



Sustainability in 2021

FACT SHEET





Dear Readers,

We are publishing this sustainability fact sheet at a time when the purpose of our business is more relevant than ever: the Lufthansa Group connects people, cultures and economies in a sustainable way. In doing so, we contribute actively to international understanding and peace. This purpose has never been as important and relevant as it is now.

Responsible conduct has been and will continue to be the foundation of our commercial activities. We have been closely guided by the ten principles of the UN Global Compact since back in 2002 and have also documented our part in contributing to the United Nations' Sustainable Development Goals since 2015.

When making these efforts, we are able to rely on the outstanding expertise, above-average skill set and unique spirit of our team. As a service provider, our employees are our biggest asset. This is why we are all the more pleased to have kept the promise we made at the start of the pandemic and retained more than 105,000 secure jobs at Lufthansa Group companies over the long term.

Despite the pandemic's particularly difficult impacts on global aviation, our employees have continued to get involved for

people who are socially disadvantaged and financially worse off. Thanks to their manifold commitment, there were over 40,000 people who benefited from the support of help alliance, our aid organisation, in 2021. The initiatives for this societal engagement stem in large part from our employees who take on this work for the needy in their free time.

In the last two years of the pandemic, we have continued to follow our path to more sustainability and less carbon emissions in spite of the major financial burdens. For instance, we continued the most extensive fleet transformation in our history and even accelerated it by ordering additional fuel-efficient aircraft.

Our airlines were Europe's largest customers for sustainable fuel in 2021. We are actively committed to developing production methods that allow this fuel to be made on a large scale. This is because we firmly believe that technology and infrastructure are the most important and most effective tools at our disposal for climate-friendly aviation. With this commitment we also demonstrate our role as an innovation leader and established the Lufthansa CleanTech Hub last year. It is a center of expertise for sustainable technologies and solutions that is currently evaluating more than 90 projects and initiatives such as AeroSHARK,

a surface film for commercial aircraft that is inspired by the skin of sharks and reduces drag, which lowers the fuel consumption for each flight.

We are continuously expanding our environmental management so that we can achieve our ambitious climate targets, which see the Lufthansa Group being carbon-neutral by 2050. We are aware of the responsibility that we hold and are seeking to guide our industry on the journey to a more sustainable future.

We are delighted that you are interested in our commitment and wish you insightful reading.

Carsten Spohr
Chief Executive Officer
Deutsche Lufthansa AG

At a glance

PERSONNEL DATA		2021	2020	Change
Annual average number of employees		107,643	125,207	-14%
Number of employees (as at 31 Dec)		105,290	110,065	-4.3%
of these, in Germany		60,517	64,058	-5.5%
of these, outside of Germany		44,773	46,007	-2.7%
Staff costs	€ million	6,328	6,436	-1.7%
Revenue/employee	€	159,660	108,532	+47.1%
Staff costs/revenue	percent	37.6	47.4	-9.8 PP
Average age	years	43.2	42.4	+0.8 years
Part-time ratio ¹	percent	32.3	34.0	-1.7 PP
Part-time ratio, men	percent	16.9	18.2	-1.3 PP
Part-time ratio, women	percent	51.3	53.0	-1.7 PP
Share of women in management positions (worldwide)	percent	18.7	17.2	+1.5 PP
Share of women in management positions (Germany)	percent	20.0	19.4	+0.6 PP

TRAFFIC DATA		Fact sheet ^{2,3}	Change vs. 2020	Annual Report ^{6,7}	Change vs. 2020
Flights ⁴		456,169	+21.0%	460,029	+17.7%
Passengers carried ⁵	thousand	46,126	+35.1%	46,949	+29.1%
Seat kilometers offered, SKO	million	144,873	+33.1%	145,139	+32.2%
Freight tonne kilometers offered, FTKO	million	9,942	+12.1%	11,867	+12.0%
Passenger kilometers transported, PKT ⁵	million	89,530	+32.4%	89,397	+28.7%
Freight tonne kilometers transported (including third-party performance), FTKT	million	6,673	+14.0%	8,477	+14.7%

¹ Scope = Group consolidation without exceptions. ² The following companies are included in the 2021 reporting year: Lufthansa (including Lufthansa CityLine, Eurowings Discover and Air Dolomiti), SWISS (including Edelweiss Air), Austrian Airlines, Eurowings (including Germanwings), Brussels Airlines and Lufthansa Cargo. Other flights are excluded, as are services from third parties as the Group's influence over their performance is limited

(see fuel consumption table and Third-Party Share table on page 8). ³ Types of flights considered: all scheduled and chartered flights (excluding ground services). ⁴ Segments (operational perspective); annual report: route (customer perspective). A route can contain several segments, for example stopovers. ⁵ Based on all passengers on board. ⁶ Companies included as per footnote 2, but also including services provided by third

parties that contribute to the Group's earnings. ⁷ Previous year's figures adjusted analogously to the 2020 Annual Report. ⁸ Actual fuel consumption/carbon dioxide emissions from flight operations, in tonnes, based on all flight events under the relevant operating flight number. This includes consumption/carbon dioxide emissions from gate to gate, i.e. including taxiing, holding patterns and flight detours.

ENVIRONMENTAL DATA ^{2,3,8}		2021	2020	Change
Resource consumption				
Fuel consumption	tonnes	4,324,746	3,507,461	+23.3%
Fuel consumption, specific, all types of transport	g/tkm	276	280	-1.6%
Fuel consumption, specific, passenger transportation	l/100 pkm	4.05	4.18	-3.1%
Fuel consumption, specific, freight transportation	g/tkm	216	214	+0.9%
Emissions				
Carbon dioxide emissions	tonnes	13,622,950	11,048,504	+23.3%
Carbon dioxide emissions, specific, all types of transport	g/tkm	869	880	-1.2%
Carbon dioxide emissions, specific, passenger transportation	kg/100 pkm	10.16	10.52	-3.4%
Nitrogen oxide emissions	tonnes	65,001	54,873	+18.5%
Nitrogen oxide emissions, specific, passenger transportation	g/100 pkm	46.5	51.6	-9.9%
Carbon monoxide emissions	tonnes	11,031	8,342	+32.2%
Carbon monoxide emissions, specific, passenger transportation	g/100 pkm	8.8	8.9	-0.9%
Unburned hydrocarbons	tonnes	1,006.6	805.4	+25%
Unburned hydrocarbons, specific, passenger transportation	g/100 pkm	0.80	0.83	-3.3%

The Lufthansa Group values transparent and comprehensive sustainability reporting

Company

MATERIAL ASPECTS OF SUSTAINABILITY AT THE LUFTHANSA GROUP

- Customer satisfaction
- Financial stability and resilience
- Business ethics and compliance
- Sustainable supply chains

- Emissions with impacts on the climate
- Energy and fuel efficiency
- Local pollution (incl. noise)
- Waste management

- Employer attractiveness
- Transformation capability
- Health and safety at work
- Diversity and equal opportunities
- Societal engagement¹

Acting as a sustainable and responsible business is a core component of the Lufthansa Group's corporate strategy. The Lufthansa Group believes that it is its duty to add value for customers, employees and investors and fulfil its responsibility towards the environment, people and society.

It is important for the Lufthansa Group to report on its sustainability-related activities in a transparent and comprehensive way. The Lufthansa Group regularly identifies the aspects of sustainability that are material for this reporting by performing a **materiality analysis**. This analysis incorporates the expectations and interests of the Group's stakeholders. In addition to publishing its **Sustainability Fact Sheet**, the Lufthansa Group also reports on its commitment to sustainability extensively in the **non-financial declaration** in its Annual Report. This declaration is based on the **GRI Standards 2016**, which are internationally accepted reporting standards, and for the first time includes a statement regarding the applicability of the EU Taxonomy Regulation in the 2021 reporting year. The Lufthansa Group has been a signatory to the Task Force on Climate-Related Finance Disclosures (**TCFD**) since 2020 and reports accordingly.









In addition, the Lufthansa Group reports in accordance with the specifications of the Sustainable Accounting Standards Board (**SASB-Standard**).

All reports are published at lufthansagroup.com/en/responsibility.

This website also provides a detailed presentation of the Group's carbon footprint based on a **CDP score** and an annual **Communication on Progress** regarding the Group's sustainable corporate governance in line with the ten principles of the **UN Global Compact**.

External rating agencies have again given the Lufthansa Group's sustainability-related activities an above-average score. The Lufthansa Group has its commitment to sustainability assessed regularly by EcoVadis, an external sustainability assessment platform, on a voluntary basis.







LUFTHANSA GROUP STAKEHOLDERS

 Customers Consumers	 Investors Shareholders Analysts Ratings agencies	 Governments Legislatures Politics State authorities	 Local communities General public Social networks
 Non-governmental organisations (NGOs) Interest groups Associations	 Academia Research and education	 Employees Employee representatives	 Suppliers Contract counterparties

¹ Voluntary materiality by the Lufthansa Group.

SUSTAINABILITY RATINGS

As at: 31 Dec. 2021











 MSCI ESG RATINGS A	 CDP DISCLOSURE INSIGHT ACTION B
 ISS ESG C+	 vigeo eiris 44 Score on 100
 SUSTAINALYTICS 27,5 Medium Risk	 SILVER 2021 ecovadis Sustainability Rating

Values and guidelines

The Lufthansa Group is committed to the **ten principles of the UN Global Compact** for sustainable and responsible corporate governance. Furthermore, it supports the **2030 Agenda for Sustainable Development** that was agreed on by the member states of the United Nations in 2015 and its 17 Sustainable Development Goals (SDGs) as its key components. To contribute

to the achievement of these goals, the Lufthansa Group focuses on the SDGs where it can reduce its negative impact and increase its positive effect due to its business model. These SDGs include:

SUSTAINABLE DEVELOPMENT GOALS (SDG) AT THE LUFTHANSA GROUP

	SDG 3: Good Health and Well-Being		SDG 10: Reduced Inequalities
	SDG 4: Quality Education		SDG 12: Responsible Consumption and Production
	SDG 7: Affordable and Clean Energy		SDG 13: Climate Action
	SDG 8: Decent Work and Economic Growth		SDG 16: Peace and Justice
	SDG 9: Industry, Innovation and Infrastructure		SDG 17: Partnerships for the Goals

Code of Conduct

The Lufthansa Group has a **Code of Conduct** that is mandatory for all of its governing bodies, management and employees. It documents the Group's values, principles and conduct standards. It provides a framework for acting with integrity in accordance with internationally accepted values and standards. The key principles of the Code of Conduct include compliance with the rules of fair competition, fighting corruption and bribery, respect for human rights and compliance with labour and social standards.

Building on this document, the Lufthansa Group also has a **Supplier Code of Conduct**, which specifically lays out the Group's position: it expects its business partners and suppliers to abide by the principles outlined in the code as a key aspect of their business relationship. The principles laid down in the Supplier Code of Conduct not only act as the basis for responsible conduct and fair competition, but are also intended to help identify legal and reputational risks at an early stage and avoid them.

The ten principles of the UN Global Compact

1. Businesses should support and respect the protection of internationally proclaimed human rights.
2. Businesses should make sure that they are not complicit in human rights abuses.
3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.
4. Businesses should uphold the elimination of all forms of forced and compulsory labour.
5. Businesses should uphold the effective abolition of child labour.
6. Businesses should uphold the elimination of discrimination in respect of employment and occupation.
7. Businesses should support a precautionary approach to environmental challenges.
8. Businesses should undertake initiatives to promote greater environmental responsibility.
9. Businesses should encourage the development and diffusion of environmentally friendly technologies.
10. Businesses should work against corruption in all its forms, including extortion and bribery.

Source: UN Global Compact

Strategy

Strategic alignment of the Lufthansa Group

The Lufthansa Group positions itself among the largest airlines in the world and assumes the role as the leading European airline group. In this role, the Lufthansa Group aims to continue to play a part in actively shaping the global airline market. It strives to follow the mission statement: the Lufthansa Group connects people, cultures and economies in a sustainable way. In doing so, it aspires to set standards in terms of sustainability and customer-friendliness. It uses the potential of innovation

and digitalisation to develop customer-focused products and increase efficiency. Corporate responsibility and identity are put into practice locally and supported by overarching functional processes that enable synergies and economies of scale. A strict focus on costs, operational stability and reliability in all areas are firmly established in the DNA of the Lufthansa Group. The safety of flight operations is and will always be the top priority.

VISION STATEMENT OF LUFTHANSA GROUP



A stronger focus on sustainability and corporate responsibility

Responsibility is the basis for commercial activity in the Group. The Lufthansa Group aspires to lead the airline industry with high standards in this area too. It therefore builds continuously on its environmental commitment, is dedicated to many social issues and treats its employees responsibly and fairly.

 456,169 flights¹

 >300 destinations

 46 mn passengers²

 713 aircraft

 5 hubs

 105,290 employees as at 31 Dec. 2021

 302 companies (fully consolidated)

¹ Segments (operational perspective). A route can contain several segments, for example stopovers. ² Based on all passengers on board.

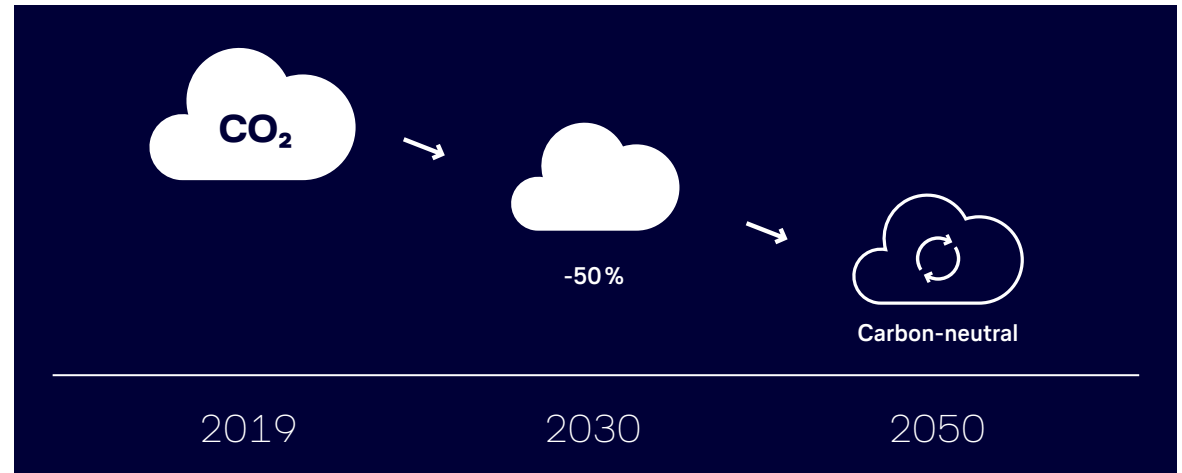
Climate targets

The Lufthansa Group's ambitious climate protection targets

The Lufthansa Group has set ambitious climate protection targets. It is striving to lower its net carbon emissions to half of 2019 levels by 2030 and is seeking to be carbon-neutral by 2050.

