289c Paragraph 3 HGB, i. e. to determine which aspects are material for understanding the course of business, the financial results and the position of the Lufthansa Group, as well as their effects on the aspects of sustainability. The materiality analysis was also conducted in view of sustainability reporting in accordance with the GRI Standards, core option, in this report. Accordingly, significant topics are those that indicate important economic, ecological and social effects caused by the reporting company or those that significantly influence the stakeholders' evaluations or decisions.

The Lufthansa Group's Corporate Responsibility Council (CRC) evaluated the results of the stakeholder survey and, using these as a basis, prioritized the most important action areas from the Group's perspective. A materiality matrix visualizes this prioritization of action areas from stakeholder and Company perspectives (see illustration, page 31). The result of this materiality analysis is the basis for the strategic further development of corporate responsibility management and for the selection of topics to be covered in this sustainability report and in the non-financial report (see insert below).

## COMBINED NON-FINANCIAL REPORT

In accordance with the CSR Directive Implementation Act (CSR-Richtlinie-Umsetzungsgesetz – CSR-RUG) passed on April 19, 2017, Deutsche Lufthansa AG has again published a combined non-financial report for the financial year 2018 in accordance with Sections 315b and 315c German Commercial Code (HGB) in conjunction with Sections 289b to 289e HGB. Deutsche Lufthansa AG published a separate non-financial report at Company level and a separate non-financial Group report together as a combined non-financial report. It combines significant aspects and reporting on the following key issues: environmental concerns, customer concerns, employee concerns, anti-corruption and bribery, human rights, social concerns and sustainability in the supply chain as an interdisciplinary topic. Measures and initiatives taken by the Lufthansa Group that demonstrate the Company's wide-ranging commitment to corporate responsibility are described in the combined management report. References to these passages are made in this report in the appropriate passages. The combined non-financial report was the subject of a voluntary limited assurance engagement in accordance with ISAE 3000 (revised). It is based on the GRI Standards 2016. Additional, comprehensive reporting on non-financial topics is presented in this sustainability report.

➤ [www.lufthansagroup.com/investor-relations](http://www.lufthansagroup.com/investor-relations)



Environmental concerns, customer concerns and employee concerns are especially important for the Lufthansa Group's business activities. Existing flight operations are not possible without kerosene – and thus CO<sub>2</sub> emissions – nor without noise. Moreover, being a service company, the economic success of the Lufthansa Group depends significantly on the satisfaction of its customers and the commitment and motivation of its employees. Additionally, fighting corruption and bribery, respect for human rights as well as a sustainable supply chain have a high degree of relevance for the Lufthansa Group.

## The 12 topics of the stakeholder survey 2018 at a glance<sup>1</sup>

↗ GRI 102-44, GRI 102-47

**Respect for human rights:** Visible positioning as a company that works around the world for respect of and adherence to human rights.

**Active noise abatement:** Participation of the Lufthansa Group in measures that advance active noise abatement and support for related research projects.

**Attractiveness as an employer:** Positioning of the Lufthansa Group as an attractive employer, acting responsibly and with integrity. Comprehensive approach to promoting diversity and equal opportunities, broad portfolio of training and continuing education options as well as maintaining a well-balanced relationship between work and private life.

**Occupational safety and health protection:** Setting up of health-promoting work environments, work processes and collaboration. Supporting employees in treating their health as a personal responsibility (empowerment). Implementation of preventative measures to avoid accidents, health risks and occupational illnesses.

**Compliance:** Adherence to rules concerning fair competition. Responsible conduct and working against all forms of bribery and corruption. Active consideration of ethical aspects and voluntary commitments.

**Data protection and data security:** Protection and security of personal data according to the highest standards as the basis for a trusting business relationship and to prevent penalties, fines and reputational damage.

**Digitalization and innovation:** Focus on digital innovations in all business segments to improve product and service offers on a continuous basis and to optimize processes. Strengthening of innovation culture, ability to innovate and research activities – also with regard to more sustainable products and services. Use of digital innovations and tools, such as augmented reality, to optimally support employees in their daily tasks.

**Corporate citizenship:** Implementation of corporate citizenship initiatives worldwide and locally at large locations and hubs of the Lufthansa Group to strengthen the respective regions. Promoting the employees' social commitment by means of corporate volunteering options.

**Climate protection:** Commitment to long-term improvement of fuel efficiency and reduction of specific CO<sub>2</sub> emissions as an active contribution of the Lufthansa Group to climate protection. Increased use of alternative fuels in flight operations and of renewable energies on the ground.

**Sustainability in supply chain:** Securing of standards with regard to human rights, working conditions, environmental protection and compliance criteria in the supply chain, and regular supplier screenings and audits; consideration of sustainability aspects in selecting suppliers.

**Service and customer orientation:** Oriented by the wishes and needs of the Lufthansa Group's customers. This also includes making products and services discrimination-free and environmentally compatible, and informing customers sufficiently about environmental and social effects of products and services.

**Responsible production:** Responsible and efficient use of natural resources as well as continuous optimization of products and processes on board to offer passengers the highest level of quality in combination with far-reaching consideration of sustainability aspects.

<sup>1</sup> The topic of aviation safety was not a subject of the stakeholder survey as the Lufthansa Group considers it a self-evident basis for its business activities.

# 2018 materiality analysis conducted by the Lufthansa Group

↗ GRI 102-44, GRI 102-47



## WE SUPPORT



### THE 10 PRINCIPLES OF THE UN GLOBAL COMPACT

Already since 2002, the Lufthansa Group has participated in the UN Global Compact, the largest initiative worldwide for responsible and sustainable corporate governance. The participating companies commit themselves to aligning their business activities and strategies with ten principles from the areas human rights, labor standards, environmental protection and anti-corruption measures.

#### HUMAN RIGHTS

1. Businesses should support and respect the protection of internationally proclaimed human rights; and
2. make sure that they are not complicit in human rights abuses.

#### LABOR

3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
4. the elimination of all forms of forced and compulsory labor;
5. the effective abolition of child labor; and
6. the elimination of discrimination in respect of employment and occupation.

#### ENVIRONMENT

7. Businesses should support a precautionary approach to environmental challenges;
8. undertake initiatives to promote greater environmental responsibility; and
9. encourage the development and diffusion of environmentally friendly technologies.

#### ANTI-CORRUPTION

10. Businesses should work against corruption in all its forms, including extortion and bribery.

➤ [www.unglobalcompact.org](http://www.unglobalcompact.org)

## Values and standards of conduct

With the aim of continuing the corporate culture based on trust and integrity, and to secure the Company's sustainable success, in 2017 the Lufthansa Group introduced a binding Code of Conduct for all bodies, executives and employees (see page 35 f.). The Group has supported the ten principles of the UN Global Compact for sustainable and responsible corporate governance since 2002. Since 2018, the Lufthansa Group has been committed to the "Participant" tier in this alliance between United Nations and businesses, the goal of which is to shape globalization in socially and environmentally compatible ways. The aviation group thus again confirms its voluntary commitment to align its business strategy with the ten globally recognized principles covering the areas of human rights, labor standards, environmental protection and anti-corruption measures. The Lufthansa Group participated in the yearbook "Global Compact Deutschland 2018" with a best-practice example in the subject area "Climate and environmental responsibility", showing how sustainable fleet management contributes significantly to making flight operations as environmentally compatible as possible.

## Sustainable Development Goals

The central element of the Agenda 2030 is a set of 17 global sustainability goals, which were adopted in September 2015 by the United Nations' members (Sustainable Development Goals, SDGs, see illustration on page 33). A large part of the global sustainability goals is relevant for the Group, even though intensity and shaping vary.

Of particular importance for the entrepreneurial activities of the Lufthansa Group are support for climate goals (SDG 13) and responsible use of resources (SDG 12). These are the areas where the Company sees the greatest opportunities for applying its influence in order to make a measurable contribution. The same is true for promoting female employees (SDG 5) and the continuous improvement of working conditions (SDG 3, 8). In the context of innovation and digitalization projects (SDG 9) the Lufthansa Group also pays increased attention to social and ecological compatibility. Among others, this applies to paperless aviation, the promotion of intermodal solutions, electromobility at airports and active noise abatement.

In addition to its entrepreneurial activities, the Lufthansa Group's commitment includes its registered charity help alliance, which was given a new base effective January 1, 2017, whose emphasis is in education and enabling (SDG 4) as well as work and income (SDG 8). For a long time, high-quality training and continuing education programs have been of particularly high importance across the entire Company. Beyond this, the Group supports the SDGs through cooperation with science and research as well as its active participation in numerous national and international committees and workgroups (SDG 17). Some examples are its participation in econsense, German industry's forum for sustainable development, and its support for climate research (see page 11).

## Communications and sensibilizing employees

In 2018, the Group again incorporated sustainability topics into its communications to inform and sensibilize employees on a continuous basis. Additionally, employees are also made aware of relevant topics related to sustainability by means of voluntary – and sometimes obligatory – training opportunities; examples are compliance and data protection.

An overview of the most important sustainability related memberships is available at:

➤ [www.lufthansagroup.com/responsibility](http://www.lufthansagroup.com/responsibility)



Since 2015, the Lufthansa Group has supported the Sustainable Development Goals (SDGs), which the member states of the United Nations adopted in the Agenda 2030.



## External evaluation

Sustainability analysts and rating agencies regularly assess the activities of the Lufthansa Group according to criteria of responsible corporate governance. In 2018, the Lufthansa share was again represented in the following sustainability indices:

### **Sustainalytics / FTSE4Good**

Worldwide renowned rating agency Sustainalytics regularly evaluates the Lufthansa Group's sustainability activities in accordance with the ESG criteria. The rating is included in the composition of the FTSE4Good, in which the Lufthansa Group share has been listed since 2001. The index includes only those companies that meet the internationally accepted standards of entrepreneurial responsibility.

### **MSCI Rating / MSCI Sustainability Index Series**

The Lufthansa Group is regularly assessed by MSCI, a leading rating agency for investors. In July 2018, the Group was again confirmed with a rating of BBB and thus ranked above average in comparison with its industry. In the areas of carbon emissions and corporate governance, the Group even has a leading position. The Lufthansa Group is represented in several MSCI Sustainability Indices. The index family depicts companies with a particular commitment to environmental, social and governance (ESG) issues.

### **ECPI**

The Lufthansa share is listed in the sustainability indices ECPI EMU Ethical Equity, ECPI Euro Ethical Equity, ECPI Euro ESG Equity and ECPI World ESG Equity. ECPI has offered a selection of ESG indices since 1997 and uses its own evaluation method

that is based on exclusion criteria as well as positive criteria in the categories of environment, social issues and corporate governance. Only those companies are included in these indices that depict suitable, sustainable investment according to ECPI's assessment.

The Lufthansa Group received the following ratings in 2018:

### **CDP: scoring result "B"**

In the 2018 climate change reporting of CDP, the international charitable rating organization, the Lufthansa Group reached the Climate Scoring Result "B" (previous year: "A-").

The aviation group is thus among the top five airlines listed in the CDP. CDP Climate Scores are awarded on a scale from "A" (best result) to "D-". CDP is widely recognized among experts and annually conducts the world's most comprehensive climate ranking, for which companies have to report wide-ranging information and data concerning CO<sub>2</sub> emissions, strategies for reducing these emissions as well as climate risks. The Lufthansa Group has participated in the annual CDP reporting since 2006. A large part of the CDP data is also used for other ratings established by leading rating agencies.

### **ISS oekom Corporate Rating: "Prime" status**

In the ISS oekom Corporate Rating of July 2018 the Lufthansa Group again received "Prime" status with a "C+" rating. It thus belongs to the group of "Industry Leaders" among a total of 115 companies evaluated in the area of transport and logistics. In this rating process the social and governance rating has a weight of 30 percent and the environmental rating 70 percent.

# COMPLIANCE AND HUMAN RIGHTS

Compliance and respecting human rights are significant elements in the entrepreneurial activities of the Lufthansa Group. For the Company it is self-evident to comply with applicable law as well as voluntary self-commitments, and to actively consider ethical principles, too.

The Lufthansa Group Code of Conduct, which was adopted in 2017 and internally and externally communicated in 2018, contains the principles and guidelines that are binding for all bodies, executives and employees in daily business life. The code also serves as an aid to orientation for business partners. The Lufthansa Group expects that they will also adhere to the principles defined in it. The Code of Conduct has been published in nine languages and can be accessed on the Group's intranet and Internet.

Further self-commitments for the Lufthansa Group result from its participation in the UN Global Compact (see page 32), its membership in the anti-corruption organization Transparency International, the Universal Declaration of Human Rights and the four core work standards of the International Labor Organization (ILO).

The Lufthansa Group endeavors to manage the Company effectively, as required by the principles of good corporate governance. In particular, they imply integrity on the part of the employees as a prerequisite for the Company's sustainable success.

The Lufthansa Group reflects these principles by applying corporate leadership and control focused on responsibility and sustainable value generation. This approach is in accordance with high international standards and is of vital importance in maintaining transparency vis-a-vis the Company's shareholders and continuously increasing trust in the Company's top management.

An essential legal base for these principles are the German Stock Corporation Act and the German Corporate Governance Code. The Declaration of Compliance with the German Corporate Governance Code was updated in December 2018 and has been published on the Internet at:

➤ [www.lufthansagroup.com/investor-relations](http://www.lufthansagroup.com/investor-relations)

## Code of Conduct

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The principles anchored in the Lufthansa Group's Code of Conduct are the basis for fair competition and help to avoid legal risks and to identify and avoid reputational risks.

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In addition to the Code of Conduct, a number of Company-internal guidelines complement the Code's binding principles and standards of conduct. In particular, this includes the Lufthansa Group Compliance Program, which consists of the following components:



**COMPETITION**



**INTEGRITY**



**CAPITAL MARKET**



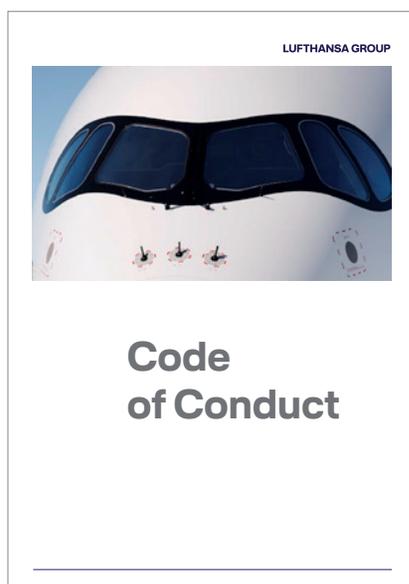
**EMBARGO**

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To allow for confidential information concerning potential crimes or violations of laws or regulations, the Lufthansa Group set up an ombudsman system.

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In addition, the Lufthansa Group is listed in the joint transparency register of the European Commission and the European Parliament. The goal of this register with public access is to increase the transparency of decision-making processes on a voluntary basis. Simultaneously, it aims at ensuring that interactions between EU institutions and organizations, associations and corporations are conducted in conformity with current laws and carried out on the basis of ethical principles.



## Fighting corruption and bribery

Corruption risks may occur in companies worldwide, including within the Lufthansa Group or at its business partners. Therefore, the issue of anti-corruption is significant for the Group as it makes an important contribution to strengthening fair competition, integrity and responsible conduct. The Lufthansa Group's goal is to further increase awareness of the issue of anti-corruption throughout the Company and to ensure conduct in conformity with applicable law and regulations.

Its global operations mean that the Lufthansa Group is obliged to comply with national anti-corruption legislation around the world and in some cases with anti-corruption laws that have extraterritorial application. Infringements may not only result in criminal and civil penalties for the individuals and companies involved, but may also result in incalculable reputational damage. Combating and preventing corruption and bribery is also an integral part of the Lufthansa Code of Conduct and is essential for the business operations of the Lufthansa Group.

To ensure this outcome, the Lufthansa Group's Compliance Management System aims at keeping employees and the Company from breaking the law and supporting employees in applying laws correctly. The Compliance Management System consists of the modules Competition, Capital Market, Integrity (anti-corruption) and Embargo Compliance (see page 35).

### Corporate Compliance Office

The Group-wide implementation, development and communication of the Lufthansa Group Compliance System is the responsibility of the Group Compliance Office, which is part of the central Legal Department. It is supported by a worldwide network of compliance managers at the Group companies. Continuous self-audits and audits ensure the effective implementation of the compliance program.

The head of the Legal department and Chief Compliance Officer reports directly to the Executive Board member for Human Resources and Legal Affairs and presents two Compliance Reports a year to the Executive Board. Furthermore, the Steering Committee of the Supervisory Board is informed twice a year about compliance-relevant developments within the Group.

### Anti-corruption training

All managers, team leaders and employees from relevant areas participate in obligatory two-year cycles of an IT-based anti-corruption training to make them aware of potential risks.

Automated IT processes ensure that all employees and members of bodies of the Lufthansa Group regularly take part in the web-based compliance trainings that are relevant for them. The Group companies' employees have access to these e-learning courses and are in part already linked to automated mailings or participate in corresponding company-specific processes. As a complement, the Corporate Compliance Office conducts worldwide classroom training and offers workshops. During the reporting year, more than 1,200 participants took part in such trainings and workshops. The training offers are directed at managers as decision-makers and multipliers as well as at employees who need in-depth compliance knowledge to handle their tasks.



### Risk-based business partner due diligence

The Lufthansa Group also expects the conduct of its business partners to be fully in line with compliance requirements. Therefore, the integrity of suppliers and service providers is ensured by means of a risk-based business partner compliance due diligence process. In the course of the review, the compliance managers or the employees in the Corporate Compliance Office carry out compliance screenings. To begin, this entails determining the identity of the business partner in order to then carry out a check against databases in the compliance, embargo, sanctions, PEP (politically exposed person) and watch lists categories, verifying that there are no relevant entries. Depending on the result, various measures proposed jointly by the Corporate Compliance Office and Corporate Security may be necessary to deal with a potential business partner, up to a decision against establishing a business relationship.

### Review for corruption risks

All companies in the Lufthansa Group were reviewed for corruption and antitrust risks by means of a compliance risk assessment (see page 26, Balance 2017).

A report detailing the results for each Group company reviewed and describing recommended mitigation measures was issued during the reporting year 2018. These measures are to be implemented by the respective companies according to a structured plan. In addition to the risk areas identified in this manner, further potential compliance-critical areas with regard to integrity and competition are identified in all Group companies in the context of regular Group-wide risk assessments. Appropriate preventative measures are subsequently taken with the goal of eliminating potential weak points. These risk assessments include both interviews with managers as well as written self-assessments.

### Ombudsman system

The Lufthansa Group set up an ombudsman system in 2008 to enable information to be provided confidentially about suspected criminal offences, particularly potential breaches of anti-corruption legislation and regulations. An external, independent lawyer, Dr. Rainer Buchert in Frankfurt, acts as the ombudsman. Informants can give information by telephone, in writing or personally to the ombudsman. He communicates any information he receives to Lufthansa while respecting absolute confidentiality concerning the name and identity of the informant. In this way, the disclosure of an informant's identity to the Company or to third parties without his or her consent is ruled out.



## Respect for human rights

Respecting human rights is self-evident for the Lufthansa Group as a company acting with integrity and responsibility. In the Lufthansa Group's stakeholder survey of 2018, this action area was elected into the first half of prioritizations, both by internal and external stakeholders (see materiality matrix, page 31). Respect for human rights along the entrepreneurial supply chain includes the aspects supply chain, employee environment and business purpose.

As a member of the UN Global Compact, it is important for the Group to align entrepreneurial conduct with internationally accepted principles and self-commitments, and to anchor respect for human rights as an integral part of its corporate culture worldwide. This is also reflected in working conditions, freedom of association and assembly, rules to ensure gender equality and inclusion of minorities as a matter of course. Thus, Article 6 of the Lufthansa Group's Code of Conduct specifically states that the Company always acts in agreement with human rights, the principles of the UN Global Compact as well as recognized international work and social standards.

The Lufthansa Group's overarching goal is to avoid human rights breaches by means of organizational and process-based measures. The Group's procurement policy states that the Lufthansa Group expects its suppliers to respect human rights too (see page 41). Contracts should therefore include the possibility of penalties up to and including the immediate termination of the business relationship.

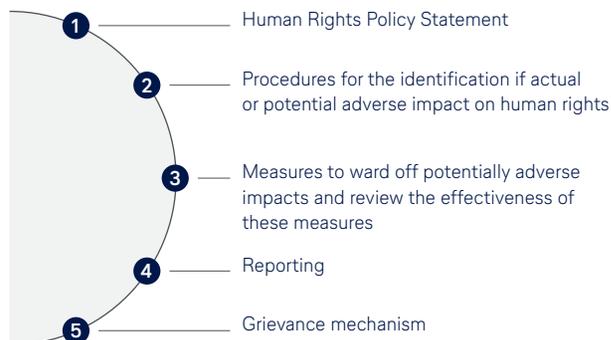
The Lufthansa Group is guided in implementing measures concerning human rights obligations by the recommendations given by the National Action Plan for Business and Human Rights (NAP), adopted by Germany's federal government on December 21, 2016. It formulates the expectation that German companies ought to adhere to their human rights obligations and respect these rights along their supply and value chains. The NAP describes five core elements of human rights-related duties of care. These include a declaration of principles, a procedure to determine actual and potential disadvantageous effects on human rights, measures and effectiveness control, reporting and a complaints mechanism (see illustration on this page). All measures listed below can be assigned to one of these core elements.

### Working group human rights acts as contact and multiplier

The human rights working group, established in 2017 in the Human Resources and Legal Affairs Division of the Executive Board, continued its work in the reporting year and includes representatives of all relevant head office functions and Group companies potentially at risk. Its regular meetings serve to communicate information and develop a uniform, Group-wide position and strategy. In the future, the development of a structured media monitoring process is planned. In addition, selected contacts advise, support and follow up on the topic at the main companies in the Lufthansa Group. International reporting obligations are also dealt with by the working group. The Lufthansa Group has published a mandatory declaration for the financial year 2018 as required by the UK Modern Slavery Act 2015.

In addition, the Lufthansa Group signed the "Resolution against Trafficking in Persons" of the International Air Transport Association (IATA) during the reporting year. The Company supports this industry initiative, which aims in particular at sensibilizing staff in the operational, cabin and ground areas at stations with regard to the issue of human trafficking.

### CORE ELEMENTS OF THE GERMAN NATIONAL ACTION PLAN FOR BUSINESS AND HUMAN RIGHTS





## Three questions for KARLHEINZ SCHNEIDER

Senior Vice President Corporate HR Steering & Labor Relations

### WHAT IS THE LUFTHANSA GROUP'S POSITION ON HUMAN RIGHTS?

It is often assumed that human rights are respected as a matter of course. However, this is not the case everywhere. As an aviation group with worldwide activities, we consider it our responsibility to make a contribution in this area. Companies do not control the political development in those countries in which they are active. But they do bear responsibility in the areas in which they operate, especially for the treatment of their own employees and those employees along the value chain – in a global context. For the Lufthansa Group as a member of the UN Global Compact, it is important to align our practices with internationally recognized principles and to anchor respect for human rights actively in the Company's everyday life.

### IN CONCRETE TERMS, WHAT DOES THIS MEAN?

Dealing with the contents related to the topic of human rights within the Lufthansa Group is divided into different topic areas and currently includes the Company's own employees as well as the supply chain. To prevent "human trafficking" – meaning

smuggling people – additional topics, more from an operations context, are also being considered. The strategic steering and further development of this topic is handled centrally and Lufthansa Group-wide, and its content is built up from the relevant interfaces. Taking the responsibility and ensuring respect for human rights concerning employees is organized in line with these policies via a decentralized key account system within the parent companies.

### WHAT CAN COMPANIES EXPECT IN TERMS OF LEGISLATION IN THE COMING YEARS?

We observe that in this area as well, there is an increasing tendency towards legal regulation. Today, numerous national and international reporting obligations already exist for the Lufthansa Group in the topic area of human rights. On the occasion of the 70th anniversary of the UN Universal Declaration of Human Rights, Germany's federal government pointed out to the German business community – with reference to the framework of the National Action Plan for Business and Human Rights – that they have a duty to care for human rights. In 2020 at least half of all companies with more than 500 employees in Germany will need to be able to prove conclusively that they have incorporated the core elements of care concerning human rights into their corporate processes. Whether legal regulation will be deemed necessary will depend on the results of monitoring. Germany's Federal Ministry for Economic Development and Cooperation is already working on draft legislation for a sustainable value-added chain. The German Minister of Labor announced that an emphasis is also to be placed on sustainable value-added chains at the European level in the context of Germany's presidency of the European Council in 2020.

### **Managers and employees are sensibilized by target audience**

Based on an analysis carried out by Verisk Maplecroft, an advisory company, an overview was drawn up of all Group companies operating in high-risk and extreme-risk countries, i.e. where the risk of human rights violation is particularly high. The country overview is regularly updated.

The companies are obliged to identify human rights risks and report the type and number of suspicious incidents. Individual complaints can be made also by third parties to the external ombudsman – confidentially if so desired.

Employees of the Lufthansa Group can also report to their manager, Human Resources management or the employee representative. A works agreement with regard to procedures for grievances is already in place for all employees in Germany. It is already used for many different kinds of complaints and can also be used for complaints regarding human rights violations.

Managers and personnel services at the Group companies are being sensibilized concerning their duty of care related to avoiding human rights violations. Thus, the employment contracts for these managers have been complemented step-by-step with a specific appendix since 2018.

Furthermore, all employees are being sensibilized by a Group-wide communications campaign on an intranet portal dedicated to the topic. This includes a statement by the member of the Executive Board responsible for Corporate Human Resources and Legal Affairs, which emphasizes the Lufthansa Group's responsibility for respecting human rights as a company with global business activities. Additionally, further information on this subject is available to all employees. In 2019, this communication is to be continued in a need-oriented and target audience-specific manner. It focuses on expanding internal communications concerning the NAP.

### **“Zero tolerance” for cases of sexual harassment**

Respect for one another is particularly important to the Lufthansa Group. This includes ensuring a working environment for all employees that is free of discrimination, harassment and unequal treatment. The Lufthansa Group expects that this principle is reflected globally in the conduct of all employees towards one another. A corresponding clause was added to the Code of Conduct in 2018 and an extensive communications campaign to raise awareness was carried out using various internal and external communications channels. For those employees affected, the Lufthansa Group also expanded its range of options for providing support.

# SUSTAINABILITY ALONG THE SUPPLY CHAIN

The Lufthansa Group has more than 40,000 suppliers. The annual procurement volume is about 20 billion euros.

To meet the standards it sets for the sustainability of its own products, the Lufthansa Group relies on close cooperation with suppliers who share and implement these standards. This approach is also part of the Lufthansa Group's Code of Conduct. The Group expects its suppliers to fully comply with current law, guidelines and regulations concerning fair competition, integrity and responsible practices (see page 35 ff., Compliance and human rights).

A transparent supply chain allows the Lufthansa Group to manage procurement processes in a targeted manner. Bottlenecks and weak points can thus be identified quickly and countermeasures taken. For these reasons, setting up and expanding a sustainable supply chain is of strategic importance for the Lufthansa Group.

Since October 2017, the purchasing units in the Lufthansa Group have been organized within a single reporting line under the Chief Financial Officer. They inform the Executive Board about current developments on a regular basis. In some cases – especially airline-specific processes such as purchasing aircraft or kerosene – the purchasing units are centralized. In other cases they are decentralized throughout the Group companies (for more specialized products). Reporting lines are based on responsibilities for different product groups and Group companies. Defining product groups optimizes the purchasing function in the procurement markets. Reporting on the basis of Group companies ensures security of supply.

The introduction of a process-based matrix organization makes it easier to establish sustainability standards because it means that standardized processes and IT systems are increasingly used. In addition, defining responsibility within the Group ensures efficient ways of working together. The goal is also to improve the enforcement of sustainability standards. Furthermore, confidential information concerning potential criminal conduct or violations of laws or regulations are made possible by the Group's ombudsman system.

## **The Group procurement policy includes the obligation to assume social and ecological responsibility**

It is to be understood as an overriding specification for all procurement guidelines at the Group companies and includes the obligation to assume social and ecological responsibility. In addition, it serves as a handbook for buyers and all employees with contacts in the procurement markets. Among other considerations, it requires that these obligations be included in contracts with suppliers:

- to comply with the ten principles of the UN Global Compact (see overview on page 32);
- to comply with the four basic principles of the International Labor Organization (ILO);
- to consent to announced and unannounced audits by companies of the Lufthansa Group;
- to accept the termination of the contract in the event that these contractual obligations are breached.

During the reporting year, the application of standardized contract clauses was further advanced. By setting up these requirements the Lufthansa Group aims at ensuring responsible practices at its immediate suppliers and thus meeting its own entrepreneurial responsibility.

The purchasing units responsible for specific product groups carried out a suppliers' risk assessment with the goal of identifying the types and levels of risks related to suppliers. These assessments are reflected in the result of the Group's risk management. At the same time, Group-wide, standardized and structured supplier screening continues to be implemented.

## **The Lufthansa Group's commitment to sustainability is confirmed by EcoVadis**

With the aim of being able to describe its sustainable and responsible practices vis-a-vis customers, the Lufthansa Group participates in EcoVadis, a sustainability evaluation platform for global supply chains. During the reporting year 2018, the Lufthansa Group's commitment was again confirmed by EcoVadis with the "Silver Status".

# FLEET MANAGEMENT

The Lufthansa Group counts on a modern, efficient and standardized fleet and continuously makes investments in its fundamental modernization. By following this approach, the aviation group will be able to continue to offer leading-edge product quality in the future, while flying increasingly economically and quietly. Operating new aircraft with lower fuel burn is the most effective lever the Group can apply in keeping the environmental burdens from flight operations as low as possible. In 2018, the Lufthansa Group received a total of 46 aircraft, including six long-haul aircraft (see page 20, Annual Report 2018). At the end of 2018, the Lufthansa Group's operative fleet included a total of 744 aircraft with an average age of 11.9 years (see page 45, table: The Lufthansa Group fleet).

In March 2019, the Lufthansa Group placed an order for 40 ultra-modern long-haul aircraft: 20 Boeing 787-9s and 20 Airbus A350-900s, which are considered the most fuel-efficient in their respective classes. They are to be delivered between the end of 2022 and 2027 and primarily replace four-engined aircraft in the fleet of the Group airlines. The order has an investment volume of 12 billion U.S. dollars at list prices. Moreover, a decision was made to sell six of a total of 14 Airbus A380s to the manufacturer; the aircraft are to leave the fleet in 2022 and 2023.

The Lufthansa Group currently (as of May 7, 2019) has firm orders for a total of 210 new aircraft with delivery dates by 2027. During the financial year 2019 the Group expects to take delivery of up to 32 new aircraft. Seven new aircraft were already incorporated into the fleet during the first quarter 2019, primarily to replace older aircraft.

The largest part of aircraft is financially unencumbered and is in the unrestricted ownership of the Group.

## Fleet planning and management from one hand

Commercial Fleet Management at the Lufthansa Group steers the Group-wide fleet planning and is thus responsible for the fleet's size and composition as well as the allocation to individual Group airlines (see interview page 10 ff., Balance 2018). The internal matrix structure ensures that the Company optimally bundles the technical knowledge available in the Lufthansa Group. On the basis of market and requirement analyses as well as efficiency criteria, experts select suitable types of aircraft and determine the number to be ordered. The process from deciding on a particular type of aircraft to taking delivery takes about three to five years. At the same time, Fleet Management regularly calculates the optimum point in time for replacing an aircraft, which provides the highest possible planning security for distribution, network planning and technical services, among other considerations.

In its fleet planning, the Lufthansa Group currently focuses above all on increasing the Group fleet's efficiency and on further harmonizing it. Older aircraft are replaced by modern ones with low fuel consumption and thus low CO<sub>2</sub> emissions. Simultaneously, the Lufthansa Group has been reducing the number of aircraft types for a number of years, so that the fleet's complexity is continuously reduced and efficiency increased. The fleet's harmonization also helps decrease maintenance and operating costs, and create additional synergies, from licensing for pilots and cabin personnel to standardized processes on board and maintaining stocks of spare parts. After decommissioning, aircraft are either sold or recycled (see page 13, Balance 2018). The majority of the aircraft in the fleet are manufactured by Airbus and Boeing. On short- and medium-haul routes the Group airlines also operate aircraft produced by manufacturers Bombardier and Embraer.





SWISS CS300 featuring the "Fête des Vignerons" livery



A Lufthansa A320neo

## Fleet standardization advances

With the goal of becoming more flexible and taking advantage of synergies, the Lufthansa Group is continuing the standardization of its Airbus A320 fleet (see illustration, Balance 2018, page 33). In the future, the aircraft of the Group Airlines will be configured and standardized from the start so as to allow conversions within a short time and with little effort when they are transferred between Group airlines. As a result, duration and costs associated with such modifications can be reduced significantly. This allows the Group to react more swiftly and flexibly to current developments, and to move aircraft and capacities more simply and efficiently between its airlines and hubs. The airline brands with their respective corporate identities remain unchanged in this context.

The fleet development of the Group airlines from an operative perspective:

### Lufthansa

In 2018, Lufthansa consistently continued its fleet modernization. Six Airbus A320neo aircraft were put into service during the reporting year. At the end of 2018, a total of 16 A320neos were in operation. The A320neo is significantly more fuel-efficient than comparable predecessor models and is characterized by correspondingly lower CO<sub>2</sub> emissions. In addition, the 85-decibel noise contour of an A320neo taking off is only half that of an A320 in the existing fleet.

For long-haul operations Lufthansa integrated six A350-900s in its fleet during the reporting year. At the end of the year, the airline operated 12 of these environmentally friendly long-haul aircraft from its Munich hub. They consume about 25 percent less fuel, emit correspondingly less CO<sub>2</sub> and are significantly quieter during takeoff and landing than comparable types of aircraft (see page 70).

Lufthansa CityLine, which has provided an important portion of feeder flights at the Munich and Frankfurt hubs for many years, has operated its first Airbus A319 at the Munich hub since the beginning of the summer timetable 2019. More aircraft of this type are to follow by the end of 2020. Independently of this development, the airline has counted on Bombardier CRJ series aircraft for more than 25 years. The CRJ900s epitomize fuel efficiency, low emissions values and a low noise burden. Currently, 35 CRJs are the mainstay of Lufthansa CityLine's fleet, complemented by Embraer 190s and 195s.

### SWISS

SWISS also successfully continued its fleet modernization during the reporting year. The airline put another two Boeing 777-300ERs into service in 2018 and thus currently operates ten aircraft of this type. An order for a further two Boeing 777-300ERs was placed in May 2018. These two long-haul aircraft are to be commissioned in 2020. The SWISS long-haul fleet will then comprise 12 Boeing 777-300s, five A340-300s and 14 A330-300s.

For short- and medium-haul operations the fleet was expanded by another 13 C Series aircraft. By the end of the reporting year SWISS had received 28 of the 30 C Series aircraft it has on order.

## Austrian Airlines

Austrian Airlines expanded its long-haul fleet with one Boeing 777-200ER, which started revenue services in May 2018. In short- and medium-haul operations all 18 76-seater Bombardier Q400s are to be replaced by ten Airbus A320neo aircraft by the end of 2020. Once this measure is completed, Austrian Airlines' short- and medium-haul fleet will consist of 17 Embraer 195s and 46 aircraft of the Airbus A320 family.

## Eurowings

During the reporting year, Eurowings took over 77 aircraft from the Air Berlin Group and integrated these into its fleet, following Air Berlin's insolvency in 2017; these included 20 Bombardier Q400s of Luftfahrtgesellschaft Walter (LGW). On April 1, 2019, Zeitfracht Group acquired LGW from Eurowings. A longer-term wet-lease agreement ensures that LGW's contribution to Eurowings' operations remains unchanged.

The sale of LGW is also an important step for Eurowings towards a homogeneous Airbus A320 fleet on short- and medium-haul routes.

## Lufthansa Cargo

At the beginning of 2019, Lufthansa Cargo expanded its fleet with two factory-new Boeing 777F freighters, which had been ordered in May 2018. This aircraft is considered the quietest and most fuel-efficient freighter in its class and is characterized by its high level of reliability and long range. As a countermove, two Boeing MD-11Fs are to be decommissioned later in 2019. At the end of 2018, the freighter fleet of Lufthansa Cargo comprised five Boeing 777Fs and 12 Boeing MD-11Fs. The freight specialist's strategic goal is to switch to an all-Boeing 777F fleet over the long term. This fleet modernization is to be fully concluded by the middle of the next decade at the latest.

In addition, Lufthansa Cargo leased two further Boeing 777Fs from the manufacturer, which are operated by AeroLogic, the joint venture with DHL. The first aircraft arrived in February 2019 at the Leipzig/Halle Airport; the delivery of the second one has been planned for the fall. With these two additions the AeroLogic fleet will in the future consist of 12 Boeing 777F aircraft.





## One of the initial customers for the highly-efficient Boeing 777-9

The Lufthansa Group is a pioneer of introducing environmentally friendly technologies. The Group airline Lufthansa will be one of the first airlines worldwide to receive the new Boeing 777-9 in summer 2020. The Group has ordered a total of 20 of these highly-efficient long-haul aircraft. Their fuel efficiency is improved by about 15 percent compared to the Boeing 777-300ER. Lower kerosene consumption is achieved above all by the two newly-developed General Electric GE9X engines as well as the extremely long and narrow, curved wings, which consist for the most part of carbon fiber.

Furthermore, the Boeing 777-9 features a significantly wider cabin compared to its predecessor models. For the first time, it will feature the new Lufthansa Business Class that gives every passenger direct aisle access at any time. In addition, new seats provide greater privacy and optimum sleeping comfort (see page 101). In configuring the cabin of the new Boeing 777-9, the Lufthansa Group for the first time opts for standardization of long-haul aircraft too.

### THE LUFTHANSA GROUP FLEET AS OF DECEMBER 31, 2018

(changes compared to 2017)

	In possession <sup>1</sup>				In operation <sup>2</sup>			
	Number		Age		Number		Age	
Lufthansa (including regional partners)	351	(-6)	11.5	(+0.6)	351	(+14)	11.5	(+0.6)
Eurowings <sup>3</sup>	153	(+17)	11.1	(+0.7)	133	(+46)	10.9	(+0.7)
SWISS (including Edelweiss Air)	105	(+14)	10.2	(-0.8)	105	(+14)	10.2	(-0.8)
Austrian Airlines	83	(±0)	14.6	(+0.9)	83	(±0)	14.6	(+0.9)
Brussels Airlines	52	(+8)	15.3	(±0)	55	(+11)	15.4	(+0.1)
Lufthansa Cargo	19	(+2)	14.4	(+0.3)	17	(±0)	15.1	(+1.0)
<b>Lufthansa Group fleet</b>	<b>763</b>	<b>(+35)</b>	<b>11.9</b>	<b>(+0.5)</b>	<b>744</b>	<b>(+85)</b>	<b>11.9</b>	<b>(+0.4)</b>

<sup>1</sup> Aircraft in the possession of Lufthansa Group <sup>2</sup> Operated by companies of the Lufthansa Group

<sup>3</sup> Including Germanwings (GWI) and Luftfahrtgesellschaft Walter (LGW)

# SUSTAINABLE INNOVATION, RESEARCH AND DEVELOPMENT

The Lufthansa Group and its companies continuously work on product innovation and research and development projects, both individually as well as Group-wide. Given the highly heterogeneous core business models within the Group, product innovations are mainly driven forward in a decentralized manner in the respective business segments. This is also where the concrete effects of research and development are the most distinctly perceptible (see page 41 ff., Annual Report 2018).

Beyond that, there is a partial centralized coordination of activities as well as incentives and financial support provided for Group-wide innovation projects, which intensifies interdisciplinary cooperation. The results thus generate added value for the Lufthansa Group and strengthen interconnectedness as well as alignment with overarching goals.

In the digital era, the ability to innovate is more than ever a key prerequisite for sustainable economic success. For a company such as the Lufthansa Group this means thinking and acting strategically in a highly competitive environment. Therefore, digitalization is the central innovation and future topic in all of

the Group's business segments. It allows the development of new business models, solutions and products. All companies within the Lufthansa Group are thus able to redesign their customer interfaces and better address differentiated customer needs (see page 36, Balance 2018).

The open platform AVIATAR, which was developed by Lufthansa Technik for digital MRO solutions (see page 9, Balance 2017) also makes a contribution in this area. By now, more than 1,000 aircraft are live on this platform in order to benefit from optimized operating times, lower follow-up costs as well as safer and more reliable fleet operations.

Additionally, in March 2019 the MRO specialist established the AVIATION DataHub. For the first time, this gives the entire aviation industry an independent data platform on which airlines, manufacturers and companies in the maintenance and overhaul areas as well as data providers and other market participants can digitally gather, combine and process technical and flight operations data – with the full security, integrity and control over data by their owners being assured.



The start-up Yilu, founded by the Lufthansa Group and the Lufthansa Innovation Hub, developed an end-to-end platform for travel service providers.



At the beginning of 2019, the Lufthansa Innovation Hub opened its first location abroad in Singapore.

Beyond that, Lufthansa Technik is the most important provider of ideas within the Lufthansa Group. The world's leading supplier of technical aviation services saves about 40 million euros per year by implementing creative improvement suggestions made by employees working in hangars, workshops and offices.



### **Lufthansa Innovation Hub**

With the aim of identifying and managing opportunities resulting from industry changes and digitalization trends in an even more structured manner, in 2014 the Lufthansa Group set up the Innovation Hub in Berlin. Its goal is to further develop the Group's distinct innovation culture and power, and to take advantage of opportunities in a focused way. Meanwhile, the Lufthansa Innovation Hub has established itself as one of the most important drivers of the Group's digital activities and in 2018 was honored by business magazine Capital for the second time in a row for its work as "Germany's best innovation laboratory". During the reporting year, 23 projects were developed, four partnerships successfully implemented and three investments in tech start-ups in Germany, the USA and Canada realized. Furthermore, the Innovation Hub was expanded by new digitalization units in Asia. With the aim of being better able to create network links with local players and increase the footprint of the Lufthansa Group in the Asian economic system, the Lufthansa Innovation Hub opened its first location abroad at the beginning of 2019 in Singapore, while the second one is to follow this summer in Shanghai.

Th Lufthansa Innovation Hub and the SAP.iO Foundry Berlin also have jointly chosen to pursue a creative approach. In July 2018, the partners launched an ideas competition for blockchain-based solutions, aimed at making the customer experience as well as processes, supply chains and maintenance processes at airlines even more smooth and interconnected.

With the format FlyingLab the Lufthansa Group created an open innovation platform. On selected Lufthansa flights, passengers have since been able to experience innovative products and services live on board, test these themselves and give feedback.

In addition, in 2018 Eurowings founded Eurowings Digital GmbH. This new company is to bundle all of the airline's

customer-relevant digital activities under one roof. The focus is on developing the digital customer interface eurowings.com into a comprehensive travel platform on which the airline's customers can not only book flights but also take advantage of personalized offers of digital services and products.

### **Chair for innovation endowed**

In May 2018 Dr. Bettina Volkens, Member of the Executive Board, Corporate Human Resources and Legal Affairs of Deutsche Lufthansa AG, endowed the new Lufthansa Group Chair in Innovation Studies at the private European School of Management and Technology in Berlin. The chairholder's future tasks will include analyses of how new ideas and innovations are developed in networks and communities, and how companies can more effectively take advantage of external sources of innovation and integrate them.

### **Numerous internal platforms**

With the goal of increasing its ability to innovate, the Lufthansa Group offers a number of events and platforms, including the annual Innovation Forum as well as the Innovator Awards. The latter have honored exceptional innovation projects once a year since 2014.

Beyond that, the Group runs the Innovation Accelerator, a program that imparts methods and tools for agile working techniques and fast prototyping. In addition, since 2014 employees have had the opportunity to apply to the LH Group Innovation Growth Fund (IGF) for development funds of up to 10 million euros per year to develop ideas from their early stages.

With the aim of securing its worldwide pioneering role in the area of digitalization and innovation within the aviation industry, since 2018 the Lufthansa Group has made available an additional 20 million euros per year through its new Lufthansa Digital Fund (LDF). These funds are aimed at the development of digital business models as well as technology and risk capital projects (see page 37, Balance 2018).

Furthermore, the Lufthansa Group cooperates with aircraft manufacturers, airports, fuel producers and science to advance innovations on the basis of substantiated data and continuously improve the Company's own involvement in environmental protection.



# 02

Key points on

# CLIMATE & ENVIRONMENT

Global aviation is a growth industry and, for the foreseeable future, it will continue to require the use of fossil fuels or alternative liquid fuels with a corresponding energy density. Therefore, the material environmental effects of flight operations are primarily climate effects due to the CO<sub>2</sub> emissions produced by burning kerosene and the noise caused by aircraft while taking off and landing. In addition, upstream and downstream activities consume resources, such as energy and water, and generate waste materials.

Against this background, climate and environmental responsibility are key concerns for the Lufthansa Group. The Company has been committed to limiting the environmental effects of its business activities for many years. This approach also has an economic motivation, as fuel consumption, CO<sub>2</sub> certificate acquisition and noise-related airport fees all generate costs. In line with the consideration of materiality, the Lufthansa Group focuses its commitment above all on its core business, the product of “flying”. Central action areas are emissions reduction, active noise abatement, energy and resource management as well as the commitment to scientific research and the establishment of environmental management systems.

The Lufthansa Group aims to conduct its business in a sustainable and responsible manner in all business segments. The Company’s goal is to meet increasing mobility needs with environmentally compatible products and to increase the eco-efficiency of flight operations on a continuous basis (→ PAGE 50 FF.)

# ENVIRONMENTAL MANAGEMENT

As early as 1996, the Lufthansa Group firmly anchored rules concerning environmental care in its Environmental Guidelines. In 2008, the Executive Board approved the strategic environmental program valid until 2020. It establishes the continuous expansion of the environmental management systems in the Group companies as well as significant action areas concerning fuel efficiency and climate protection, active noise abatement, and energy and resource management. The implementation of the environmental strategy thus unfurls its effects in all areas of the Lufthansa Group – from operative activities and technical maintenance to procurement, facility management and administration.

In 2018, the Group was intensively concerned with analyzing increasing stakeholder demands with regard to climate and environmental protection and incorporating these in a new strategic environmental program. At the beginning of 2019, the Executive Board communicated an initial package of key goals and measures (see page 26). Furthermore, these measures are currently being integrated into a sustainability concept that

is still in the development phase and is to be approved by the Executive Board in 2019. In this context, further control parameters are to be implemented at the Group level wherever possible and environmental care is to be interconnected even more strongly with Group strategy. At the same time, the department Group Environmental Issues expanded its database during the reporting year to allow for the systematic integration of other environmental values beyond flight-related environmental data in order to be even better able to meet future reporting requirements.

The Lufthansa Group links entrepreneurial risks related to climate change and noise emissions into multidisciplinary, Group-wide risk management processes. They are also summarized in a regularly updated risk chart. The Group's environmental experts continuously monitor, analyze and manage the environment-related opportunities and risks by means of environmental programs and the environmental management systems.



For the first time, the Lufthansa hub Munich was successfully validated in accordance with the stringent European environmental regulation EMAS and certified with the international standard ISO 14001 for environmental management systems.



In their exhibit "Green Gate", Lufthansa and Munich Airport inform passengers about the numerous programs and initiatives for sustainable mobility.

With regard to climate and environmental responsibility, the companies of the Lufthansa Group take their bearings from voluntary external guidelines and participate in various sustainability initiatives. The resulting obligations in large part exceed legal requirements.

The department Environmental Issues reports to the Chairman of the Executive Board and CEO, and is responsible for the Lufthansa Group's definition, coordination and implementation of Group-wide goals and measures with regard to environmental management. In addition, all larger subsidiaries have their own environmental departments as well as an environmental commissioner or coordinator. The environmental commissioners and coordinators meet at least once a year at the Group-wide Environmental Forum to coordinate strategies, measures and processes, to exchange experiences and to identify possible synergies. In addition, new or planned legal requirements and their effect on the Lufthansa Group are discussed at the forum.

## Environmental management systems

To support the systematic control and continuous optimization of environmentally relevant processes, the Lufthansa Group steadily advances the implementation of environmental management systems according to ISO 14001 or EMAS at the Group companies. This is an overview of the current situation:

The Group's pioneer is **Lufthansa CityLine** with its long-standing experience in environmental protection: in 1999, it became the first airline worldwide to launch a professional environmental management system and to pass EMAS (Eco-Management and Audit Scheme), the most rigorous European certification system in 2000. Since then, the program has been validated annually. Lufthansa CityLine is also certified according to the international environmental standard ISO 14001.

During the reporting year, the environmental management system of **Deutsche Lufthansa AG at the Munich location** was validated for the first time according to EMAS and certified in accordance with ISO 14001. The airline is considering the extension of the validated and certified environmental management system to other locations.



## Four questions for BERNHARD DIETRICH

Head of Environmental Issues, Lufthansa Group

we would like to expand our strategy by adding the topic areas “innovative solutions” and “organization” because we see significant potential in these subjects for further improving the Group’s environmental performance.

### **WHAT IS THE LUFTHANSA GROUP DOING TO MAKE FLYING MORE SUSTAINABLE?**

The Lufthansa Group makes immense efforts in all business segments and areas to make flying more compatible and thus more sustainable. In many subject areas we closely cooperate with partners in industry, science and research. Within our action areas “reduction of emissions”, “active noise abatement” as well as “energy and resource management” we have an entire portfolio of projects. For example, this includes measures to increase fuel efficiency, improve building efficiency, reduce noise, avoid waste and stimulate recycling. In addition to making continuous investments in new aircraft, we also modify aircraft in the existing fleet, so that our overall flight operations will get quieter and more and more efficient.

### **THE LUFTHANSA GROUP’S STRATEGIC ENVIRONMENTAL PROGRAM OUTLINES THE PATH TOWARDS IMPROVEMENTS IN THE AREA OF CLIMATE AND THE ENVIRONMENT BY 2020. WHAT DOES FURTHER PLANNING INCLUDE?**

During an initial workshop with the Executive Board all principal considerations concerning the further development of the Lufthansa Group’s environmental strategy were discussed. Now, our task is to make specific topics more concrete so that they can be included in corresponding programs. For example,

### **WHICH MEASURES HAVE ALREADY BEEN LAUNCHED?**

In March, the Executive Board decided to compensate CO<sub>2</sub> emissions, starting in 2019, for all business-related flights the Group’s employees take. Here we cooperate with our partner myclimate with whom we already offer voluntary CO<sub>2</sub> compensation for our customers. Another important measure is CO<sub>2</sub>-neutral mobility on the ground. By 2030 we want to replace our vehicle fleets – including those on the aprons – in Germany, Austria and Switzerland with e-vehicles or vehicles with other emissions-free propulsion systems. To ensure that the necessary infrastructure will be in place, we will closely coordinate and implement this measure with the respective airports. Another part of this package is that we will switch to sources of “green” electricity supply.

### **WHEN WILL THE LUFTHANSA GROUP’S AIRLINES AGAIN REFUEL WITH SUSTAINABLE ALTERNATIVE FUEL?**

Our interest in sustainable alternative fuels is very strong. Therefore we are working with vigor on ensuring that these fuels will be used more in the future. To help achieve this goal we are actively involved in different research projects and industry associations, among other efforts. At the moment it is above all two factors that hinder the use of these fuels: availability and price. Sustainable alternative fuels are only available in small quantities and still about three to five times more expensive than conventional kerosene. However, we recently signed a declaration of intent covering production and delivery of synthetic kerosene with Raffinerie Heide. This renewable fuel is to be produced with regional wind-generated electricity. Hamburg Airport is also a partner in this project.

**Lufthansa Cargo** has been certified according to the environmental management standard ISO 14001 at its Frankfurt location since 2008 and worldwide since the end of 2015. The worldwide recertification took place in 2017, for the first time in accordance with the more stringent requirements of the revised standard. The latter include the detailed compilation of environmentally relevant risks and opportunities as well as a materiality analysis and a life-cycle evaluation including supplier management. After the certificate's validity had been extended to Jettainer GmbH, it was successfully widened to include another subsidiary, time:matters GmbH in Germany. In 2018, conformity with the ISO norm was again confirmed in a monitoring audit and for the first time the subsidiary time:matters Netherlands was also integrated into the environmental management system. In the process of certification the auditors evaluate among other points whether the environmental effects of daily operations are known in all areas, whether employees receive training on environmental issues, whether reduction goals have been defined and which optimization measures have been launched and implemented. These continuous improvements are of central importance for the environmental management system. They can be measured by evaluating to which degree Lufthansa Cargo has reached its goal in areas such as emissions, digitalization and number of lightweight containers.

**Lufthansa Technik** received its validation according to EMAS as long ago as 1996, as the first Group company to do so, and has been certified in accordance with ISO 14001 since 1999. The MRO specialist has also operated a job safety management program validated in accordance with the international specification OHSAS 18001 since 2008. In 2017, the certification of Lufthansa Technik Philippines in Manila was concluded successfully. Thus, beyond all of the Lufthansa Technik Group's European locations, all of its locations in the Asia-Pacific region have been certified as well. In 2018, the Lufthansa Technik locations in Tulsa (Oklahoma), Frankfurt (Osthafen) and London (Hayes) had their environmental management systems certified in accordance with ISO 14001 for the first time. The engine overhaul locations in Wroclaw (XEOS) and Jasionka (EME Aero), which are being set up, are preparing for certification in 2019 and 2020, respectively.

The **LSG Group** has operated an in-house environmental management system, which comprises significant portions of core elements from ISO 14001, since 2008. All locations worldwide that are fully owned by the airline caterer are covered by this system. The system's components are continuously supported by short-term and long-term goals, activities and programs. Furthermore, each region of the LSG Group has a Regional Environmental Manager (REM), who works together with the regional management team on implementing and monitoring the local environmental programs.

**LZ-Catering** is preparing the introduction of an environmental management system. The company is an "environmental partner" of the City of Hamburg and has been a member of Ökoprofit since 2010. In 2017, LZ-Catering introduced reusable cups at its Bartesse coffee shops to help reduce the quantity of waste. At a majority of its company restaurants LZ-Catering has offered at least one daily "CO<sub>2</sub>-friendly" main course since July 2014. Individual special dishes and regionally-sourced ingredients complement the meal offers at the different restaurant locations.

On the basis of its strategic environmental program, the Lufthansa Group pursues the goal of establishing certified environmental management systems step-by-step at the large Group companies. The airlines SWISS (including Edelweiss Air), Air Dolomiti, Austrian Airlines, Eurowings and Brussels Airlines have currently not implemented certified environmental management systems.

# FUEL CONSUMPTION AND EMISSIONS

The CO<sub>2</sub> emissions of civil aviation currently account for 2.83 percent<sup>1</sup> of all CO<sub>2</sub> emissions caused by human activities, according to the International Energy Agency (IEA), and count among the industry's significant global environmental effects. Given that increasing demand for mobility is foreseeable, air transport and its related emissions will continue to increase in the future. The aviation industry has reacted to this development and in 2009 adopted the following goals with worldwide validity:

1. Fuel efficiency is to be increased by 1.5 percent per year by 2020.
2. From 2020, growth in civil aviation is to be realized in CO<sub>2</sub>-neutral ways.
3. By 2050, the net-CO<sub>2</sub> emissions of civil aviation are to decline by 50 percent, compared with 2005.

The Lufthansa Group had a significant role in this approach and shares the industry's goals. The Company participated in numerous working groups of the International Air Transport Association (IATA), such as the Environmental Committee and the Industry Affairs Committee as well as the Board of Governors.

In addition, the Lufthansa Group has set its own goals to reduce its specific CO<sub>2</sub> emissions by 25 percent by 2020, compared with 2006 values. It achieved 67 percent of this goal by the end of 2018. Against the background of responsible mobility, fuel efficiency and climate protection in flight operations are fundamental for the Group, both from an economic and an ecological perspective. In this way, effects on environment and society can be reduced as well as operational costs – important preconditions for ensuring the Company's long-term success. Simultaneously, the Lufthansa Group fulfills the (transparency) requirements of its stakeholders and meets national, regional and industry-specific energy and emissions regulations.

All projects concerning the subject of improving fuel efficiency are managed by the department Flight Operations Efficiency & Innovation. The experts' task is to identify, develop and implement concepts, projects and processes in flight operations – with the goal of continuously improving the Lufthansa Group's fuel efficiency (see interview page 58). In addition, the modernization of the fleet is a fundamental building block within the concept of resource conservation (see page 56 ff., Fleet management).

## Specific fuel consumption: A new efficiency record

The Lufthansa Group again established a new efficiency record in the reporting year: in 2018, the aircraft of the passenger fleets needed only 3.65 liters of kerosene on average to transport one passenger over a distance of 100 kilometers (2017: 3.68 l/100 pkm). This is an improvement of 0.8 percent compared with the previous year. SWISS (including Edelweiss Air) was again the most efficient Group airline with an average specific fuel consumption of only 3.15 liters per 100 passenger kilometers – an improvement of 1.34 percent compared with 2017. The efficiency values of all Lufthansa Group airlines are shown on page 56 f.. The new fuel efficiency record is in large part the result of the long-term fleet modernization program and numerous operative measures aimed at conserving kerosene.

The CO<sub>2</sub> emissions of the Lufthansa Group, increased by 6.6 percent during the reporting year, compared with the preceding year.

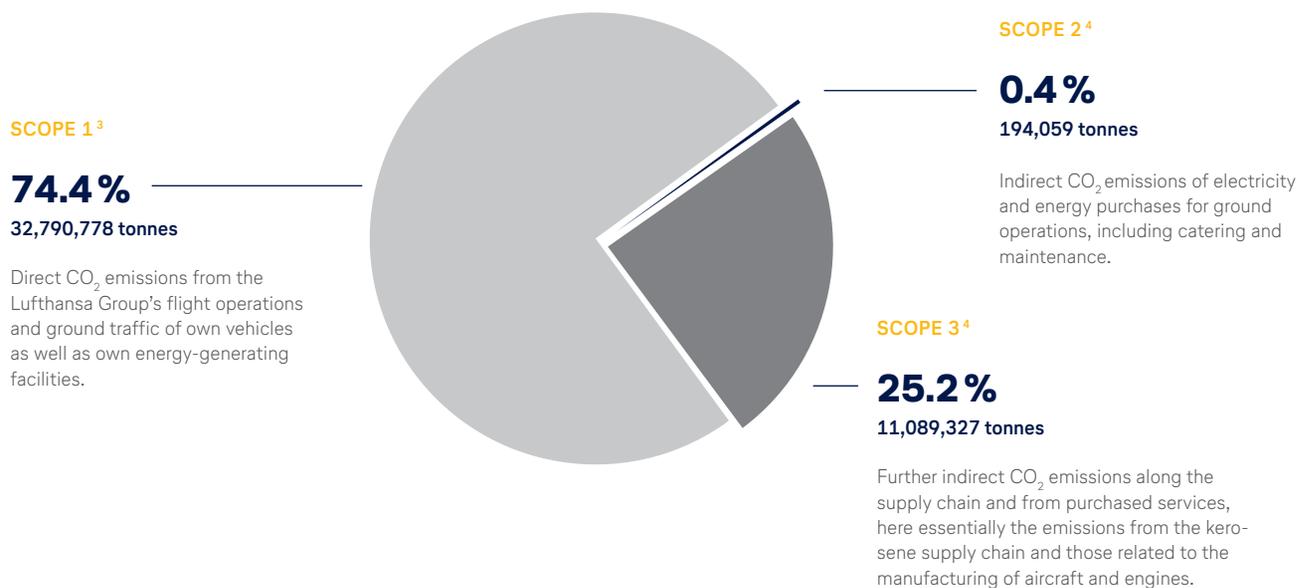


## CO<sub>2</sub> emissions according to GHG Protocol

The Lufthansa Group determines its CO<sub>2</sub> emissions on the basis of the Greenhouse Gas Protocol (GHG Protocol), which divides emissions into three main categories (scopes). All direct emissions from flight operations, which are shown in the illustration as “Direct and indirect CO<sub>2</sub> emissions of the Lufthansa Group”, were determined and verified on behalf of

the aviation group in accordance with the requirements of the European emissions trading scheme. Beyond that, for some years the aviation group has also recorded indirect emissions caused by its business activities. All recorded and calculated direct and indirect CO<sub>2</sub> emissions were verified externally (see page 115, Verification statement). The so-called CO<sub>2</sub> footprint helps the Lufthansa Group to identify and evaluate its significant environmental effects with greater precision, pursuing the goal of developing more effective options for reduction as the next step.

## Direct and indirect CO<sub>2</sub> emissions of the Lufthansa Group 2018<sup>2</sup>



<sup>1</sup> Source: International Energy Agency (IEA) 2018, data for 2016 <sup>2</sup> In the version of the report published on 6 June 2019, the Scope 1 value was not displayed correctly. The value was therefore corrected in the present report on 19 June 2019; the chart on this page has been modified accordingly. <sup>3</sup> Audited with the result High Assurance. <sup>4</sup> Audited with the result Limited Assurance.

# PASSENGER TRANSPORTATION 2018

## SPECIFIC FUEL CONSUMPTION AND SPECIFIC CO<sub>2</sub> EMISSIONS



Values for specific fuel consumption in liters per 100 passenger kilometers (l/100 pkm)



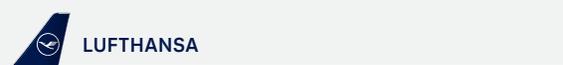
Values for specific CO<sub>2</sub> emissions in kilograms per 100 passenger kilometers (kg/100 pkm)



### LUFTHANSA GROUP

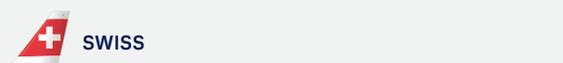
	Total	Long-	Medium-	Short-haul
	<b>3.65</b>	3.33	3.84	5.48
	<b>9.19</b>	8.39	9.68	13.81

### Share of fuel consumption by traffic areas<sup>1</sup>



### LUFTHANSA

	Total	Long-	Medium-	Short-haul
	<b>3.76</b>	3.49	3.94	6.13
	<b>9.47</b>	8.81	9.94	15.44



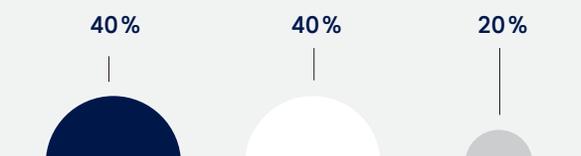
### SWISS

	Total	Long-	Medium-	Short-haul
	<b>3.15</b>	2.88	3.72	5.03
	<b>7.94</b>	7.25	9.38	12.67



### AUSTRIAN AIRLINES

	Total	Long-	Medium-	Short-haul
	<b>3.79</b>	3.10	4.09	5.33
	<b>9.55</b>	7.82	10.31	13.42



<sup>1</sup> Definitions of traffic areas: Long-haul more than 3,000 km | Medium-haul 800 to 3,000 km | Short-haul under 800 km <sup>2</sup> All scheduled and charter flights operated by Lufthansa (including Lufthansa CityLine und Air Dolomiti), SWISS (including Edelweiss Air), Austrian Airlines, Eurowings (including

Germanwings and Luftfahrtgesellschaft Walter), Brussels Airlines and Lufthansa Cargo. Excluding services of third parties as the Company cannot influence their performance.