The Group also aims to switch to carbon-neutral mobility on the ground in its home markets by 2030.

Lufthansa Group joined the Science Based Targets initiative in 2021 to align its carbon reduction pathway with the targets of the Paris Climate Agreement based on scientific calculations.



THE LUFTHANSA GROUP'S KEY LEVERS FOR ACHIEVING CLIMATE TARGETS



Fleet modernisation

Flying more modern and more efficient aircraft is the most effective instrument for reducing carbon emissions this decade.



Efficient flight operation

Intelligent route planning, modern approach procedures and the latest technology are instruments that are used every day to reduce carbon emissions.



Carbon offsetting

High-quality, certified carbon offset projects that promote climate protection across the world, complemented by CORSIA, the international carbon offsetting instrument for carbon-neutral growth in aviation.



Sustainable fuel

Increasing the use of sustainable fuel is critical for a climate-friendly future.



Intermodal transport for reaching hubs

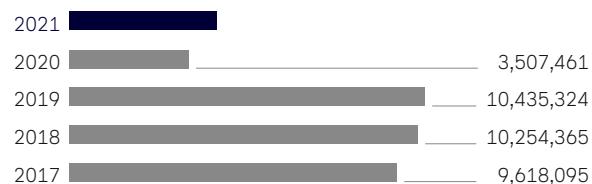
Expanding and integrating flight-, train- and bus services enables a lower number of short-haul flights and alternative ways for reaching hubs.

Absolute fuel consumption

FUEL CONSUMPTION^{1,2}

in tonnes

4,324,746



The passenger airlines within the Lufthansa Group saw a significant rise in demand, especially in summer, due to the gradual ease of travel restrictions. However, towards the end of the year, the infection numbers in the Group's home markets started rising again and had a negative effect on demand.

Due to the overall more positive demand in 2021 as a whole, coupled with the increase in flight operations, a greater amount of fuel was consumed compared to 2020. Accordingly, the number of flights operated rose by 21% and total volume transported by 25%.

FUEL CONSUMPTION¹ IN 2021

in tonnes

	Passengers	Freight	Total	Share
Scheduled flights²				
Lufthansa	1,609,002	1,044,992	2,653,994	58.5%
Swiss	494,044	284,175	778,220	17.2%
Austrian Airlines	257,674	53,981	311,655	6.9%
Eurowings	303,884	1,413	305,297	6.7%
Brussels Airlines	225,472	50,108	275,580	6.1%
			4,324,746	95.4%
Other flights ⁴			14,975	0.3%
Reg. + other flights			4,339,721	95.7%
Third parties ^{5,6}	21,774	171,669	193,443	4.3%
Total flights			4,533,165	100.0%

FUEL DUMPS² IN 2021

	2021	Change vs. 2020
Total events	5	-5
For medical reasons	2	0
technical reasons	2	-6
other reasons	1	1
Amount³	152 t	-60.4%

THIRD-PARTY SHARE^{5,6} IN 2021

Flights	2.2%
Passengers	1.2%
Tonne kilometers transported, TKT (tkm)	7.9%
Fuel consumption (tonnes)	4.3%
Carbon dioxide emissions (tonnes)	4.3%

¹ Actual fuel consumption/carbon dioxide emissions from flight operations, in tonnes, based on all flight events under the relevant operating flight number. This includes consumption from gate to gate, i.e. including taxiing, holding patterns and flight detours.

² The following companies are included in the 2021 reporting year: Lufthansa (including Lufthansa CityLine, Eurowings Discover and Air Dolomiti), SWISS (including Edelweiss Air),

Austrian Airlines, Eurowings (including Germanwings), Brussels Airlines and Lufthansa Cargo. Other flights (see footnote 4) are excluded, as are services from third parties as the Group's influence over their performance is limited (see the Third-Party Share table).

³ Based partly on projections. ⁴ Ferry flights, special flights, test flights, training flights,

aborted flights. ⁵ Airlines that are outside the scope of this fact sheet but provide services for Lufthansa, e.g. in the event of capacity bottlenecks. ⁶ Excluding Road Feeder Service and chartered in-partial capacities of Lufthansa Cargo, as information on fuel consumption and emissions is not available for these services.



~2.5 liters

Kerosene per passenger per 100 km¹

Fleet renewal will remain the most important lever for reducing carbon emissions this decade

The Lufthansa Group invests continuously in modern and particularly fuel-efficient aircraft and engine technologies. It also continuously reviews measures for modifying the technology of existing aircraft and, if applicable, implements its findings in conjunction with partners in research and industry.

Accelerated fleet renewal

The Lufthansa Group signed leases for four modern and fuel-efficient Airbus A350-900 aircraft in 2021. It also purchased five additional Boeing 787-9 long-haul aeroplanes. These nine jets are planned to join the Lufthansa fleet in 2022 and will contribute to improved sustainability thanks to their reduced fuel consumption and lower carbon emissions. These emissions are up to 30% less than with the predecessor models.

¹ Applies to the Airbus A350-900. ² Excluding contracted leases.

FLEET ORDERS LUFTHANSA GROUP

	Fixed orders ²	Deliveries	Additional options
Long-haul fleet			
Airbus A350	28	2023 to 2029	
Boeing 787	25	2022 to 2026	20
Boeing 777	20	2023 to 2027	24
Boeing 777F	1	2024	
Short-haul fleet			
Airbus A220			30
Airbus A320	66	2022 to 2026	
Airbus A321	35	2022 to 2027	
Total aircraft	175	2022 to 2029	74



Further highlights in 2021

- **Ten new, more fuel-efficient aircraft** put into operation – including Airbus A220-300, A320neo and A321neo and Boeing 777F, all featuring modern engines.
- The **A320neo** family aircraft, for instance, are the most modern and environmentally friendly aircraft in the short-haul and medium-haul segments. They are also much quieter than their predecessors.
- In return, a total of **55 older aircraft left the Group fleet.**

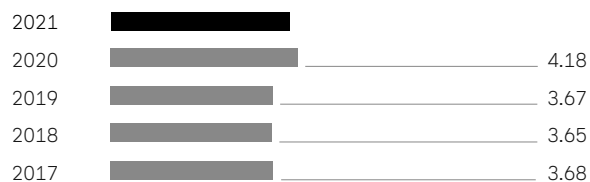
Specific fuel consumption



SPECIFIC FUEL CONSUMPTION PASSENGER TRANSPORTATION^{1,2} IN THE LUFTHANSA GROUP

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

4.05



The year-on-year decline in the specific consumption by the Group's fleet is mainly the result of a changed mix of routes and an associated increase in the average route length. Longer routes result in better specific consumption since the energy-intensive share of take-off and landing in the total flight distance is reduced.

SPECIFIC FUEL CONSUMPTION PASSENGER TRANSPORTATION IN COMPARISON^{1,2}

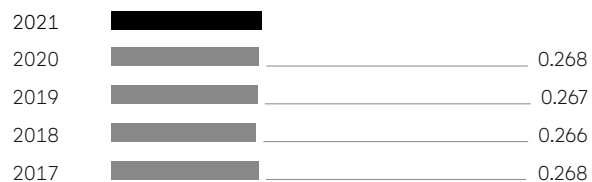
in liters/100 pkm

	2021	2020	Change in %
Group fleet	4.05	4.18	-3.1%
Lufthansa	3.97	4.21	-5.7%
Swiss	4.14	3.70	11.8%
Austrian Airlines	4.57	4.73	-3.5%
Eurowings	4.10	4.97	-17.4%
Brussels Airlines	3.87	3.86	0.3%

SPECIFIC FUEL CONSUMPTION FREIGHT TRANSPORTATION^{1,2,3}

in liters/tonne kilometers (l/tkm)

0.270



¹ Actual fuel consumption from flight operations, in tonnes, based on all flight events under the relevant operating flight number. This includes consumption/carbon dioxide emissions from gate to gate, i.e. including taxiing, holding patterns and flight detours.

² The following companies are included in the 2021 reporting year: Lufthansa (including

Lufthansa CityLine, Eurowings Discover and Air Dolomiti), SWISS (including Edelweiss Air), Austrian Airlines, Eurowings (including Germanwings), Brussels Airlines and Lufthansa Cargo. Other flights are excluded, as are services from third parties as the Group's influ-

ence over their performance is limited (see fuel consumption table and Third-Party Share table on page 8). ³ Based on freight tonne kilometers (FTKT), transported in both cargo and passenger aircraft.

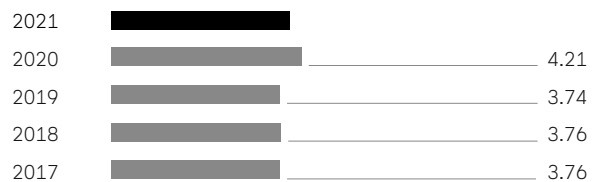
Specific fuel consumption passenger airlines



SPECIFIC FUEL CONSUMPTION PASSENGER TRANSPORTATION^{1,2} AT LUFTHANSA GERMAN AIRLINES

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

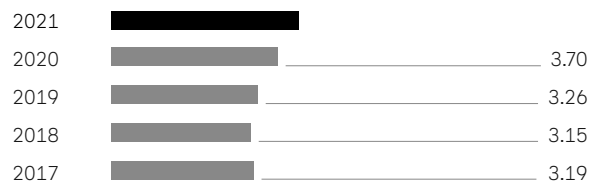
3.97



SPECIFIC FUEL CONSUMPTION PASSENGER TRANSPORTATION^{1,2} AT SWISS

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

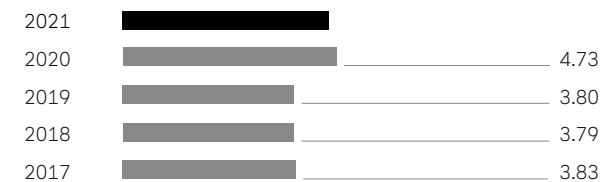
4.14



SPECIFIC FUEL CONSUMPTION PASSENGER TRANSPORTATION^{1,2} AT AUSTRIAN AIRLINES

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

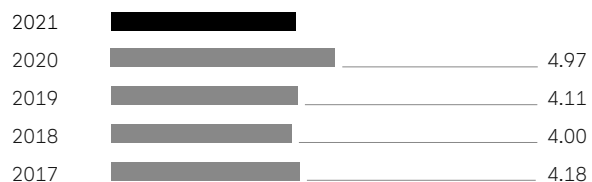
4.57



SPECIFIC FUEL CONSUMPTION PASSENGER TRANSPORTATION^{1,2} AT EUROWINGS

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

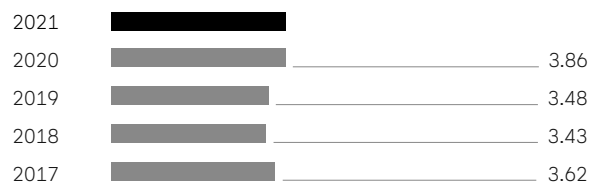
4.10



SPECIFIC FUEL CONSUMPTION PASSENGER TRANSPORTATION^{1,2} AT BRUSSELS AIRLINES

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

3.87

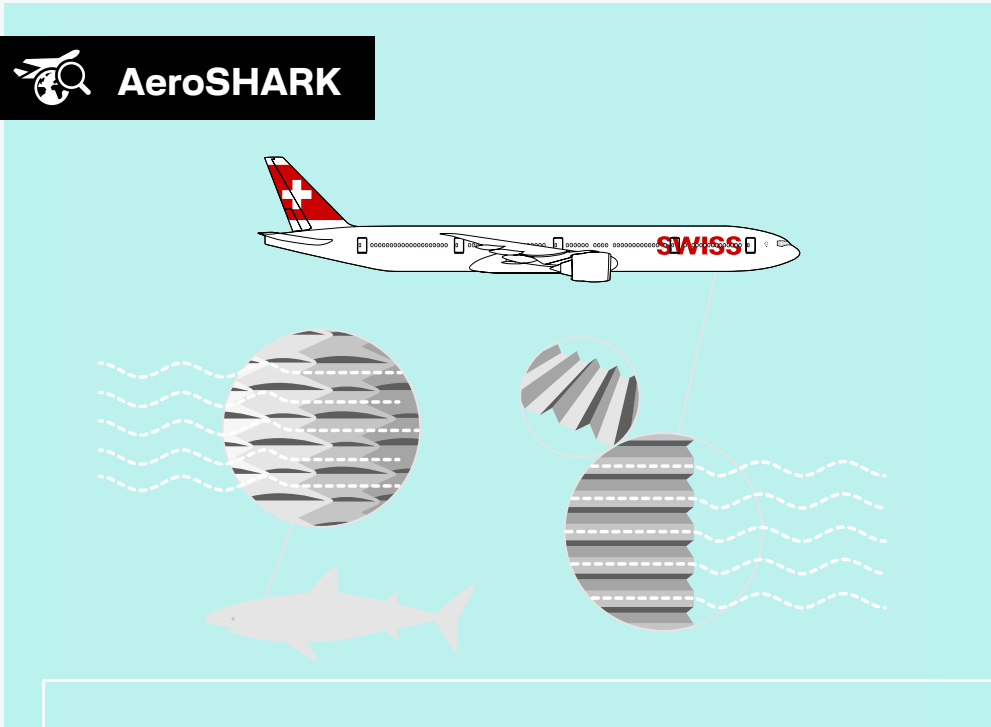


¹ Actual fuel consumption from flight operations, in tonnes, based on all flight events under the relevant operating flight number. This includes consumption/carbon dioxide emissions from gate to gate, i.e. including taxiing, holding patterns and flight detours.

² The following companies are included in the 2021 reporting year: Lufthansa (including Lufthansa CityLine, Eurowings Discover and Air Dolomiti), SWISS (including Edelweiss Air), Austrian Airlines, Eurowings (including Germanwings), Brussels Airlines and Lufthansa

Cargo. Other flights are excluded, as are services from third parties as the Group's influence over their performance is limited (see fuel consumption table and Third-Party Share table on page 8).

 **AeroSHARK**







The film is being applied to the hull and nacelles first. Lufthansa Technik's engineers are already working on the ability to cover the wings with AeroSHARK film soon so that even more fuel can be saved and carbon emissions reduced.

AeroSHARK – inspired by nature

A concept to reduce carbon emissions that uses technology and sharks as inspiration: Lufthansa Technik and BASF are developing this innovative surface technology and making it marketable. A small structure with a major contribution for less carbon emissions.

The AeroSHARK film is invisible to the human eye and yet still saves striking amounts of fuel. Thanks to its roughly 50-micrometer-large structure, it reduces flow-induced drag and therefore fuel consumption by up to 1.1%.

¹ After retrofitting.