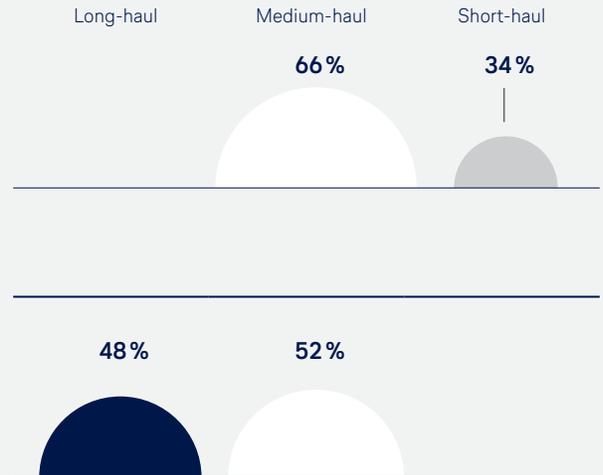


	Total	Long-	Medium-	Short-haul
🔹	<b>4.00</b>	—	3.72	4.70
☁️	<b>10.09</b>	—	9.37	11.84



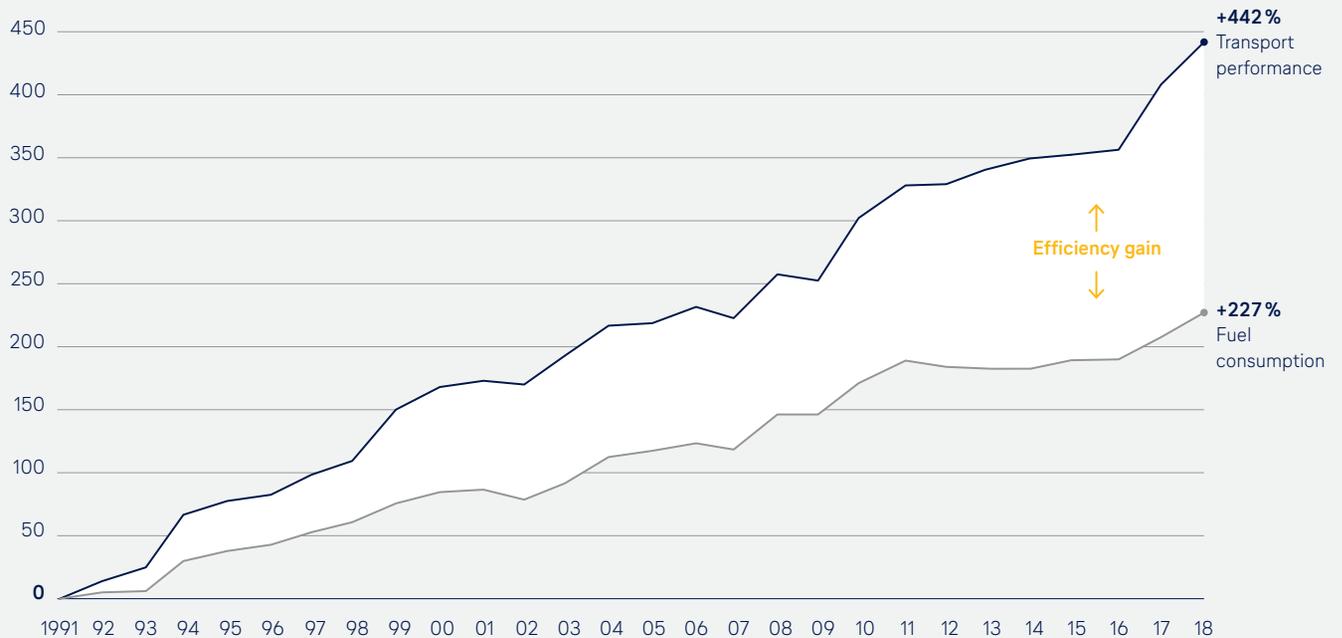
	Total	Long-	Medium-	Short-haul
🔹	<b>3.43</b>	3.27	3.59	—
☁️	<b>8.63</b>	8.24	9.04	—

Share of fuel consumption by traffic areas<sup>1</sup>



## DECOUPLING OF TRANSPORT PERFORMANCE AND FUEL CONSUMPTION<sup>2</sup> SINCE 1991

Changes compared to 1991 in percent, values for the fleet of the Lufthansa Group



For further environmental ratios refer to the chapter Service & Information, page 112 ff.



## Three questions for JÖRG PIKOLIN

Head of Flight Operations Efficiency &  
Innovation Group Airlines

### **HOW MUCH INFLUENCE DO PILOTS HAVE ON FUEL EFFICIENCY WHILE IN FLIGHT?**

Safe flight operations have the top priority for us. Beyond that, our cockpit crews make every effort to operate a flight within optimum economic and ecological values. To help them make the best decisions possible at any time, we support them with information and IT tools. Flight altitude has a decisive influence on fuel consumption. For this reason we show our pilots IT-supported values for the optimum – and thus most efficient – altitude while in flight, taking into account numerous parameters. Selecting the shortest possible route between the points of origin and departure means the least kerosene is consumed. To enable our cockpit crews to easily identify possible shortcuts, we give them data-analytically supported depictions of past flight routings. In addition, to determine the optimum speed of an individual flight within the overall system while airborne, we provide our pilots with systemic parameters such as parking positions or information on connecting flights. Thus they can make decisions based on a broad range of input.

### **WHAT KIND OF TRAINING DO LUFTHANSA GROUP PILOTS RECEIVE ON THE TOPIC OF OPERATING EFFICIENCY?**

Efficient flying accompanies our pilots continuously – starting at the flight academy and then throughout their flying careers. Economic and ecological topics are core elements of training and continuing education for cockpit crews. But efficiency topics are also an integral component of aircraft documentation itself. As the most efficient flight operations possible are indispensable for us, we also support pilots across the entire Lufthansa Group with the so-called “Ops Efficiency Guide”. It provides them with information, tips and background details on each flight phase to enable them to operate flights as efficiently as possible, both economically and ecologically.

### **YOU ARE INTENSIVELY CONCERNED WITH OPTIMIZING AND SHORTENING FLIGHT ROUTINGS. WHAT IS THE CURRENT SITUATION IN THIS AREA?**

As a responsible company, we are naturally interested in planning the optimum flight routing possible. As the European network of air routes is very dense and highly complex, we cooperate with other European airlines, the European air traffic control organizations as well as national and international organizations. By means of numerous initiatives and projects we shape changes in order to make the dense network function more efficiently for all of us.

## Four-pillar strategy for climate protection

The aviation industry intends to reach its goals concerning fuel efficiency and reduction of CO<sub>2</sub> emissions by pooling different measures implemented by different players (manufacturers, airports, air traffic control, airlines, politics). These were classed at the IATA assembly in 2007 in the industry's four-pillar climate protection strategy (see overview below). This strategy also forms the basis for the Lufthansa Group's fuel-efficiency activities. Furthermore, the Group draws orientation in the area of climate and environmental responsibility from the environmental principles of the UN Global Compact and the Sustainable Development Goals of the United Nations (see page 32 f.).



### 1. Technological progress

The most important lever for reducing CO<sub>2</sub> emissions from flight operations is to invest continuously in modern and especially fuel-efficient aircraft and engine technologies (see page 42 ff., Fleet management). The airlines within the Lufthansa Group took delivery of 29 new aircraft in the course of the reporting year.

Moreover, the Lufthansa Group has participated for a number of years in researching and testing alternative fuels in flight operations (see page 9, Pioneer work with alternative fuels). Before the aircraft of the Group airlines can use alternative fuel, a number of basic conditions must be met. They include above all irrefutable quality specifications, sustainability in

production and supply chains, as well as cost effectiveness, of course. In 2018, the Lufthansa Group took part in another cross-sector initiative. It aims to launch and build an international alliance to develop the future strategic importance of synthetic renewable energy sources (PtL – power to liquid), to jointly advance a global market for these energy sources and to accelerate their market development. Furthermore, Lufthansa and Raffinerie Heide signed a joint declaration of intent at the beginning of 2019 concerning the future production and delivery of synthetic kerosene, which is to be produced with green electricity.

## Four pillars for climate protection



### 1. Technological progress

Innovation in aircraft and engine technologies

Alternative fuels



### 2. Improved infrastructure

Better use of airspace

Needs-based airport infrastructures



### 3. Operational measures

Efficient aircraft sizes

Optimal flight routes and speeds

Optimized processes on the ground



### 4. Economic measures

A global, sensibly designed, market-based system for reducing emissions to complement the other three pillars



## PROJECT PROFILE

### PROJECT NAME:

**NETWORK COLLABORATIVE MANAGEMENT**

In the context of the SESAR research project Network Collaborative Management (NCM) the participating system partners demonstrate how they can maintain or even increase efficiency in flight operations through improved cooperation in the event of bottlenecks and disturbances (weather, strikes, etc.). For this purpose they have tested both new concepts and procedures as well as technical innovations under the conditions of everyday flight operations; these measures include B2B interfaces between airlines and air traffic control as well as forecasting systems concerning critical weather situations. The goal is to make data from all system landscapes generally available and to exchange it in a coordinated and standardized way. The partners thus aim to remove inefficiencies and to improve and stabilize traffic flows. The greatest challenge is to harmonize system landscapes and data formats.

### TOPIC AREA

Air traffic management

### FOUR-PILLAR STRATEGY

The project "Network Collaborative Management" makes a contribution to the pillar "improved infrastructure".

### PARTICIPATING EXPERTS

Experts from several system partners participate in this project: air traffic control, airlines – including Lufthansa, SWISS, Austrian Airlines and Eurowings – as well as network management and meteorological services.

### GOAL

The goal of the Lufthansa Group airlines is to avoid delays and emissions through this project, and above all to reduce unnecessary long routes and the related fuel burn.

### DURATION OF MEASURE

February 2018 to January 2020

## 2. Improved infrastructure

The largest climate protection project in European aviation is to establish a standardized airspace above Europe, the so-called Single European Sky (SES). With a "Schengen in the air", aircraft would no longer have to fly detours. According to the European air traffic control organization, Eurocontrol, airlines could conserve up to 10 percent of fuel and reduce their CO<sub>2</sub> emissions proportionally. The airlines of the Lufthansa Group alone would be able to reduce their CO<sub>2</sub> emissions by 3 million tonnes per year. This would be the largest single contribution to sustainability. In Europe, there are still about 61 air traffic control centers with responsibility for air safety in 28 different national systems, which means that aircraft can rarely follow an optimum route to their destinations.

The Lufthansa Group supports the EU's SES initiative explicitly and works through the European airline association Airlines for Europe (A4E) for the creation of a reliable and efficient EU air space. An important milestone on the path toward this goal is the standardization and modernization of the European aviation infrastructure, for which the European Commission set up the SESAR (Single European Sky ATM Research) program. SESAR is to advance the development, testing and Europe-wide implementation of new technologies, procedures and standards that contribute to harmonizing and digitalizing European air traffic management. The work of air traffic controllers could be significantly facilitated if systems become more digital and virtual. Numerous technologies have already been developed and were presented to the EU in the middle of March in the context of the Airspace Architecture Study – now they have to be introduced resolutely. The Lufthansa Group is committed to SESAR with the clear expectation that measurable operational improvements in the area of air traffic management will turn into reality.

The implementation of these technologies in everyday operations is coordinated under the roof of the industry consortium SESAR Deployment Manager (SDM). The Lufthansa Group is a member of this consortium and provides experts on site. Currently, the SDM coordinates 349 projects across Europe. The different airlines of the Lufthansa Group and Lufthansa Systems as an IT provider also actively participate in the SESAR research and demonstration projects (see profile on the right). One example is the project Network Collaborative Management (see project profile on this page).

In addition to the improved use of air space, a further goal is to optimize conditions on the ground. Here, more than anything it

is airport infrastructure adapted to actual needs that allows efficient flight operations. A further contribution to reducing environmental burden comes from intelligent links between different transport modes. The Lufthansa Group is active in this area too and develops intermodal transport concepts that systematically interlink air, rail and road traffic. Offers include feeder services to and from airports by ICE high-speed trains, modern long-distance buses and car-sharing.

### 3. Operational measures

In 2018, 21 fuel-saving projects were underway across the Lufthansa Group, comprising activities relating to weight reduction, flight route optimization and technical developments. These include “Expanded connex info”, the “Development of Company-own approaches based on most modern area navigation” and the “Optimized filling of fresh water tanks” (see project profiles, page 61, 62 and 64). With these operational measures, the Group sustainably avoided more than 24,000 tonnes of CO<sub>2</sub> emissions in addition to the reductions achieved in 2017. In comparison, the quantity of kerosene saved – and thus CO<sub>2</sub> avoided – is equivalent to approximately 90 return flights between Munich and New York with a Lufthansa Airbus A350-900. Or in different terms, the quantity of kerosene conserved would allow SWISS to operate its schedule between Geneva and London City with its C Series aircraft for about 20 months.

Lufthansa Cargo has also developed a broad-ranging catalogue of measures aimed at reducing the CO<sub>2</sub> emissions of its freighter fleet. The logistics specialist continuously works on alternatives for its loading devices and has already replaced 75 percent of all standard containers with more lightweight models.

Furthermore, Lufthansa Cargo is testing the use of more light-weight palettes for freight stowage. While standard palettes currently in use weigh around 100 kilos, lightweight versions weigh about 20 to 30 kilos less. With a stock of about 18,000 palettes, a conversion would result in significant efficiency gains. Tests with an aluminum-foam palette were successful. All possible alternatives also undergo economic feasibility studies in the framework of evaluation.

In the area of loading accessories, the cargo airline is currently evaluating the use of lightweight structural elements made from recycled cardboard-fiber composite material in loading air freight palettes and has carried out some positive tests. In these palettes, heavy-duty floors and beams made of heavy-



## PROJECT PROFILE

**PROJECT NAME:**

**EXPANDED CONNEX INFO**

Pilots already receive information about connecting flights and the number of connecting passengers (connex info). This also includes the latest possible arrival time at the parking position to ensure that passengers reach their connecting flights. With the inclusion of a new component, “expanded connex info” allows pilots to evaluate unequivocally under economic and operational aspects if they need to accelerate to catch up with a delay. So-called high-speed cruises are thus reduced to the necessary minimum.

### TOPIC AREA

Systemic operations management, cross-functional control logic in the areas flight control, group control and operations control, and deployment control to reduce delays and fuel costs.

### FOUR-PILLAR STRATEGY

The project “expanded connex info” makes a contribution to the pillar “operational measures”.

### PARTICIPATING EXPERTS

Flight operations experts from the areas fuel efficiency, cockpit information service and air/ground communication participate in this project. In addition, the hub control center is involved with information about the current operative situation and monitoring of transfer connections.

### GOAL

With this project, the Lufthansa Group aims at avoiding up to 6,000 tonnes of CO<sub>2</sub> emissions over the long term.

### DURATION OF MEASURE

“Expanded connex info” is to be available at the Group airlines step-by-step from July 2019.



## PROJECT PROFILE

### PROJECT NAME:

**OPTIMIZED FILLING OF FRESH WATER TANKS**

Lufthansa optimizes the filling of fresh water tanks aboard its aircraft on the basis of route characteristics and passenger numbers. New types of aircraft, such as the Airbus A350-900, capture significantly more data than earlier types. Among other data, they automatically record the filling level of the fresh water tanks for later analyses. This allows the airline to evaluate fresh water consumption and optimize tank fillings by means of artificial intelligence, thus avoiding unnecessary quantities being filled.

### TOPIC AREA

Weight savings: the spectrum of projects ranges from structural changes on aircraft to optimizing the loading of consumable supplies.

### FOUR-PILLAR STRATEGY

The project "Optimized filling of fresh water tanks" makes a contribution to the pillar "operational measures".

### PARTICIPATING EXPERTS

Experts of Operations Efficiency work closely with colleagues from Cabin, Ground Ops and MRO. Lufthansa Technik staff support with improved sensor technology and capture; colleagues in ground services and cabin crews subsequently manage the optimized filling of fresh water tanks during ground handling.

### GOAL

Lower departure weights are to reduce Lufthansa's CO<sub>2</sub> emissions by about 3,200 tonnes per year.

### DURATION OF MEASURE

The optimization is to be introduced on all long-haul flights in the third quarter 2019.

weight wood are replaced by more lightweight materials. It is important that the mechanical properties of the cardboard-fiber composite material are comparable to those of wood.

Moreover, Lufthansa Cargo pursues the goal of digitalizing air freight and implementing paperless handling of all related processes step-by-step. Effects on the environment can be significantly reduced by fully digitalizing the delivery chain. The electronic air waybill, eAirWaybill (eAWB), is already in use at more than 150 Lufthansa Cargo stations. By using digital air waybills, the entire industry could save 7,800 tonnes of paper per year. Furthermore, the cargo airline is rolling out more documents, such as the Consignment Security Declaration (CSD), which transfers security-related information, and the Shipper's Dangerous Goods Declaration (DGD), which provides data on hazardous shipments. Another advantage of digital documents: by means of pre-checks, Lufthansa Cargo can inform its customers about possible problems with data quality at an early stage and thus avoid that truck drivers deliver the shipment in vain, as not all hurdles have been cleared yet.

For many years, Lufthansa Technik has participated in numerous research and development projects with the aim of improving the efficiency of flight operations sustainably (see page 46, Sustainable innovation, research and development). Among others, the MRO specialist developed a unique engine wash process using CO<sub>2</sub> dry ice. The CO<sub>2</sub> used is a byproduct of crude oil processing and the fertilizer industry, and therefore no additional carbon dioxide has to be generated. There is also no residue as the CO<sub>2</sub> dry ice pellets, which are just a few millimeters in diameter, turn into gas. The procedure can also be used at external temperatures below the freezing point. Thus, engines can be washed 365 days a year, even in permafrost regions. With this innovation Lufthansa Technik makes a significant contribution to lowering the fuel consumption and CO<sub>2</sub> emissions in civil aviation by several hundred thousand tonnes per year. Cycleclean Dry Ice has been available since 2019 as a complement to the water-based engine wash Cycleclean.

In a complementary move, Lufthansa Technik achieved another milestone on the path towards Green MRO with the first automated steam cleaning system for engine heat exchangers worldwide. So far, heat exchangers were maintained in the framework of engine overhauls with great manual effort and chemical cleaners. Lufthansa Technik has used the new process since July 2018, allowing even heavily soiled heat exchangers to be restored to original performance entirely

## Measures taken by the Network Airlines and Eurowings to reduce fuel consumption and thus also CO<sub>2</sub> emissions (selection)

Airline	Measure	Expected fuel savings <sup>1</sup>	Fuel savings 2018	Expected CO <sub>2</sub> savings <sup>1</sup>	CO <sub>2</sub> savings 2018	Project completed
 Lufthansa	<ul style="list-style-type: none"> <li>On short-haul flights, the Flightprofile Optimizer OPTI calculates the optimum flight profile on the pilots' Electronic FlightBag.</li> </ul>	4,038 t	4,038 t	12,720 t	12,720 t	2018
 SWISS	<ul style="list-style-type: none"> <li>Installation planning for optimum engine-aircraft combination in relation to fuel efficiency and the remaining lifetime.</li> </ul>	628 t	105 t	1,979 t	330 t	2021
 Austrian Airlines	<ul style="list-style-type: none"> <li>A weight saving is realized on the entire Boeing long-haul fleet with the introduction of Premium Economy Class seats.</li> </ul>	667 t	500 t	2,100 t	1,575 t	2018
 Eurowings	<ul style="list-style-type: none"> <li>In cooperation with the LSG Group, Eurowings is replacing older catering trolleys with modern lightweight models.</li> </ul>	975 t	975 t	3,073 t	3,073 t	2018

<sup>1</sup> In tonnes p. a., total project

without chemical substances. This saves not only time, costs and resources, but it is also kind on the environment.

In addition, Lufthansa Technik has tested low-drag surfaces on aircraft fuselages for many years (see page 51, Balance 2018). What works there might also pay off if used in engines. Coating the low-pressure turbine vanes of CFM56 engines with these advanced surface structures (riblets) would significantly improve the aerodynamic characteristics of the low-pressure turbine – which, in turn, would reduce kerosene consumption.

#### 4. Economic measures

With the agreement on climate protection (CORSIA – Carbon Offsetting and Reduction Scheme for International Aviation), which was adopted in October 2016 in the context of the International Civil Aviation Organization (ICAO), growth-related CO<sub>2</sub> emissions in international civil aviation are to be compensated from 2021 by CO<sub>2</sub> savings achieved by climate protection projects. As a result, the Lufthansa Group will have to pay the corresponding CO<sub>2</sub> compensation costs from 2021 for

increases in CO<sub>2</sub> emissions of included international flights within the aviation industry, should it not be possible to limit these CO<sub>2</sub> emissions appropriately. In the EU emissions trading system for civil aviation, CO<sub>2</sub> emissions have been steered and limited by trading certificates since 2012. The Lufthansa Group is covered by this system for all flights within Europe. In 2018, these flights emitted about 8.5 million tonnes of CO<sub>2</sub>, of which about 62 percent were compensated and neutralized by purchasing emissions certificates. Thus, the goal of CO<sub>2</sub>-neutral growth has effectively been more than fulfilled within Europe.

Today, the Lufthansa Group already offers the majority of its customers the option of voluntary CO<sub>2</sub> compensation. The latter is provided through renowned agencies that apply the highest standards in selection and implementation (see page 67, Balance 2016). In cooperation with the renowned Swiss climate protection foundation myclimate, customers can have the emissions related to their flights with Lufthansa and SWISS calculated online, and can offset them by making a donation in favor of selected climate protection projects. Austrian Airlines



## PROJECT PROFILE

### PROJECT NAME:

**DEVELOPMENT OF COMPANY-OWN APPROACHES  
BASED ON MOST MODERN AREA NAVIGATION**

So-called performance-based navigation technology (PBN) complements and increasingly replaces air navigation with ground radio stations. Modern avionics equipment and navigation sensors allow not only accurate navigation to any geographical point, but also more economic flight routes. Lufthansa has adapted this technology to support pilots by means of the Flight Management System (FMS) at airports with challenging approach procedures. Increased precision has a positive effect on fuel efficiency and also increases safety by lightening the pilots' work load.

### TOPIC AREA

Flight procedures. The spectrum of PBN projects ranges from flight route optimizations during departure and approach, tighter separations on transatlantic routes and during final approach, to new approach procedures that increase safety and fuel efficiency while decreasing costs.

### FOUR-PILLAR STRATEGY

The project "Development of Company-own approaches based on most modern area navigation" makes a contribution to the pillar "operative measures".

### PARTICIPATING EXPERTS

This project is carried out by experts from the area Navigation and Approach Procedures.

### GOAL

Increasing flight safety and higher efficiency of approach procedures mean lower emissions and improved punctuality.

### DURATION OF MEASURE

Current projects, such as approach procedures in Nice, Tokyo Haneda and Tivat, are almost completed; other projects are pursued long-term.

cooperates with compensation partner Climate Austria in this area (see page 65, Balance 2017). In 2018, many customers of the Group airlines again took advantage of the opportunity to travel in a CO<sub>2</sub>-neutral way. Passengers of Lufthansa, SWISS and Austrian Airlines as well as customers of AirPlus compensated a total of 6,539 tonnes of carbon dioxide in the reporting year. As a result, more than 127,404 euros were donated to climate protection projects. In the future, customers will be able to compensate CO<sub>2</sub> emissions even more conveniently as the Group airlines are to integrate the option into their reservations masks.

Furthermore, all Lufthansa Group employees on business flights have flown CO<sub>2</sub>-neutrally since January 1, 2019 (see page 26, Strategy and management). Likewise, corporate customers have had the option of flying CO<sub>2</sub>-neutrally with the airlines of the Lufthansa Group since January 1, 2019. For this purpose, the Group has started a test run with selected customers in Germany, Austria and Switzerland who have a support contract within the PartnerPlus Progress Program. Through the latter, the program's "Added Value Fund" is debited for 50 percent of the cost due for CO<sub>2</sub> compensation for all flights customers take within Germany and the EU with Lufthansa Group airlines. The Lufthansa Group assumes the remaining 50 percent of the compensation cost. The participating companies can compensate long-haul flights on a voluntary basis.

# ENERGY AND RESOURCE MANAGEMENT

It is part of the entrepreneurial DNA of the Lufthansa Group to keep air transport's effects on the environment as environmentally friendly as possible – not only in flight operations, but also in its activities on the ground. The Group's corresponding guidelines and goals result from the strategic environmental program 2020, which was implemented in 2008 (see page 36, Balance 2015). Its 15 guidelines outline how the Lufthansa Group is to continuously optimize its energy and resource management, among other considerations, by 2020. This approach also takes into consideration energy-saving and resource-conserving aspects related to planning, modernizing and constructing buildings.

Input for optimizing buildings with regard to energy consumption is above all provided by the results of energy audits in accordance with the EU Energy Efficiency Directive (EED). Accordingly, companies above a certain size are obliged to conduct energy audits at least once every four years (see page 45, Balance 2017). To meet these requirements, energy audits will again take place at the end of 2019 at the Lufthansa Group; the Company has already started these audits.

Furthermore, the Group again evaluated measures to increase energy efficiency during the reporting year. A Group-wide standardized tracking tool is the basis for continuously monitoring cost savings realized by planned or implemented measures, such as further changes of lighting systems to LED.

To generate sustainable potentials for the sparing use of electricity and water, and to develop suitable solutions, are as important for the Lufthansa Group as its efforts to optimize waste management in catering. Within the new matrix organization, the aviation group therefore continuously intensifies the cooperation of its subsidiaries in the area of energy management with the goal of generating synergies and deepening exchanges on best-practice cases.

At its Frankfurt location, the Lufthansa Group and 14 other companies in the Rhine-Main region have participated since March 2017 in the Business Energy Efficiency Network of energy provider Mainova and the Frankfurt Chamber of Commerce. The goal of the initiative is to conserve 17,500 megawatt hours of electricity per year and 5,000 tonnes of CO<sub>2</sub>

(without transport) on the ground during its three-year duration.

For energy-intensive service companies Lufthansa Technik and LSG Group, the topic of energy management has a particularly high significance. Therefore, these companies use their own concepts and systems that are geared to their particularities and business activities.

For example, Lufthansa Technik operates a certified environmental management system (see page 53). A proprietary building standard with company-wide application helps the leading provider of MRO services (Maintenance, Repair & Overhaul) to increase the energy efficiency of its locations worldwide. Moreover, the Lufthansa Technik Group has launched a carbon-save program that was concluded successfully in 2018. Its goal was to lower the company's CO<sub>2</sub> emissions by 30 percent by 2018 when compared with those of 2012. To realize further savings, at the end of the carbon-save program the company defined new goals to be reached by 2025. They include the objective to increase resource efficiency by 25 percent and the recycling ratio by 75 percent.

In recent years, the LSG Group has launched numerous programs aimed at conserving energy and water, and continued these during the reporting year. They included the replacement of dishwashers at locations in Brazil and Mexico. The company also introduced monitoring technology to measure the energy, water and detergent consumption of existing dishwashers. Since 2018, the LSG Group has recycled PET items at its German locations.

The catering specialist checks the key performance indicators (KPI) concerning energy consumption and waste quantities every year, and defined new KPIs per region for the period 2017 to 2020 (see page 46, Balance 2017). It also works with its own environmental management system that closely follows the ISO 14001 standard.

During the reporting year, Lufthansa Cargo purchased 49 modern, energy-efficient chargers for forklift batteries in Frankfurt; the use of its 80 forklifts is indispensable for loading freight pallets. At 1.5 charging cycles per day and charger, this

corresponds to an annual conservation of about 235,000 kilowatt hours. This is due to the new chargers' effectiveness of 97 percent, among other factors.

In addition, the freight specialist achieved a significant reduction in the consumption of mono batteries in 2018, which contain numerous poisonous pollutants. While Lufthansa Cargo has used high-performance accumulators as an energy supply for its own cooling containers for many years – to cool highly sensitive pharmaceutical products, for example – environmentally harmful mono batteries were still used as energy supply for the control element in some types of containers used by customers. Thanks to a suggestion from an employee, their use has been significantly reduced since the reporting year thanks to a special charger (Interim Power Supply, IPS). Lufthansa Cargo was thus able to reduce the number of batteries used at the Frankfurt location from 45,000 in 2015 to 24,000 in the reporting year. Given these positive results, the use of IPSs is being evaluated at all cargo stations worldwide.



## Waste and recycling management on board

Permanently reducing waste quantities on board or increasing its recycling ratio are important considerations for the Lufthansa Group's waste management.

However, there are limits to separating and recycling materials from different types of waste on board – for instance, waste from meal services. To exclude any health risk, the transport and disposal of such waste is regulated by the strict EU regulation EG 1774/2002. Accordingly, food leftovers and foils, packaging and transport packaging as well as beverage cartons or food cans that arrive by air in EU countries have to be consistently burned, deposited at special disposal sites or disinfected.

Beyond these legal requirements, the initiative "Flygreener" contributes Group-wide to reducing waste volumes continuously and to make the processes on board more sustainable.

In recent years, the aviation group has implemented numerous measures on this basis. These ensure, for example, that correct stowage on board helps reduce waste and makes recycling possible in the first place.

At Flygreener, flight attendants act as "Ambassadors on Board", support crews with their know-how and raise their environmental awareness (see page 55, Balance 2018). Additional support in this area comes from regular Flygreener product stands at different locations as well as guided tours in LSG facilities. Moreover, numerous measures were implemented to further optimize the loading of beverage trolleys. At Austrian Airlines this means weight reductions on specific flights of 10.3 kilos per trolley, to name but one example.

As the aviation group attempts to find a sensible equilibrium between unavoidable waste volumes, striving for weight reductions, fulfilling hygiene-related regulations and a perfect customer experience, the initiative follows a multi-functional approach. Flygreener therefore involves cabin and product management as well as the LSG Group and airports. Furthermore, a project group was set up in 2018, preparing the development of a specialized recycling trolley to establish alternative options for the disposal of liquids.

## Reduction of disposable plastic packaging on board

The Lufthansa Group continuously aims at improving sustainability on board. For this purpose, product management and operations efficiency experts continually analyze all products and processes. The Group pursues a demand-oriented approach in doing so and already has successfully implemented numerous measures. It is not only a concern for the Company to replace disposable plastic products with environmentally friendly alternatives in catering whenever possible, it is also a goal to avoid taking superfluous catering items on board in the first place (see page 100, interview with Annette Mann).

Since January 2019, Austrian Airlines has its crew members in the Flygreener team to thank for a future-oriented project through which plastic cups used by passengers have been used to produce synthetic crude oil. Cups are collected separately from disposable waste and are subsequently cleaned



Austrian Airlines flight attendants Astrid Harrer (left) and Angelika Hönigmann of the Flygreener team collect plastic cups for the OMV ReOil® pilot project. 100 kilos of plastic will be turned into 100 liters of synthetic crude oil.

and shredded by a waste management company. The plastic waste is subsequently used in a pilot plant operated by oil and gas company OMV to produce synthetic crude oil, which is then processed into fuel and primary products for the plastics industry. Up to 100 tonnes of disposable waste annually can be avoided in this way.

Since May 2019, Eurowings has offered its passengers on short- and medium-haul flights the option of reducing plastic waste and supporting the construction of wells when buying still water. The background is the introduction of the first fully-recycled PET water bottle marketed by the “Share” brand, which will help the airline conserve an estimated three tonnes of newly-produced plastic per year. For each bottle of water sold, the Berlin-based social start-up provides one person in distress with an equivalent product. Additionally, the water sold on Eurowings flights is expected to allow Share and its social partners to construct or repair at least three wells. Between February and April 2018, Eurowings passengers also had the option of bringing their own cups aboard, receiving a 20-percent discount on hot beverages in exchange.



## Electromobility: Project Airport eMove successfully concluded

Fuel-efficient and quiet aircraft are the central, but not the only regulating options that can be applied to make air transport more environmentally compatible. On the ground, there are also numerous opportunities, in particular in ground handling processes as well as taxiing and towing processes of aircraft. At Frankfurt Airport, the Lufthansa Group places an emphasis on advancing projects aimed at reducing the consumption of gasoline or diesel by ground vehicles. This includes the initiative E-PORT AN. Its goal is to switch individual vehicle types step-by-step to electric propulsion technologies (see page 55 ff., Balance 2018).



In the context of E-PORT AN, the LSG Group cooperated closely with external partners in the development of the fully electrified catering lift truck “eLift”.

Part of the Lufthansa Group’s consortium project eMove was the development of the world’s first electrically powered tug for wide-body aircraft, which has been in operation at Lufthansa LEOS since 2016. The “eTug” helps avoid up to 75 percent of emissions in comparison with conventional, diesel-powered aircraft tugs. In June 2018, the subsidiary company of Lufthansa Technik put a second vehicle of this type into service. Compared with the first “eTug” it features numerous optimizations. The LSG Group developed the fully-electrified catering lift truck “LSG eLift” in close cooperation with external partners in the context of E-PORT AN (see page 55 f., Balance 2018).

After the conclusion of Airport eMove, the Lufthansa Group continues its commitment to sustainable aircraft handling at the Frankfurt hub. Thus, since 2018 and in cooperation with Fraport AG, the Company has been testing the first remote-controlled aircraft tug. Lufthansa provides aircraft to be pushed back from parking positions and to be towed to runways by this electrically-powered tug.

In 2019, Lufthansa Cargo is planning to replace a diesel-powered forklift with a weight-bearing capacity of 12 tonnes with a modern 15-tonne electric forklift. The background is that most of the aircraft engines that the cargo specialist transports are getting ever larger. Additionally, significant quantities of diesel fuel can be conserved.