<p> ~26,800 tonnes of CO₂ prevented each year¹</p>	<p> ~8,500 tonnes of kerosene avoided each year¹</p>
<p> 100 % In 2022, SWISS and Lufthansa Cargo will be the first airlines in the world to have all their Boeing 777s equipped</p>	<p> 110 equals Boeing 777F flights from Frankfurt to Shanghai</p>

Decoupling of fuel and transport

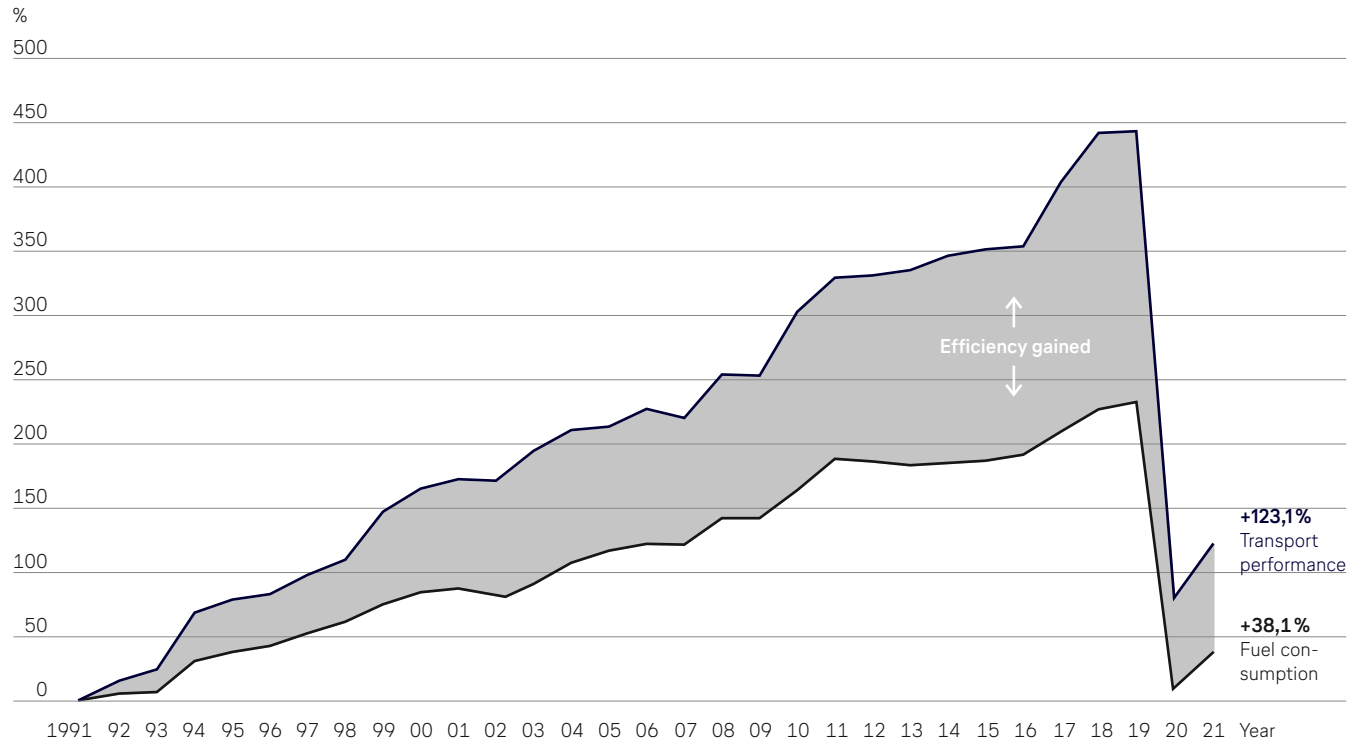
Increasing the efficiency between transport performance and fuel consumption

Thanks to countless measures, the Lufthansa Group has already been successful in reducing its fuel consumption relative to its rising transport performance for many years.

The results of these efforts can be seen in the graph illustrating the decoupling effect⁴. For instance, transport performance increased by up to 440% between 1991 and 2019, the year before the crisis, though fuel consumption over the same period only rose by about 230%. This is equivalent to a specific fuel consumption of 446 g/tkm (grams of fuel per transported tonne kilometer) in 1991 and 276 g/tkm in 2019 and an efficiency increase of 38%. The Lufthansa Group was able to reach its pre-crisis level of 276 g/tkm in 2021. The continuous fleet modernisation and use of more fuel-efficient aircraft in particular contributed to the efficiency increase. The modern Airbus A350-900 and Boeing 787-9 aeroplanes are current examples of this as they consume up to 30% less fuel than their predecessor models. Accordingly, nine aircraft of these types in total will enter service at the Lufthansa Group in 2022. The year 2021 also 55 older aircraft left the Group fleet. Up to 180 new and particularly fuel-efficient aircraft will be added by 2030.

Environment

DECOUPLING OF TRANSPORT PERFORMANCE AND FUEL CONSUMPTION^{1,2,3,4} SINCE 1991



Further highlights in 2021

There were **22 additional Group-wide projects** for reducing fuel consumption that were pursued in the areas of performance and procedures, weight reduction, flight route optimisation and technical developments.

-9.6

1,000 tonnes of kerosene equates to 1,000 tonnes of CO₂

-30.4

This equates to roughly 113 Airbus A350-900 flights from Munich to New York and return.

¹ For the 2020 reporting year, the following applies: all routes and charter flights operated by Lufthansa (including Lufthansa CityLine, Eurowings Discover and Air Dolomiti), SWISS (including Edelweiss Air), Austrian Airlines, Eurowings (including Germanwings), Brussels

Airlines and Lufthansa Cargo. Services provided by third parties are excluded, as their performance can only be influenced to a limited degree (see the Third-Party Share table on page 8). ² Transport measured in TKT. ³ 2020 transport performance corrected due

to system adjustments. ⁴ Illustration of developments in transport performance and fuel consumption – based on the initial values for 1991 – in two graphs. The grey area in between represents the efficiency gained.



Sustainable aviation fuel (SAF)



The future

In the future, sustainable aviation fuel will be made as well by using renewable energies and the power of the sun:

Power to liquid (PtL): the Lufthansa Group is the first customer for the world's first PtL jet fuel made on an industrial scale. It is manufactured based on power from renewable energies, water and carbon dioxide – from the atmosphere, for example.

Sun to liquid (StL): it will also be possible to make sustainable aviation fuel from sunlight in the future. The StL process involves sunlight being concentrated using mirrors and combined with water and carbon dioxide from the surrounding air to manufacture carbon-neutral jet fuel. **SWISS will be the first customer for this first solar fuel worldwide.**



USD 250 mn

is the amount the Lufthansa Group will invest in procuring SAF over the next three years

Sustainable aviation fuel – the climate-friendly fuel

Sustainable fuel is the key to the carbon-neutral flights of the future, especially on medium- and long-haul flights. The Lufthansa Group is engaged in more than ten SAF developing cooperations, which specialized mostly on power-to-liquid and solar technologies, without disregarding SAF of biogenic origins.

With these multitude of cooperations the Lufthansa Group has agreed on purchase commitments, so called „off-taking agreements“.



Why will it take so long until sustainable aviation fuel is used on a large scale?

Although the technologies for producing sustainable aviation fuel (SAF) industrially have been tested and are well known, the volume of SAF available on the market is not yet sufficient. What's more, today's SAF costs about three to five times as much as kerosene from fossil sources. Future types of SAF such as power-to-liquid (PtL) and sun-to-liquid (StL) fuel are predicted to see a market ramp-up over the coming years. However, this will be strongly dependent on the industrial and political frame conditions. Because renewable energies are used to manufacture PtL fuel, the generation of the large volumes of energy required is currently in competition with the renewable energy that is in demand in other sectors.

How much renewable energy will be needed to meet the fuel demands of the Lufthansa Group with SAF from renewable sources?

Here is a comparison: the Lufthansa Group's demand for kerosene in 2019 was just over 10 million tonnes. Producing the equivalent amount of fuel from renewable energies would require approximately 310 TWh of power. This volume of electricity corresponds to roughly 42% of Germany's current demand for electricity.



-80%

carbon emissions compared to fossil fuel thanks to sustainable fuel of biogenic origins – including production and transport



The sustainable aviation fuel that is **already used by the Lufthansa Group today** is produced using materials of biogenic origins, such as used cooking oils and fats. It does not conflict with the farming of food products as only waste from tree plantations and agriculture is used. In 2021 the Lufthansa Group was the largest customer in Europe.

Emissions

Absolute emissions¹

EMISSIONS² IN 2021

in tonnes

	Passengers	PY	Freight ²	PY	Total	PY
CO ₂	9,100,317	+27.9%	4,522,633	+15.0%	13,622,950	+23.3%
NO _x	41,667	+19.2%	23,334	+17.1%	65,001	+18.5%
CO	7,885	+31.1%	3,146	+35.3%	11,031	+32.2%
UHCs	719	+27.8%	287	+18.4%	1,007	+25.0%

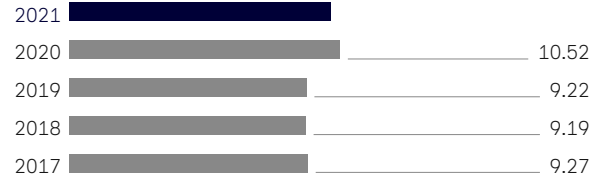
Specific CO₂ emissions¹

PASSENGER TRANSPORTATION IN 2021

CO₂ emissions

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

10.16

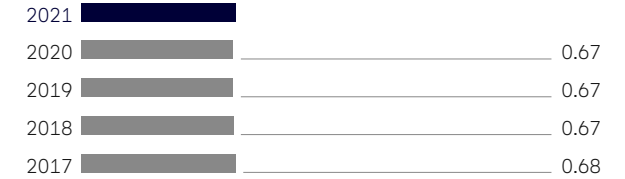


FREIGHT TRANSPORTATION³ IN 2021

CO₂ emissions

in kilograms/freight tonne kilometers (kg/tkm)

0.68



Why are there no battery/hydrogen aeroplanes?

To make aviation fully carbon-neutral over the long term, the use of alternative sources of power could make an immense contribution. The main power systems in this context are electric ones that use power from renewable sources such as the sun or wind or power from fuel cells. Smaller aircraft can already be run entirely on electric engines these days. However, further research is needed until alternative power systems are at such a stage of technological maturity and financial viability that they can be used on a large scale in new aeroplanes. For example, a battery's energy density would first need to be eight to ten times more than is currently possible using today's

technology. This means it will take presumably many years until large passenger aeroplanes can run solely on electric batteries.

Hydrogen can also enable carbon-neutral aviation. It has three times the energy density of conventional kerosene, but requires a multitude of volume. On top of that, hydrogen only becomes liquid at -253 °C and can only be used in a compressed form under high pressure in special tanks. Aeroplane and engine concepts will need to be reconceptualised, the necessary infrastructure will have to be built at airports, and there will need to be enough green hydrogen – generated using renewable energies – at

competitive prices. The development and market-ready production of alternative battery-electric and hydrogen-based motor concepts for short-haul aeroplanes will likely take at least another 15 years, while the development for larger and, importantly, long-haul aeroplanes is currently unforeseeable. The Lufthansa Group is following these developments diligently and analysing their future viability and relevance on an ongoing basis.

Source: German Aviation Association Klimaschutzportal [Climate Protection Portal]

¹ For the 2020 reporting year, the following applies: all routes and charter flights operated by Lufthansa (including Lufthansa CityLine, Eurowings Discover and Air Dolomiti), SWISS (including Edelweiss Air), Austrian Airlines, Eurowings (including Germanwings), Brussels

Airlines and Lufthansa Cargo. Services provided by third parties are excluded, as their performance can only be influenced to a limited degree (see fuel consumption table and Third-Party Share table on page 8). ² Absolute emissions from flight operations, in tonnes

(all routes and charter flights). This includes emissions from gate to gate, i.e. including taxiing, holding patterns and flight detours. ³ Based on freight tonne kilometers (FTKT), transported in both cargo and passenger aircraft.



Carbon offsetting



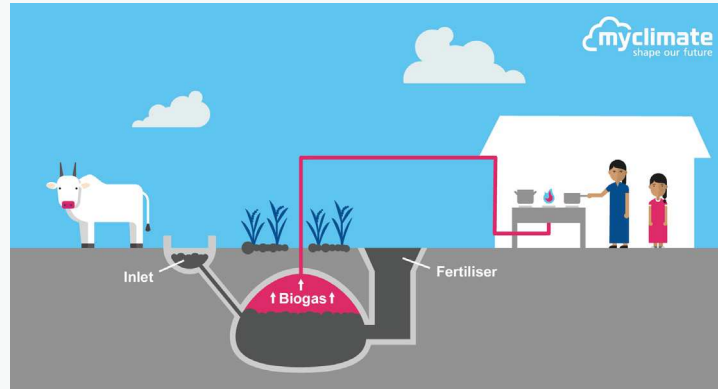
High-quality offset projects for climate and environment

Example 1

➤ **Offsetting carbon emissions** and protecting Tanzanian forests for indigenous populations, wild animals and the climate. **Just €10 protects roughly 50 m² of forest.**

 Thank you!

The Lufthansa Group's customers offset over **85,000 tonnes of carbon emissions with climate protection projects between 2019 and 2021.**



Source: ➤ myclimate

Example 2

➤ **Building biogas plants** for families in India stops them from having to cut down and burn firewood and use chemical fertilisers in that country. **One plant stops 6.5 t of carbon emissions per year.**

Flying carbon-neutral while benefitting the climate, biodiversity and habitats

Since 2007, the Lufthansa Group has offered its customers the option of flying carbon-neutral by contributing to high-quality carbon offset projects and/or now also by procuring sustainable fuel. They can choose their desired type of offset easily and directly at the time of booking. For carbon offsetting projects, the Lufthansa Group mainly relies on its long-established partnership with ➤ myclimate. myclimate is a non-profit organisation that aims not only for climate protection, but also to support social, environmental and economic development in the regions of their respective projects. The long-term effectiveness of carbon offset projects and, by extension, climate protection can only be ensured when the local population is included. myclimate transparently publishes the contributions that each of its projects make to achieving the ➤ **United Nations' SDGs**. The carbon offset projects selected by the Lufthansa Group are also subject to the highest quality standards and, for example, are certified by the provider ➤ „The Gold Standard“. This non-commercial certification organisation puts exceptional demands on integrative project design with a demonstrable offset of greenhouse gases, and is also recommended by the German Environment Agency.



Further highlights in 2021

- **100% offsetting** of carbon emissions from **work-related** flights taken by Lufthansa Group employees around the world – **over 25,000 tonnes of CO₂** were offset through the climate protection organisation **myclimate**
- **„Sustainable Choices“** gives business clients of the Lufthansa Cargo the option to offset carbon dioxide from their flights and individual shipments through climate projects or in combination with sustainable fuel – as well like private customers can offset via Lufthansa Group's compensation platform ➤ **„Compensaid“** already.

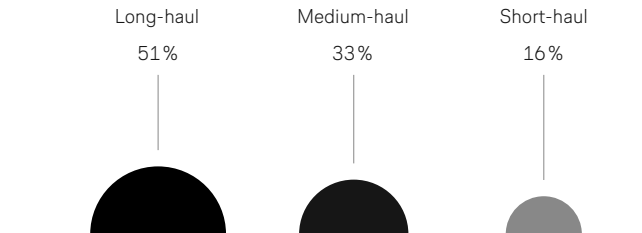
Specific fuel consumption and CO₂ emissions

SPECIFIC FUEL CONSUMPTION AND SPECIFIC CO₂ EMISSIONS OF THE LUFTHANSA GROUP¹ IN 2021

- Values for specific fuel consumption in liters per 100 passenger kilometers (l/100 pkm)
- Values for specific CO₂ emissions in kilograms per 100 passenger kilometers (kg/100 pkm)

	Total	Long-haul	Medium-haul	Short-haul
•	4.05	3.75	3.80	6.67
•	10.16	9.41	9.57	16.78

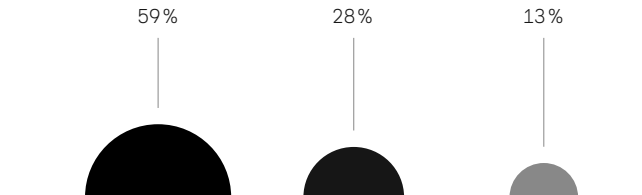
SHARE OF FUEL CONSUMPTION BY TRAFFIC AREAS¹ IN 2021



Environment

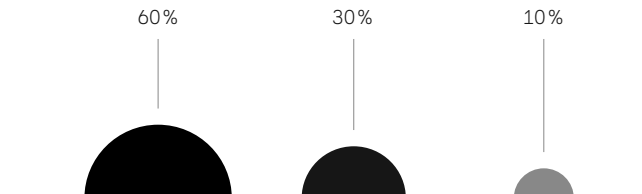
LUFTHANSA GERMAN AIRLINES

	Total	Long-haul	Medium-haul	Short-haul
•	3.97	3.71	3.68	6.57
•	9.96	9.29	9.26	16.55



SWISS

	Total	Long-haul	Medium-haul	Short-haul
•	4.14	4.19	3.75	5.36
•	10.38	10.51	9.43	13.46



¹ Definition of haul length: long-haul over 3,000 km; medium-haul 800 to 3,000 km; short-haul under 800 km.

Specific fuel consumption and CO₂ emissions

SPECIFIC FUEL CONSUMPTION AND SPECIFIC CO₂ EMISSIONS¹ IN 2021

- Values for specific fuel consumption in liters per 100 passenger kilometers (l/100 pkm)
- Values for specific CO₂ emissions in kilograms per 100 passenger kilometers (kg/100 pkm)



	Total	Long-haul	Medium-haul	Short-haul
•	4.57	3.75	4.45	6.40
☁	11.41	9.35	11.13	16.04

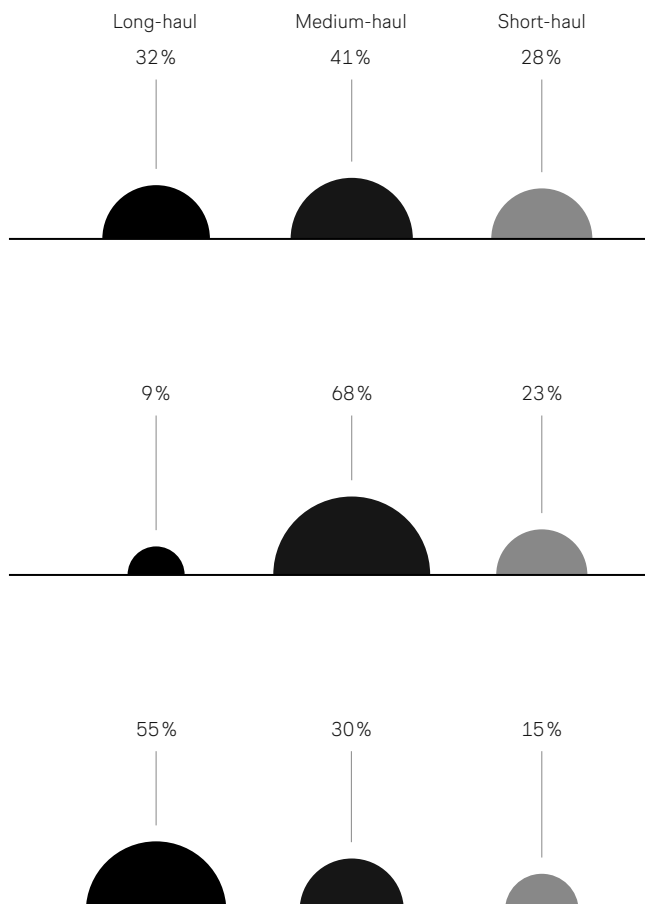


	Total	Long-haul	Medium-haul	Short-haul
•	4.10	3.15	3.67	7.84
☁	10.36	7.95	9.26	19.82



	Total	Long-haul	Medium-haul	Short-haul
•	3.87	3.44	3.84	7.32
☁	9.72	8.63	9.65	18.42

SHARE OF FUEL CONSUMPTION BY TRAFFIC AREAS¹ IN 2021



Smart transport mix

Different modes of transport should be connected in a way that makes optimal use of their respective benefits for transport, the economy and the environment in order to harness the added potential for reducing emissions. In the interest of intermodal connectivity, the Lufthansa Group doesn't only focus on its flights but on building partnerships with national railway companies in Germany, Switzerland and Austria as well as various bus companies.

The project partners believe that roughly 4.3 million passengers could potentially decide to take the train instead of the plane for domestic travel in Germany, which could reduce domestic German flights by an estimated 20 percent. To make this happen, rail travel times will need to be shortened further. Experience shows that considerable numbers of passengers switch to rail if the travel time is not much more than three hours. Domestic routes have been and can be cancelled wherever this mode switch is successful. At places where trains and buses are intended to replace connecting flights at international hub airports, work is also being done to enhance the reliability of the connection and the carriage of any baggage.

Source: German Aviation Association Klimaschutzportal [Climate Protection Portal]

¹ Definition of haul length: long-haul over 3,000 km; medium-haul 800 to 3,000 km; short-haul under 800 km.



Political engagement

European climate protection must not distort competition

In summer 2021, the European Commission presented its Fit for 55 legislative package which included proposed regulations for meeting Europe's climate targets. Of the total of 13 legislative initiatives, three are particularly relevant for aviation: the reform of the emissions trading system (EU-ETS), a rising quota for sustainable aviation fuel blending (ReFuelEU Aviation) and a proposal for implementing a kerosene tax (Energy Taxation Directive).

The Lufthansa Group welcomes the ambitious targets set out within the climate package, however it has also presented tangible proposals for improving the measures in order to avoid the potential disadvantages for European airlines when facing international competitors. In the view of the Lufthansa Group, what is needed is a climate policy that reduces emissions effectively, that prevents carbon emissions being shifted to non-EU countries through carbon leakage and that ensures fair competition internationally. However, the stricter EU emissions trading system and plans quota for sustainable, and therefore more expensive, fuels increase costs in a one-sided way for long-haul flights that connect at EU hubs.

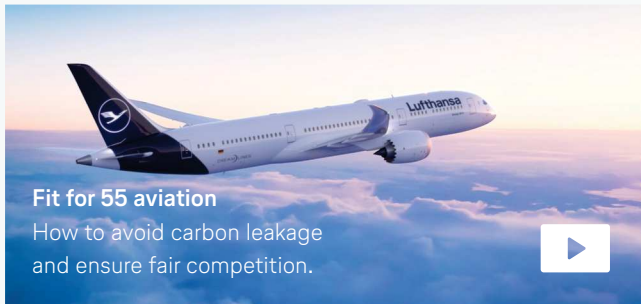


Aviation Alliance Fit for 55

A new alliance of European airlines and airports is calling for revisions to the Fit for 55 package presented by the European Commission in July. The „Aviation Alliance Fit for 55“ currently consists of 19 companies, including airlines within the Lufthansa Group. These partners have developed proposals for how the EU climate protection package could set an example globally and safeguard connectivity and jobs in the EU.

More information at aviationalliance.eu

Environment



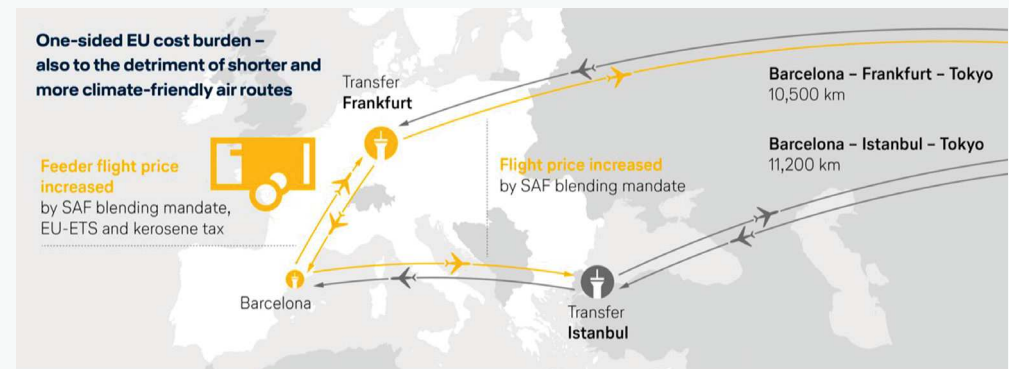
Fit for 55 aviation

How to avoid carbon leakage and ensure fair competition.

One-sided financial burden for European airlines

Internal analyses show clearly that the gap in prices caused by the Fit for 55 regulations would increase considerably and at Germany's and Europe's expense.

An example: While tickets from Frankfurt Airport would be more than 25 percent more expensive by 2035, the cost increase for Istanbul would be just 4 percent. Consequently, demand for Frankfurt Airport would decrease by about 15 percent whereas Istanbul could expect passenger numbers to grow.

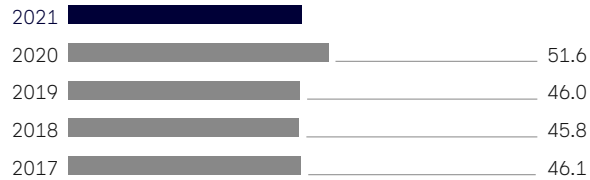


Specific further emissions separated by passenger and freight traffic

NO_x emissions

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

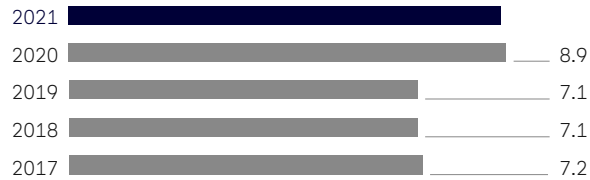
46.5



CO emissions

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

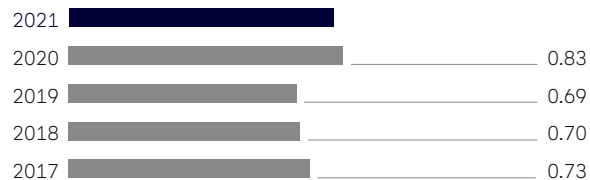
8.8



UHC emissions

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

0.80



How are further emissions created?

Using fossil fuel causes different types of emissions, such as nitrogen oxides, in addition to carbon emissions.

These emissions arise from e.g. the incomplete combustion of kerosene. Factors such as temperature, pressure and load influence the combustion efficiency. Consequently, the combustion processes must be optimised in order to reduce the emissions that are generated.

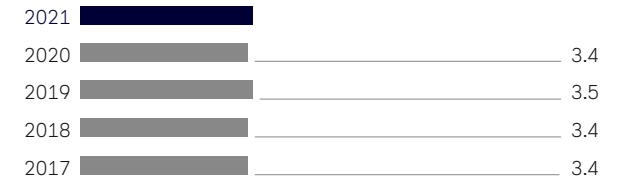
Higher combustion temperatures, for example, allow a more efficient use of fuel – on the other hand – they also produce more emissions, including nitrogen oxides in particular. The combustion chambers in modern engines are able to achieve an improved combustion. Less emissions are released as a result and fuel consumption is reduced at the same time.

The Lufthansa Group invests continuously in more modern and particularly fuel-efficient aircraft and engine technologies. It also has a committed role in research projects that examine the impact and prevention of further emissions.

NO_x emissions

in grams/freight tonne kilometers (g/tkm)

3.5



CO emissions

in grams/freight tonne kilometers (g/tkm)

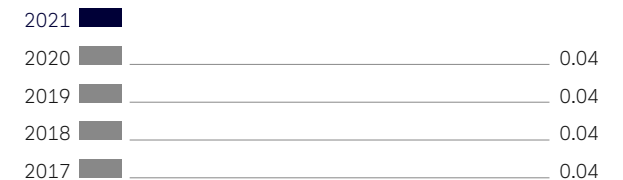
0.5



UHC emissions

in grams/freight tonne kilometers (g/tkm)

0.04



Carbon footprint

DIRECT AND INDIRECT CO₂ EMISSIONS OF THE LUFTHANSA GROUP IN COMPARISON¹

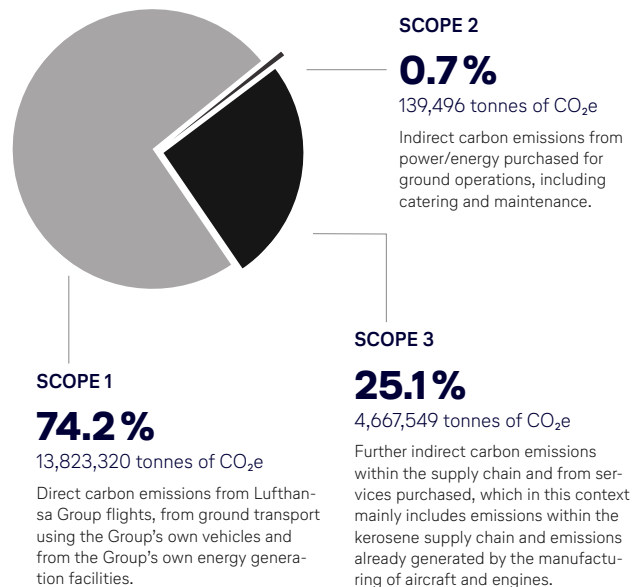
in tonnes of CO₂e

	2021	2020	2019
Scope 1	13,823,320 74.2%	11,509,756 76.0%	33,349,293 75.6%
Scope 2	139,496 0.7%	135,183 0.9%	199,817 0.4%
Scope 3	4,667,549 25.1%	3,491,821 23.1%	10,588,707 24.0%



Environment

DIRECT AND INDIRECT CO₂ EMISSIONS OF THE LUFTHANSA GROUP IN 2021



The Greenhouse Gas Inventory accounts for the entire Greenhouse Gas emissions of Lufthansa Group². Through the use of Sustainable Aviation Fuel (SAF) 35,456 tonnes CO₂ were reduced in the year 2021 outside of this verified inventory (Well-to-Wheel Accounting³).



The special nature of carbon footprints in aviation

The term „carbon footprint“ refers to the sum of all carbon dioxide emissions (measured in CO₂) and greenhouse gas emissions (measured in CO₂ equivalent, CO₂e) that a company, product or service causes directly or indirectly over a defined period of time or across a life cycle.