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In its home markets – Germany, Austria and Switzerland – the Lufthansa Group is to switch its vehicles to CO<sub>2</sub>-neutral mode by 2030.

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To underscore its commitment to sustainability, the aviation group intends to realize CO<sub>2</sub>-neutral ground operations in its home markets (Germany, Austria and Switzerland) by 2030. This is to be achieved by switching vehicles to electric and other emissions-free propulsion systems, using 100 percent electricity from renewable sources at the earliest possible time and using this eco-electricity as power supply for all buildings of the Lufthansa Group, if possible. To give this venture the necessary thrust, the Group’s Executive Board decided to establish a dedicated project management.

# ACTIVE NOISE ABATEMENT

Operating aircraft causes noise, especially during takeoffs and landings. As a result, it is chiefly people living in areas surrounding airports who are affected by aircraft noise. At higher altitudes, such as during cruising flight, aircraft noise is without consequence. The noise-related effects of the Lufthansa Group's aircraft operations primarily affect hub locations and airports with high flight frequencies.

The Lufthansa Group supports numerous long-term activities and measures designed to decrease aircraft noise perceptibly. The main goals are to lower noise sustainably at the source and to develop optimized flying procedures in cooperation with system partners. In addition, noise protection efforts also have an economic element. Noise-related airport fees are lower for quieter aircraft, while they are higher for louder aircraft. For this reason, modern fleets and noise-abatement measures pay off directly.

Therefore, the Lufthansa Group has been working with determination on operating the quietest aircraft possible and on making its existing fleet even quieter. These efforts have been successful: in 2018, 99.6 percent – and thus almost the entire operative Group fleet – fulfilled or exceeded the strict minus-10-decibel criterium of the ICAO Chapter 4 standard (see overview page 130). The aircraft noise experts from the Group's different departments are closely connected within a network. In addition, they are active in aircraft noise commissions, dialogue forums and research projects, which in some cases they initiated and have coordinated. For example, this includes participation in test projects under the umbrella of SESAR (Single European Sky ATM Research, see page 60 f.).

The Lufthansa Group's commitment to active noise abatement comprises five dimensions (see graphic below). In addition to this issue of Balance, the Lufthansa Group also published this approach in its Annual Report 2018 as part of the combined non-financial report (see info box page 29).

## Active noise abatement

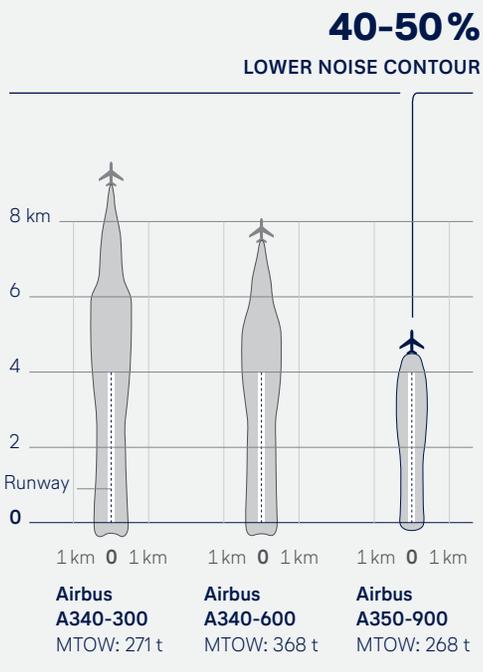
				
<b>1. Investments in quieter aircraft</b>	<b>2. Noise-reducing technologies for the existing fleet</b>	<b>3. Participation in noise research</b>	<b>4. Optimization of approach and departure procedures</b>	<b>5. Dialogue with residents near airports and other stakeholders</b>
Introduction of the latest aircraft such as the Airbus A320neo and Airbus A350-900  Retirement of older models	Retrofitting of noise-reducing vortex generators to the existing fleet	Continuous collaboration and exchange with partners from research and industry  Development and analysis of new noise-reduction measures	Cooperation with system partners  Development and testing of new methods  Use of new navigation technology	Continuous exchanges with residents as in the Airport and Region Forum  Active participation in aircraft noise commissions



## Noise contours compared A350-900 vs. A340-300/600

Compared to previous models, the Airbus A350-900 shows a 40–50 percent lower noise contour. The 85 dB(A) maximum noise level contours are shown for a takeoff with Lufthansa standard takeoff procedures and maximum takeoff weight (MTOW).

By comparison, a maximum noise level of 85 dB(A) is produced by a truck passing at a distance of five meters (16 feet) in city traffic.



Source: Airbus, information as of: 11/2016

### 1. Investments in quieter aircraft

The most effective lever for reducing aircraft noise is fleet modernization. In this area, the Lufthansa Group cooperates closely with aircraft manufacturers and actively influences the shaping of specifications and the technical status of new aircraft. In 2018, the aviation group put 29 new aircraft into service, including six further Airbus A320neos, six Airbus A350-900s and 13 Bombardier C Series aircraft, all of which are equipped with modern engines (see page 42, Fleet management).

### 2. Noise-reducing technologies for the existing fleet

In addition to modernization measures, retrofitting the existing fleet can also produce measurable reductions of aircraft noise. At the beginning of 2014, Lufthansa was the first airline worldwide to start operations with an Airbus A320 equipped with noise-reducing vortex generators, thus setting an industry standard (see page 49, Balance 2017). Aircraft with vortex generators are up to 4 decibels quieter during the approach phase. In the meantime, the Group has retrofitted all aircraft of the A320 family operated by Lufthansa and SWISS with these vortex generators.

At Austrian Airlines, all aircraft of the A320 family already in the fleet at the beginning of the reporting year had been equipped with this technical improvement by the beginning of 2019. A retrofit has been planned for all aircraft added to the fleet in 2018. The modification is carried out in the framework of routine technical maintenance cycles. Likewise, the largest part of the Eurowings A320 fleet has already been equipped with the noise-reducing vortex generators. All A320 aircraft of the Eurowings Group, which are not yet equipped with vortex generators – including aircraft taken over from the former Air Berlin – are being retrofitted systematically.

Retrofitting aircraft with vortex generators is another example that shows how economy and ecology go hand in hand for many measures. With this project, the Lufthansa Group makes progress in active noise abatement and in particular lessens the noise burden on people close to airports. On the other hand, there is a positive economic effect as noise-related fees at Frankfurt Airport are reduced in the context of calculating noise charges for aircraft equipped with vortex generators compared with charges for comparable aircraft without these parts, for example. In an environment with intensified competition, the economic efficiency of such measures will gain increasing importance.

### 3. Participation in noise research

For many years, the Lufthansa Group has been committed to noise research via projects such as MODAL (Models and Data for the Development of Active Noise Abatement Measures in Aviation, 2012–2015), thus helping to create the foundations for successful active noise protection.

In 2017, the project “EffFlug” (Efficiency increases in flight operations) was added. Its goal is to analyze efficiency measures more precisely with regard to their noise reduction potential compared with previous solutions. To this end, the existing evaluation methods are to be expanded and deepened. Digitalization makes it possible to analyze flight operations data even more intensively and to link them with intelligent analytic tools. The prerequisite for the participation in “EffFlug” is a high degree of expert knowledge and cockpit experience. In this project, the Lufthansa Group closely cooperates with the German Aerospace Center (DLR), Fraport AG and Flughafen München GmbH.

Beyond that, the DLR – with support from Lufthansa Technik and other partners – is conducting research into options for optimizing existing fleets. The DLR expects audible improvements from fairings on landing gears and innovative exhaust nozzles on engines in particular. The development, certification and testing of such noise-abatement measures require several years of preparations.

Continuous research and development work, especially by manufacturers, produce new generations of quieter aircraft and engines as well as desired optimizations on the aircraft in existing fleets. Therefore, it is of great importance for the Lufthansa Group to help shape this steady cycle of intensive research as well as new technologies and products in order to achieve further efficiency improvements in aircraft and engines.

### 4. Optimization of approach and departure procedures

Optimizing flight procedures and flight routings also contributes to noise reductions. The Lufthansa Group is active in this area in numerous ways by cooperating with international partners such as EUROCONTROL. In the framework of the project EMAS 1 (Early Morning Arrival Stream) Frankfurt, the time during which approaching aircraft are in the airport’s close range could be reduced by up to 20 percent. This project is supported and co-funded by the Environment and Neighborhood House (UNH) in Kelsterbach as a part of the Airport and Region Forum (FFR).

In July 2017, Deutsche Flugsicherung (DFS, air traffic control), Lufthansa and Fraport successfully tested and implemented

new navigation technology on the so-called southern circumnavigation in Frankfurt in the context of SESAR. The newly used Radius-to-Fix (RF) functionality allows flying highly-precise circular-path segments with fixed radius and fixed origin at a quality level that so far is unique in Germany. For people living in the region, this is likely to produce correspondingly positive effects on noise burdens. Operations will be accompanied by comprehensive monitoring in cooperation between DFS and the Environment and Neighborhood House.

### 5. Dialogue with residents near airports and other stakeholders

Since 2001, the Lufthansa Group has actively and continuously participated in measurement packages aimed at noise abatement in the framework of dialogue forums, in Frankfurt and Vienna among other locations.

One example is the “Alliance for Noise Abatement” in Frankfurt, in which the state government of Hesse, Fraport AG, Deutsche Lufthansa AG, the Airport and Region Forum (FFR), Deutsche Flugsicherung (DFS) and the aviation association BARIG participate. Moreover, the Lufthansa Group also works actively in some of the German aircraft noise commissions stipulated by Germany’s Civil Aviation Act.

In January 2018, the FFR presented 17 additional measures to reduce the noise burden in the areas surrounding Frankfurt Airport or to enable an improved political and legal framework for the expedited implementation of measures. Those involved took the first steps in this context in 2017. The new package of measures “Active Noise Abatement” builds on the 12 noise protection measures that were implemented in the past in standard operations, and also opens up new perspectives, such as the precision navigation system.

Simultaneously, Hesse’s Ministry for Economic Affairs and Transport, the Frankfurt Aircraft Noise Commission, Lufthansa, Condor, BARIG, Fraport and the FFR agreed on a voluntary upper noise limit at Frankfurt Airport. This agreement gives the airlines an additional incentive for flying even more quietly: doing so is the only way to increase the number of their aircraft movements. The Lufthansa Group welcomes such a reliable, clear and long-term regulatory framework that creates investment and planning security for future growth and fleet decisions. In May 2016, the state of Hesse and the aviation industry had already sealed the voluntary introduction of noise breaks in an “Alliance for Noise Breaks” (see page 60, Balance 2016, and page 55, Balance 2015).



# 03

**Key points on**  
**EMPLOYEES**  
**& SOCIETY**

Working at the Lufthansa Group has many facets. But the individual is always at the center of attention. The employees' know-how and diverse talents are a central variable that directly influences the Company's entrepreneurial success. Therefore, the Group's goal is to establish itself as an attractive employer over the long term while meeting its social responsibility. The Lufthansa Group places the greatest emphasis on offering its employees an attractive working environment with transparent structures and processes in order to meet the requirements of megatrends such as digital evolution and to strengthen the innovative and transformative forces within the Company over the long term.

Custom-fit offers for continuing education that also promote the willingness to learn life-long, a realistic framework of conditions to promote balance between working and private life, a comprehensive approach to equal opportunity and diversity in all its dimensions, and intensive support for talent – all of these are significant action areas for the aviation group to meet its self-defined benchmark for treating employees fairly and as partners. By using modern information technology the Group takes into account the fact that the working world is global, digital and networked. In addition, the Group meets its responsibilities for its employees by means of its tried-and-tested health and safety policies.

With regard to society as a whole, the Lufthansa Group also acts responsibly. As a corporate citizen it engages in a dynamic process supporting social issues and has firmly anchored specific employee involvement in its HR strategy. (→ PAGE 74 FF.)

# THE ABILITY TO TRANSFORM

Changing market conditions and megatrends such as digitalization demand continuous adaptation and further development of companies and their employees. To achieve this goal, employees have to acquire corresponding competencies on a continuous basis and be willing to take on new challenges again and again.

The goal is to establish a process that allows the Lufthansa Group's administrative employees in particular to analyze their abilities and compare them with current and future requirements on their tasks.

The Lufthansa Group's managers play an important role in this process of transformation as values, standards and convictions are formed by role models, who provide orientation in times of cultural change. The Lufthansa Group CAMPUS, which is open to all Group employees, therefore also supports managers and top management with qualification options and accompanies team development processes and organizational change. This internal learning platform helps complement existing continuing education offers and close possible knowledge gaps by means of innovative formats.



“open mind” represents the new culture of lifelong learning. This is the umbrella for all topics concerning learning and acquiring new qualifications within the Lufthansa Group.

The responsibility for cultural aspects of transformation lies with a separate “process domain owner” (see page 67, Balance 2018), who reports directly to the Executive Board's Chief Officer Corporate Human Resources and Legal Affairs and heads a department with several staff members responsible for processes.

## Working world of the future

Innovations and digital trends are changing both private and professional environments. Mobile and flexible work has become a fundamental building block and continues to gain importance. Digital change in particular opens up entirely new options for companies and their employees to collaborate in even more efficient ways (see interview, page 75).

For this reason, in the reporting year the Lufthansa Group began to roll out Microsoft Office 365 in the administrative areas under intensive employee participation. This software allows transparent and efficient ways of collaborating in networks and teams, and thus promotes the exchange of ideas across departmental boundaries. This creates not only transparency, but it also contributes to making the Lufthansa Group more nimble as a whole. This change, which benefits about 45,000 employees and supports the current transformation process within the Lufthansa Group toward a modern corporate and collaborate culture, is to be completed in 2019. It is accompanied by rolling out new mobile work equipment. The new software is also a gain for operational employees who work on computers at least some of the time.



## Four questions for DR. ANJA DREßLER

Senior Director Future Digital Workplace, Lufthansa Group

### **YOU HEAD THE LUFTHANSA GROUP'S DEPARTMENT "FUTURE DIGITAL WORKPLACE". WHAT DOES THIS ENTAIL?**

We benefit from numerous digital offers today that simplify everyday life. Social platforms such as Facebook and WhatsApp connect people like never before. This global trend also includes companies. At the same time, our employees' expectations concerning their work situation are rising. The department "Future Digital Workplace" is the link between the private forms of experiencing digitalization and their translation into meaningful support at the workplace – today and in the future.

### **WHAT IS THE IMPORTANCE OF DIGITAL CHANGE FOR TOMORROW'S WORK ENVIRONMENT?**

Digital change has a very high level of importance for our work environment because digitalization, automatization and artificial intelligence provide entirely new technological options. Our task is to recognize digital trends early on and to transform them into user-friendly work environments for our employees. Doing so means we support efficient ways of working in a "Leading Digital Aviation Group".

### **WHAT WILL THE FUTURE DIGITAL WORKPLACE BE LIKE?**

In the future, employees will remain irreplaceable because of their creativity and competence in finding solutions. For the benefit of the Lufthansa Group we continuously assess what digital change means for our tasks and working methods as well as for the individual abilities and skills of each employee.

Working in networks is gaining more and more importance in the future working environment. Employees and their knowledge are at the center of collaboration. They will be continuously supported with appropriate tools, working methods and ways of using these effectively in order to experience the digital workplace actively for themselves.

### **WHICH INITIATIVES HAVE ALREADY BEEN LAUNCHED TO ACCOMPANY EMPLOYEES DURING THIS DIGITAL TRANSFORMATION?**

At the moment we are in the process of introducing new technologies that will shape the future of digital collaboration within the Group. An example is the new software Office 365. This is a large project and we accompany and coach our employees throughout all transition phases. In addition, we offer new formats, such as "cloud-based collaboration". Or we provide methodical support, for example for design thinking; a method that helps develop customer-oriented innovations, products and services.

In addition, our monthly virtual conferences focusing on the "digital journey" create an active community, which delves into the digital world by exchanging tips and tricks, and makes it evolve in accordance with the users' needs. This is also a form of cultural change and one that is fun as well.

# DIVERSITY AND EQUAL OPPORTUNITIES

For the Lufthansa Group, diversity and equal opportunities are central elements of the Company's strategic alignment. They are indispensable in positioning the Group as an attractive employer in a global and intergenerational setting – today and in the future. Diversity in all its dimensions is also a fundamental prerequisite for being able to innovate and change, and to secure a leading competitive position over the long term.

Against this background, the hallmark of the Lufthansa Group's corporate culture is pronounced diversity, which makes the Company more open for different values, attitudes and life situations at the same time. For the aviation group, diversity is a decisive foundation of its modern service philosophy and customer centricity. In addition, diversity helps to minimize risks, as in mixed teams different points of view are contributed to development and decision-making processes.



Impressive proof of applied diversity are the 176 nationalities who are represented worldwide throughout all age levels among managers and employees across the Group. They contribute an enormous variety of points of view and competencies to the Company. Among other advantages, this perspective results in a differentiated understanding of needs, which, in turn, makes a significant contribution to customer-centric development of products and services. This is especially important against the background of the Lufthansa Group with its different business segments offering a broad spectrum of products and serving correspondingly varied customer groups.

## Organizational anchoring

The Lufthansa Group pursues a comprehensive management approach, which understands diversity in the sense of variety with regard to gender, demography and internationality, creativity and mixing of perspectives.

Regular reports, such as on gender distribution, are used to evaluate the effectiveness of the management approach and related measures. Moreover, exchanges within networks or with other DAX-30 companies allow a comparison of developments against external benchmarks. Exchanges additionally provide insights on how effective certain measures are.

For more than 20 years, the Group has had an officer responsible for equal opportunities, whose task and role is the strategic further development of this topic within the Group. In 2016, the Lufthansa Group launched a project for promoting women in managerial positions, which has since been used to initiate and implement measures aimed at increasing the share of women in supervisory positions (see page 66, Balance 2017).

## Goals and central action areas

The Lufthansa Group pursues several goals with its diversity-oriented personnel policy. The Company wants to even better take advantage of the enormous potential of the diversity that already exists among its roughly 135,000 employees, while simultaneously even further increasing diversity in profiles, competencies and experience up to the management level. In addition to its explicit goal of strengthening and expanding its attractiveness as an employer, the aviation group aims at using diversity management to secure its competitiveness and future viability, increase its ability to innovate, facilitate access to potential employee groups on the global labor market and further boost its distinctive customer orientation.

The Lufthansa Group approaches the task of realizing diversity and equal opportunities in accordance with defined goals from several directions. For example, the Company wants to increase the share of women in management and improve the compatibility of work and family – two central goals in the area of gender diversity to ensure equality between men and women. Further items on the agenda are an even stronger internationalization of staff and the inclusion of people with disabilities.

## Gender diversity

Company-wide, the Lufthansa Group employs nearly as many men as women. In management positions too, women have long been well-established. Nevertheless, it is especially at the management level that their numbers should be increased. At the end of the reporting year, 15.9 percent (2017: 15.1 percent) of managers worldwide were women.

Ambitious goals were set against the background of implementing the German Act on equal participation of men and women in executive positions in the public and private sectors. Beyond the legally required definition of target values for the share of women on the management board and the first two management levels, the Lufthansa Group companies adopted shared target values. Each company contributes to reaching these target values, while consideration is given to the respective external conditions. In 2016, the Lufthansa Group defined targets that are to be fulfilled by December 31, 2021. For Deutsche Lufthansa AG, the target value for the Executive Board was set at 30 percent, for the management levels below the Executive Board at 20 percent for management level 1 and

## EMPLOYEES IN THE LUFTHANSA GROUP

KEY DATA 2018<sup>1</sup>

135,534

EMPLOYEES Group total

45.9%

FEMALE EMPLOYEES Group total

32.5%

SHARE OF WOMEN with staff responsibility

15.9%

SHARE OF WOMEN in management positions

6.2%

SHARE OF WOMEN in the cockpit

1,087

APPRENTICES

150,000

JOB APPLICATIONS

<sup>1</sup> as of December 31, 2018



Currently, 15 percent of future pilots in training at the Lufthansa Group are female.

30 percent for management level 2. For the Lufthansa Group, the target value for management level 1 was set at 18 percent and for management level 2 at 24 percent. The Group also publishes all values and target quotas on its website.

The Lufthansa Group applies a broad portfolio of measures and activities to increase the share of women in management positions. For example, since 2015 a transparent job advertisement process for management positions has been used and diversity criteria have been applied in filling vacancies. Moreover, a rotation policy ensures that the staff composition at the management level changes regularly and that enough open positions are available for qualified talents to rise to the executive level.

For administrative employees the aviation group has introduced a Group-wide standardized potential and performance data collection process with subsequent conferences in order to create transparency and allow targeted rotation-related consultations. The internal development and mentoring program “GoAhead” launched its fourth generation in 2018. It is addressed at women who supervise teams and aim at a management position. During the reporting year, two innovations were

introduced: first, a transparent application and selection process; and second, the program was offered twice and thus allowed twice as many female talents to participate. From 2019, an additional new program is to be offered to female top coordinators who are on their way to their first team-leader positions. For many years, the Lufthansa Group has also supported female junior employees with cross-industry mentoring and internal Female Network Events.

Within the Group, the concept of equal opportunities has been anchored in collective bargaining agreements for a long time. The principle of “same pay for same performance” was applied within the Lufthansa Group as long ago as the 1970s. Collective wage agreements that can be consulted by all employees and company-wide non-tariff remuneration systems are proof of this approach (see page 65, Balance 2018).

In 2018, increasing awareness for the issue of “unconscious bias” was again an important building block in internal communications. With the goal of identifying and reducing unconscious thinking patterns, all managers watch a short video before making personnel decisions. In this way, personnel selection is to be as objective as possible. This measure was

developed in cooperation with the initiative “Chefsache” (“A Matter for the Boss”).

At the international level too, the Lufthansa Group supports the economic strengthening of women from all countries and strata of society. To this end, personnel manager Martina Niemann participated as Germany’s representative in the international Business Women Leaders’ Taskforce (BWLTF) in December 2018 at the G20 Summit in Buenos Aires. The BWLTF, which was founded in 2017, unites managers and supervisors who support promoting women in business.

Another central Human Resource goal at the Lufthansa Group is to inspire more women to pursue careers in the cockpit. Today, 15 percent of future pilots in training are female. Lufthansa Aviation Training actively recruits additional female applicants. During the reporting year, the employment of female pilots at the Lufthansa Group passed its 30th anniversary. In 2018, their share among cockpit crews reached 6.2 percent (2017: 6.1 percent).

### **LGBTI network “Diversify – we colour the air” launched**

The Lufthansa Group’s goal is to promote a work environment in which all employees are able to develop their talents independently of their sexual orientation or identity and without fear. During the reporting year, the long-established informal LGBTI network was given a formal framework (LGBTI = lesbian, gay, bisexual, transgender and intersexual). Since then it has operated under the name “Diversify – we colour the air”. To underscore the importance that is placed on a liberal-minded and esteem-based corporate culture, the LGBTI network’s first official event was supported in 2018.

“Diversify” acts not only as contact and mediator in cases of discrimination and conflicts, it also drives the development and implementation of measures and guidelines that prevent discrimination. Furthermore, the network has taken up the cause of the internal and external exchange of experiences, and it is also available as a sparring partner in the development of new business ideas and projects focused on the LGBTI target group. Additionally, the Lufthansa Group has advertised all vacancies by including the third gender since 2019.

As an expression of its responsibility for enforcing the human rights of LGBTI employees, the Lufthansa Group also supports the UN Global LGBTI Standards of Conduct for Business.

➤ [www.unfe.org/standards](http://www.unfe.org/standards)



International Business Women Leaders’ Taskforce (BWLTF). Lufthansa HR manager Martina Niemann is Germany’s BWLTF representative.

### Varied activities

The individual companies of the Lufthansa Group also pursue the goal of gender diversity and equal opportunities with vigor. For this purpose, they again successfully completed numerous programs during the reporting year. For example, Lufthansa Cargo ran the program “cargo.ahead” to specifically gain highly qualified employees from outside the aviation industry with an international career background for the company. In addition, with “GROW!” and “female talent program”, two internal continuing education programs were launched for female junior staff members. Ambitious female employees were also the focus of the “LSG Group Female Leadership Program”, which prepares participants for future management roles.

Eurowings gave the starting signal in 2018 for the first two rounds of a cross-mentoring program for women who envisage a leadership position – in cooperation with the Cologne-based alliance MIT FRAUEN IN FÜHRUNG (In the lead with women), of which Eurowings has been a member. And SWISS conducted two scientific studies in cooperation with the School of Management and Law at the International Management Institute (ZHAW). These aimed at developing measures and concepts for optimizing both corporate responsibility and diversity management at SWISS in consideration of the aspects of gender and age.

## Work-life integration

Traditional family and work models are undergoing change. The Lufthansa Group supports its employees and managers by offering flexible work-time models, which accommodate this development and the related varying needs in different life phases, for example with part-time and home-office options. For example, there are more than 100 different part-time models for cabin staff at Lufthansa alone. This allows not only a better equilibrium between professional and private demands, it also promotes employees' motivation and health. The Group provides detailed information about the concrete options available on the intranet and in the context of various events. Numerous communication measures have contributed to increasing the transparency of offers and strengthening demand.

Furthermore, there are the options of filling managerial positions in tandem (shared leadership) or taking limited time off work

(sabbaticals). To ease the re-entry into working life after parental leave, the Lufthansa Group has set up specific coaching. The central element is a “business plan” that is jointly worked out by employee and supervisor before the beginning of parental leave. It defines central aspects, such as the leave's duration, who assumes which tasks in the interim, how contact is maintained and how the employee remains informed with regard to work content, and whether the employee returns on a full-time or part-time basis.

In Frankfurt, Lufthansa Group employees together with their children have the use of three parent-child offices when there are difficulties with child care; in Hamburg one such office is available. Offers such as the summer school vacation care program “Luftkuss” in Frankfurt and Munich, “pme Familienservice” at all German locations or the network “Väter gGmbH” (“Fathers, Inc.”) were continued during 2018 (see page 86 ff., Balance 2016).

The topic of compatibility of work and caring for family members also plays an important role. In 2015, the Lufthansa Group signed the “Charter for care” in the state of Hesse. In accordance with the charter, the Group offers two regular care consultation hours in Frankfurt – a service that employees in Hamburg and Munich have also been able to use since 2018.

Programs aimed at making professional and private lives more compatible are also offered by the companies of the aviation group. Lufthansa Technik set up an “Innovation Classroom” in 2018. This seven-week personality coaching served to improve stress resistance, for example. In 2019, Eurowings is coordinating two dialogue events in cooperation with Cologne-based alliance MIT FRAUEN IN FÜHRUNG, including one on “Leadership in part-time”.

## Internationality

Given its diverse business segments with international locations and global business links, a broad range of cultural and linguistic diversity exists within the Lufthansa Group. The goal is to further strengthen this diversity, as it supports the Company's business strategy with regard to future developments. Therefore, the aim is an even higher degree of diversity among its employees. To advance the internationalization of its employees consistently, the Group launches new measures



step-by-step, such as the development of a Group-wide transfer guideline or even more internationality in the context of trainee and internship programs.

Outside of Germany, the Lufthansa Group specifically hires local employees and supports them adequately in order to enable the sharing of know-how between regions and business segments by means of selective transfers on the one hand, and to promote employees' individual development and the creation of intercultural competencies on the other.

## Inclusion

For the Lufthansa Group, employment and inclusion of people with disabilities is not only a legal obligation, it also fulfills a social responsibility and is thus an important goal of personnel policy. The Group is committed to promoting people with disabilities professionally and treating them fairly and caringly. Measures designed to include people with disabilities are discussed and advanced in regular dialogue events involving top management, HR management and representatives of the severely disabled.

At the end of 2018, the employment rate for people with severe disabilities at the Lufthansa Group in Germany stood at 4.3 percent (2017: 4.3 percent). While some Group companies, such as LSG Sky Chefs, reach employment rates of up to 20 percent and thus overfulfill the legally defined minimum quota of 5 percent, the employment share of disabled people at the passenger airlines is significantly lower, in part due to legal requirements. Therefore, the Lufthansa Group also takes advantage of other ways of supporting people with disabilities, such as placing orders with Werkstätten für Behinderte Rhein-Main (see page 95). Further social projects within the Group companies include cooperation with the National Paralympic Committee Germany (DBS).

# EMPLOYMENT POLICY BASED ON PARTNERSHIP

➤ GRI 102-41

The Lufthansa Group's success depends greatly on the ideas, enthusiasm and commitment of its employees. Therefore, the aviation company attaches the greatest importance to providing its employees with an attractive work environment and appropriate salaries. In this context, the goal is always to find an equilibrium between the Company's economic interests and the employees' expectations. By developing appropriate standards in personnel policy, the Lufthansa Group positions itself as an employer acting with integrity and in responsible ways. Its successful personnel policy is characterized group-wide by a proactive approach in a business environment increasingly shaped by digitalization, flexibility and agile structures as well as the tightening of existing and the increase of new statutory regulations. Taking into account the dynamic development of social, political and legal frameworks while integrating social requirements is indispensable in this context. The goal is to ensure sustainable, future-oriented work structures and tailor-made resource management at the Lufthansa Group.

## Partnership in collective agreements

It is tried-and-tested Company policy to settle clashes of interests between Company management and the bodies representing employees in a transparent manner. A fair approach to coexistence in all areas creates the balance needed to advance the Lufthansa Group's position in the market. The Lufthansa Group employs its staff under conditions that guarantee them social and material security. In Germany, almost all Group companies are party to collective wage agreements (nearly 100 percent). These are established on the basis of collective agreements that the Company negotiates with its union partners Vereinte Dienstleistungsgewerkschaft (ver.di), Vereinigung Cockpit (VC), and Unabhängige Flugbegleiter Organisation e.V. (UFO).

The Lufthansa Group's goal is to conclude long-term and economically viable agreements with its union partners (see Annual Report 2018, page 23). This allows sustainable success, the ability to plan, and security, for the Company and its employees alike. The guidelines for this joint effort are flexibility and the ability to react with sensitivity.

## Active pay and social policy in Germany and abroad

Internationalization and globalization offer a broad range of opportunities for the Group's business and personnel processes. As a company with international operations, the Lufthansa Group's pay and social policies are guided by conditions in the various countries. The focus is on the long-term definition of the conditions of employment, which depend on the needs of the employees, operational requirements, and the local labor market – with the inclusion of compensation rules, working conditions, and pension schemes. The Lufthansa Group defines these agreements in cooperation with internal labor committees and employee representatives. The Company is a party to collective wage bargaining with employees in about 25 countries. In all countries where Lufthansa acts unilaterally, the Company uses benchmarks and macroeconomic data such as inflation figures to review salaries usually once a year on the basis of market and competitiveness criteria. In countries with very high rates of inflation, this assessment, which usually leads to pay increases, is performed more often, in accordance with circumstances. In this way the Lufthansa Group offers continual review and adjustment of working conditions for its locally employed staff. As a signatory to the UN Global Compact and supporter of the UN's Sustainable Development Goals, the Lufthansa Group has documented its support for freedom of association and the right to collective bargaining for all of its employees worldwide in its Code of Conduct (see info box page 32). Employees in any country where Lufthansa companies are active are free to

lawfully organize themselves and become involved in defining their working conditions. For the reporting year 2018, it is assumed that no business activity within the Lufthansa Group jeopardized the free exercise of employees' rights concerning their freedom of association and right to collective bargaining.



## Employee survey “involve me!”

Regular employee surveys are an important instrument for the Lufthansa Group to measure employee commitment, identify action fields and initiate change where needed (see Balance 2018, page 67, interview Claudia Rautenberg).

In 2015, the Lufthansa Group conducted “involve me!”, its first standardized, voluntary employee survey. Since then, the number of participating companies has increased step-by-step and was extended in 2018 to the significant Group companies (with the exception of the LSG Group locations abroad).

On the basis of the results of this survey, management is able to directly compare data from the individual Group companies and engage in a transparent, Group-wide dialogue. In 2018, employees had the opportunity to respond to questions from four thematic areas. At 53 percent, the response rate was slightly higher than that of the previous year (51 percent). Every third employee gave additional feedback in more than 25,600 constructive comments in this context. While a reduced set of questions (so-called quick check) was given to the employees in the survey carried out during the reporting year 2018, a comprehensive employee survey will again be conducted in 2019. This alternating cycle corresponds to the established practice.

In contrast to the comprehensive survey, the quick check concentrates on updating the central index values relating to commitment, leadership and health as well as on questions concerning the Group Executive Board. The quick check specifically poses questions concerning positive changes, as the focus is also to be shifted to the effectiveness of measures implemented in the individual companies.

The results of the employee survey are also reported to the Supervisory Board and the Executive Board. At management level and broken down for individual teams, the results are communicated and discussed in order to derive and implement strategic measures for the entire Lufthansa Group and individual organizational units.

### **Employer attractiveness: Engagement Index provides transparency**

The results of “involve me!” also serve as basis for the calculation of the Health Index (HI) (see page 88), Leadership Index (LI) and Engagement Index (EI). The EI indicates to which degree employees feel committed to the Group, to which degree they are willing to lend their support to their employer, and how much they are inclined to recommend the Company to others. It also gives insights into the Group’s attractiveness as an employer and allows comparisons with other employers across industry lines. The result is indicated on a scale from 1 (best value) to 5 (lowest value).

During the reporting year 2018, the Lufthansa Group achieved an Engagement Index of 2.2. Compared with the preceding year, the EI again improved by 0.1 points and reached the target value projected for 2020 two years earlier than expected. The index has now reached the average level of comparable companies in Germany. The Lufthansa Group is aware of the fact that merely measuring employee commitment is not enough. The greatest challenge comes after the survey is completed. Progress can only be achieved if concrete measures are derived from the survey results and employees can thus see that the Group takes their responses seriously (see page 27 f., Stakeholder dialogue). In parallel to determining the Engagement Index, the Lufthansa Group again calculated the Leadership Index (LI), which is oriented by the Group’s five Leadership Principles (see page 73, Balance 2015). During the reporting year, the LI reached 2.1 and was thus at the favorable level of the preceding year.

# myTurn

Creating perspectives.

## Program to support voluntary professional reorientation

The Lufthansa Group is in a continuous process of modernization (see page 74, The ability to transform) and in this context offers its employees attractive options for voluntary professional reorientation. During the reporting year, the program “myTurn” was launched, which addressed administrative employees of Deutsche Lufthansa AG in Germany. The goal was to create a movement that would help develop existing employees for new positions, both internal and external, and at the same time allow recruitment of new talents with important future-oriented competencies from the outside.

The myTurn offer was available from September 2018 to February 2019, complemented existing programs (see page 90, Balance 2016) and also comprised newly developed advice and compensation products. A significant component of myTurn was the broad-based dialogue between managers and employees. In orientation talks, about 3,200 employees discussed their personal perspectives and future options with their supervisors. After these talks, each employee could opt for participating in a professional consultation on available perspectives. As with previous programs, the “double voluntary” principle was applied to myTurn: no employee was obliged to accept an offer and no employee could make a claim for one. A total of more than 1,700 employees took advantage of consultative sessions. Of these, more than 300 employees opted for one of the products offered for professional reorientation outside the Lufthansa Group, such as starting up a company or self-employed business, a course of study or a bridge model for transitioning into retirement.



# TALENT MANAGEMENT

The fascination for jobs within the Lufthansa Group is unabated: during the reporting year, about 150,000 applications were submitted and the Group has received top positions in renowned employer rankings for many years. This also applies to the German ranking of employers, which is based on a representative evaluation by the renowned market research institute YouGov and comprises more than 200 companies. After it took third place the preceding year, the Lufthansa Group ranked second on average during the reporting year. The aviation group's goal is to continuously rank among the five most popular employers in Germany.

To gain qualified and motivated personnel for all management and employee levels, talent management has a key role in the Group's HR strategy. In the organizational structure it is anchored via responsibilities, which were clearly defined in the context of the Group's process-oriented reorganization. The topic is regularly on the agendas of the Executive Board, HR Board and Supervisory Board; these committees can thus initiate adaptations and complementary actions when needed. Beyond that, regular exchanges within networks ensure the validation of such measures.

In 2014, the Lufthansa Group implemented its talent management philosophy under the motto "Every employee has talent!" (see page 83 f., Balance 2015). It gives all employees the opportunity to shape their own careers in the Group according to their individual talents and interests. A standardized Group-wide potential identification process and subsequent training programs help them to do so. This both increases transparency and brings talents to the fore. Employees are thus encouraged in their own responsibility and managers are able to identify potentials and support these in concrete ways. In this process, the Lufthansa Group places great emphasis on diversity and equal opportunities. It is one of the Group's particular concerns to promote the career development of female talents and to ensure a balanced proportion between men and women in management positions (see page 76 ff., Diversity and equal opportunities).

Meaningful data on the development of the Lufthansa Group's employees has been provided annually since 2014 by the internal performance and talent assessment instrument

"Profile". It is based on the Group's five Leadership Principles and allows the Company to evaluate how effective the measures concerning talent management are and to which degree goals were reached. In the reporting year 2018, about 16,500 employees within the Lufthansa Group completed or started the standardized performance and talent process. Profile, and the related platform "eProfile", were rolled out step-by-step for additional employee groups and companies during the reporting year.

## Making talents visible

The Lufthansa Group's talent management is addressed at all employees and is not limited to vertical promotions. It makes a significant contribution to supporting defined competencies, to identifying talents for specific job families and to broadening different career paths. The formats range from trainee and mentoring programs to initiatives at the top management level. In this context, strategic personnel planning always takes the employees' different life phases into account. It is an essential goal for the Lufthansa Group to fill all positions on the lower management level potentially with its own talents.

During the reporting year, the Lufthansa Group introduced the platform-based Company-wide program "Makers of Tomorrow". Its goal is to set up a visibility and development program for those talents below the top management level who shape the future – without limiting formal criteria such as working for a particular Group company or completed university studies. The selection was made on the basis of future-relevant abilities and competencies as well as suggestions and evaluations from colleagues. Fifty of the more than 1,200 applicants worldwide were included in the program. The participants receive an individual career plan and access to an internal Lufthansa Group network. "Makers of Tomorrow" has been continued in 2019.

Another important format is the visibility platform "Spotlight on Talent", introduced in 2016 (see page 70, Balance 2018). The annual process aims not only at giving talents in specific job families more visibility across all boundaries of companies within the Group. It also gives the Lufthansa Group an overview

of the talent situation in job families that are particularly in demand. In addition to the areas finance, legal and procurement, the IT and personnel areas have also participated in the visibility platform since 2018.

In 2018, the Lufthansa Group advanced the expansion of its trainee program “ProTeam”. The primary focus is on aligning ProTeam, together with the trainee programs of other Group companies such as StartCargo or StartTechnik, even more decisively with the process organization. For this purpose, cross-company standardizations are to be established, especially in the area HR Marketing, Employer Branding and Recruiting. Implementation is expected to be completed in 2020.

## Development of managers

A further important building block in the Lufthansa Group’s talent management is the long-term orientation of developing managers. It ensures that talents with potential are identified, individually supported and retained by the Company. In this way, critical key positions can be filled quickly and the potential loss of know-how can be avoided.

To take the life realities of managers and relevant young talents into account, for some years the Lufthansa Group has offered the option of flexible work-time models for employees at the

management level. This also includes the concept of “shared leadership”, in which two employees who both work part-time fill one managerial role “in tandem”. The Group always has an eye firmly on women who aspire to a management position. For example, the internal development and mentoring program “GoAhead” is addressed to them (see page 78, Diversity and equal opportunities).

In 2018, the Lufthansa Group fundamentally renewed and adapted its long-standing program for managers to current requirements. In addition to the willingness to act as an influencer within the organization, another prerequisite for participation is proven openness to change.

Additionally, managers have the option of completing practical assignments in operative customer contact once a year. The program “Dive Into the Ops” provides opportunities for doing so. It aims at generating a deeper understanding of customer needs and expectations by interacting with employees in operative areas and making a contribution to improved customer and employee orientation.

In addition to the promotional and development measures for employees and managers, the Lufthansa Group sets the course for innovative forms of collaboration. For example, the work area of the Executive Board’s member for personnel at the Lufthansa Aviation Center in Frankfurt was specifically remodeled to make it a “collaboration workspace” (Q-Lab).



The Makers of Tomorrow Event “You are awesome” addressed applicants of the Lufthansa Group’s talent program.

This new space promotes agile forms of cooperation and forms the basis for the swift development of focus themes and projects in cross-functional HR teams. About 3,500 employees used the Q-Lab during the reporting year.

## Optimized recruiting for cockpit and cabin

To accelerate and modernize the recruiting process in order to gain more and better applicants within the shortest time possible – this is the goal of a large-scale digitalization project that the airlines of the Lufthansa Group, HR Recruiting and Lufthansa Aviation Training (LAT) launched in July 2018. It aims at winning more than 5,000 applicants annually and training 500 future pilots at the flying schools of the European Flight Academy. Simultaneously, the standardized platform is to make a contribution to actively guiding applications between the Group airlines and thus to realize synergies, for example in the selection of suitable applicants. The platform successfully went live for the first time in January 2019. This digital transformation project is part of the newly set up Lufthansa Group Lean Program, which is expected to conclude during the first half of 2019.

Furthermore, Lufthansa Aviation Training comprehensively revised basic training for flight attendants, both from a content and a technical perspective. As a result, training has more strongly incorporated megatrends such as digitalization, connectivity and individualization since 2018, a development from which future Lufthansa cabin crews will benefit as well. Modern tablets are now the central focus, as well as teaching tools at the training locations Frankfurt and Munich. Another innovation is the option for future flight attendants to choose the time, place and location for individual learning phases themselves. In addition, personal tutors are at their sides, online and offline, to answer their questions.



The Q-Lab at the Lufthansa Aviation Center facilitates agile and cross-departmental work styles.

### REALIGNMENT OF EMPLOYER BRANDING

During the reporting year, the Lufthansa Group fundamentally revised its long-existing career portal and all channels and websites. Thus, be-lufthansa.com has featured a fresh design and new functions since the end of 2018. Another innovation: be-Lufthansa is to become [lufthansagroup.careers](https://www.lufthansagroup.com/careers) in the future.

Unlike in the past, the Lufthansa Group predefines only the framework on its career platform, while company-specific content, images and colors permit the Group companies to present their own characteristic employer environments. The goal is to become significantly more visible on the application market. Beyond that, the aviation group not only wants to shift the focus to the diversity and strengths that are characteristic of specific business segments and their individual companies, but it also wants to further strengthen the positioning of regionally oriented Group brands. That the reorganization of employer branding has been successful is shown by the fact that the activities of the Lufthansa Group have an increasing resonance in social media and career networks, among other indications.

In the interest of up-to-date personnel acquisition and to avoid staffing bottlenecks, the Group also operates “Active Sourcing” via external recruiting platforms. In connection with other social media channels, it takes advantage of the opportunities yielded by (inter)active communications with potential qualified employees and managerial staff. Under the formats “Talent Hub” and “Alumni Network” (see page 71, Balance 2017) the Lufthansa Group maintains contact with former employees.

# OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT

Occupational safety and health protection are central action areas for the Lufthansa Group. Their development is jointly managed by the Medical Services (including psychosocial counseling) as well as the Group occupational safety and health management functions. To promote employee health, the areas involved have implemented various measures through which the Group not only fulfills its duty of care, but also makes an important contribution to being an attractive employer.

Megatrends such as globalization, competition and digitalization are particular challenges for organizations such as the Lufthansa Group and its employees. In addition, there are internal challenges such as an increasing need for flexibility and restructuring, and the lack of qualified staff. The Lufthansa Group's comprehensive approach to health and safety accompanies megatrends in society and supports internal changes. The goal is to safeguard its employees' health and motivation and to secure the Lufthansa Group's future viability over the long term. Logically, the Group rated health protection as "very important" in its 2018 materiality analysis (see page 31).



## Health Management

To further develop health protection Group-wide, the Company successfully launched the three-year program Health Management@Lufthansa Group in 2016. At the end of the reporting year, the health management function was transferred into the line organization. The goal of the Group-wide health management is to maintain employees' health and their ability to perform long-term and sustainably, and to encourage them to treat their health as a personal responsibility (empowerment). Furthermore, the key Group companies named more than 35 occupational health officers. Their task is to give the topics of health and well-being greater

visibility and to assume responsibility in this area. They act as established contacts within their companies and as an interface with the overall health management.

Through the program Health Management@Lufthansa Group the Company has integrated health aspects into existing, general processes and instruments, and implemented measures in a specific manner. This includes counseling offers and information events for employees and managers alike. These address focal themes with Group-wide relevance, such as stress management and recovery capacities; additionally, various seminars and learning modules are available. To complement these options, the Lufthansa Group introduced a digital eHealth platform with numerous internal and external health offers in January 2019. These are initially available to all ground staff in Germany and then will be rolled out step-by-step to additional employee groups.

Health Management coordinates and manages the central steering committee "Health", a forum which meets at regular intervals and includes representatives of the largest Group companies, employee representatives, occupational safety and disabled employees' representatives as well as experts from the medical and psychosocial areas.

### Health Index

As the primary performance indicator for measuring the overall health-related sense of well-being among all employees, the Lufthansa Group compiled the Health Index again in 2018. The results are based on the responses to relevant questions in the employee survey "involve me!" (see page 83). They serve to identify aspects of work that require adjustment and provide a basis to develop focused measures to strengthen individual health resources and to minimize the risk of inappropriate physical strain. As with the Engagement Index, the Health Index results are communicated to top management, team managers and the entire workforce.

The Health Index is depicted on a scale from 1 (best) to 5 (worst). In 2018, it declined slightly by 0.1 to 2.4, which does not deviate significantly from the previous year's value of 2.3.

## Medical Service

The Medical Service has a key role in the Lufthansa Group's concept of occupational safety and health protection. Its permanent core task is to secure and improve the Group employees' ability to perform and thus ensure reliable business activities and flight operations.

Medical Services at Lufthansa, SWISS and Austrian Airlines are holistic centers of excellence, permanently offering a full range of services. This includes aviation and occupational medicine, vaccinations and travel medicine, outpatient care, a comprehensive social and medical advisory service, and other preventive and healthcare treatments. Beyond these individual treatments, Medical Services provide advice to decision-makers, committees and employee representatives concerning all issues of occupational health and safety.

In fall 2018, the requirements associated with the amendment of the German Civil Aviation Act were met with the introduction of a central interface with Germany's federal aviation administration for the transfer of pilots' medical data. As a result, Deutsche Lufthansa AG fulfills the legal requirements for all three medical centers.

Following comprehensive preparation and training for employees to become quality management officers, the successful recertification of all locations and functions was completed in August 2018 in accordance with the quality management system DIN ISO 9001:2015 (previously 2008). Many processes were adapted, standardized and optimized in this context; this process of evolution is pursued continuously.

Psychological and psychosocial factors also have a highly significant influence on health, safety and performance levels in work settings. For this reason, the Lufthansa Group has offered its employees, teams and organizational units individual counseling and mediation services under the obligation to maintain confidentiality, as well as different services of psychosocial organizational counseling for more than 30 years.

Beyond the obligatory features in the area of health protection, the Lufthansa Group offers its employees a wide range of preventive measures on a voluntary basis, both for administrative and flying personnel. These measures and campaigns are widely communicated within the Company.

## Group occupational safety

Group occupational safety ensures all employees' health and safety on the job. The goal of this function is to prevent accidents, health risks and occupational illnesses at the Lufthansa Group. The Company's occupational safety experts check all professional activities as well as technical or infrastructural set-ups by means of risk assessments and safety inspections at the individual Group companies in accordance with the regulations.

Based on results thus obtained as well as legal requirements, Group occupational safety consistently implements and continuously develops preventive measures, such as the use of personal protective gear and various types of operating equipment, or conducting measurements of pollutants. In the same way, standardized and binding minimum standards are established that are applicable for all employees worldwide.

Obligatory and regular training sessions for employees as well as specialized and target-group oriented campaigns contribute to raising awareness among employees and managers; this approach also contributes to a sustainable safety culture. Low numbers of work-related accidents and occupational illnesses at the Lufthansa Group are a measure of success for medical and technical aspects of occupational safety and occupational hygiene.

In addition to other legally required committees, a central committee meets at regular intervals. The Occupational Safety Committee (OSC) steers, bundles and monitors all issues related to job safety within the Lufthansa Group. In Germany, occupational safety committees with employer and employee representation are active at all relevant locations of the Lufthansa Group. In close cooperation they optimize processes and agree on measures to improve job safety.

In 2019, Group occupational safety is focusing especially on digital change and its influence on possible work-related health risks. In this context, factors such as psychological stress on the job are evaluated from a technical and economic perspective; the possible use of modern technologies and new products for health-oriented and ergonomic design of work environments are also assessed.

# CORPORATE CITIZENSHIP

As an aviation group with international activities, the Lufthansa Group also assumes responsibility for social and societal issues. Since 2016, the Company has been guided in particular by the United Nations' global Sustainable Development Goals (see page 32 f.) and concentrates especially on the core themes Education / Enabling and Life / Health.

The Lufthansa Group's stakeholders expect a comprehensive social commitment (corporate citizenship) that reflects the Group's importance and size, and that is transparent, credible and comprehensible at the same time. To meet this expectation, responsible thinking and practice go far beyond the aviation group's operative business activities.

The emphasis in the topic area Education / Enabling is on helping disadvantaged people to be able to lead successful, healthy and self-determined lives. This is above all facilitated

by educational projects worldwide, which are bundled and coordinated by the help alliance, the Lufthansa Group's charitable aid organization (see page 93 f.).

In the reporting year 2018, the Lufthansa Group launched the further development of its corporate citizenship concept at the Network Airlines' hubs. Essentially, this implies establishing or expanding local help alliance projects as well as supporting additional regional projects, at first in Germany and with a reference to the Lufthansa Group, all oriented by the topic area Education / Enabling. Implementation will begin in 2019. In this context, Deutsche Lufthansa AG has increased its annual donation amount for the help alliance by 800,000 euros.

This commitment is complemented by a number of further aid projects supported by the Group airlines and Aviation Services (see illustration on this page). Beyond that, the aviation group

## Alignment of the Lufthansa Group's corporate citizenship

<p><b>Central pillar of corporate citizenship</b></p>	 <p>The Lufthansa Group's charitable aid organization currently combines more than 40 projects worldwide under its roof <a href="http://www.helpalliance.org">www.helpalliance.org</a></p>		
<p><b>The Lufthansa Group is committed to these areas</b></p>	 <p><b>Education / Enabling</b> In addition to the emphasis on education and training, the help alliance also supports business approaches (entrepreneurship).</p>	 <p><b>Life / Health</b> Professional and fast emergency aid during humanitarian crises and catastrophes. Lufthansa Cargo cooperates with renowned aid organizations for this purpose.</p>	
<p><b>The projects are divided into</b></p>	<p>Global flagship projects</p>	<p>Local projects at the large Company locations</p>	<p>Decentralized commitments specific to certain business segments</p>
<p><b>Goal of commitment</b></p>	<p>Make a measurable contribution to sustainable social development</p>		<p>Expand corporate volunteering option for employees</p>



The help alliance supports about 23,000 people worldwide every year, including at iThemba in South Africa, its largest project.

respects the wish of its stakeholders to continue its support for the protection of the crane – the Lufthansa Group’s heraldic bird (see Balance 2018, page 81). Selected partnerships are maintained in the socially relevant areas of culture and sports.

A significant component of the Lufthansa Group’s approach to corporate citizenship is the selected social commitment of its employees. For this reason, the corporate volunteering activities and other participation formats are closely connected to the HR strategy. The Lufthansa Group continuously develops the concepts of these offers. In the future, Lufthansa Group employees are to have the opportunity to spend a defined amount of their time getting involved in new help alliance projects in Germany during working hours.

Within the topic area Life / Health, for many years the Group has provided emergency aid to humanitarian crises and catastrophes by means of dedicated flights. Swift action and logistical know-how are decisive factors to be able to help victims of natural catastrophes and humanitarian crises immediately and effectively. Given its expertise as an aviation group with international activities, the Lufthansa Group is able at any time to provide transport capacities aboard its freight aircraft in

such extreme cases. Lufthansa Cargo supported humanitarian campaigns on numerous occasions in the past by transporting relief supplies (see illustration page 98 f., Balance 2016). To ensure that first aid in the event of crises or catastrophes can be launched quickly, the Lufthansa Group’s logistics specialist cooperates closely with renowned aid organizations.

This includes Germany’s Red Cross (DRK), with which Lufthansa Cargo signed a cooperation agreement at the end of 2016. The goal of this cooperation is to accelerate and simplify the preparation of aid flights. This cooperation sustainably improves the effective support and provision for people in need in crisis and catastrophe situations. Additionally, at the end of 2016 the freight airline signed an agreement in principle with Airlink. This non-commercial humanitarian aid organization was founded in 2010 by employees of the International Society of Transport Aircraft Trading Foundation (ISTAT). At the beginning of 2013, Lufthansa Cargo entered into a long-term partnership agreement with the emergency aid association “Aktion Deutschland Hilft”. Under the motto “Helping faster, together” the preconditions were set up to be prepared for humanitarian emergency situations at any time and to allow swift implementation of a worldwide logistics chain.



## Four questions for SUSANNE FRENCH

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Lufthansa purser and project coordinator of the help alliance project iThemba in South Africa

### **YOU HEAD THE HELP ALLIANCE PROJECT Ithemba. WHAT ARE YOUR TASKS AND WHAT IS THIS PROJECT ABOUT?**

In the context of this project, since 2006 we have looked after underprivileged children in Cape Town's townships and given them access to high-quality preschool education. As the primary responsible project coordinator, I oversee very diverse tasks. To begin with, there is fundraising, which includes negotiations with the ministry and the school authority. I am a member of the committee that selects and hires new teachers, and also of the School Governing Body where I make decisions concerning the school together with the other members. For a short while I have been supported by Christian Haude, a former volunteer at iThemba. After all, project coordination tasks are rather extensive and we do this work as volunteers.

### **WHY ARE YOU COMMITTED TO THE HELP ALLIANCE?**

As a purser I get around a lot and see where help is needed. The way the help alliance is set up, it does offer something special. It gives me the unique opportunity as a Lufthansa employee to work as a project coordinator. Beyond that, transparency is important to me and I would not want to support an organization with a heavy administration. It is also wonderful

to receive so much support. For a few months iThemba has been receiving support from Austrian Airlines. In addition, crews regularly visit our pupils, which is great for the children. As a linking force, the help alliance is not to be underestimated. Every Lufthansa Group employee can contribute, by getting involved directly, visiting, payroll giving or as a permanent donor. This strengthens the collective spirit.

### **HOW IMPORTANT IS CORPORATE CITIZENSHIP FOR A COMPANY SUCH AS THE LUFTHANSA GROUP?**

Given the enormous problems in the world, the importance of corporate citizenship is rising. Young, well-educated people in particular are paying increasing attention to a potential employer's social commitment. This type of commitment linked with our Company's international character is a perfect combination. We receive support from many business segments and subsidiary companies. The project connects Lufthansa Group employees and together we achieve more for iThemba and the underprivileged children it serves.

### **WHAT ARE THE NEXT STEPS FOR THE PROJECT?**

We will be busy with construction work well into next year. Once that is completed, we would like to realize our original goal, which is a community college. We will then open the school for high-school dropouts and for parents in the afternoons and evenings, giving them the opportunity to catch up on subjects they may have missed. Nothing strengthens people more than good education. This is the only effective weapon against exploitation and abuse.

The Lufthansa Group's humanitarian emergency aid also benefits from the long-term experience of freight airline Lufthansa Cargo in the area of charters. Thanks to "network-on-demand", aid consignments can be transported swiftly, professionally and flexibly to any destination within or outside the network of the Lufthansa Group Airlines.



help alliance: Closer to the world.  
Closer to its people.

The help alliance is the Lufthansa Group's central corporate citizenship pillar. The charitable aid organization acts as a catalyst for greater social engagement, combining proven projects initiated by employees with the power and network of the Lufthansa Group. Defined criteria ensure that the supported projects are sustainable. The importance of the help alliance is emphasized by the fact that the company reports to the Chairman of the Executive Board and CEO. The focus on social and humanitarian projects in the field of Education / Enabling makes it possible to deploy the available funding in an efficient and targeted way. The main objective is to help disadvantaged people lead a successful, healthy and self-sufficient life. This help primarily takes the form of educational opportunities.

In 2018, the Lufthansa Group covered all of the costs of administration, project assistance, fundraising and communication at help alliance gGmbH. This ensures that 100 percent of all other donations can be used to fund aid projects. This also applies to voluntary donations made via salary deduction by employees of the Lufthansa Group. The option of the so-called payroll giving, introduced in April 2017, is initially open to about 80,000 employees and retirees who are covered by the Lufthansa Group's joint payroll system.



### ON-BOARD COLLECTION PROGRAM "SMALL CHANGE - IT'S A BIG HELP"

With the goal of creating a bridge towards a better life for people in need, in 2001 the help alliance launched the onboard collection program "Small change - it's a big help". It offers passengers aboard Lufthansa Group long-haul flights the option to donate coins and banknotes in any currency. Small, sealable donation envelopes are available in the seat pockets for this purpose; they are collected by flight attendants and forwarded to the help alliance. Remaining currency can also be deposited in donation pillars placed in employee areas, Lufthansa lounges at German and selected international airports as well as the public areas at the Frankfurt and Munich hubs.

### DEVELOPMENT OF DONATION VOLUMES IN EUROS

**267,223**

2018		
2017		283,127
2016		283,605
2015		362,662
2014		497,823

- October 2002:  
Start of Condor's participation
- July 2012:  
Start of Austrian Airlines' participation
- November 2017:  
Start of Edelweiss Air's participation
- May 2019:  
Start of Eurowings' participation

### Support for 23,000 people worldwide

In the reporting year, the help alliance was responsible for 41 aid projects with a volume of 2 million euros and helped some 23,000 people around the world. Continuous monitoring and regular evaluations of projects according to a predefined catalogue of criteria ensure that the supported projects and programs improve the life situations of children, their families and the community in an effective and sustainable way, and that project funds are used effectively and efficiently.

One focus was once again on the biggest help alliance project so far, the “iThemba” project in South Africa, which enables children in the Capricorn township of Cape Town to receive a high-quality primary education (see interview page 92). The iThemba primary school was opened in January 2018 and teaches more than 100 children in three classes. With this project, the help alliance makes an intensive commitment to Sustainable Development Goal number 4, “high-quality education”, as defined in the United Nations Agenda 2030. In the help alliance project “Broadening Horizons”, 30 young people from the socially disadvantaged area around Sao Paulo International Airport in Brazil successfully completed their training as bakers and pastry chefs during the reporting year. Ten of them were immediately hired by LSG Sky Chefs. The initiative was supported by employees from different areas within the Lufthansa Group, who acted as mentors.

➤ [www.helpalliance.org](http://www.helpalliance.org)



With its project iThemba, the help alliance gives children in the Capricorn township in Cape Town access to high-quality pre-school education.



## Cargo Human Care

In May 2007, employees of Lufthansa Cargo, together with German physicians, founded the humanitarian aid association Cargo Human Care (CHC). The basic idea was – and remains – to help destitute people as well as impoverished and underprivileged orphans in Nairobi in uncomplicated, professional and sustainable ways. The focus of this charitable commitment is on providing medical care, education and accommodation. The Executive Board of Lufthansa Cargo has supported the aid project from the start.

Furthermore, Cargo Human Care is actively involved in many other areas and projects, and continuously expands its commitment. For example, in September 2017 the association signed the contracts for the construction of the Happy Child Education Centre (HCEC), located in the Kabiria slum area of Nairobi. On January 21, 2019, the HCEC was officially inaugurated and has since then provided a school education for 100 children from the surrounding area who lacked access to schooling. Financing was provided equally by CHC, help alliance and Regine Sixt Kinderhilfe Stiftung.

➤ [www.cargohumancare.de](http://www.cargohumancare.de)



The Happy Child Education Centre, opened in January 2019 in a slum district in Nairobi, offers a school education to 100 children.

## Further social projects within the Group companies

### SWISS

- Similar to the Lufthansa Group's approach, philanthropic commitments focus on supporting children and young people; both in Switzerland, its home market, and internationally.
- The airline has supported SOS Children's Villages Switzerland since its foundation – among other measures with flight tickets and on-board collections of funds in coins.
- Funds donated benefit projects located at SWISS destinations.
- In cooperation with the Foundation ProJuventute, SWISS made it possible for children and adolescents from the Zurich region to experience the airline and airport first-hand during the summer vacation. The Foundation's goal is to energetically support adolescents in their development towards becoming self-confident and responsible adults.
- In its procurement process, SWISS takes special suppliers into consideration: every year, SWISS orders about 2,000 Business Class and 300 First Class clothes hangers from the Foundation "Orte zum Leben" ("Places to Live"). The foundation offers people with disabilities a place to live and work, and operates a carpenter's workshop, among others. The Foundation Pigna, a workshop for people with disabilities in Kloten, looks after cleaning and readying for use about one million onboard headphones a year for SWISS.

### AUSTRIAN AIRLINES

- Concentration on social projects in central and eastern Europe.
- The focus is on renowned organizations such as "Global 2000", "Help for Children from Belarus", and "Alliance for Children".
- In the framework of the initiative "Flygreener", discarded airplane blankets, crew suitcases, and mattresses from crew restrooms are donated to charitable organizations.

### EUROWINGS

- May 2019: start of participation in help alliance's on-board collection program on Eurowings long-haul routes.
- The donations collected at the Christmas party raffle 2017 and from tickets for the carnival party 2018 were increased by management to 36,000 euros and donated to Kinder- und Jugendhospiz Balthasar (Children and Youth's Hospice Balthasar).

### BRUSSELS AIRLINES

- Brussels Airlines set up the initiative b.foundation for Africa in 2010 and has since then supported humanitarian projects on the African continent.
- In addition to supporting the social commitment of its employees, the airline also backs a number of non-profit organizations.

### LUFTHANSA CARGO

- Cargo Human Care e.V. (see page 94)
- For more than 35 years there has been a close cooperation with "Werkstätten für Behinderte Rhein-Main e.V." (Workshops for the Disabled, WfB Rhein-Main) in producing lashing straps used for loading cargo aboard aircraft. WfB Rhein-Main's goal is to give people with disabilities an opportunity to participate in working life and to integrate them into the job market.
- With a current order volume of almost 1.2 million euros, Lufthansa Cargo is the largest manufacturing customer at WfB Rhein-Main, thus securing more than 120 jobs at the workshop.
- The association was certified in 2016 by the European Aviation Safety Agency (EASA) as development company and by Germany's Federal Aviation Office (LBA) as manufacturing company. WfB Rhein-Main is thus one of only six manufacturers worldwide that produce lashing straps certified according to the highest standards.
- The cooperation is to be intensified in 2019.

### LSG GROUP

- Its regionally varying commitment includes educational projects, health promotion and sports events, among others.

An aerial night photograph of a city, showing a dense network of streets and buildings illuminated with warm orange and yellow lights, with some blue lights scattered throughout. The overall scene is dark, with the city lights providing the primary illumination.

# 04

**Key points on**

PRODUCT  
& CUSTOMER

Customers are always the center of attention at the Lufthansa Group. Their satisfaction is a primary concern at all times. The aviation company aims at providing its passengers with perfect service and making flying in all its facets a sustainably positive experience. Against this background, the goal is to assess the Company's offers and products along the entire travel chain on a continuous basis with the aim of optimizing them. This includes punctuality and reliability in particular. For this reason, the Lufthansa Group has intensified its cooperation with system partners in order to increase and secure operational stability over the long term.

Flight safety and health protection always have top priority in this context. To implement this fundamental standard without qualification, all airlines within the Lufthansa Group operate comprehensive safety management systems. Equally important are data protection and data security as a basis for trusting business relationships.

Customer orientation and a focus on quality are the Lufthansa Group's strategic cornerstones. Regular surveys and a continuous dialogue with passengers help to learn as much as possible about customer needs and to include them in the development of innovative offers. Significant investments in a modern and efficient Group fleet, more comfort on board, numerous product innovations, and digital offers ensure that flying is becoming more and more attractive and sustainable for the Lufthansa Group's customers. And the high level of commitment to product responsibility is being honored: in 2018 the airlines and service companies again received numerous prizes and awards. ([-> PAGE 98 FF.](#))

# PRODUCT AND SERVICES

A high level of customer orientation is indispensable for a service company like the Lufthansa Group. For this reason, all products and services along the travel chain are continuously reviewed and new, innovative in-flight and ground products and services are developed that place the customer at the center. Digitalization and sustainability aspects play an important role in better meeting differentiated customer needs. The customer's travel experience should become even more convenient, especially through greater personalization of the products and services along the entire travel chain.