The Lufthansa Group calculates its carbon emissions based on the categories laid out in the Greenhouse Gas Protocol (GHG Protocol). Accordingly, emissions are divided into three „scopes“ (see the illustration entitled „Direct and indirect CO₂ emissions of the Lufthansa Group“).

While the scope 3 emissions from supply chains in all industries are, on average, three times as much as the total scope 1 and 2 emissions, the reverse is the case in aviation. The emissions from the direct burning (scope 1) of energy sources – in this instance kerosene – makes up about 75% of the total carbon footprint in aviation. Determining its carbon footprint helps the Lufthansa Group identify and evaluate its material environmental impacts with more precision. This helps to develop more targeted options for mitigation.

¹ Scope 1 for the 2021 reporting year, audited with high assurance. Scopes 2 and 3 subjected to a limited-assurance audit (see page 22). ² Group consolidation.

³ Definition (DIN EN 16258) „Well-to-Wheel Accounting“: Assessment of vehicle as well as energy processes.

Calculation method of absolute and specific consumption and emissions

Kerosene, absolute

Kerosene consumption is calculated based on actual flight operations, which means accounting for actual payloads and flight routes from gate to gate. This calculation captures all stages of a flight, from taxiing to detours and holding patterns.

Emissions, absolute

The calculation of absolute emissions from flight operations is based on the actual transport performance and thus on actual payloads as well as the actual absolute kerosene consumed during the reporting year. The transport performance is measured in tonne kilometers. For passengers and their baggage, an average of 100 kilograms is used as the standard, whereas the actual weight is used for freight.

Carbon emissions do not require a specific aeroplane-specific calculation because they are produced proportionally to the amount of kerosene that is burned. The combustion of one tonne of kerosene produces 3.15 tonnes of carbon dioxide.

Specific consumption and emissions

The calculation of specific consumption and emissions puts the absolute values in relation to the transport performance. For example, the key liter figures per 100 passenger kilometers (l/100 pkm) is calculated on the basis of the actual kilometers flown and the actual amount of kerosene consumed.

The underlying distances are based on great-circle distances. For combined flights (freight and passengers transported on the same aeroplane), the fuel consumption is linked with the calculation of passenger- or freight-specific values based on their share of the total payload.

The DIN EN 16258 standard has existed since 2013 to provide a framework for calculating the greenhouse gas emissions for transport processes in a consistent way. The Lufthansa Group applies this framework when it comes to allocating payloads. The Lufthansa Group would welcome a consistent and internationally harmonised and accepted method.

Verification statement Scopes 1–3

VERIFICATION STATEMENT




Müller-BBM Cert Umweltgutachter GmbH, accredited verification body DAKKS D-VS-18709-01-01 confirms that the greenhouse gas balance according to the GHG Protocol of the

LUFTHANSA GROUP

Deutschen Lufthansa AG and affiliates*

audited according to the requirements of ISO 14064-3 and the information in the figure "direct and indirect CO₂ emissions of the Lufthansa Group 2021" on page 21 of the Factsheet Sustainability 2021 was verified with the following uncertainties:

Scope 1 (reasonable assurance, 2% materiality)	13.823.320 t CO ₂ eq
Scope 2** (limited assurance, 5% materiality)	139.496 t CO ₂ eq
Scope 3 (limited assurance, 10% materiality)	4.667.549 t CO ₂ eq

Kerpen, April 27th, 2022



Müller-BBM Cert Umweltgutachter GmbH

* Companies in the scope of the CDP Report 2021:
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 Discover GmbH, Eurowings Europe GmbH, LSG Lufthansa Service Holding AG, Lufthansa AirPlus Servicekartens 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, Lufthansa Global Tele Sales GmbH, EFM-Gesellschaft für Entleeren und Flugzeugschleppen am Flughafen München GmbH

** market based

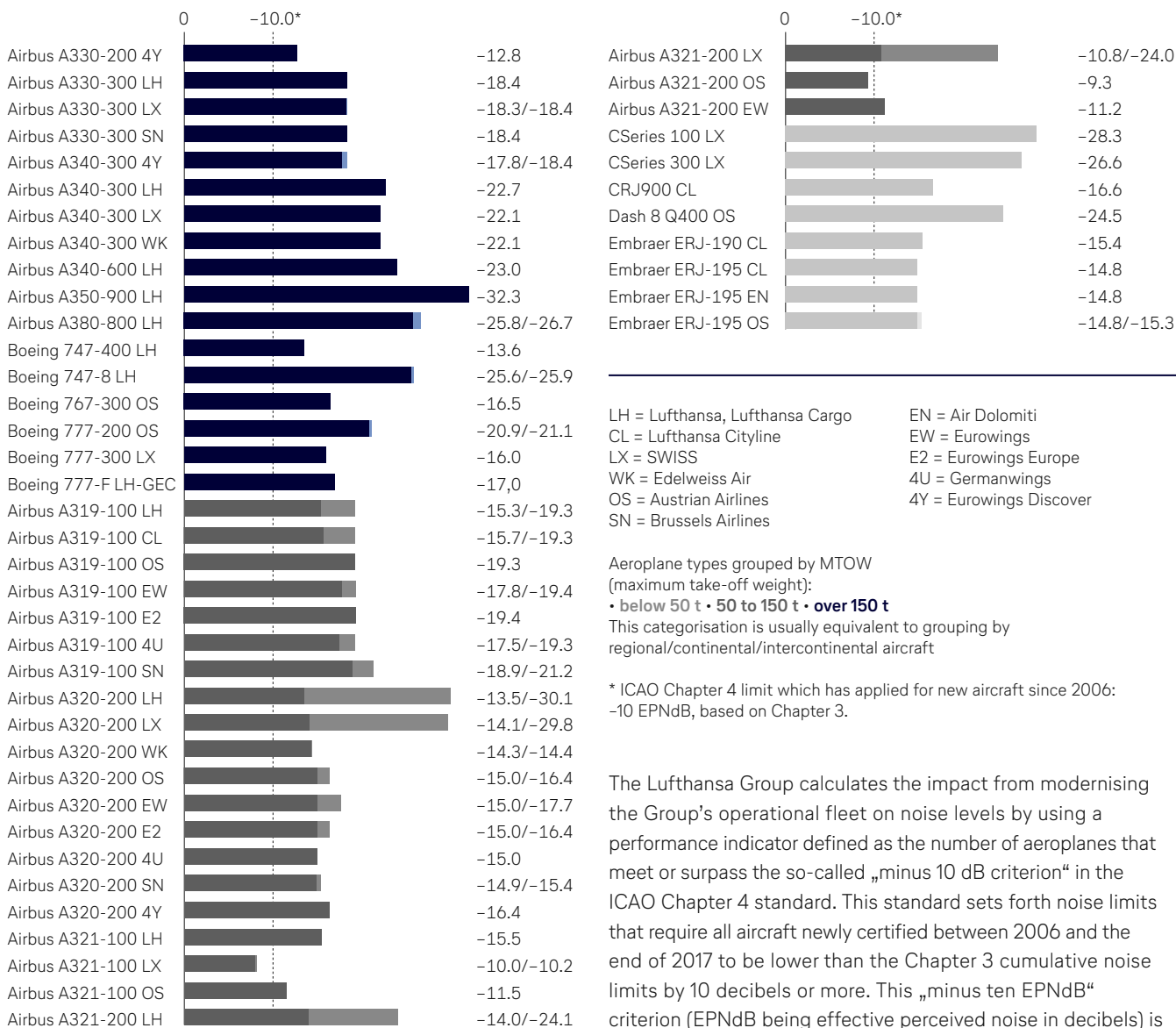
A MEMBER OF



Most stringent noise standards for the Lufthansa Group's fleet

MARGIN BELOW THE NOISE LIMIT OF ICAO CHAPTER 3 AND 4

As at 30 Oct. 2021, in EPNdB



represented by the vertical dashed line in the overview to the left. In 2021, 99.6 percent of aircraft – and therefore almost all of the Group's operational fleet – met this criterion.

The limits depend on the aircraft's maximum take-off weight allowed and the number of engines in an aeroplane. The bar chart displays the sum of the differences between the measurement and the limit at the three reference measurement points (cumulative margin). If necessary, the values are presented based on the reduced maximum take-off weight applicable during flight operation. The analysis methodology incorporates the individual noise certification data of all of the Group's aircraft. This accounts for the different versions of aeroplane models and their engines by year of construction. Accordingly, the overview presents ranges from the lowest to the highest cumulative margin for many fleets.

The analysis also incorporates modifications that have been performed on the aircraft or engines in the meantime, which can result in changed noise data and cumulative margins. Furthermore, additions and disposals within individual fleets lead to changes in the ranges reported.

The data is collected as at the date on which the summer schedule ends. All aircraft held within the individual airlines as at the calculation date are included in the calculation of the performance indicator.

99.6%

of aircraft in the Group's operational fleet meet the strict minus 10 dB criterion of the ICAO Chapter 4 standard



Reducing plastic and food waste



New food options with more sustainable packaging materials on board Lufthansa German Airlines, SWISS and Austrian Airlines

Bottle to bottle – a closed loop for rPET bottles

In the future, bottles made of recyclable PET (rPET) used on board arriving Lufthansa German Airlines aircraft will be collected at Frankfurt Airport and fully recycled. The bottles will be integrated into a dedicated recycling process to which crews, catering companies, aircraft cleaning staff and Frankfurt Airport will contribute. The PET flakes that are recovered will then be used to create new bottles which can be refilled with beverages. This will make Frankfurt the first airport in Europe and here, Lufthansa German Airlines the first airline to transfer recyclable PET bottles into a sustainable, closed material cycle directly from the plane. Based on the plane movements and loads in 2019, the number of PET bottles that could be collected and put into recycling each year is up to ten million.

¹ Basis: 370 million (annual consumption in 2019) single-use plastic parts consumed on board Lufthansa German Airlines, SWISS and Austrian Airlines.

71%

reduction of single-use plastic parts already achieved¹

100%

of single-use plastic parts on board Lufthansa Group Network Airlines and Eurowings to be fully removed or replaced by sustainable alternatives by 2025¹

The Lufthansa Group Airlines have short-term targets that focus in particular on reducing waste from single-use plastic on board. Lufthansa German Airlines, SWISS and Austrian Airlines identified 370 million single-use plastic parts in 2019. Due to the pandemic, the airlines were unable to achieve their target of fully replacing them with sustainable alternatives or removing them by 2021. As a result, this target has been postponed to 2025.

Why not just switch to reusable items?

Utilising reusable items is a core element of the product concepts at the Lufthansa Group. The potential for switching to reusable items is regularly reviewed when there are product adjustments, taking into consideration the available stowage space on board, weight, in-flight service times and number of items required, and the on-board items are adjusted if necessary.



Further highlights in 2021

- **Reduce:** reducing the **volume of single-use plastic items stocked on board** by changing the food and drink offering to a premium buy-on-board service on intra-European flights operated by Lufthansa German Airlines, SWISS and Austrian Airlines
- **Reuse:** **switching to reusable cutlery and dishes** in SWISS Economy Class
- **Recycle:** **rolling out new single-use plastic cups made of recycled PET** at Lufthansa German Airlines – cups that can be fed into a recycling process in the future
- **Replace:** the Eurowings **on-board magazine is now printed on 100% recycled paper** and the airline's disposable plastic stirrers have been **replaced by wooden stirrers**
- **Reduced volumes of food waste** at Lufthansa German Airlines, SWISS and Austrian Airlines with improved, algorithm-based demand planning and with discounts on the final flights of the day at Eurowings



CleanTech Hub

Lufthansa Group CleanTech Hub – the new center for bundling competences for climate protection technologies

This new center of expertise that the Group has started aims to accelerate the implementation of clean technologies within the Lufthansa Group airlines and foster collaboration within teams and with external partners. The Lufthansa Group CleanTech Hub thus adopts a targeted approach of seeking out technology-driven

ideas and project partners that can contribute to sustainable aviation. Regular events (pitch days) since November 2021 give businesses, start-ups and research organisations an opportunity to present their concepts and ideas. If they are given a positive assessment, the concepts are developed further in conjunction with the Lufthansa Group.

The CleanTech Hub brings together projects and initiatives in five fields

Transport of tomorrow

This field focuses on the future. The emphasis is on trailblazing projects for sustainable aviation and transport that have a time to market finishing in the next few years or that require further research and development work.

Alternative fuel and emissions

This field revolves around initiatives for sustainable aviation fuel, emission reduction and climate research.

Aircraft-related hardware

The projects and research in this field aim to improve all aspects of an aircraft that could have positive impacts on fuel consumption, aerodynamics and noise emissions.

Waste and circular economy

This brings together all projects that help reduce the waste generated on board and avoid plastic.

Digital solutions and processes

This field concentrates on smart software solutions for climate-friendly decision making and planning in flight operations and beyond.

„traceless materials“ – an example of collaboration

The Lufthansa Group is supporting a start-up called „traceless materials“ in scaling up its sustainable plastic alternatives.

Plastic is an affordable, versatile and useful material. Life without it would be unimaginable. However, the general awareness of its problems is growing and so too is the demand for alternative solutions.

„traceless materials“ is a German green-business start-up whose mission it is to develop an innovative, sustainable technology for manufacturing biodegradable plastic alternatives made from agricultural waste products. These materials can be used to make packaging that can decompose in natural composting conditions without leaving any remains. As a result, the materials can circulate in their biological cycle continuously and „traceless“ waste is turned into a nutrient over and over again.

One of the goals for the collaboration between „traceless materials“ and the Lufthansa Group is to make on-board food packaging more environmentally friendly.

>40

project applications since foundation



Customer satisfaction

49

NPS of Network Airlines

47

NPS of Eurowings

The Net Promoter Score (NPS) is based on customers' willingness to recommend the company and is the leading indicator of customer satisfaction among Network Airlines and Eurowings. Eurowings reached an NPS of 47 in 2021, higher than its target of 45. Network Airlines achieved a score beneath its target of 60. The reason for this were the strong increase in flight operations and the corresponding passenger numbers, particularly in the second quarter of 2021 and later. Combined together with mandatory pandemic-related measures such as extensive document checks, both causes had negative impacts on processes and punctuality and thus also on customer satisfaction.