Responsibility for products and services for all Network Airlines in the Lufthansa Group is centrally pooled, with reporting responsibilities to the Executive Board member for Network Airlines. This ensures effective and efficient implementation in the airlines by taking advantage of synergies and continuously improving products and services for customers. Responsibility for in-flight and ground products for all airlines in the

Eurowings Group lies with the Customer Experience & Product department, which reports to the Commercial Director.

To ensure the Lufthansa Group's long-term success, customer needs play a preeminent role. Therefore, the Company applies systematic approaches to understand these even better. By surveying customers, their needs along the travel chain are identified. These results form the basis for strategic decisions. The systematic methods to continuously optimize and improve service, quality and customer orientation serve to ensure the Lufthansa Group's long-term success and ability to create value.

The Network Airlines focus on the strategic vision of "New Premium" to fulfill customer needs along the entire travel chain and to improve weak points. In the reporting year 2018, focus initiatives were launched for customer-centric process improvement concerning flight irregularities and baggage handling procedures.



## Continuous, worldwide customer surveys

To obtain insights that are as differentiated as possible about their passengers' travel experiences, the airlines of the Lufthansa Group count on regularly tracking satisfaction and conducting additional detailed surveys. Thanks to these worldwide surveys, possible starting points for improving customer satisfaction can be identified.

By means of online surveys, the three Network Airlines determine on a daily basis how satisfied passengers are with the different services along the travel chain. Data collection and reporting are centrally steered at Group level. The team responsible comprises experts from all Network Airlines and is supported in this task by a market research institute. To obtain representative results, the Lufthansa Group ensures that the surveys include all service classes, traffic areas and passenger segments. In addition, complex statistical random sample logic based on monthly updated timetable data ensures that the values generated have both a high level of meaning and statistical stability. The airlines compile the evaluations of individual products and services to formulate satisfaction indices concerning the onboard and ground products, and concurrently generate a higher overall satisfaction index. The departments responsible as well as management receive monthly reports.

The satisfaction ratings allow differentiated insights into how elements such as adaptations in catering, lounge modernizations, new seat concepts, the introduction of new in-flight entertainment systems or changed service sequences influence passenger satisfaction. They can also be used as indicators for implementing improvements of services and products.

In a parallel move and dependent on the relevant target variable (for example satisfaction or recommendation), the Network Airlines collect data for additional central performance indicators such as the loyalty index. Furthermore, the Net Promoter Score (NPS®)<sup>1</sup> which has been generated since 2014 places the focus on the travel experience as the airlines' central product or service category. To establish the NPS®, the airlines continuously survey their customers, asking if they would recommend the company concerned, based on their travel experience.

## Customer satisfaction at high level

↗ GRI 102-44

Since 2018, Lufthansa Airlines, SWISS and Austrian Airlines have harmonized their methods and processes for measuring customer satisfaction in terms of both content and methodology. Customer satisfaction data is tracked separately for different service aspects along the entire travel chain (in-flight and ground products).

The main performance indicator for measuring satisfaction at the Network Airlines is overall satisfaction with products and services. This is the percentage of customers surveyed who said that they were satisfied or very satisfied with the quality of the in-flight and ground products and services offered by the Network Airlines.

This performance indicator is derived from the Passenger Satisfaction Tracking (PST) study and is shown for all three Network Airlines. In the reporting year, the Network Airlines had a customer satisfaction value of 74, which is at a high level, even if the level declined over the course of the year due to the challenges experienced during the reporting year (see page 103, Operational stability).

Under a new concept, Lufthansa Cargo, the Group's specialist for logistics services, conducts its global customer survey "My Customer's Voice" once a year. During the reporting year 2018, overall customer satisfaction improved in comparison with the preceding year and reached a high level at a value of 5.3 (on a scale from 1 = very dissatisfied to 6 = very satisfied). Satisfaction with the aspects "social commitment" and "environmental protection", which were also evaluated, at values of 5.3 and 5.1 respectively, were situated above the level of other customer touchpoints in 2018.

<sup>1</sup> NPS® - Net Promoter Score, a registered service mark of Bain & Co., Inc., Fred Reichheld and Satmetrix Systems, Inc.



## Three questions for ANNETTE MANN

Vice President Onboard & Customer Services Network Airlines

### **RESPONSIBILITY FOR THE ENVIRONMENT AND SOCIETY IS A CENTRAL TOPIC FOR THE LUFTHANSA GROUP. WHAT DOES THIS MEAN FOR THE ON-BOARD PRODUCT?**

Applying sustainability criteria to the on-board product is a very wide field. Many first think of avoiding disposable or crude-oil plastics, recycling or reducing weight on board. This is important and we are already doing a lot in this area. In the future, we will additionally replace more than 400 million plastic items per year, such as cups, cutlery and swizzle sticks with more ecological alternatives. But the most effective lever for us is to load aircraft with an even greater fit between the items on board and those that will actually be used during a flight. Unfortunately, we throw away too much food today because we want to have something on board for each passenger, but perhaps the passenger does not even want it. Therefore, our goal is to set up a demand-driven system that focuses on customer wishes and quality, and that helps lower food waste and waste quantities to a minimum. Reduce – reuse – recycle, this is our credo driving sustainability on board.

### **ON WHICH SUSTAINABLE PRODUCT COMPONENTS ARE YOU WORKING AT THE MOMENT?**

We are working on developing an entire range of sustainable product components, including a new beverage cup made from recycled plastic and the avoidance of packaging for amenity kits. We have already implemented the exclusive use of reusable dishes on our long-haul flights in all service classes, the introduction of multiple-use coffee cups and the avoidance of plastic covers on reusable boxes. In Business Class we now use paper sleeves for blankets instead of plastic. And offering eJournals instead of classic newspapers and magazines reduces waste significantly and saves weight on board too.

### **WHAT ARE THE ALTERNATIVES FOR PLASTIC?**

There are numerous alternatives. For dishes, for example, there is porcelain and metal. But we mustn't forget that these are heavier materials. And increased weight means higher kerosene consumption. Washing these dishes needs energy and consumes resources. For disposable items, we can use natural fibers made from sugar cane, for example. Wood, bamboo and organic plastic on the basis of corn starch are options for cutlery, containers and covers. Due to a lack of alternatives there are some areas in which we have to continue the use of conventional plastic. These include medical or hygiene products such as gloves, disinfectants or trash bags, which must be tearproof.

## New products and services

In 2018, the Lufthansa Group again phased in new aircraft, programs and services, aimed at further improving the travel experience and thus also customer satisfaction. For example, the new Lufthansa Airbus A350-900 offers more comfort for passengers with its wider cabin and innovative lighting concept (see pages 29 f. and 54, Balance 2017). Furthermore, from 2020 Lufthansa is planning to introduce a completely new Business Class with the new Boeing 777-9, which will offer optimum sleeping comfort and plenty of privacy as well as more individual seating options.

SWISS expanded its flagship fleet by two further Boeing 777-300ERs to a total of ten during the reporting year and is also planning to equip five Airbus A340-300s with a new cabin product in all three service classes. Austrian Airlines completed the integration of the new Premium Economy Class for the beginning of the summer timetable 2018 on its entire long-haul fleet and expanded the latter by one Boeing 777-200.

In 2018, Eurowings became the first low-cost airline to introduce a "BIZclass" on selected long-haul routes, which includes

classic Business Class product components such as a fully flat seat that opens to 180 degrees, lounge access, fast-tracked security checks and other amenities. These services are supplemented by new, up-to-date in-flight catering trends, partly in cooperation with innovative start-ups. Eurowings also offers fast broadband Internet access on more and more short- and medium-haul flights.

The same applies to the Network Airlines: in 2018 alone, 69 short- and medium-haul aircraft were equipped with broadband Internet access; by the end of the reporting year, a total of 238 short- and medium-haul aircraft featured broadband Internet. Beyond that, all flight attendants are equipped with mobile devices which allow faster reporting about passenger satisfaction.

Digitalization and innovation initiatives support the Lufthansa Group in continuously developing new products and services that are focused on customers. By means of the Lufthansa Innovation Hub, the Company advances the systematic use of innovative online business models for the Lufthansa Group airlines and develops digital solutions along the travel chain for passengers and travel providers (see page 46, Sustainable innovation, research and development).



Business Class seats aboard the first SWISS A340 with new cabin furnishings.



The new Lufthansa Business Class will enter service for the first time in 2020 aboard the Boeing 777-9.



## Increasing demand for sustainable products and services

The Lufthansa Group is responding in various ways to customers' wishes for sustainability aspects to play a greater role in products and services. As a result, passengers on flights with the Lufthansa Group airlines are increasingly offered organic and fair trade food and beverages, and the recycling of in-flight waste is being expanded. LSG subsidiary SPIRIANT, a leading global provider of in-flight service products and equipment, continuously expands the range of reusable and recycled or low-waste products for airlines.

In addition, product management experts are working under the tenet "Reduce - Reuse - Recycle" on establishing a demand-oriented system for even more sustainability on board (see page 100, interview with Annette Mann). The Group-wide initiative "Flygreener" also contributes to reducing waste volumes and making processes on board more sustainable (see page 66).

## Customers are involved early

The Lufthansa Group includes its customers at a very early stage in the development process of new products, to be able to decide faster whether new concepts meet their needs. For example, the new Business Class seat was tested by customers during the development process. Customer panels have been set up in Frankfurt, Munich, Zurich and Geneva; a panel in Vienna will be set up next year. With the help of these customer panels, the Network Airlines are able to get very rapid feedback from customers for specific lines of enquiry, understand customers' expectations and needs better and faster, and proactively fulfill the "New Premium" approach by actively involving customers in the process of product and service optimization.

## Employees at all levels made aware of customer satisfaction

Development and training courses for employees on increasing customer satisfaction are continuously updated and expanded. They include the Management in Practice program that encourages managers to work for one day a year in operational, customer-facing areas of the Lufthansa Group. In competition with other traditional full-service carriers, on the one hand, and low-cost airlines, on the other, the Network Airlines must develop an understanding of the concept of "premium" that meets customer requirements and enables them to differentiate themselves further. Various customer profiles were drawn up by using "Personas" to clarify the structure of their requirements. In the framework of the "New Premium" initiatives, employees at the Network Airlines have been trained in customer-centric methods since 2018. In training courses and on the job they learn the key concepts for analyzing, designing and sustainably improving customer experiences; for example by applying the innovative method of Design Thinking. In the future, these can be used in combination with the "Personas" to develop tailor-made products and services for individual customer needs.

# OPERATIONAL STABILITY

The top priority of all Lufthansa Group airlines is to ensure safe, punctual and dependable flight operations. However, in 2018 the Group airlines' passengers were also affected to a high degree by schedule changes, flight cancellations or delays. Among the reasons were infrastructure-related bottlenecks at many airports, lack of personnel, strikes at air traffic control and violent thunderstorms that caused delayed departures or cancellations for many flights.

At the beginning of 2019, Deutsche Lufthansa AG expanded its management with the new Executive Board function Airline Resources & Operations Standards. It bundles vital functions such as fleet management, flight operations standards, ground operations standards, infrastructure, system partners as well as Group safety. The Group-wide program Operational Excellence 2019 is aimed at implementing especially those measures that improve the dependability of flight operations in summer 2019. Unlike the existing initiatives at the Network Airlines and Eurowings, this program's focus is a functional, and thus comprehensive, perspective. Dependability and punctuality are a concern not only for the Lufthansa Group's airlines but also for industry representatives and system partners such as air traffic control and airports. For this reason, all parties concerned jointly search for solutions that can increase operational stability over the long term.

## Numerous measures to increase operational stability

All airlines have adopted comprehensive measures for summer 2019 to increase dependability and punctuality. This includes increased numbers of reserve aircraft and crews as well as longer time buffers in aircraft rotations by means of extended turn-around times on the ground. In addition, Eurowings has separated the scheduling of intra-German flights from European rotations to be able to operate these independently of overcrowded air spaces in southern Europe.

The Lufthansa Group has identified more than 400 individual measures to improve operative stability. These were developed on the basis of an analysis of several hundred millions of data sets from previous years, which indicates unequivocal causes

for delays and flight cancellations. Based on this input, both airline-specific and Group-wide measures were initiated and implemented.

This includes the purchase of six additional Airbus A320neos in September 2018 to compensate for the currently lower productivity of Lufthansa's A320neos due to above-average maintenance work as well as delayed deliveries. After having put these aircraft into service step-by-step and increased the number of reserve short-haul aircraft to 37, the Lufthansa Group expects improved punctuality and dependability for 2019. With the goal of ensuring operational quality, the Group is also hiring 600 new employees and training about 500 pilots, who are to increase the number of reserve crews (see illustration on page 104).

In addition, Lufthansa brought forward maintenance events during the winter and invested 100 million euros in spare-part supplies and engines in order to avoid cancellations due to technical reasons. Eurowings carried out additional checks on more than 120 aircraft. Beyond that, more than 200 aircraft mechanics are being recruited and trained so as to be able to react to unplanned technical problems even more flexibly.

## Investments in optimized customer information and communication

It is of particular importance for the Lufthansa Group airlines to inform customers affected by flight irregularities or cancellations as quickly as possible. Therefore, the Company has made significant investments in related services. For example, passengers can check a flight's status at any time on the homepage or app. In case of a cancellation, customers who would like to change their reservation from flight to train can do so simply and transparently on the app, online, by chatbot or on the hotline. Rebookings on other flights are always made automatically. In the event of delays, passengers find information about their rights directly on their mobile boarding pass, on the Lufthansa app or homepage and by SMS. To handle these tasks, Lufthansa specifically hired 250 additional employees in customer service. Additionally, Eurowings has

implemented standardized boarding processes and the strict application of rules concerning carry-on luggage. This guarantees not only smooth boarding, but also encourages passengers to drop off their carry-on luggage at check-in.

## Wide-ranging initiatives launched together with system partners

The airlines in the Lufthansa Group work closely with system partners, such as airport operators and German air traffic control (DFS), to find solutions for significantly reducing existing bottlenecks, particularly involving staff at the security gates, ground services and air traffic control centers. As a result, at the First Hamburg Aviation Summit in October 2018, attended by the Lufthansa Group, representatives of the German aviation industry and policymakers, a broad-ranging package comprising about two dozen measures was adopted to improve the reliability and quality of air traffic in Germany. In March 2019, representatives met again – for the Second Hamburg Aviation Summit – and confirmed the implementation of the measures adopted. In particular, this includes the removal of bottlenecks in state-run air traffic control services, border controls at the large airports and recruitment of additional personnel for ground services. The same goal is pursued by the industry initiative Airlines for Europe (A4E), whose members include the Lufthansa Group and other renowned European airlines, which works to improve the framework of infrastructure conditions at airports and the European air traffic control authority (EUROCONTROL). The initiative has already

set in motion numerous measures in cooperation with airports and German air traffic control, such as optimized use of control logic for air traffic in Germany.

## Performance indicator of punctuality of departures

The core performance indicator for judging operational stability is the airlines' punctuality of departures. Flights are defined as punctual if they are taxiing to the runway no later than 15 minutes after the planned departure time.

The punctuality of the Lufthansa Group airlines fell significantly in 2018, following the start of the summer flight timetable in April. The measures taken resulted in only slightly improved punctuality in August. A significant improvement only came in October 2018 with the transition to the winter timetable, which has considerably fewer flights in Germany and thus reduced pressure on German airspace. On average over the year, the punctuality of the Passenger Airlines in the Lufthansa Group fell to 72 percent (previous year: 77 percent).

The airlines of the Lufthansa Group are well prepared thanks to comprehensive investments and numerous measures, and they have adapted or regulated the flow of processes. But they are only able to influence about one-third of the issues themselves. Therefore it is even more important that all system partners involved make their indispensable contributions to the operative stability of air traffic in Germany and Europe.

### FOR MORE STABILITY IN FLIGHT OPERATIONS, THE LUFTHANSA GROUP HAS INVESTED 250 MILLION EUROS

For example in:



600 additional **employees** in operating areas



More **engine** and **aircraft reserves**



Improved **communications** with passengers in the event of delays and cancellations



**Faster** ground handling

# FLIGHT SAFETY AND HEALTH PROTECTION

The Lufthansa Group's success depends primarily on safe and reliable flight operations. The health and safety of passengers, crews and employees have the highest priority for the aviation group. Therefore, all Lufthansa Group airlines operate a comprehensive Safety Management System (SMS).

This includes continuous monitoring of flight operations: The Group airlines' experts track performance ratios, carry out audits and inspections, evaluate risks, analyze flight data and investigate incidents. All these measures serve the purpose of identifying and steering safety-relevant trends at an early stage, and guarding against possible undesirable developments. Beyond the legally required reporting systems, the Lufthansa Group operates a low-threshold confidential reporting system that is open to all employees.

With regard to their safety management systems, the Lufthansa Group's airlines take their bearings from legal requirements such as EU guidelines, as well as regulations issued by

the European Aviation Safety Agency (EASA) and the U.S. Federal Aviation Administration (FAA). In addition, they fulfill all standards and recommendations of the International Civil Aviation Organization (ICAO). Every two years, independent experts audit the safety standards applied Group-wide in an IATA Operational Safety Audit (IOSA). All Group airlines fully apply the internationally accepted IATA standards for air safety. These external benchmarks are supplemented by the Lufthansa Group with internal guidelines, in particular the Executive Board's Safety Commitment. These guidelines are compiled in the aviation group's Safety Management Manual (SMM) and are additionally included in handbooks concerning flight operations, training, maintenance and ground handling services. The Executive Board and all managers and employees affected by operator regulations fulfill their tasks in accordance with the SMM.



## Organization and responsibilities

Within the Lufthansa Group, independent departments monitor compliance with regulations and processes related to flight operations. At every Group airline, the safety management system is the responsibility of a safety manager. The safety manager reports both to the airline's management and to the Group Safety Pilot, who has Group-wide responsibility for evaluating and developing procedures and standards relevant to flight safety. He reports directly to the Chairman of the Executive Board and CEO of Deutsche Lufthansa AG, Carsten Spohr.

## Areas of emphasis in 2018

The organizational merger of the areas Security (protection from external hazards) and Safety (safe operations and flight safety), which began in 2017 was implemented in 2018. This change adapted the Group's safety structures to the matrix organization.

Further process adaptations were implemented in 2018 in this area. For example, risk analyses that concern more than one airline are now carried out in a standardized process. The classification and evaluation of reports, incidents and risk analyses have been adapted, which makes them interchangeable and readies them for further analyses. As a central form of documentation, a Group-wide SMM was published, supplementing local manuals.

Among other areas of emphasis were the verification and safeguarding of the quality offered by wet-lease partners and the renewal of IOSA certification.



### GERMANWINGS FLIGHT 4U9525

Four years after the crash of the Germanwings aircraft on March 24, 2015, the unity between all employees of the Lufthansa Group and the bereaved around the world remains as strong as ever. It is an important concern for the Group to keep alive the memory of the people who lost their lives in the accident that occurred in the Alps in southern France, and to support the next of kin. Relatives receive continued support in dealing with the effects of the accident by means of numerous forms of voluntary assistance provided by the Post Emergency Organization (PEO), which was set up immediately after the crash. In addition, the PEO coordinates all non-legal tasks related to the accident. To provide spaces for grieving, numerous private and public places of remembrance have been created since 2015.

<sup>1</sup> as of March 31, 2019

## Forever in our memories

The aid fund set up immediately following the crash to support social and cultural projects commemorating the victims (see page 74, Balance 2016) had already supported more than 53 projects<sup>1</sup> by spring 2019. A particular priority is giving support to young people who lost one or both parents in the crash. Independent of claims for damages, an aid fund of more than 5 million euros was made available for them to give financial support for an academic education or professional training in accordance with their preferences and abilities.

The aid fund's board of trustees, in which representatives of the relatives have seats and voting rights, decides on all support initiatives.

## Cabin air quality

The Lufthansa Group has actively participated in investigating so-called smell events aboard aircraft for many years. In cooperation with national and international authorities, associations, research institutes and manufacturers, the aviation group supports research on the composition of cabin air, the development of new innovative technologies and medical studies. So far, the Group has invested about 2 million euros in investigations and information in this area.

In addition, the Lufthansa Group set up a Cabin Air Quality Review Board as early as 2012, whose members represent flight operations, the Medical Services, Lufthansa Technik, technical operations management, Group occupational safety and personnel representatives. This interdisciplinary committee decides which steps and measures are to be taken in this area within the aviation company.

Current studies prove that the air aboard aircraft is innocuous and sometimes even of better quality than in offices. For example, on March 23, 2017 the European Aviation Safety Agency (EASA) presented its final report on a study of cabin air quality aboard commercial wide-body aircraft, in which it continues to draw the conclusion that there is currently no provable correlation between cabin air and health problems. Rather, the air quality on measuring flights was comparable to the air quality found in ordinary indoor spaces, such as classrooms or offices (see page 57, Balance 2017). Earlier measuring sequences yielded the same result (see page 71, Balance 2016).



### Special HEPA/carbon filters being tested

Additionally, the Lufthansa Group runs its own process tests with technical adaptations. For example, since May 2016 the aviation company has been testing the use of special

HEPA/carbon filters. These cabin air recirculation filters are equipped with an additional layer of activated carbon and are intended to further increase cabin air quality by removing volatile substances and compounds from recirculated air more quickly. Lufthansa has already equipped numerous aircraft of the Airbus A320 family with these filters for test purposes, and analyzes cabin air quality before and after installation. If the filters' performance turns out convincingly, the Lufthansa Group will install them on additional aircraft. Furthermore, the Lufthansa Group is in discussion with a number of manufacturers concerning a total air filter technology and sensor systems.

### Detailed communications and information

The Lufthansa Group covers the topic of cabin air quality comprehensively in its internal and external media. Experts from the relevant Group departments regularly inform employees in operational areas at different company locations about measurement and research results as well as technical analyses and innovations. The Group has presented the HEPA/carbon filters several times at product stands in Frankfurt and Munich.

Furthermore, cockpit and cabin crew representatives from all flying companies within the Lufthansa Group as well as the airlines' personnel and union representatives met on November 21, 2017 for the first Group-wide Cabin Air Quality (CAQ) Forum in Frankfurt. The goal of this internal event was to provide and exchange information about measures implemented and insights gained so far, as well as on current developments concerning cabin air issues. More CAQ Forums are to take place in the future.

# DATA PROTECTION AND DATA SECURITY

The Lufthansa Group companies collect, process and use personal data of customers, shareholders, employees and suppliers on a daily basis. For the business processes of the passenger airlines in particular, the Group depends on personal information about customers. The Lufthansa Group protects and secures all data according to the highest standards.

The secure handling of data is the basis for trusting business relations and is an increasingly important factor for the Group's success. In addition, handling personal data in conformity with data protection legislation safeguards the rights of those whose data is involved and protects the Lufthansa Group against violations of legal requirements as well as sanctions, fines and reputational damage that might result from such cases.

## **LUFTHANSA GROUP** Corporate Data Protection

### Guidelines and organizational foundations

The legally required responsibilities are implemented by the Lufthansa Group in an integrated data protection organization on all levels. The department Group Data Protection ensures the application of legal provisions across the entire Lufthansa Group. It familiarizes employees with legal requirements and regularly conducts data protection audits. In addition, data protection experts advise individual departments concerning the introduction of new systems and the design or change of processes. With the taking effect of the EU General Data Protection Regulation (EU-GDPR) on May 25, 2018, the importance of data protection has been increased significantly, accompanied by comprehensive documentation and reporting obligations.

The framework for data protection within the Lufthansa Group is provided by the Group Data Protection Guideline which is based on laws such as the EU General Data Protection Regulation (EU-GDPR) and Germany's Federal Data Protection Act (FDPA) as well as recognized principles. It defines roles and

responsibilities, and also provides rules that ensure conduct in accordance with data protection requirements across the entire Group, make data protection risks transparent and guard against them. The Lufthansa Group applies instruments that ensure compliance with data protection universally and thus a uniform level of data protection.

Data protection is the responsibility of the Executive Board member responsible for Corporate Human Resources and Legal Affairs of Deutsche Lufthansa AG (until 31.12.2018 the Executive Board member responsible for Finance) and the management of the respective Group company. In assuming this responsibility, they are supported by the Corporate Data Protection department. All companies that are required by law to appoint a data protection commissioner have done so. Additionally, data protection coordinators were installed in companies and process areas. The Group Data Protection Commissioner defines and establishes standards, and the required core processes such as guidelines, sample contracts and forms with regard to data protection for the entire aviation group.

Furthermore, the Lufthansa Group has established a notification process for data protection and data security incidents. Complaints and information requests from concerned parties are processed in a timely and comprehensive manner within internally set deadlines. The Lufthansa Group fulfilled the extended reporting obligations according to the EU-GDPR in all relevant cases of infringements against data protection. These affected customer data and, in individual cases, employee data. In addition, during the reporting year the companies of the Lufthansa Group received inquiries from supervisory authorities following complaints from those affected. The Group responded completely and conclusively to information requests or inquiries from those affected concerning the processing of their personal data.

### International data protection regulations

Data protection regulations in other countries play an increasing role for the Lufthansa Group due to its international operations. Conflicts arise in the airline industry in particular because foreign authorities increasingly request passenger

data. However, providing such data would often be contrary to European data protection rules (see page 67, Balance 2015). Since June 2016, the “EU-US Privacy Shield” has regulated data transfers between the EU and the USA (see page 73, Balance 2016, and page 59, Balance 2017).

The Lufthansa Group has adapted its existing data protection management system to the EU-GDPR and has almost completed related projects necessary for its introduction within those Group companies affected. Nevertheless, individual national deviations from this norm will continue to be in application for the aviation group, such as those concerning the obligations to appoint data protection commissioners and with regard to employee data protection. In the context of her legal supervision function, the Group Data Protection Commissioner regularly monitors the situation in relation to the EU-GDPR and reports to the Executive Board. In 2018, the Group Data Protection Commissioner carried out the first verifications of Lufthansa companies domiciled in Germany. Insofar as gaps existed with regard to individual data protection requirements, the data protection experts defined measures to remove them. The implementation will be evaluated in the context of the next regular verifications of these companies.

## Employee sensibilization and targeted training

The Group Data Protection Commissioner supports employees and managers by means of training courses, web-based training programs and comprehensive communication in understanding data protection, its necessity and its principles within the Lufthansa Group. This includes important concepts, the organization of data protection and specific aspects concerning certain areas. The Group Data Protection Commissioner plans the necessary training measures as a recommendation, informs those responsible about their training obligations and supervises – as much as this is technically possible – by means of an automated monitoring system and concrete controls, that these training obligations are met.

### Outlook

For 2019, the Lufthansa Group has planned to further expand its data protection organization and the corresponding knowledge within individual departments. Furthermore, the data protection experts will evaluate compliance issues in the Group’s subsidiaries abroad.

## IT security

The increasing digitalization of business processes within the Lufthansa Group also increases the necessity of prevention against cyber risks (see page 71 f., Annual Report 2018). At the Group level, the department IT Strategy & Security is responsible for implementing requirements concerning data protection and IT security. This includes the development of appropriate concepts and measures such as e-mail encryption, a cyber crime awareness campaign, and protection from criminal activity over the Internet (see page 59, Balance 2017). The risk and security management systems as well as selected measures are regularly checked by internal auditors.

The steadily increasing threat scenario from cyber attacks induced the Lufthansa Group in 2018 to assess the latest security status of its IT systems and to implement a comprehensive protection program. The goal is to increase the Group’s cyber resilience. The three-year cyber-security program adopted by the Executive Board outlines the Group-wide implementation of measures in different core areas as well as numerous projects. In addition, the Group decided in October 2018 to introduce the cyber-security trainings offered to supervisors since 2017 as an obligatory measure for all employees in managerial positions. The training sessions took place between February and May 2019.

# 05

## Key points on SERVICE & INFORMATION



# Notes on the scope of consolidation and methodology for calculating absolute and specific consumption and emissions

➤ GRI 102-45 ➤ GRI 102-48

## Scope of consolidation

Reporting on transport performance, kerosene consumption, and emissions from flight operations in 2018 is – unless noted otherwise – based on the following scope of consolidation:

- Lufthansa (including Lufthansa CityLine and Air Dolomiti), SWISS (including Edelweiss Air), Austrian Airlines, Eurowings (including Germanwings and Luftfahrtgesellschaft Walter), Brussels Airlines and Lufthansa Cargo. Not included are services performed by third parties, as their performance is beyond our control.
- Types of flight service: all scheduled and charter flights.

## Methodology of calculations

### Kerosene in absolute terms

Kerosene consumption is calculated on the basis of actual flight operations (i.e. using actual load factors and flight routings) according to the gate-to-gate principle. This covers all phases of a flight, from taxiing on the ground to flying detours and holding patterns in the air.

### Emissions in absolute terms

The absolute emissions from flight operations are calculated on the basis of actual transport performance and hence on actual load factors and the actual absolute quantity of kerosene consumed in the reporting year. Transport performance is measured in tonne kilometers; i.e., payload transported over a distance. For passengers and their luggage, an average of 100 kilograms is the standard estimate; for freight, it is its scale weight. Each aircraft/engine combination present in the fleet is considered separately, and the associated values are calculated with the aid of computer programs provided by the aircraft and engine manufacturers. The annual average flight profile for each subset of the fleet is then fed into these programs. This allows us to determine emissions in relation to flight altitude, distance flown, thrust, and load. This approach is necessary for nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and unburned hydrocarbons (UHC) in particular. Carbon dioxide (CO<sub>2</sub>) emissions do not require special calculation methods, as they are generated in a fixed ratio to the quantity of kerosene burned. The combustion of 1 tonne of kerosene generates 3.15 tonnes of CO<sub>2</sub>.

### Specific consumption and emission values

Calculating specific consumption and emissions entails expressing absolute values in relation to transport performance. For example, the ratio liters per 100 passenger kilometers (l/100pkm) is calculated on the basis of actual load factors along with the quantity of

kerosene actually consumed. The distances used in the calculations are great-circle distances. In combination flights (freight and passenger transport in one aircraft), fuel consumption is attributed on the basis of its share of the total payload to calculate the passenger- and freight-specific figures.

Since 2013, the DIN EN 16258 standard has provided a guide for standardized calculation of greenhouse gas emissions for transport processes. This guide uses the same estimates for calculating payload as the Lufthansa Group. When traveled distances are calculated, 95 kilometers must be added to the great-circle distance according to the guidelines of the EU emission allowance trading scheme. The International Air Transport Association (IATA) has separately developed its own calculation proposals, which deal with the division of fuel consumption between freight and passengers and attribute a larger share of fuel consumption to passengers because of the passenger-specific infrastructure. Although this method has no effect on the overall efficiency of a flight, it changes the apportionment between passengers and freight. There are still divergences between the two methods (including from the method used up to now by the Lufthansa Group). We would welcome a standardized, internationally harmonized and accepted method.

### Environmental database

The environmental data for this report were compiled by the Lufthansa Group by means of its central environmental database. All Lufthansa Group companies are encouraged to feed their environmentally relevant performance and consumption data (such as fuel consumption) into the Group's environmental database. Data used for the calculation of the Lufthansa Group's carbon footprint (Scope 1–3 emissions) were additionally checked by an external auditor for completeness and correctness according to accepted verification standards and verified with High Assurance (Scope 1) and Limited Assurance (Scope 2 and 3) respectively.

### Accuracy

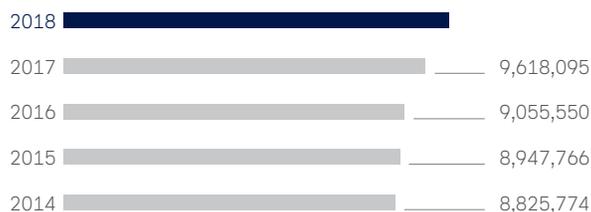
For presentation purposes the figures in the charts and tables are rounded. Changes from the previous year's figures and share percentages refer in each case to precise figures, however. For this reason it is possible that a reported value may remain the same from one year to the next even though a relative change is reported. Because of the rounding of share percentages, it is also possible that the sum of their addition may differ from the sum of the unrounded percentages. For example, as a result of rounding, share percentages may not add up to 100 percent even though it would be logical to expect them to.