81.3 %

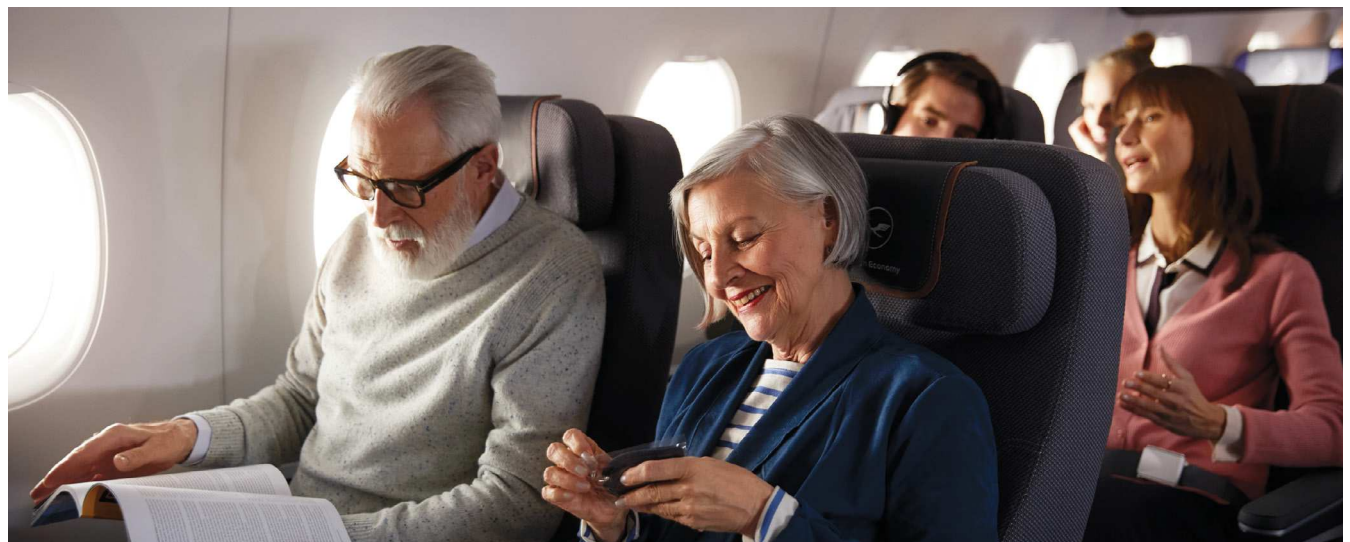
Departure punctuality

The average departure punctuality achieved throughout the year was 7.3 percentage points lower than previous year. However, pandemic-related adjustments of ground processes, strongly fluctuating load numbers and staff shortages among the ground handling services of system partners had negative impacts on departure punctuality.



Further highlights in 2021

- **Quick and convenient processing at security:** implementing the Health & Entry Support Center for digital document checks, online check-in and travel information such as entry requirements, and the Drive-Through Test Center directly at Frankfurt Airport
- **Unlimited rebookings:** extensive flexibility thanks to modified fare structure
- **Notifications sent via instant messaging:** European Aviation Network (EAN) broadband internet technology was piloted on a SWISS Airbus A320
- In the event of delays and cancellations, any compensation entitlements can be automatically assessed independently of any customer call center and, if applicable, payment can be requested – enabled by the „Self-Compensation Tool“ developed by Eurowings

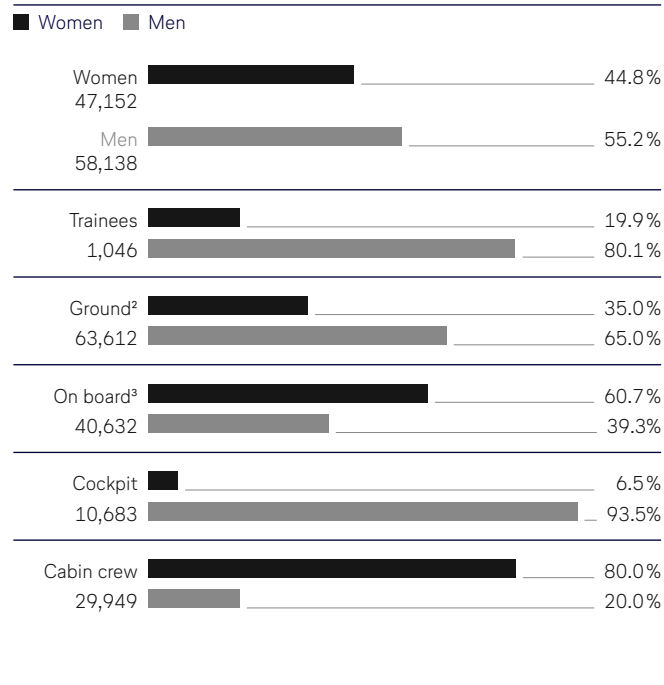


Employee numbers

The employees of the Lufthansa Group are a key factor in the Group's success thanks to their expertise and diverse wealth of talent. They represent the premium claim of the Lufthansa Group airlines during interactions with passengers and shape the customer experience. They also ensure reliable and productive operations and efficient administrative processes. Accordingly, the Lufthansa Group attaches great importance to guiding and supporting them through this current period of transformation and restructuring.

NUMBER OF EMPLOYEES BY PROFESSIONAL GROUP AND GENDER¹

Lufthansa Group, employees as at December 31, 2021

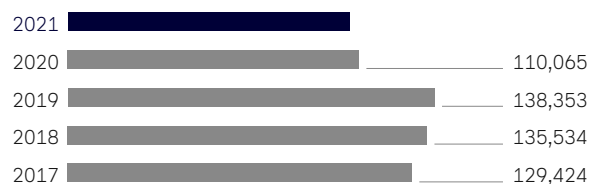


¹ Group consolidation. ² Excluding trainees. ³ Comprised of cockpit and cabin crews. ⁴ Close to pensionable age: employees born in 1958 or earlier; far from pensionable age: employees born in 1965 or later; partial-retirement offers were made for employees born between 1960 and 1964. ⁵ Pilots who were eligible to apply for a transitional pension

EMPLOYEES IN TOTAL¹

Lufthansa Group, employees as at December 31

105,290



Voluntary redundancies

Structural changes in demand and the market environment brought about by the Corona pandemic made far-reaching changes necessary within the Lufthansa Group. As part of its transformation, the Lufthansa Group is adjusting not only its fleet but also its headcount to the changed market environment. It was able to achieve major progress in these efforts during the 2021 financial year. The number of employees declined in 2021, mainly as a result of the broad acceptance of the voluntary redundancy packages that were offered to employees in all job categories at Deutsche Lufthansa AG and to employees of Lufthansa Technik AG and other Lufthansa Group companies in

VOLUNTARY REDUNDANCIES AT LUFTHANSA TECHNIK⁹

Lufthansa Technik AG, employees leaving/left in 2021 and 2022

■ Close to pension⁷ ■ Far from pension⁷

Total: | 1,376 people
 ■ 65% | 894 people
 ■ 35% | 462 people



in 2021 (entitlement exists in the year before reaching the age limit of 55). ⁶ Close to entitlements threshold (over 55 years of age as at 31 Jan. 2022); far from entitlements threshold (under 55 as at 31 Jan. 2022). ⁷ Close to pensionable age: employees born

DISTRIBUTION OF EMPLOYEES¹

Lufthansa Group, employees as at December 31

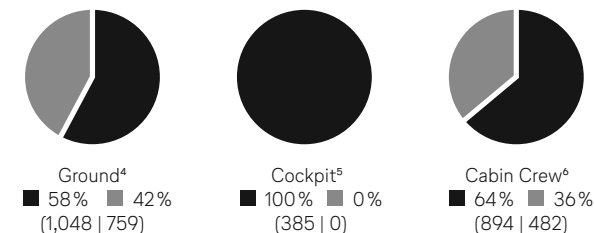
	2021	2020	Change
Group employees	105,290	110,065	-4.3%
of these, at Network Airlines	53,295	57,363	-7.1%
of these, at Eurowings	3,563	3,088	15.4%
of these, in Logistics	4,162	4,373	-4.8%
of these, in MRO	20,569	22,745	-9.6%
of these, in Catering	15,626	13,227	18.1%
of these, at other companies and Group functions ⁴	8,075	9,269	-12.9%

Germany. The purpose of these redundancies was to reduce the existing surplus of employees in a socially responsible way in order to avoid forced layoffs in Germany. In total, there were roughly 4,500 employees who opted to leave the Group with a voluntary redundancy package in 2021. Of this number, about 800 have already terminated employment at the Lufthansa Group in the course of the 2021 financial year.

„now!“ VOLUNTARY REDUNDANCY PROGRAMME⁸

Deutsche Lufthansa AG, employees leaving/left in 2021 and 2022

■ Close to pension/entitlements ■ Far from pension/entitlements



between 1956 and 1964 (1965 for heavily disabled staff); far from pensionable age: employees born in 1965 or later. ⁸ Deutsche Lufthansa AG only. ⁹ Lufthansa Technik AG only.

Employer attractiveness

A balanced relationship between professional and private lives, a comprehensive approach to equal opportunities and diversity in all its dimensions and intensive support for talented individuals are crucial fields of action that are intended to help achieve the Lufthansa Group's desire for fair and peer-like interaction with its employees and preserve its position as an attractive employer.

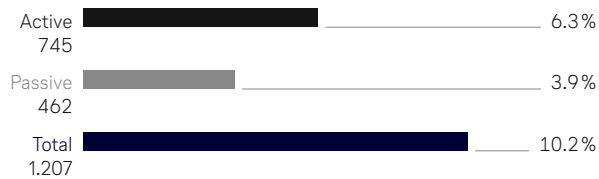
Engagement Index is down, dedication is up

Within the Lufthansa Group, the Engagement Index is calculated based on the voluntary annual employee survey: „involve me!“. It provides information about aspects such as employer appeal and measures the employees' feeling of connection with the company, their commitment to the company and their willingness to recommend the company. The result is presented on a scale from 1 (best score) to 5 (lowest score). The main drivers of the decline were the redundancies, restructuring and necessary cost-cutting measures. The employees' commitment to the company, however, increased compared to 2020.

PARTIAL RETIREMENT, ACTIVE/PASSIVE²

Deutsche Lufthansa AG, employees as at December 31, 2021

Total ground staff at Deutsche Lufthansa AG: 11,876



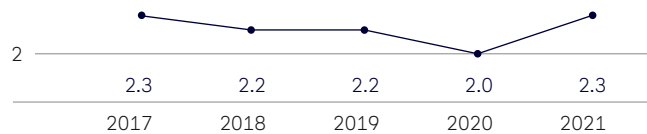
¹ The remaining proportion of employees are largely executives and senior-level managers.
² Deutsche Lufthansa AG only. ³ Deutsche Lufthansa AG and Lufthansa Cargo AG.

 83%

of staff in Germany covered by collective agreements¹

ENGAGEMENT INDEX⁴

Lufthansa Group, in percent 2021



TRANSITIONAL PENSION FOR FLIGHT CREW³

Deutsche Lufthansa AG and Lufthansa Cargo AG, employees as at December 31, 2021



⁴ Companies participating in the "involve me!" survey represent 86% of all Lufthansa Group employees.



Partial retirement for ground staff

Based on Germany's Act on Partial Retirement (AltTZG), partial retirement is an agreement with an employee no younger than 55 years of age to reduce working hours to half of their previous weekly working hours whilst simultaneously making this form of part-time work attractive by topping up the employee's salary with payments from the employer. The working hours are usually divided into a stage with full working hours (**actively working stage**) and a subsequent period where the employee is relieved of all of their work duties (**leave/passive-income stage**). This model is called the block model, with the employer topping up the reduced salary and paying additional pension contributions. The top-up payments made by Deutsche Lufthansa AG are normally 25% of the reduced salary.

Transitional pension for flight crew

The transitional pension is a retirement benefit provided for under the collective agreements. It consists mostly of a funded pension benefit from Deutsche Lufthansa AG and can be complemented with a pension benefit funded by the employees themselves. The transitional pension is paid for the period between retirement based on the applicable age limit and the earliest possible start date for the statutory pension scheme. Cabin and cockpit employees have the possibility to obtain a transitional pension starting at 55 years of age. Drawing a transitional pension is voluntary and governed by collective agreements. It offers flight crew an option for exiting working life earlier than the age limit mandated by law for Deutsche Lufthansa AG.

Employer attractiveness

Parental leave, childcare, caregiver leave and time off

Increased flexibility and freedom is provided with programmes such as Lufthansa Family Time, extensive childcare services (including during holidays), parent-child offices, caregiver leave and time off.

To balance work and family better, there are offerings such as different working-hour models. Employees can reduce their weekly working hours and/or distribute them flexible in line with their personal situation. They also have possibilities to apply

for special leave or remote working as well as various options for taking time off, whether it is for caring for or looking after children, family members or partners. They are complemented by accompanying counselling services.

At the Lufthansa Group, managers, employees and co-workers agree on solutions jointly so that they can balance their professional and personal lives better.



Employees

EMPLOYEES ON PARENTAL LEAVE (OUTSIDE GERMANY)¹

Lufthansa Group, employees as at December 31

Women



Men



EMPLOYEES ON PARENTAL LEAVE (GERMANY)²

Lufthansa Group, employees as at December 31

Women



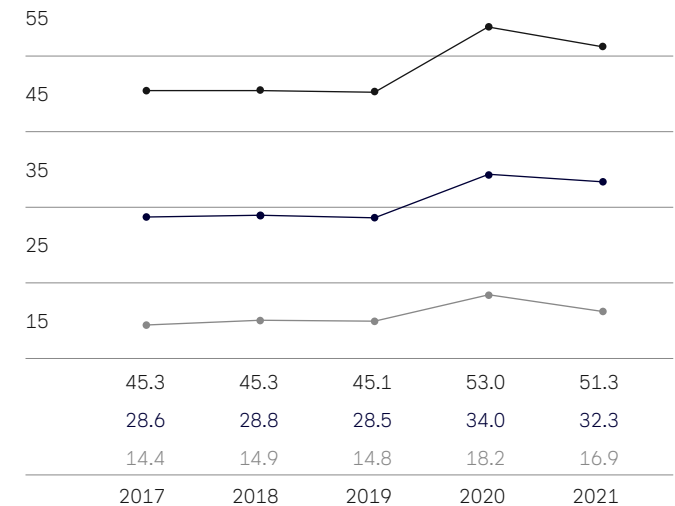
Men



PART-TIME EMPLOYMENT^{1,3,4}

Lufthansa Group, in percent as at December 31

■ Women ■ Total ■ Men



¹ Scope: Group consolidation, excluding Germany, excluding LSG Sky Chefs Spain, S.A.; LSG Sky Chefs Supply Chain Solutions, Inc.; Constance Food Group, Inc.; Sky Chefs, Inc.; Western Aire Chef, Inc.; SCIS Air Security Corporation. ² Group consolidation, Germany. ³ Part-time

with partial retirement (including block model). ⁴ Scope: Group consolidation, excluding LSG Sky Chefs Spain, S.A.; LSG Sky Chefs Supply Chain Solutions, Inc.; Constance Food Group, Inc.; Sky Chefs, Inc.; Western Aire Chef, Inc.; SCIS Air Security Corporation.

Diversity and equal opportunities

Share of women in leadership to be boosted

The Lufthansa Group is committed to embedding gender diversity into its leadership culture continuously. In addition to awareness training for all managers, the Female Leadership Boost project provides a broad portfolio of individual development measures for female talents.

For example, the established GoAhead programme for up-and-coming women in management is being expanded from 16 to roughly 50 participants in 2022. This programme aims to give talented women the best preparation possible for a position in

management. The Lufthansa Group has also rolled out a requirement for the selection in recruitment processes, with a quota for women now set within the recruitment process at various „Leadership Circle“ levels. This requirement is intended to enable more visibility for talented women. The final appointments will continue to be based on the most suitable candidate. To promote work-life balance, all „Leadership Circle“ positions are advertised with an option for part-time hours and „shared leadership“. The latter is a job-share model where two individuals split the hours of a leadership position while sharing the duties. There are currently about 30 such pairs at the Lufthansa Group.

Employees

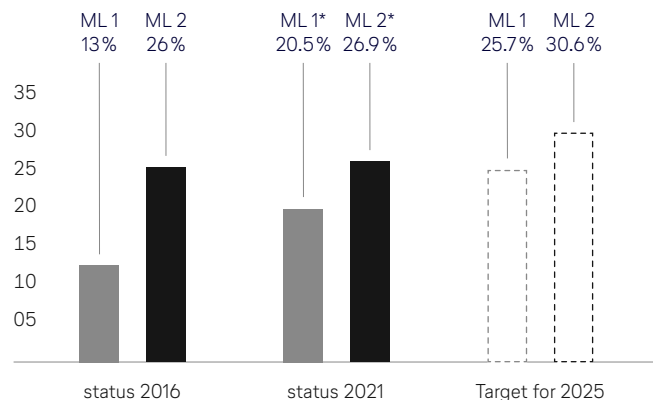
 40%

women on Supervisory Board²

WOMEN AT MANAGEMENT LEVELS³ 1 AND 2

(legally required) Deutsche Lufthansa AG, in percent

*Target for 2021 ML 1: 20%; ML 2: 30%

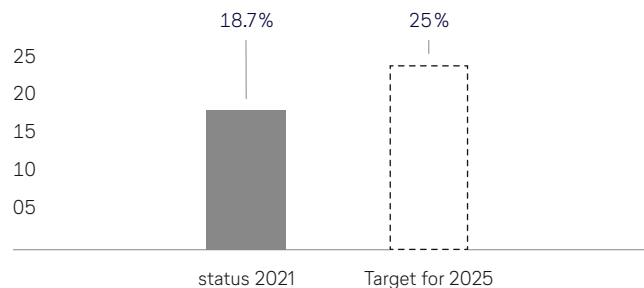


 16.7%

women on Executive Board²

WOMEN IN MANAGEMENT⁵

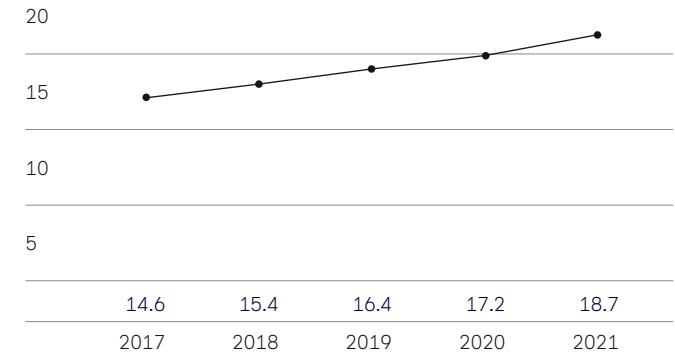
(voluntary) Lufthansa Group, in percent



In addition to the statutory targets for Management Levels 1 and 2 at Deutsche Lufthansa AG, the Lufthansa Group has also set a further, voluntary target. Based on it, the Lufthansa Group is endeavouring to increase the percentage of women among all managers in leading positions.

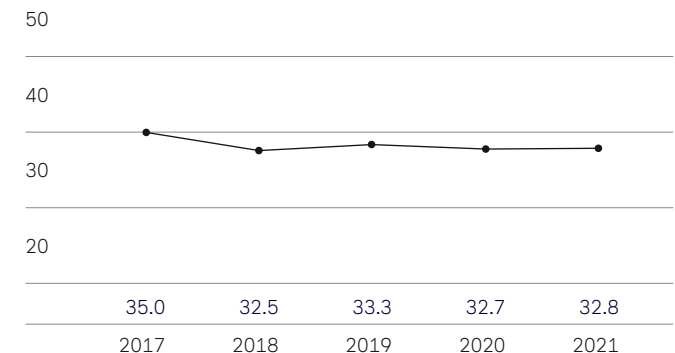
SHARE OF WOMEN IN MANAGEMENT (WORLDWIDE)¹

Lufthansa Group, in percent as at December 31



SHARE OF WOMEN WITH STAFF RESPONSIBILITY (WORLDWIDE)¹

Lufthansa Group, in percent as at December 31



¹ Scope: Group consolidation. ² Deutsche Lufthansa AG. ³ Management Level (ML) refers to the level reporting to the Executive Board. ⁴ Leadership Circle comprises employees in leading position and describes one level within the management levels of the Lufthansa Group. ⁵ Management comprises all employees in leading positions.

Diversity and equal opportunities



Employees

 4.3%

Inclusion³

Finding, keeping and developing talents

Talent management at the Lufthansa Group has a focus on performance and potential and is set up to identify individuals within the company who are high-performing and have potential and to bind them to the company with suitable measures. The Group creates structured networking opportunities, has professional development offerings such as digital learning programmes, analyses potential and organises educational placements. These offers are complemented by appealing opportunities for inclusion, for example, in design thinking challenges or participation in projects where issues relating to the future are tackled. The Lufthansa Group recruits talented graduates in a targeted way

¹ Scope: Group consolidation, excluding LSG Sky Chefs Spain, S.A.; LSG Sky Chefs Supply Chain Solutions, Inc.; Constance Food Group, Inc.; Sky Chefs, Inc.; Western.

 172

different nationalities² within the Lufthansa Group workforce

by collaborating with universities for „dual study programmes“ in engineering, finance and IT, where students learn at the university and at work, as well as by running established international management trainee programmes.

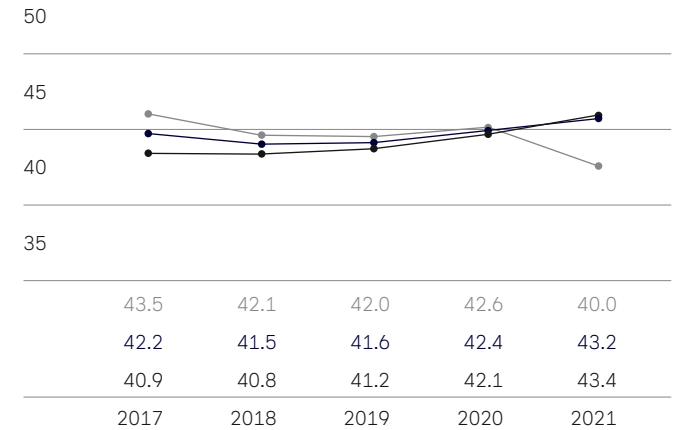
The Lufthansa Group's planned recruitment of almost 500 young adults who will commence an apprenticeship or study programme in 2022 emphasises the importance that the Group attaches to the education and development of up-and-coming talent.

² Group consolidation. ³ Reporting German companies, consolidated plus shares of Lufthansa Group >50%.

AVERAGE AGE¹

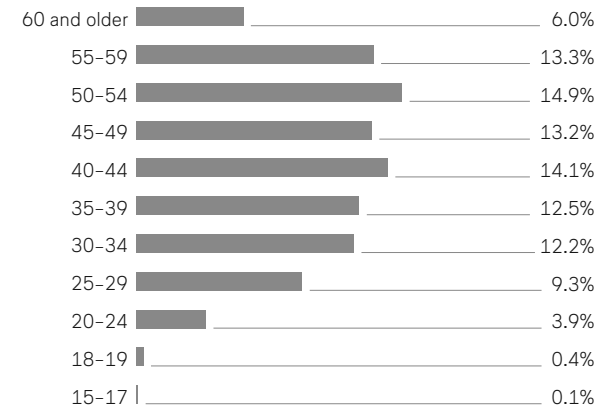
Lufthansa Group, in percent as at December 31

■ Men ■ Total ■ Women



AGE STRUCTURE¹

Lufthansa Group, in percent as at December 31, 2021



Health and safety at work



Further highlights in 2021

- A variety of measures for maintaining Corona infection prevention:**
 - Provision of three vaccination centers and Corona vaccination services for employees
 - Corona vaccines administered to more than 14,000 employees
 - 12-episode podcast provided employees with pandemic-related information of particular relevance to the company
 - Specific digital services for supporting employee health: webinars addressing the special circumstances surrounding the pandemic and the company's situation, complemented by tangible guidance and information about coping mechanisms
 - Expanded offerings for psychosocial counselling and from operational health management during the pandemic – online courses for promoting health and preventing stress and additional newsletters and podcasts about psychosocial topics were provided

- Winner of the Deutscher Personalwirtschaftspreis 2021 („German Human Resources Award“) in the Operational Health Management category

Employees



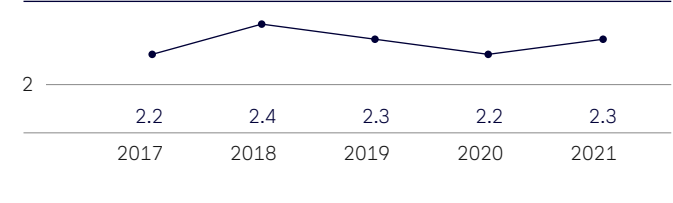
▲ 3.7

work-related injuries per 1 million working hours

This figure includes all events that resulted in at least one calendar day of lost time. The calculation of the accident figures for 2021 started by including relevant companies that, in Germany, are insured with the liability insurance association that is responsible for most Lufthansa Group companies (BG Verkehr). In total, these companies employ 48% of the Lufthansa Group's employees worldwide and 83% of its employees in Germany. This result is significantly less than the 2020 benchmark of 25.7 published by BG Verkehr and of 12.1 for all German companies – whose results are only calculated as of the third day of lost time. The Lufthansa Group calculates its injury rate starting on the very first day of lost time.

HEALTH INDEX¹

Lufthansa Group, in percent 2021



The Health Index is a core indicator of employee health and is calculated annually as part of the „involve me!“ employee survey. The result is presented on a scale from 1 (best score) to 5 (lowest score). Despite the company's extraordinary situation, the score deteriorated only slightly, to 2.3, in 2021.

In addition to analysing the Health Index, the Group also analyses work-related factors that are closely related to the Health Index. All managers and health coordinators at the Group's individual companies receive a results report containing a selection of specific and supporting advice for actions and initiative offerings.

¹ Companies participating in the "involve me!" survey represent 86% of all Lufthansa Group employees.

Societal engagement



Closer to the world. Closer to its people.

help alliance is the aid organisation of the Lufthansa Group and its employees. It is the cornerstone of the Lufthansa Group's societal engagement. As an international company and part of the German and international communities, it has a responsibility for current social challenges that goes beyond its purely business-related activities. help alliance was started by 13 Lufthansa employees in 1999 and, today, is a registered non-profit organisation which brings together 48 projects globally under its roof. These projects aim above all to enable access to education for younger generations and empower them to live a self-determined life. In addition to its focus on education, help alliance also supports

entrepreneurship. It has given support to roughly 140 projects around the world over the years. All elements of these projects are based on the strict standards of the UN Convention on the Rights of the Child and contribute to the **United Nations' SDGs.**

In its regular **annual report**, help alliance presents a look back at the year and its many highlights. The report includes information such as detailed figures about the effect of its projects, exciting impact stories from projects across the world, donation highlights and key financial data.



A new life for (un)lucky children
India



Inclusion rocks for everyone
Germany



Austrian Airlines trainees involved in help alliance project
Gambia



Further highlights in 2021

- **16 evacuation flights** from Tashkent organised and operated on behalf of the German government within just a few days.
- **Lufthansa Cargo** supported the **UNICEF Humanitarian Airfreight Initiative**. This initiative brought together airlines that cover routes in over 100 countries in order to assist with the **COVAX Facility**. The initiative's goal is to give all people the possibility of getting a Corona vaccine regardless of a country's economic state.
- **Supported global supply chains and provided urgently needed goods** by maintaining relevant routes despite ongoing travel restrictions.
- **help alliance** oversaw 48 aid projects in roughly 20 countries, with a **project volume of €2.7 million – 87% of which went into promoting education** – approximately **40,000 disadvantaged people** worldwide received support.

Glossary

Carbon dioxide (CO₂)

Gas resulting in nature from the burning or decomposition of organic substances (e.g. plant material). The greenhouse gas CO₂ remains in the atmosphere for about 100 years. Scientists attribute the increase in atmospheric CO₂ over the last 100 years to the burning of fossil fuel (e.g. coal, oil, natural gas) by humans. Per tonne of fuel, 3.15 tonnes of CO₂ result from the combustion process. Currently, 2.8 percent of the CO₂ 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.

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.

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.

Freight tonne kilometers (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 allowed 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 four to eight 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.

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.

Nitrogen oxides (NO_x)

Chemical compounds consisting of one nitrogen and several oxygen atoms. NO_x is defined as the sum of NO and NO₂ compounds. Natural sources include lightning and microbes in the soil. Nitrogen oxides are also generated in combustion processes under high pressures and temperatures. However, future combustion chambers of an advanced design could help reduce NO_x emissions by 85 percent. Air traffic contributes two to three percent of man-made NO_x emissions. Climate models show that nitrogen oxides have increased the concentration of ozone at cruising altitudes by a few percentage points.

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).

Seat kilometer (SKO)

Measure of the transport capacity available (SKO, seat kilometers offered).

Tonne kilometer (TKT/TKO)

Measure of transport performance (payload multiplied by distance). A distinction is made between available transport

Glossary

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.

Unburned hydrocarbons (UHC)

Organic mixture of carbon and hydrogen that results from the incomplete combustion of fuel containing hydrocarbons or from the evaporation of fuel.



Editorial information

Publisher

Deutsche Lufthansa AG
Venloer Str. 151-153
50672 Cologne
Germany

Entered in the Commercial Register of Cologne
District Court under HRB 2168

Editing and conceptualisation

Claudia Hügel (Direction)
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Design

Sherpa Design GmbH, Hamburg

Copy deadline

29.04.2022

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Values in the tables may show rounding differences.

Photos

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p. 09: Jens Görlich; MO CGI
p. 10: Jens Görlich
p. 12: Lufthansa Group,
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You can find more information about sustainability at the Lufthansa Group at:

➤ lufthansagroup.com/en/responsibility

You can find the Group's 2020 Annual Report, including its non-financial declaration, at:

➤ investor-relations.lufthansagroup.com

Combined non-financial declaration

Lufthansa Group wants to fulfil its role as a leading airline group, also in terms of sustainability. | Corporate responsibility is an integral part of the corporate strategy. | The combined non-financial declaration focuses on the aspects of environmental concerns, customer concerns, employee concerns, social concerns, business ethics and compliance, including anti-corruption and bribery as well as respect for human rights and responsible supply chain management. | Declaration is based on the GRI Standards 2016.

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Note: This combined non-financial declaration is part of the Lufthansa Group's Annual Report 2021 and contains references to disclosures in the Annual Report. It is published on the Lufthansa Group website.