# ENVIRONMENTAL DATA

## FUEL CONSUMPTION<sup>1,2</sup>

in tonnes

**10,254,365**



## SPECIFIC FUEL CONSUMPTION OF PASSENGER TRANSPORTATION COMPARED<sup>2018</sup>

in liters per 100 passenger kilometers (l/100 pkm)

	2018	2017	Changes in %
Group fleet <sup>2</sup>	3.65	3.68	-0.8
Lufthansa	3.76	3.76	+0.1
SWISS	3.15	3.19	-1.3
Austrian Airlines	3.79	3.83	-1.0
Eurowings	4.00	4.18	-4.1
Brussels Airlines	3.43	3.62	-5.5

## FUEL DUMPS<sup>2</sup> 2018

	2018	Changes compared to 2017
Events total	26	± 0
of which medical reasons	10	- 2
technical reasons	13	+ 2
other reasons	3	± 0
Quantity <sup>3</sup>	820t	+ 11 %

**1** Actual fuel consumption in tonnes from flight operations, based on all flight events under the respective operative flight number. Recorded are consumption values from gate to gate, i.e. including taxiing on the ground, holding patterns and detours in the air. **2** For the reporting year 2018, the following companies have been included in Balance: Lufthansa (including Lufthansa CityLine and Air Dolomiti), SWISS (including Edelweiss Air), Austrian Airlines, Eurowings (including Germanwings and Luftfahrtgesellschaft Walter), Brussels Airlines and Lufthansa Cargo. Excluding the services of third parties as the Company cannot influence their performance (see table "Share of third parties"). **3** In part projections **4** Airlines outside

## FUEL CONSUMPTION<sup>1</sup> 2018

in tonnes

	Passengers	Freight	Total	Share
<b>Scheduled flights<sup>2</sup></b>				
Lufthansa	4,904,843	1,566,902	6,471,744	60.7%
SWISS	1,263,938	431,841	1,695,779	15.9%
Austrian Airlines	669,166	94,351	763,517	7.2%
Eurowings	747,060	830	747,889	7.0%
Brussels Airlines	513,029	62,406	575,435	5.4%
			<b>10,254,365</b>	<b>96.1%</b>
Third parties <sup>4</sup>	373,980	21,117	395,098	3.7%
<b>Other flights<sup>5</sup></b>			20,950	0.2%
<b>All flights</b>			<b>10,670,412</b>	<b>100.0%</b>

## EMISSIONS<sup>2,6</sup> 2018

in tonnes

	Passengers	± 2017	Freight	± 2017	Total	± 2017
CO <sub>2</sub>	25,508,811	+8.9%	6,792,438	-1.3%	32,301,249	+6.6%
NO <sub>x</sub>	126,975	+9.0%	34,452	-1.4%	161,427	+6.6%
CO	19,622	+7.5%	3,575	-2.6%	23,197	+5.8%
UHC	1,944	+5.1%	367	-2.6%	2,311	+3.8%

## SHARE OF THIRD PARTIES<sup>4,7</sup> 2018

Flights	5.7%
Passengers	4.5%
Tonne kilometers transported, TKT (tkm)	3.5%
Fuel consumption (tonnes)	3.7%
CO <sub>2</sub> emissions (tonnes)	3.7%

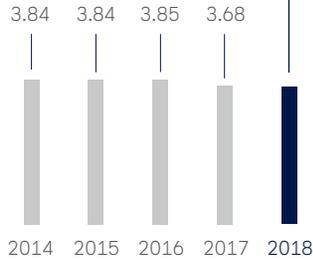
the scope of consolidation of Balance, but operating services on behalf of Lufthansa, for example in the event of capacity bottlenecks. **5** Ferry flights, special flights, training flights, test flights, aborted flights. **6** Absolute emissions in tonnes resulting from flight operations (all scheduled and charter flights). Recorded are consumption values from gate to gate, i.e. including taxiing on the ground, holding patterns and detours in the air (see explanations on page 111). **7** Excludes road feeder services and partial capacity chartered by Lufthansa Cargo, as no fuel consumption and emissions values are available for this performance. **8** On the basis of freight tonne kilometers (FTKT), transported on both cargo and passenger aircraft.



**SPECIFIC FUEL CONSUMPTION  
PASSENGER TRANSPORTATION LUFTHANSA GROUP**

in liters/100 passenger kilometers (l/100 pkm)

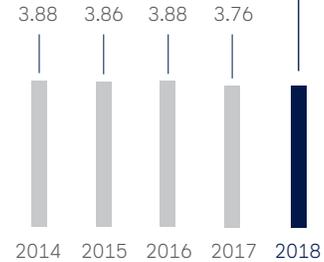
**3.65**



**SPECIFIC FUEL CONSUMPTION  
PASSENGER TRANSPORTATION LUFTHANSA**

in liters/100 passenger kilometers (l/100 pkm)

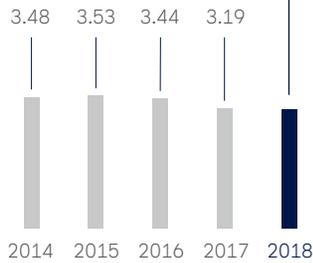
**3.76**



**SPECIFIC FUEL CONSUMPTION  
PASSENGER TRANSPORTATION SWISS**

in liters/100 passenger kilometers (l/100 pkm)

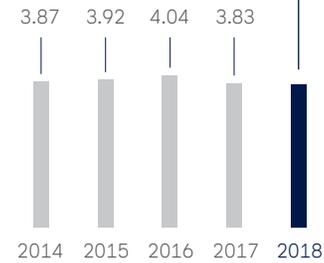
**3.15**



**SPECIFIC FUEL CONSUMPTION  
PASSENGER TRANSPORTATION AUSTRIAN AIRLINES**

in liters/100 passenger kilometers (l/100 pkm)

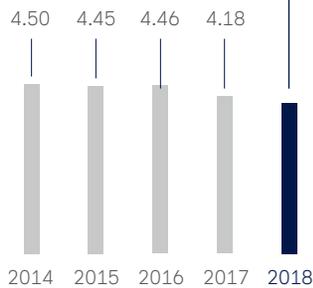
**3.79**



**SPECIFIC FUEL CONSUMPTION  
PASSENGER TRANSPORTATION EUROWINGS**

in liters/100 passenger kilometers (l/100 pkm)

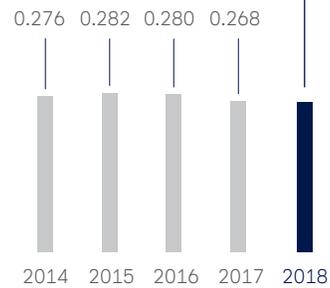
**4.00**



**SPECIFIC FUEL CONSUMPTION  
FREIGHT TRANSPORTATION<sup>2,8</sup>**

in liters/tonne kilometers (l/tkm)

**0.266**



## DIRECT AND INDIRECT CO<sub>2</sub> EMISSIONS OF THE LUFTHANSA GROUP COMPARED<sup>1</sup>

in tonnes

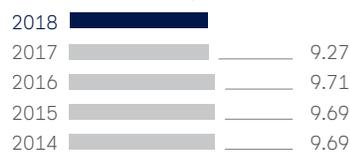
	2018	2017	2016
Scope 1	32,790,778 <sup>2</sup> 74.4%	28,949,145 72.6%	29,250,821 76.4%
Scope 2	194,059 0.4%	256,232 0.6%	275,161 0.7%
Scope 3	11,089,327 25.2%	10,678,859 26.8%	8,774,231 22.9%

## PASSENGER TRANSPORTATION<sup>3</sup>

### CO<sub>2</sub> emissions

in kilograms/100 passenger kilometers (kg/100 pkm)

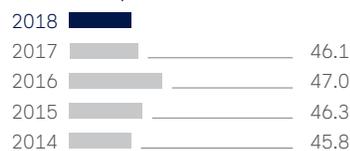
**9.19**



### NO<sub>x</sub> emissions

in grams/100 passenger kilometers (g/100 pkm)

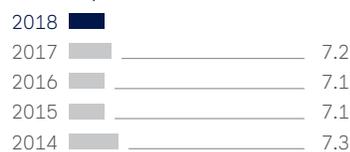
**45.8**



### CO emissions

in grams/100 passenger kilometers (g/100 pkm)

**7.1**



### UHC emissions

in grams/100 passenger kilometers (g/100 pkm)

**0.70**

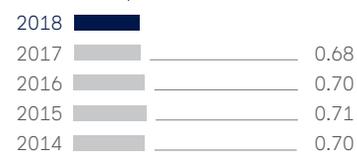


## FREIGHT TRANSPORTATION<sup>3,4</sup>

### CO<sub>2</sub> emissions

in kilograms/tonne kilometers (kg/tkm)

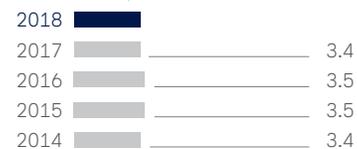
**0.67**



### NO<sub>x</sub> emissions

in grams/tonne kilometers (g/tkm)

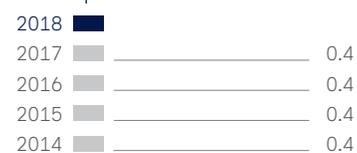
**3.4**



### CO emissions

in grams/tonne kilometers (g/tkm)

**0.4**



### UHC emissions

in grams/tonne kilometers (g/tkm)

**0.04**



value was therefore corrected in the present report on 19 June 2019.

<sup>3</sup> For the reporting year 2018, the following companies have been included in Balance: Lufthansa (including Lufthansa CityLine and Air Dolomiti), SWISS (including Edelweiss Air), Austrian Airlines, Eurowings (including Germanwings and Luftfahrtgesellschaft Walter), Brussels Airlines and Lufthansa Cargo. Excluding the services of third parties as the Company cannot influence their performance (see table "Share of third parties", page 112). <sup>4</sup> On the basis of freight tonne kilometers (FTKT), transported on both cargo and passenger aircraft.

<sup>1</sup> Scope 1 audited for the reporting year 2018 with the result High Assurance. For the first time including Brussels Airlines, Luftfahrtgesellschaft Walter as well as further aircraft taken over from Air Berlin. Scope 2 and 3 audited with the result Limited Assurance (see page 115). <sup>2</sup> In the version of the report published on 6 June 2019, the Scope 1 value was not displayed correctly. The

# VERIFICATION STATEMENT SCOPE 1-3<sup>1</sup>

verification statement

## MÜLLER-BBM CERT GMBH

Müller-BBM Cert GmbH, accredited verifier DAkkS D-VS-18709-01-01, accredited and approved for air transportation confirms, that CO<sub>2</sub> emissions data in figure „Direct and indirect CO<sub>2</sub> emissions of the Lufthansa Group“ on page 55 of the sustainable report *Balance*, issue 2019,

### LUFTHANSA GROUP

#### Deutsche Lufthansa AG and affiliates\*

under the verification standards

- *EU Emissions Trading Scheme (EU ETS) Directive and EU ETS related national implementation laws*
- *Airport Carbon Accreditation (ACA) des Airports Council International Europe*

are verified with following uncertainties

Scope 1	32,790,778 t CO <sub>2eq</sub> (high assurance)
Scope 2	194,059 t CO <sub>2eq</sub> (market based, limited assurance)
Scope 3	11,089,327 t CO <sub>2eq</sub> (limited assurance)

Kerpen, June 14th, 2019



Müller-BBM Cert GmbH

\* Scope of application from organizations at CDP-report 2019:  
Deutsche Lufthansa AG, Lufthansa Cargo AG, Lufthansa Technik AG, Lufthansa CityLine GmbH, Swiss International Air Lines AG, Edelweiss Air AG, Brussels Airlines SA/NV, Austrian Airlines AG, Air Dolomiti S.p.A. Linee Aeree Regionali Europee, Germanwings GmbH, Eurowings Aviation GmbH, Eurowings Europe GmbH, Luftfahrtgesellschaft Walter mbH, LSG Lufthansa Service Holding AG, Lufthansa AirPlus Servicekarten GmbH, Lufthansa Global Business Services GmbH, Lufthansa Seeheim GmbH, Miles & More GmbH, Lufthansa Process Management GmbH, Lufthansa Systems GmbH & Co.KG, Lufthansa Industry Solutions GmbH & Co.KG, Lufthansa Aviation Training GmbH, LZ-Catering GmbH

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**MBBM**  
MÜLLER-BBM GRUPPE

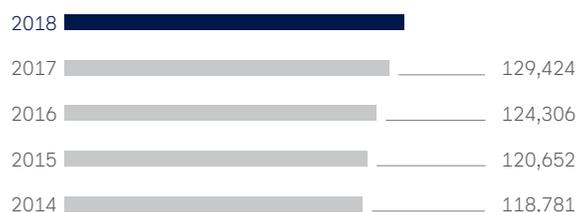
<sup>1</sup> In the verification statement published on 6 June 2019, the Scope 1 value was not displayed correctly. The corrected value, with a new verification statement, was replaced in the present report on 19 June 2019.

# PERSONNEL DATA

## EMPLOYEES IN TOTAL<sup>1</sup>

Lufthansa Group, employees  
as of December 31, respectively

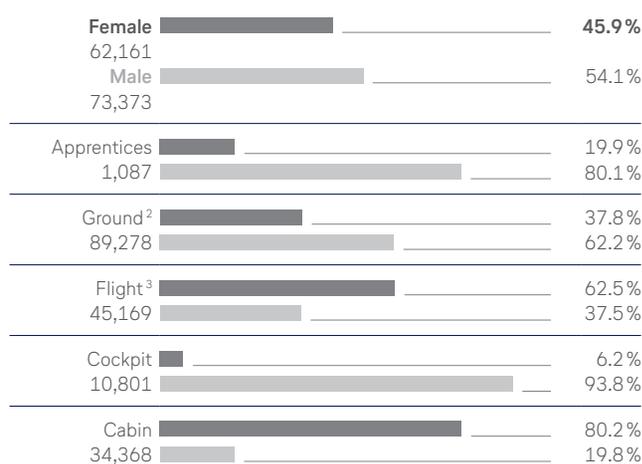
**135,534**



## NUMBER OF EMPLOYEES BY PROFESSIONAL GROUP AND GENDER<sup>1</sup>

Lufthansa Group, employees as of December 31, 2018

■ Female employees ■ Male employees



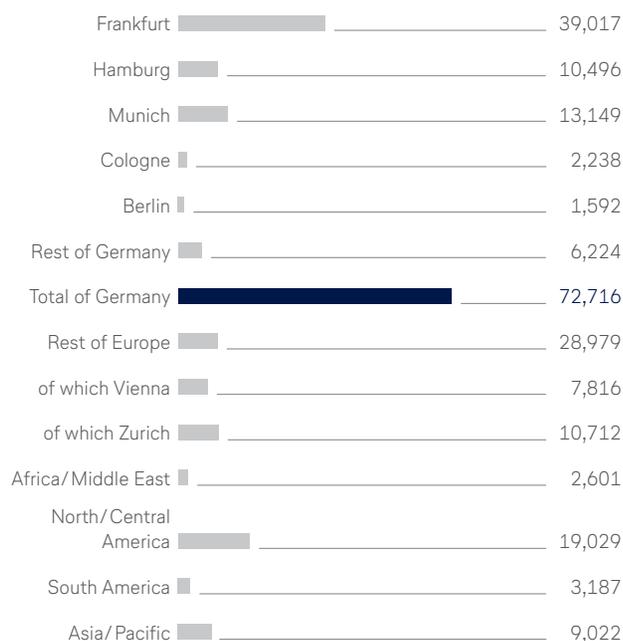
## DISTRIBUTION OF EMPLOYEES

Lufthansa Group, employees as of December 31, respectively

	2018	2017	Change
<b>Group employees</b>	135,534	129,424	+ 4.7%
of which Network Airlines	51,778	50,190	+ 3.2%
of which Eurowings	9,255	7,501	+ 23.4%
of which Logistics	4,505	4,511	- 0.1%
of which MRO	23,219	21,502	+ 8.0%
of which Catering	35,512	34,563	+ 2.7%
of which Additional Businesses and Group Functions	11,265	11,157	+ 1.0%

## JOBS THROUGHOUT THE WORLD

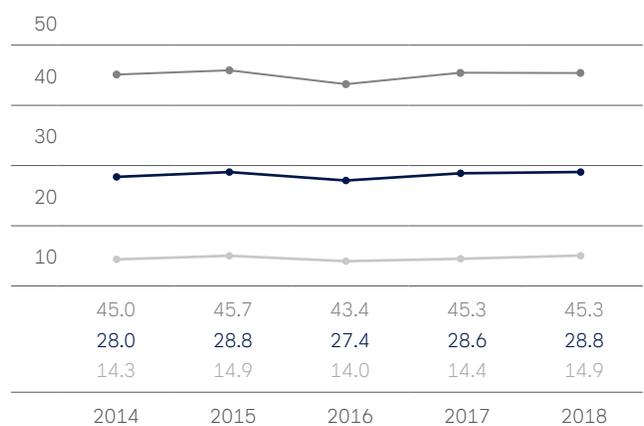
Lufthansa Group, employees as of December 31, 2018



## PART-TIME EMPLOYMENT<sup>4</sup>

Lufthansa Group, in percent as of December 31, respectively

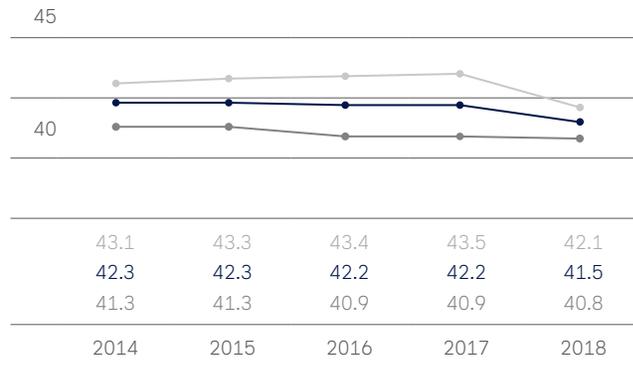
■ Female employees ■ Total ■ Male employees



### AVERAGE AGE<sup>5</sup>

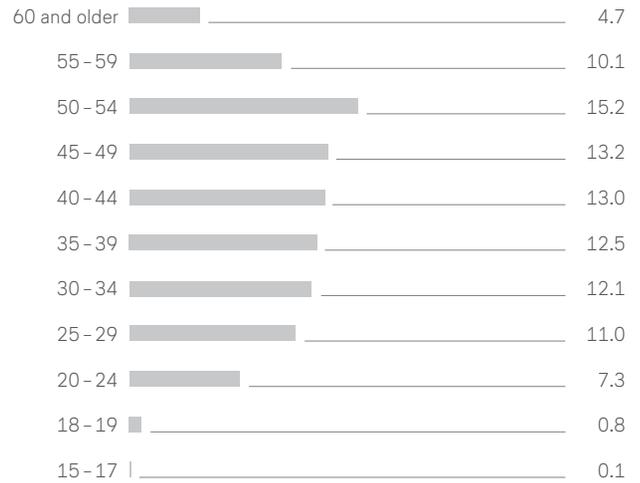
Lufthansa Group, in years as of December 31, respectively

■ Male employees ■ Total ■ Female employees



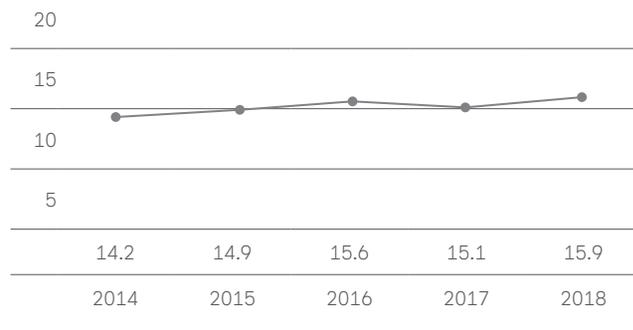
### AGE STRUCTURE<sup>5</sup>

Lufthansa Group, in percent as of December 31, 2018



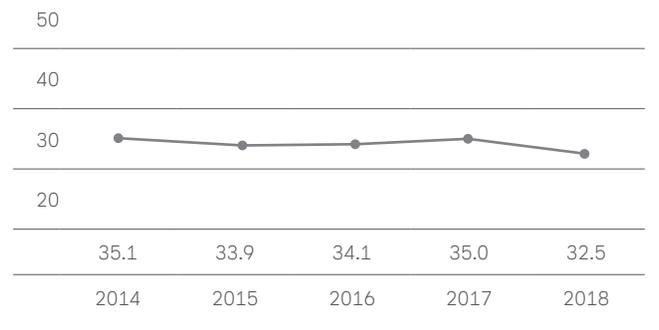
### SHARE OF WOMEN IN MANAGEMENT POSITIONS (WORLDWIDE)

Lufthansa Group, in percent as of December 31, respectively



### SHARE OF WOMEN WITH STAFF RESPONSIBILITY (WORLDWIDE)

Lufthansa Group, in percent as of December 31, respectively



1 Scope of application: Group scope of consolidation 2 Without apprentices 3 Consists of cockpit and cabin 4 Scope of application: Group scope of consolidation; shares in percent; part-time including partial retirement (including blocks of free time); from 2014 including Aerologic (partial consolidation at 25%) 5 Scope of application: Group scope of consolidation, without Sky Chefs, Inc., Wilmington, USA; Western Aire Chef, Inc., Wilmington, USA; SCIS Air Security Corporation, Wilmington, USA; Sky Chefs De Mexico, S.A. de C.V., Mexico City, Mexico; Lufthansa Malta Corporate Finance Limited, St. Julians STJ, Malta; Lufthansa Malta Working Capital Solutions Limited, St. Julians STJ, Malta; LSG Sky Chefs Solutions

Asia Limited, Hong Kong, China; LSG Sky Chefs Sverige AB, Stockholm, Sweden; Lufthansa Technik Component Services LLC, Tulsa, USA; Lufthansa Technik North America Holding Corp., Tulsa, USA; BizJet International Sales & Support, Inc., Tulsa, USA; Lufthansa Technik Shannon Limited, Claire, Ireland; LSG Sky Chefs Supply Chain Solutions, Inc., Wilmington, USA; Lufthansa Malta Aircraft Leasing Ltd., St. Julians, Malta; LHAMI LEASING LIMITED, Dublin, Ireland; LSG Sky Chefs Danmark A/S, Dragør, Denmark; Inflight Catering Services Limited, Dar es Salaam, Tanzania; Constance Food Group, Inc., New York, USA; LSG Sky Chefs Spain, S.A., Madrid, Spain; MIM IFE Limited, Dublin, Ireland

# GLOSSARY

## A

### Aerosols

Aerosols are solid and/or liquid particles that are suspended in the air. They reach the atmosphere by means of natural processes (wind, desert storms, volcanic eruptions) or human activities (combustion of biomass and fossil fuels). The most important aerosols are mineral dust, sea salt, cellular (biological) particles, soot, organic compounds, and sulfates. From a climatic perspective, aerosols are the opponents of greenhouse gases, as they can reflect incident light and thus have a cooling effect.

### ATM – Air Traffic Management

Air traffic management ensures both the safe and the efficient movement of aircraft in all phases of operations.

### Atmosphere

Mass of air surrounding the Earth. It is divided into various layers, which are separated from one another by significantly different vertical temperature distributions. Important for air traffic are the two lower layers: the troposphere and, above it, the stratosphere. The troposphere's upper boundaries vary depending on season and latitude. They lie at altitudes of 16 to 18 kilometers above sea level at the equator, and at eight to 12 kilometers above sea level at the poles. The temperature in the tropopause, the transition layer between troposphere and stratosphere, drops to about minus 60 degrees Celsius. It rises again in the stratosphere.

## C

### Carbon dioxide (CO<sub>2</sub>)

Gas resulting in nature from the burning or decomposition of organic substances (e.g. plant material). The greenhouse gas CO<sub>2</sub> remains in the atmosphere for about 100 years. Scientists attribute the increase in atmospheric CO<sub>2</sub> over the last 100 years to the burning of fossil fuels (e.g. coal, oil, natural gas) by humans. Per tonne of fuel, 3.15 tonnes of CO<sub>2</sub> result from the combustion process. Currently, 2.83 percent of the CO<sub>2</sub> emissions due to human activities are caused by global air traffic. (Source: International Energy Agency (IEA) 2018, 2016 values)

### Carbon monoxide (CO)

Chemical compound consisting of one carbon and one oxygen atom, formed in the incomplete combustion process of substances containing carbon. For aircraft engines, the level of CO emissions depends greatly on the thrust level: The emissions per kilogram of fuel burned are higher at idle settings, while taxiing, and on approach than during the climbing and cruising phases.

### CDP (previously Carbon Disclosure Project)

The CDP is an independent nongovernmental organization with a current membership of more than 525 institutional investors worldwide. Founded in 2000, this initiative gathers annual data and information on CO<sub>2</sub> emissions, climate risks as well as reduction goals and strategies on behalf of investors from corporations and organizations by means of standardized questionnaires, which are completed on a voluntary basis. In 2018, 7,000 companies and organizations published their greenhouse gas emissions and other environmentally relevant performance ratios in this way. The CDP administers the world's largest database of its kind. Investors use this data to assess long-term opportunities and risks for the companies in their portfolios, to determine their investment strategy and to develop investment products and indices. [www.cdp.net](http://www.cdp.net)

### Chapter 4 and Chapter 14 aircraft

The ICAO distinguishes between different noise standards, which are defined in related chapters of Annex 16 to the Convention on International Civil Aviation. The Environmental Committee (CAEP) of the ICAO agreed on the Chapter 4 noise standard in September 2001, according to which all aircraft newly certified since 2006 must remain cumulatively below the Chapter 3 noise levels by 10 decibels or more. In 2014, the ICAO agreed on the new Chapter 14 noise standard, which requires that aircraft must cumulatively remain 17 decibels below the Chapter 3 noise levels. This standard is initially applied to new aircraft with a maximum takeoff weight of more than 55 tonnes that are certified after December 31, 2017. For aircraft below this weight the new certification values are applied from December 31, 2020.

**CO – see “Carbon monoxide”**

**CO<sub>2</sub> – see “Carbon dioxide”**

## D

### **Decibel (dB)**

Measuring unit for the intensity and pressure of sound. The difference in intensity between the softest sound the human ear can perceive and the pain threshold is 1:10 trillion. To depict this enormous range objectively, acoustics uses the logarithmic decibel scale. On this scale, the value "0" is assigned to the perception threshold (for a sound of 1,000 Hz) and the pain threshold at the value "130". An increase of 10 dB corresponds to a tenfold increase in sound intensity. For the perceived volume, a difference of 10 dB corresponds to half or double the volume. However, the human ear is not equally sensitive across the entire range of frequencies. Low and high sounds are not perceived as being equally loud even at the same intensity. For measurements, this difference is equalized and noted accordingly. The best known such notation is the A value, marked by the index dB(A). To measure aircraft noise, the EPNdB (Effective Perceived Noise Decibel) unit is used internationally.

## E

### **EBIT**

Financial indicator; it denotes earnings before interest and taxes. From financial year 2015 it has been used as the central earnings indicator. It is calculated from total operating income minus operating expenses plus the result from equity investments.

### **EMAS – Environmental Management and Audit Scheme**

European regulations concerning environmental management and certification; colloquially referred to as EU eco-audit regulations.

### **Equivalent continuous noise level (Leq)**

The Leq is a measure for the energetic average of all sound pressure levels over a defined period of time. All sound events that differ in intensity and duration are summarized according to mathematical rules. The resulting average value is an accepted and proven measurement of the noise quantity occurring over an observed time interval.

## F

### **Freight performance (FTKO/FTKT)**

Airlines distinguish between freight performance offered (FTKO, freight tonne kilometers offered) and its sold freight performance (FTKT, freight tonne kilometers transported). See also "Tonne kilometers".

### **Fuel dump**

Dumping of fuel in flight due to emergency situations to reduce a long-haul aircraft's weight to the maximum permissible landing weight before unscheduled landings (e.g. in the event of technical problems or serious passenger illness). Special air space is assigned to the aircraft, if possible above uninhabited or thinly populated areas. Fuel is usually dumped at altitudes of 4 to 8 kilometers. A minimum altitude of 1,800 meters and a minimum speed of 500 km/h are required. The aircraft may not fly a fully closed circle. The dumped kerosene is released from outlet valves and forms a fine mist behind the aircraft. So far, no contamination has been detected in plant or soil samples after fuel dumps.

## G

### **Great-circle distance**

The shortest distance between two points on the Earth's surface, measured in kilometers (great circle kilometers) or nautical miles. The center of a great circle is the center of the Earth.

### **Greenhouse gases**

Gaseous substances that contribute to the greenhouse effect and have both natural and human (anthropogenic) causes. The most important natural greenhouse gases are water vapor (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>), and methane (CH<sub>4</sub>); the most important anthropogenic greenhouse gases are carbon dioxide from the combustion of fossil fuels and methane, primarily from agriculture and industrial livestock farming. Other artificial greenhouse gases are nitrous oxide (N<sub>2</sub>O), fluorocarbons (FCs and HFCs), sulfur hexafluoride (SF<sub>6</sub>), and chlorofluorocarbons (CFCs).

## H

### Hub

In air transport, a hub is a central traffic point or an airline's transfer airport. Passengers and freight are transported from their point of departure to one of the airline's "home airports" (hub). From there, they are carried to their destination by a second flight alongside passengers and freight from other departure points, but with the same destination.

## I

### IATA – International Air Transport Association

The umbrella organization of international commercial aviation. [↗ www.iata.org](http://www.iata.org)

### ICAO – International Civil Aviation Organization

A United Nations agency that develops internationally binding norms for civil aviation. [↗ www.icao.int](http://www.icao.int)

### ILO standards

Work standards of the International Labor Organization, which include, among others, the bans on child labor, forced labor, and discrimination as well as the fundamental right of freedom of association for employees.

### ISO 14001 – International environmental management system

Companies thereby receive an effective instrument that allows them to take environmental aspects into consideration in decisions relating to corporate policies and to continuously improve the situation of environmental care in relation to all daily tasks. [↗ www.iso.org](http://www.iso.org)

## M

### MRO

Acronym standing for maintenance, repair, and overhaul of aircraft.

### MTOW

Acronym standing for maximum takeoff weight of an aircraft.

## N

### Nitrogen oxides (NO<sub>x</sub>)

Chemical compounds consisting of one nitrogen and several oxygen atoms. NO<sub>x</sub> is defined as the sum of NO and NO<sub>2</sub> compounds. Natural sources include lightning and microbes in the soil. Nitrogen oxides are also generated in combustion processes under high pressures and temperatures. Both of these parameters have been increased in modern aircraft engines to significantly reduce fuel consumption as well as emissions of carbon monoxide and unburned hydrocarbons. However, future combustion chambers of an advanced design could help reduce NO<sub>x</sub> emissions by 85 percent. Air traffic contributes 2 to 3 percent of man-made NO<sub>x</sub> emissions. Climate models show that nitrogen oxides have increased the concentration of ozone at cruising altitudes by a few percentage points.

### Noise-related charges

Airports charge noise-related fees in the context of their tariffs. These reward airlines for operating quiet aircraft, while there are significant surcharges for noisy aircraft. In Europe, noise-related charges have become an important noise reduction instrument for areas surrounding airports.

NO<sub>x</sub> – see "Nitrogen oxides"

## O

### OHSAS 18001 – Occupational Health and Safety Assessment Series

Job safety management system developed by the British Standards Institution in cooperation with international certification organizations.

### Ozone

Oxygen molecule consisting of three atoms, formed in the stratosphere as well as in the troposphere at lower altitude. The ozone layer located in the stratosphere has an important protective function, as it absorbs harmful ultraviolet light. However, it is broken down massively by chlorofluorocarbons (CFCs), which led to the formation of the ozone hole. In the troposphere, ozone is formed from numerous precursor substances under the influence of sunlight. Summer smog lowers the air quality and irritates the mucous membranes. Nitrogen oxide emissions from current levels of air traffic at cruising

altitudes cause – analogous to summer smog – an increase in atmospheric ozone estimated by scientists at 3 to 4 percent on the heavily-flown North Atlantic routes.

## P

### **Passenger kilometer (PKO/PKT)**

Measure for transport performance in passenger carriage (number of passengers multiplied by distance flown). A distinction is made between available transport performance (PKO, passenger kilometers offered, or, synonymously, SKO, seat kilometers offered) and actual transport performance (PKT, passenger kilometers transported).

## S

### **Seat kilometer**

Measure of the transport capacity available (SKO, seat kilometers offered).

## T

### **Tonne kilometer (TKT/TKO)**

Measure of transport performance (payload multiplied by distance). A distinction is made between available transport performance (TKO, tonne kilometers offered) and the actual transport performance (TKT, tonne kilometers transported). In calculating payloads, passengers are taken into account by means of a statistical average weight.

## U

### **UHC – Unburned hydrocarbons**

Organic mixture of carbon and hydrogen that results from the incomplete combustion of fuels containing hydrocarbons or from the evaporation of fuel.

## W

### **Water vapor**

The most important greenhouse gas, even ahead of carbon dioxide. Without the natural greenhouse effect, the temperature on the Earth's surface would be minus 18 degrees Celsius. Water vapor and other greenhouse gases increase the mean temperature on Earth to plus 15 degrees Celsius. Natural water vapor is responsible for almost two-thirds of the natural greenhouse effect (33 degrees Celsius). For each kilogram of kerosene burned, 1.24 kilograms of water vapor are released. Concerns that current air traffic volumes might increase the concentration of water vapor in the stratosphere and thus change the climate have been refuted by scientific research. The German Aerospace Center (DLR) concluded that with today's flight routing/flight altitudes even a one hundred-fold increase in the quantity of water vapor emitted by air traffic would not result in a detectable climatic signal.

### **Wet Lease**

Leasing of aircraft from another airline, including cockpit and cabin crews as well as maintenance and insurance.

# GRI CONTENT INDEX

➤ GRI 102-55

This report has been prepared in accordance with the GRI Standards: Core option. For the Materiality Disclosures Service, GRI Services reviewed that the GRI content index is clearly presented and the references for Disclosures 102-40 to 102-49 align with appropriate sections in the body of the report. All of the GRI Standards listed in the GRI Content Index below were published in 2016.



GRI STANDARD	DISCLOSURE TITLE	PAGE NUMBER AND/ OR URL/ EXPLANATION
<b>GRI 101: Foundation</b>		
<b>GRI 102: General Disclosures</b>		
<b>Organizational profile</b>		
GRI 102-1	Name of the organization	Deutsche Lufthansa AG
GRI 102-2	Activities, brands, products, and services	page 4 f.
GRI 102-3	Location of headquarters	Deutsche Lufthansa AG is filed in the Commercial Register of Cologne District Court under HRB 2168 and has its headquarters in Cologne, Germany. The majority of Group functions are located in Frankfurt and Munich.
GRI 102-4	Location of operations	page 4 f. The airports served by Lufthansa Group airlines during the reporting year are located in more than 100 countries.
GRI 102-5	Ownership and legal form	Annual Report 2018, page 10 The shareholder structure, updated quarterly, can be accessed at: <a href="http://www.lufthansagroup.com/investor-relations">www.lufthansagroup.com/investor-relations</a>
GRI 102-6	Markets served	page 14 Given their materiality, the information presented in the sustainability report refer to the worldwide route network of the Lufthansa Group airlines.
GRI 102-7	Scale of the organization	page 2, page 4 Annual Report 2018, overview of performance indications, front cover page. For the Group consolidated balance sheet see page 102 f.
GRI 102-8	Information on employees and other workers	page 116 f. No separation by gender and by region, as this data is not control relevant. No description of staff by employees and staff subject to directives, and no indication of the share recognized as permanent freelance employees, and employees and staff subject to directives of contractual partners.
GRI 102-9	Supply chain	Balance 2018, page 8 f.; page 41 In this report, the primary focus is on the product "flying" without upstream and downstream processes.
GRI 102-10	Significant changes to the organization and its supply chain	page 1 For changes in the scope of consolidation in 2018, see Annual Report 2018, table page 180. The Lufthansa Commercial Holding GmbH acquired all shares in Luftfahrtgesellschaft Walter (LGW) effective January 9, 2018. For the reporting year 2018, reporting on fuel consumption and emissions therefore also includes LGW. On April 1, 2019, LGW changed over to Zeitfracht Gruppe.
GRI 102-11	Precautionary Principle or approach	The management of opportunities and risks is integrated in all business processes, see Annual Report 2018, page 61 ff. The Group risk management system has included the effects of business activities on the non-financial aspects since 2017; this was updated in 2018.
GRI 102-12	External initiatives	page 32, 35 An overview of the most important, voluntarily supported initiatives can be accessed at: <a href="http://www.lufthansagroup.com/responsibility">www.lufthansagroup.com/responsibility</a>
GRI 102-13	Membership of associations	An overview of the most important, voluntarily supported initiatives can be accessed at: <a href="http://www.lufthansagroup.com/responsibility">www.lufthansagroup.com/responsibility</a>

GRI STANDARD	DISCLOSURE TITLE	PAGE NUMBER AND / OR URL / EXPLANATION
<b>Strategy</b>		
GRI 102-14	Statement from senior decision-maker	page 3
GRI 102-15	Key impacts, risks, and opportunities	Annual Report 2018, page 61 ff.
<b>Ethics and integrity</b>		
GRI 102-16	Values, principles, standards, and norms of behavior	page 32, 35 f. The Executive Board of Deutsche Lufthansa AG adopted a Code of Conduct in 2017 that serves as a basis for the Lufthansa Group's value system. It is binding for all bodies, executives and employees of the Lufthansa Group. Beyond that, a number of Company-internal guidelines complement the principles and standards of conduct anchored in the Code of Conduct. This includes in particular the Lufthansa Group Compliance Program, see page 35
<b>Governance</b>		
GRI 102-18	Governance structure	As of January 1, 2019, the Executive Board was expanded from five to six members with the creation of a new area of responsibility, "Airline Resources & Operations Standards", see Annual Report 2018, page 13.
<b>Stakeholder engagement</b>		
GRI 102-40	List of stakeholder groups	page 27
GRI 102-41	Collective bargaining agreements	page 82
GRI 102-42	Identifying and selecting stakeholders	page 27
GRI 102-43	Approach to stakeholder engagement	page 27-29
GRI 102-44	Key topics and concerns raised	page 27-31 For customer satisfaction value, see page 99
<b>Reporting practice</b>		
GRI 102-45	Entities included in the consolidated financial statements	page 111 Composition of the Group, see Annual Report 2018, page 179. A list of major subsidiaries, joint arrangements and associated companies can be found in the Annual Report, page 194-201. The consolidated financial statements can be accessed at: <a href="http://www.lufthansagroup.com/investor-relations">www.lufthansagroup.com/investor-relations</a>
GRI 102-46	Defining report content and topic Boundaries	page 29
GRI 102-47	List of material topics	page 30-31
GRI 102-48	Restatements of information	page 111 During the reporting year 2018, Luftfahrtgesellschaft Walter was included.
GRI 102-49	Changes in reporting	In the current report, the sub-chapters "Ability to transform" and "Operational stability" were added for the first time, given the high level of relevance of both non-financial topics.
GRI 102-50	Reporting period / Reporting cycle	page 1
GRI 102-51	Date of most recent report	page 1
GRI 102-52	Reporting cycle	page 1 (yearly)
GRI 102-53	Contact point for questions regarding the report	page 134
GRI 102-54	Claims of reporting in accordance with the GRI Standards	page 1, page 122
GRI 102-55	GRI Content Index	page 122 ff.
GRI 102-56	External assurance	page 115 In this report, the Scope 1-3 emissions data were subjected to an external audit. In addition, the Lufthansa Group published a combined non-financial report for the financial year 2018 in its Annual Report. This combined non-financial report was the subject of a voluntary limited assurance engagement in accordance with ISAE 3000 (revised). The management approaches and concepts published in it were adopted for this report and complemented with supplementary information.

GRI STANDARD	DISCLOSURE TITLE	PAGE NUMBER AND/ OR URL/ EXPLANATION
<b>Material Topics</b>		
<b>Economic performance</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 25 ff. Annual Report 2018, page 16 ff.
<b>GRI 201: Economic performance</b>		
GRI 201-1	Direct economic value generated and distributed	page 2 Annual Report 2018, notes to the consolidated financial statements, page 106 ff.
<b>Anti-corruption</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 36 ff.
<b>GRI 205: Anti-corruption</b>		
GRI 205-1	Operations assessed for risks related to corruption	page 37
GRI 205-2	Communication and training about anti-corruption policies and procedures	page 37 No further breakdown available.
<b>Sustainable innovation, research and development</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 46 f. The Lufthansa Group and its subsidiaries, both individually and across business segment boundaries, continuously work on product innovations as well as research and development projects.
<b>Energy</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 49 ff., page 54 ff., page 65
<b>GRI 302: Energy</b>		
GRI 302-1	Energy consumption within the organization	page 113 f. In line with the aspect of materiality, the product of "flying" is primarily considered without upstream and downstream processes. Therefore, the focus of reporting is on the fuel consumption and CO <sub>2</sub> emissions of the Lufthansa Group airlines. In addition, there is comprehensive reporting on the participation in the CDP climate change report, see: <a href="http://www.cdp.net">www.cdp.net</a>
GRI 302-3	Energy intensity	page 111 The performance indicator for carrying a passenger over a distance of 100 kilometers is: liters per 100 passenger kilometers (l/100 pkm).
GRI 302-4	Reduction of energy consumption	page 63
GRI 302-5	Reductions in energy requirements of products and services	page 54 ff. The Lufthansa Group increased the fuel efficiency (l/100 pkm) in 2018 by 0.8 percent compared to 2017.
<b>Emissions</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 54 ff.
<b>GRI 305: Emissions</b>		
GRI 305-1	Direct (Scope 1) GHG emissions	page 55, page 114
GRI 305-2	Energy indirect (Scope 2) GHG emissions	page 55, page 114
GRI 305-3	Other indirect (Scope 3) GHG emissions	page 55, page 114

GRI STANDARD	DISCLOSURE TITLE	PAGE NUMBER AND/ OR URL/ EXPLANATION
GRI 305-4	GHG emissions intensity	page 56 f. Values for specific CO <sub>2</sub> emissions in kilograms per 100 passenger kilometers (kg/100 pkm)
GRI 305-5	Reduction of GHG emissions	page 61 ff.
<b>Supplier Environmental Assessment</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 41
<b>GRI 308: Supplier Environmental Assessment</b>		
GRI 308-1	New suppliers that were screened using environmental criteria	page 41 The project for Group-wide, standardized and structured supplier screening continues to be implemented.
<b>Active noise abatement</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 69 ff.
Performance indicator	Number of aircraft that meet the 10-dB criterium of the ICAO Chapter 4 standard.	page 129
<b>Employment</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 73 ff.
<b>GRI 401: Employment</b>		
GRI 401-3	Parental leave	The compatibility of work and private life is an important element for the Lufthansa Group to provide long-term support to employees to maintain their ability to work and perform. During the reporting year, 28.6 percent of the Lufthansa Group's employees worked part-time, 72.9 percent of whom were women. Furthermore, numerous employees took family leave. A nuanced analysis of return rates is currently not yet possible, but is targeted for the future.
<b>Labor/management relations</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 82 f.
<b>GRI 402: Labor/management relations</b>		
GRI 402-1	Minimum notice periods regarding operational changes	In accordance with the stipulations of Industrial Relations Law and in the sense of an active social partnership, the responsible bodies of code-termination and the Company's publics are informed at an early stage.
Performance indicator	Engagement Index (EI)	page 83
Performance indicator	Leadership Index (LI)	page 83
<b>Ability to transform</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 74 ff.
<b>Occupational health and safety</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 88 f.

GRI STANDARD	DISCLOSURE TITLE	PAGE NUMBER AND/ OR URL/ EXPLANATION
<b>GRI 403: Occupational health and safety</b>		
GRI 403-1	Workers representation in formal joint management-worker health and safety committees	In Germany, work protection committees that include representatives of employees and employer are active at all relevant locations of the Lufthansa Group. They jointly optimize processes and agree on measures to improve work protection. All employees in Germany are represented in work protection committees.
GRI 403-4	Health and safety topics covered in formal agreements with trade unions	The Medical Services and occupational safety provide comprehensive advice to employer and employee representations, for example in the context of implementing legal requirements or concluding collective agreements. Both departments are represented in numerous health-related committees of the employee representations of the different Lufthansa companies.
Performance indicator	Health Index	page 88
<b>Training and education</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 85 f.
<b>GRI 404: Training and education</b>		
GRI 404-3	Percentage of employees receiving regular performance and career development reviews	page 85
<b>Diversity and equal opportunity</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 76 ff.
<b>GRI 405: Diversity and equal opportunity</b>		
GRI 405-1	Diversity of governance bodies and employees	The composition of the governance bodies is monitored with regard to the share of women and used for targeted control. An extension of this view to further diversity criteria, such as age and internationality, is planned as a perspective for management positions and the Executive Board/top management. Further differentiation is currently not control relevant for the Lufthansa Group.
GRI 405-2	Ratio of basic salary and remuneration of women to men	Internally, the concept of equal opportunities has been anchored in works agreements for a long time. The principle of "Same pay for the same performance" has been practiced at the Lufthansa Group since the 1970s. Collective pay agreements and company non-tariff remuneration systems that can be consulted by all employees are proof of this approach. The "Report on equality and and equal remuneration" was produced for Deutsche Lufthansa AG in accordance with articles 21 and 22 EntgTranspG and published on the Internet. Apart from a statistical part, it contains information about measures to promote the equality between men and women and their effects as well as measures to ensure equal remuneration for men and women. <a href="http://www.lufthansagroup.com/responsibility">www.lufthansagroup.com/responsibility</a>
<b>Freedom of association and collective bargaining</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 82 f.
<b>GRI 407: Freedom of association and collective bargaining</b>		
GRI 407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	For the reporting year it is assumed that no business activity of the Lufthansa Group posed a risk for the employees' free exercise of their rights concerning the freedom of association and collective bargaining.

GRI STANDARD	DISCLOSURE TITLE	PAGE NUMBER AND/ OR URL/ EXPLANATION
<b>Human Rights Assessment</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 32, page 38 ff.
<b>GRI 412: Human Rights Assessment</b>		
GRI 412-1	Operations that have been subject to human rights reviews or impact assessments	page 40
<b>Supplier Social Assessment</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 41
<b>GRI 414: Supplier Social Assessment</b>		
GRI 414-1	New suppliers that were screened using social criteria	page 41 The project for Group-wide, standardized and structured supplier screening continues to be implemented.
<b>Customer health and safety</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 105 ff.
<b>GRI 416: Customer health and safety</b>		
GRI 416-1	Assessment of the health and safety impacts of product and service categories	page 105 ff.
<b>Customer Privacy</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 108 f.
<b>GRI 418: Customer Privacy</b>		
GRI 418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	page 108
<b>Service and customer centricity</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 98 ff.
Performance indicator	Customer satisfaction value	page 99
<b>Operational stability</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 103 f.
Performance indicator	Departure punctuality	page 104
<b>Corporate citizenship</b>		
<b>GRI 103: Management approach</b>		
GRI 103-1, GRI 103-2, GRI 103-3	Explanation of the material topic and its Boundary / The management approach and its components / Evaluation of the management approach	page 90 ff.
Performance indicator	Number of people supported worldwide	page 94

# EDITORIAL INFORMATION

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## Note

The terms Lufthansa Group, Group, Aviation Group, Company, and aviation company are used synonymously in this report.

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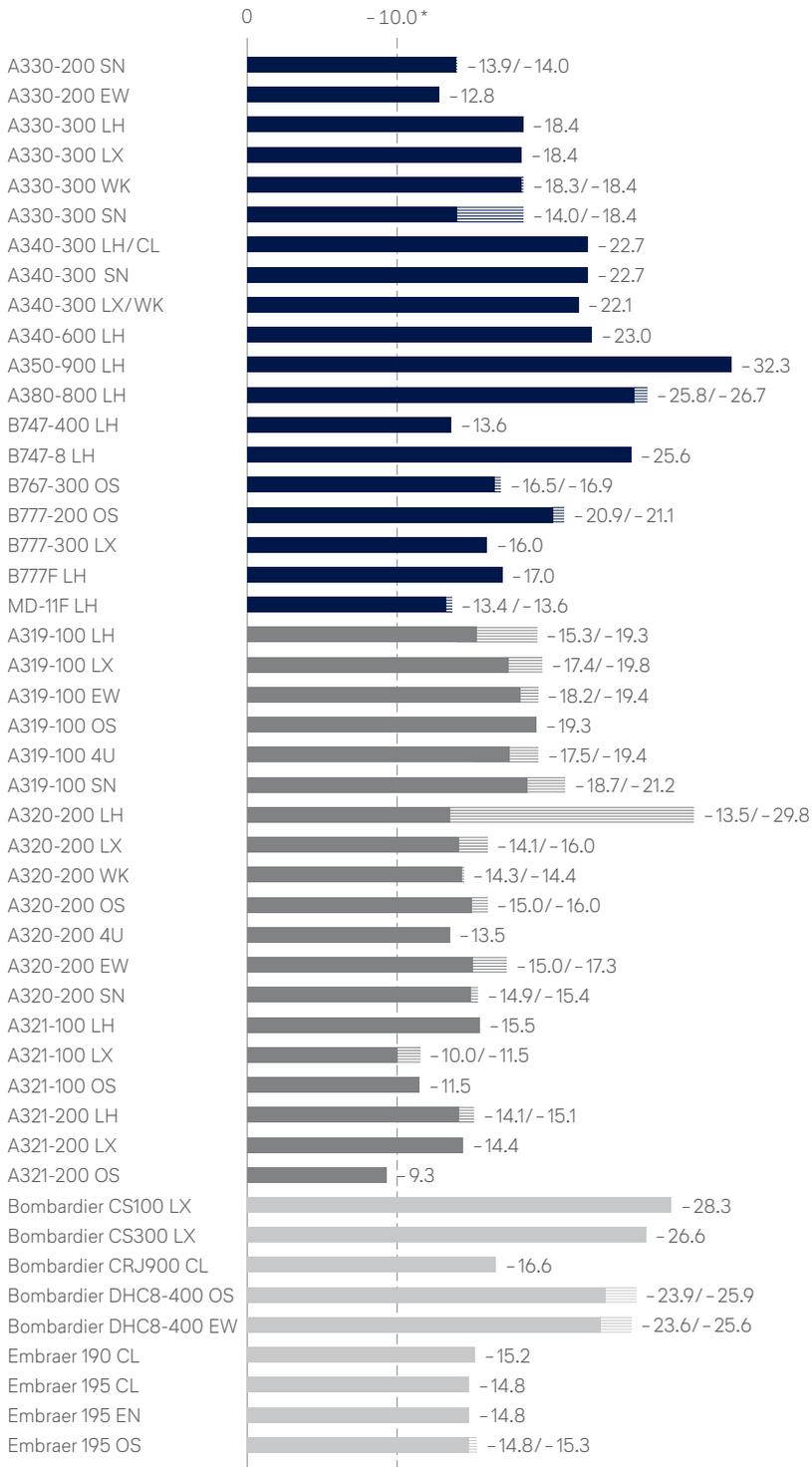
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Oliver Rösler (pages 3, 15, 17, 19, 22, 43, 68, 86)  
Jens Görlich (pages 4, 6, 8, 10, 12, 13, 14, 16, 18, 20, 22, 34, 44,  
59, 60, 61, 62, 64, 70, 77, 81, 94, 98, 105)  
Rolf Bewersdorf (page 9)  
Patrick Kuschfeld (pages 10, 21)  
Udo Kroener (page 11)  
Gregor Schläger (pages 23, 39, 52, 58, 75, 76, 92, 100)  
Michael Pasternack (page 23)  
Stephan Zirwes (page 24)  
United Nations, Sustainable Development Goals (page 33)  
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# MOST STRINGENT NOISE STANDARDS FOR THE LUFTHANSA GROUP'S FLEET

## MARGIN BELOW THE NOISE LIMIT OF ICAO CHAPTER 3 AND CHAPTER 4

Active fleet of the Lufthansa Group on October 27, 2018, in EPNdB



LH = Lufthansa, Lufthansa Cargo  
SN = Brussels Airlines

CL = Lufthansa CityLine  
4U = Germanwings

EN = Air Dolomiti  
EW = Eurowings

LX = SWISS  
OS = Austrian Airlines

WK = Edelweiss Air

The Lufthansa Group determines the effect of modernization concerning noise abatement of the operative fleet by means of the performance indicator “number of aircraft that meet or exceed the so-called ‘minus-10dB criterium’ set by the ICAO Chapter 4 standard”. This standard defines noise limits and stipulates that all aircraft newly licensed from 2006 to the end of 2017 must cumulatively fulfill the older Chapter 3 noise limits by a margin of 10 decibels or more. This “minus-10EPNdB criterium” (Effective Perceived Noise dB) is signified by the vertical broken line in the overview to the left. In 2018, 99.6 percent of the aircraft – thus virtually the entire operational Group fleet – met this criterium.

The limits depend on the aircraft’s maximum takeoff weight and number of engines. The bar chart indicates the sum of the differences between the measured value and the threshold value at the three measuring points by type of aircraft (cumulated margin). Where necessary, the values are based on the reduced maximum takeoff weight prevailing in flight operations. The individual noise certificate data of all Group aircraft is included in the evaluation methodology. Different versions of an aircraft and its engines by year of construction are thus better taken into account. Accordingly, the value ranges from the lowest to the highest cumulated margin are indicated for many fleets. The analysis also takes into account any modifications to aircraft or engines that have been made in the meantime, thereby leading to modified noise data and cumulated margins in certain cases. Furthermore, additions and withdrawals in individual fleets lead to changes in the value ranges reported.

The data to calculate the indicator is gathered on the qualifying date “end of summer timetable”. Due to seasonal requirements, the fleet is largest at this point, which makes the measurement of the largest noise-related “footprint” possible. Accordingly, all aircraft in the possession of the individual flight-operating companies at the qualifying date are taken into account for the calculation of the performance index.

Grouping of aircraft types according to MTOW (maximum takeoff weight): ● under 50t ● 50 to 150t ● more than 150t  
This division generally corresponds to a grouping of regional, continental, and intercontinental aircraft.

\* ICAO Chapter 4 limit, which has been effective for a new aircraft since 2006: -10 EPNdB when compared to chapter 3.

# THE OPERATING FLEET OF THE LUFTHANSA GROUP<sup>1</sup>

AS OF DECEMBER 31, 2018

## Lufthansa and regional partners



**Airbus A380-800** LH: 14 aircraft, 509 seats, 12,400 km range



**Boeing 747-8** LH: 19 aircraft, 364 seats, 13,000 km range



**Boeing 747-400** LH: 13 aircraft, 371 seats, 11,850 km range



**Airbus A340-600** LH: 18 aircraft, 297 seats, 12,900 km range



**Airbus A350-900** LH: 12 aircraft, 293 seats, 12,650 km range



**Airbus A340-300** LH: 9 aircraft, 283 seats, 11,800 km range  
CL: 6 aircraft, 300 seats, 11,500 km range



**Airbus A330-300** LH: 18 aircraft, 236 seats, 9,850 km range



**Airbus A321-100/200** LH: 63 aircraft, 200 seats, 2,600 km / 4,150 km range



**Airbus A320neo** LH: 16 aircraft, 180 seats, 3,000 km range



**Airbus A320-200** LH: 72 aircraft, 168 seats, 3,200 km range



**Airbus A319-100** LH: 30 aircraft, 138 seats, 3,350 km range



**Embraer 195** CL: 5 aircraft, 120 seats, 2,300 km range  
EN: 12 aircraft, 120 seats, 2,300 km range



**Embraer 190** CL: 9 aircraft, 100 seats, 3,500 km range



**Bombardier CRJ900** CL: 35 aircraft, 90 seats, 2,100 km range

## SWISS and Edelweiss Air



**Boeing 777-300ER** LX: 10 aircraft, 340 seats, 13,650 km range



**Airbus A340-300** LX: 5 aircraft, 219 seats, 13,000 km range



**Airbus A330-300** LX: 14 aircraft, 236 seats, 9,850 km range



**Airbus A321-100/200** LX: 9 aircraft, 219 seats, 2,100 km range



**Airbus A320-200** LX: 19 aircraft, 180 seats, 2,700 km range



**Airbus A319-100** LX: 5 aircraft, 138 seats, 3,350 km range

### LEGEND

LH = Lufthansa, Lufthansa Cargo  
SN = Brussels Airlines

CL = Lufthansa CityLine  
4U = Germanwings

EN = Air Dolomiti  
EW = Eurowings

LX = SWISS  
OS = Austrian Airlines

WK = Edelweiss Air  
LGW = Luftfahrtgesellschaft Walter

Range indicated in general with maximum number of passengers or payload, respectively. In part, different versions are in operation.

<sup>1</sup> Operated by companies of the Lufthansa Group.

<sup>2</sup> Two A340-300s operated by Brussels Airlines. These aircraft are part of the Eurowings fleet.



**Bombardier CS300** LX: 20 aircraft, 145 seats, 4,250 km range



**Bombardier CS100** LX: 8 aircraft, 125 seats, 2,850 km range



**Airbus A340-300** WK: 4 aircraft, 314 seats, 11,850 km range



**Airbus A330-300** WK: 2 aircraft, 315 seats, 10,000 km range



**Airbus A320-200** WK: 9 aircraft, 174 seats, 4,050 km range

## Austrian Airlines



**Boeing 777-200ER** OS: 6 aircraft, 308 seats, 12,100 km range



**Boeing 767-300ER** OS: 6 aircraft, 214 seats, 10,250 km range



**Airbus A321-100/200** OS: 6 aircraft, 200 seats, 2,600 km / 4,150 km range



**Airbus A320-200** OS: 23 aircraft, 168 seats, 4,100 km range



**Airbus A319-100** OS: 7 aircraft, 138 seats, 3,350 km range



**Embraer 195** OS: 17 aircraft, 120 seats, 2,300 km range



**Bombardier Q400** OS: 18 aircraft, 76 seats, 1,350 km range

## Eurowings



**Airbus A320-200** EW / 4U / LGW: 62 aircraft, 180 seats, 4,000 km range



**Airbus A319-100** EW / 4U / LGW: 51 aircraft, 150 seats, 2,900 km range



**Bombardier Q400** LGW: 20 aircraft, 76 seats, 1,350 km range

## Brussels Airlines<sup>2</sup>



**Airbus A330-300** SN: 11 aircraft, 288 seats, 7,700 km range



**Airbus A330-200** SN: 4 aircraft, 264 seats, 10,400 km range



**Airbus A320-200** SN: 16 aircraft, 180 seats, 3,700 km range



**Airbus A319-100** SN: 22 aircraft, 141 seats, 3,200 km range

## Lufthansa Cargo



**Boeing MD-11F** LH: 12 aircraft, 89.4 t, 6,700 km range



**Boeing 777F** LH: 5 aircraft, 103 t, 8,900 km range

# PRIZES AND AWARDS 2018/19

Every year, the Lufthansa Group and its subsidiaries receive numerous prizes and awards. Here is a selection:

## 2018

- At the Business Travel Awards 2018, Lufthansa received the award “Best Long-haul Airline”. Group company AirPlus was honored for the “Best Corporate Payment Product”.
- The IATA gave the Fast Travel Platinum Award to Austrian Airlines’ mobile self-services.
- SWISS was honored with the Randstad Award 2018 as most attractive employer in Switzerland.
- At the ADC Awards (Art Directors Club für Deutschland e. V.), Germany’s most important advertising award ceremony, Lufthansa received a total of 15 prizes, including one for the #LifeChangingPlaces campaign.
- In a Germany-wide consumer survey conducted by Deutschland test analysis and consulting house ServiceValue on the topic of sustainability, Lufthansa ranked first in the category “Airlines” and achieved the rank of “Test Winner”.
- Lufthansa Systems was honored for BoardConnect with the Onboard Hospitality Award in the category “Best Use of Onboard Technology”.
- Lufthansa was distinguished at the Business Traveller Middle East Awards as “Best European Airline Serving the Middle East”.
- Lufthansa Technik won the “Red Hat Innovation Award” for the IT platform AVIATAR.
- At the Dublin Aviation Summit 2018, Lufthansa Technik won three Aviation 100 MRO Global Awards: “Independent MRO of the Year”, “Component MRO Provider of the Year” and “Aircraft Technical Manager of the Year”.
- Lufthansa received the special award of the “German Light Design Prize 2018” for the unusual cabin lighting aboard the Airbus A350-900.
- The Lufthansa A350 Economy Class won the “German Design Award 2018” in the category “Excellent Product Design”.
- At the German Brand Award in Berlin, Lufthansa won gold in the category “Excellence in Brand Strategy, Management and Creation” and the “Best of the Best” award as “Corporate Brand of the Year”.
- At the Future Travel Experience Awards, Lufthansa was named “Most Innovative Airline in Europe” for the second time in a row.
- The Lufthansa Innovation Hub was again honored as best German innovation laboratory by business magazine Capital.
- Swiss WorldCargo and Lufthansa Cargo were presented with the DHL Care Award. It honors both air cargo service providers for their extraordinary performance in securely handling and transporting temperature-sensitive life-science products.
- SWISS was honored at the World Travel Awards for its Economy Class and First Class.
- Lufthansa, SWISS and Austrian Airlines received four prizes at the Business Traveller Awards 2018: SWISS took first place in the category “Best Airline for Business Travellers on German and European Routes”, Lufthansa took second place and Austrian Airlines third. In addition, lufthansa.com ranked first in the category “Best Internet offer for Business Travellers”.
- Lufthansa was voted “Best Airline in Europe” and “Best Western European Airline” by Skytrax. Austrian Airlines received the awards “Best Airline Staff Service in Europe” and “Best Business Class Onboard Catering”.
- Lufthansa Technik was honored by business magazine Capital for its excellent quality of professional training.
- Lufthansa Consulting won the consultant’s prize “Best of Consulting 2018” presented by business magazine WirtschaftsWoche in the category “Competitive Strategy”.

- Lufthansa Systems secured the World Travel Award for BoardConnect as “World’s Leading Inflight Entertainment”.
- Lufthansa won the “Best Airlines Award” given by Business Traveller China as best European airline in China.
- Lufthansa won first place in the category “Best Airline Europe” at the Travel Weekly Asia 2018 Readers Choice Awards.
- For its cooperation “Lufthansa Express Rail”, Deutsche Bahn and Lufthansa were honored with the Global AirRail Award in the category “AccesRail Integrated Partnership of the Year 2018”.
- In Tanzania, LSG Sky Chefs received “The Recycler” Award DAR in the category “Environment” and thus recognition as most innovative recycler.
- Lufthansa Cargo again achieved admission to the list of 75 “Green Supply Chain Partners” of trade magazine Inbound Logistics. With this initiative the magazine emphasizes companies that consistently promote sustainable supply chains and fulfill their responsibility in social and environmental issues.
- As a founding member of the initiative “Competitive Sport-Friendly Employer”, SWISS received the eponymous label.
- Austrian Airlines was honored with the Prevention Award of European Regions for the project “Cabin Ready for Health” in the category “Austrian Companies”. “Cabin Ready for Health” also received the quality seal for corporate health promotion. It honors exemplary measures supporting health-promoting corporate culture and requires high-level commitment, adherence to particularly strict quality criteria as well as sustainability.
- Brussels Airlines was named “Best Transatlantic Airline” by U.S. magazine Global Traveler based on reader feedback.



Honored for corporate citizenship: Carsten Spohr accepts the Statesmanship Award 2019.

## 2019

- Lufthansa was elected ATW Airline of 2019; the first time in 14 years that the award goes to a European airline. This coveted air transport prize is given by the industry’s leading publishing company, Airport Transport World (ATW).
- The United States Association of Former Members of Congress (FMC) honored the Lufthansa Group with the Statesmanship Award for its corporate citizenship – a world first for an aviation group.
- In the Germany-wide consumer survey “Sustainable Commitment”, conducted by Focus Money, Deutschland Test and Service Value, Lufthansa was again elected the most sustainable airline in the category “Airlines”.
- The Chambers of Commerce (IHK) in the state of Hesse and the German Hotel and Restaurant Association (DEHOGA Hesse) recognized LSG Sky Chefs in Frankfurt as “Premium Training Company” for its apprentice program.
- At Air Cargo Africa in Johannesburg, Lufthansa Cargo was honored as best global cargo airline of the year.
- SWISS was again honored with the Randstad Award as Switzerland’s most attractive employer.

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You will find further information on sustainability  
within the Lufthansa Group at:

➤ [www.lufthansagroup.com/responsibility](http://www.lufthansagroup.com/responsibility)

View the Annual Report 2018 at:

➤ [www.lufthansagroup.com/investor-relations](http://www.lufthansagroup.com/investor-relations)



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