About this combined non-financial declaration

Deutsche Lufthansa AG is publishing a combined non-financial declaration for the financial year 2021 in accordance with Sections 315b and 315c German Commercial Code (HGB) in conjunction with Sections 289b to 289e HGB. Deutsche Lufthansa AG publishes a non-financial declaration at Company level and a non-financial Group declaration together as a combined non-financial declaration. It combines aspects and reporting on the following key issues: environmental concerns, customer concerns, employee concerns, financial resilience, business ethics and compliance, including anti-corruption and bribery as well as respect for human rights, social concerns and sustainability in the supply chain.

Disclosures on whether and to what extent the activities of the Company are related to economic activities that are classified as taxonomy-eligible within the meaning of the EU Taxonomy Regulation (2020/852) are included at the end of this combined non-financial declaration. ➤ **First-time applicability of the EU Taxonomy Regulation (EU) 2020/852, p. 134f., and Summary, p. 135.**

In addition, 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 declaration. The impact of the Company on non-financial aspects is taken into account in the Group risk management system of the Lufthansa Group. ➤ **Opportunities and risk report, p. 76ff.**

Taking into account the measures and concepts described and using the net method, there are currently no indications of risks that would have a severe negative impact on these material aspects and that are highly likely to occur. Unless otherwise stated, the disclosures made here relate to the group of consolidated companies referred to in the consolidated financial statements. Unless stated otherwise, the disclosures reflect the perspective of both the Group and Deutsche Lufthansa AG. This combined non-financial declaration was subject to a voluntary limited assurance engagement in accordance with ISAE 3000 (revised). ➤ **Independent auditor's report on a limited assurance engagement regarding the Non-Financial Declaration, p. 296f.**

References to disclosures outside the combined management report are additional information and do not form part of the combined non-financial declaration.

Lufthansa Group reports according to TCFD and SASB standards and bases its reporting on GRI Standards 2016

The Lufthansa Group published further information concerning the 2020 financial year on its website in 2021 in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) initiated by the Financial Stability Board as well as the Sustainability Accounting Standards Board (SASB). These reports are also planned for the financial year 2021 and will be published on the websites of the Lufthansa Group.

The combined non-financial declaration is based on the GRI Standards 2016. ➤ **T198 GRI Content Index, p. 288.**

Disclosures on the business model

The Lufthansa Group is a global aviation group with a total of 302 fully consolidated subsidiaries. The business model of the Lufthansa Group is described in detail in the combined management report. ➤ **Principles of the Group, p. 15ff.**

Values and guidelines

Sustainability is firmly established within the Company

Responsible conduct in compliance with legislation is a key element of the Lufthansa Group's corporate culture and is firmly embedded in the Group strategy. This is reflected in the vision statement of the Lufthansa Group: "Connecting people, cultures and economies in a sustainable way." Since 2002, the Company has applied the principles of the UN Global Compact for sustainable and responsible corporate governance. In addition, it supports the Sustainable Development Goals (SDGs) of the Agenda 2030, as adopted by the UN member states in 2015. During the reporting year, the Lufthansa Group conducted a new analysis of the aspects it considers as material. In order to contribute towards achieving the SDGs, the Company has identified ten SDGs in line with its material aspects where it can reduce its negative impact and increase its positive effect due to its business model. Based on the findings, the targeted allocation of the relevant SDGs was also adjusted. The addition of SDGs 3 (Good Health and Well-Being), 7 (Affordable and Clean Energy) and 16 (Peace, Justice and Strong Institutions) took into account the developments towards greater differentiation and focus of certain aspects. Activities that were previously allocated to SDG 5 (Gender Equality) are now combined with other activities in the newly included SDG 10 (Reduced Inequalities).

C26 RELEVANT SUSTAINABLE DEVELOPMENT GOALS (SDG) OF LUFTHANSA GROUP

	SDG 3: Good Health and Well-Being
	SDG 4: Quality Education
	SDG 7: Affordable and Clean Energy
	SDG 8: Decent Work and Economic Growth
	SDG 9: Industry, Innovation and Infrastructure
	SDG 10: Reduced Inequalities
	SDG 12: Responsible Consumption and Production
	SDG 13: Climate Action
	SDG 16: Peace and Justice
	SDG 17: Partnerships for the Goals

An overview of the goals and comments on Lufthansa Group activities to support them can be found in [T199 Sustainable Development Goals, p. 289ff.](#)

The Code of Conduct, which has been binding for all bodies, managers and employees of the Lufthansa Group since 2017, was supplemented by a Supplier Code of Conduct. In this Supplier Code of Conduct, the Lufthansa Group lays out its position that it also expects business partners and suppliers to adhere to the principles as a fundamental aspect of the business relationship. The standards at its core are not only the basis for responsible conduct and fair competition, but also seek to identify legal and reputational risks at an early stage and avoid them. The Lufthansa Group has published the Code of Conduct and the Supplier Code of Conduct on its website.

Value-based management is also an integral element of sustainable corporate governance for the Lufthansa Group. Sustainability considerations are increasingly helping to

ensure financial resilience. The financial strategy of the Lufthansa Group seeks to increase its Company value in a sustainable manner. It will concentrate on three dimensions: returning to value creation, generating free cash flows and maintaining financial and stability. The concept and the associated performance indicators are described in detail in the chapter [Financial strategy and value-based management, p. 20ff.](#) Variable management remuneration is also linked to non-financial factors such as specific CO₂ emissions. [Remuneration report, p. 271ff.](#)

Material aspects

Materiality analysis forms basis for determining material aspects

Continuous dialogue with stakeholders delivers an important contribution to refining the sustainability strategy of the Lufthansa Group. The Lufthansa Group plans to conduct a comprehensive survey in 2022 to follow up on the stakeholder survey, conducted in October 2018.

The Lufthansa Group expanded the selection of aspects and issues to be assessed in its materiality analysis conducted in the reporting year. Extensive research was conducted into the interests and demands of the public, investors, customers, employees, international reporting standards and also future requirements, such as the EU Taxonomy Regulation, the Corporate Sustainability Reporting Directive (CSRD) and the German Corporate Due Diligence in Supply Chains Act (Lieferkettensorgfaltspflichtengesetz – LkSG). In particular, the significant impact of the coronavirus pandemic on the entire aviation sector has also been taken into consideration. The issues identified were analysed for their business relevance and for the impacts of the Lufthansa Group's business activities along the entire value chain. An external agency was involved in the analysis process, including the review of the results.

The results of the materiality analysis were reviewed by the management in August 2021 in accordance with Section 289c (3) HGB and again formed the basis for selecting the aspects and concerns to be covered in this combined non-financial declaration.

Environmental concerns, customer concerns and employee concerns continue to be particularly important for the business of the Lufthansa Group. Furthermore, the aspects of business ethics and compliance, including the fight against corruption and bribery, respect for human rights and responsible supply chain management are of great relevance to the Lufthansa Group. To reflect the increased focus on certain issues, climate protection, for example, was evaluated in a more nuanced approach, with a breakdown into emissions with climate impacts and energy and fuel efficiency. Waste management and diversity and equal opportunity were identified as separate issues. Corruption, bribery and respect for human rights have been subsumed under the aspect of

C27 ASPECTS, ISSUES AND PERFORMANCE INDICATORS

Aspects	Environmental concerns	Customer concerns	Employee concerns
Issues Performance indicators	Climate protection CO ₂ emissions	Operational stability Departure punctuality	Attractiveness as an employer Engagement Index
	Active noise abatement Percentage of aircraft that meet the 10dB criterion of ICAO Chapter 4	Product and services Net Promoter Score	Diversity and equality of opportunity Share of women in management roles
	Waste management		Transformation capacity Health and safety at work Health Index
Aspects	Social concerns ¹⁾	Business ethics and compliance	
Issues Performance indicators	Corporate citizenship help alliance gGmbH	Fighting corruption and bribery Integral part of the Lufthansa Group Compliance Management System	
		Respect for human rights Important part of the corporate culture - embedded in the Code of Conduct	
		Responsible political engagement	
Interdisciplinary topics ²⁾	<ul style="list-style-type: none"> • Responsible supply chain management • Containment of coronavirus pandemic 		

¹⁾ Immaterial as defined in Section 289c Paragraph 3 German Commercial Code (HGB), voluntary presentation at specific request of addressees.

²⁾ Interdisciplinary topics represented quantitatively in the non-financial declaration.

business ethics and compliance. The coronavirus pandemic mainly affects the aspect of customer and employee concerns.

In addition, the management of the help alliance reports functionally to the Corporate Responsibility department.

Organisational foundations and responsibilities

Corporate responsibility is firmly established in the organisational structure

The highest monitoring body in the area of sustainable management is the Supervisory Board. The Executive Board function of the Chief Customer Officer is responsible for the Company's environmental, climate and social impact at the Executive Board level. In the reporting year, the Corporate Responsibility department, which reports directly to the Chief Customer Officer, was expanded significantly in terms of content and personnel in order to meet the growing requirements and aims of the Lufthansa Group. In addition to the existing focus areas of environment and reporting and rating, the CleanTech Hub was established, a distinct interface for customer issues was created and a coordinating function for comprehensive external and internal communication was set up.

The Group Executive Board meetings determined the focus and further development of sustainability-related activities within the Lufthansa Group. These are prepared in part by the Group Executive Committee (GEC), chaired by the Chief Executive Officer. The GEC is a senior management level entity and consists of the Executive Board of Deutsche Lufthansa AG, the CEOs of the segment parent companies, the senior executives of the Network Airlines and the heads of the Group's Strategy, Controlling and Communications departments. In the reporting year, the Group Policy Committee (GPC) was also established. It is chaired by the Chief Executive Officer. The GPC discusses politically significant issues, also relevant to sustainability, and prepares decisions. Individual managers within the committees are responsible for implementing concrete activities and projects. The Sustainability Circle, led by the Corporate Responsibility department, was also established in the reporting year. Its objective is to promote a Group-wide exchange on sustainability topics. The members of this committee are the Corporate Responsibility Officers of the Group companies and relevant Group Functions.

External ratings

The Lufthansa Group's sustainability management is rated above-average

On 7 December 2021, as in the previous year, the Lufthansa Group's commitment to climate protection, focusing on CO₂ management, was awarded a climate score of B by the non-profit rating organisation CDP. This rating remains better than the industry average. The extensive and transparent CO₂ description, divided into Scope 1, 2 and 3, received an A score for each section. The full report is available from CDP and on the Lufthansa Group website.

The Lufthansa Group has been included in the FTSE4Good Index Series (FTSE4Good Europe Index, FTSE4Good Developed Index) since its launch in 2001. This inclusion was most recently reviewed in December 2021. The FTSE4GOOD is a sustainability and corporate governance index family created by the London-based provider FTSE. Companies that are particularly committed in the area of corporate social responsibility (CSR) are included in the index. The indices work with the "best-in-class" principle and are often used as benchmarks by investors. In the MSCI rating, the Lufthansa Group improved from "BBB" to "A" in the financial year 2021. This improved rating was due in particular to very good ratings in the area of corporate governance.

The Lufthansa Group received a score of 27.5 from the rating agency Sustainalytics. As in the previous year, this means that it was classified as "medium risk" due to its high CO₂ relevance. It ranked 13th out of 69 in the "Airlines" sub-category. Sustainalytics rates the management of the Lufthansa Group as strong in terms of the main Environment, Social, Governance (ESG) aspects.

The rating agency Vigeo Eiris (Moody's ESG Solutions) also has a positive view of the Group's environmental management, with a rating of 44 points. The Lufthansa Group was able to further improve its ranking compared with the previous year, taking 8th place out of 20 in the sector comparison. The Lufthansa Group scored above-average results in the areas of environment (E) and governance (G). The score of 64 out of 100 points in the category "Energy Transition Score" in a CO₂-intensive sector is particularly noteworthy.

ISS ESG rates the Lufthansa Group "C+". Here too, the Group is significantly above the industry average.

The sustainability commitment of the Lufthansa Group regularly undergoes a voluntary external evaluation by the sustainability rating platform EcoVadis. In August 2021, the commitment of the Lufthansa Group was reconfirmed for a further year when it received "Silver Status". The Lufthansa Group increased its score from 58 in 2019 to 65 and is once again rated better than comparable companies.

C28 SUSTAINABILITY RATINGS

as of 31 Dec 2021



Contribution to containing the coronavirus pandemic and upholding global supply chains

The Lufthansa Group and in particular its logistics subsidiary Lufthansa Cargo often have a particularly important role to play in responding to crises and natural disasters, because it is only by air that aid workers and equipment can be transported over great distances. Lufthansa Cargo supported the UNICEF Humanitarian Airfreight Initiative in 2021 as one of the airlines to transport vaccines around the globe. The initiative brought together airlines covering routes to more than 100 countries to support the COVAX Facility – the global efforts to ensure fair access to vaccines against the coronavirus.

Airfreight is also vital for maintaining global supply chains and helps to strengthen global trade. For these reasons, the airlines in the Lufthansa Group also decided in 2021 to maintain relevant flight connections for the transport of passengers and freight despite wide-ranging travel restrictions. This made it possible to deliver urgently needed goods. Lufthansa Cargo also increased its scarce airfreight capacities for its customers, partly by using passenger aircraft that had been modified at short notice for this purpose and were dubbed "preighters".

Environmental concerns



Climate protection and active noise abatement are cornerstones of the environmental strategy – waste management is another key area of action

The material environmental impacts of flight operations are primarily climate effects due to the CO₂ emissions produced by burning kerosene and the noise caused by aircraft taking off and landing. In addition, waste is produced during every flight which must be reduced or recycled wherever possible.

Based on its understanding of responsible practices and the increased demands from external stakeholders such as customers, business partners, investors and the legislature as well as current and future employees, the Lufthansa Group is strengthening its long-standing commitment to climate protection with the aim of limiting the environmental impact of its business activities. This is consistent with its own economic interests, since resource consumption and emission-related fees all represent costs for the Company.

An event devoted to environmentally relevant sustainability aspects took place in the reporting year, which was organised for the Supervisory Board together with the Executive Board of the Lufthansa Group.

The Lufthansa Group's senior executives, the Group Leadership Team (GLT), also attended sessions to delve deeper into these topics.

The Lufthansa Group actively participates in relevant national and international business and industry associations and their environmental and sustainability working groups. They include active memberships of the International Air Transport Association (IATA), Airlines for Europe (A4E), Federal Association of the German Aviation Industry (BDL), Federal Association of German Industry (BDI), German Equities Institute (DAI) and econsense. A4E, for example, has a Jour Fixe every fortnight, during which position papers on environmentally relevant issues are drafted and consultations on draft legislation are actively supported. The Lufthansa Group also maintains a direct exchange with national ministries and EU bodies through the associations. ➤ **Opportunities from the legislative framework, p. 81, and Risks from the legislative framework, p. 89f.**

The Lufthansa Group follows a strategic environmental programme that is applied in all areas of the Group. Its main fields of action are the reduction of emissions, active noise abatement, energy and resource management, investment in research and the successive establishment of environmental management systems.

The Lufthansa Group has been operating a central environmental database for several years. One of its functions is to collect and process information and data that is relevant to the environment – such as on energy consumption – so this information can be employed in business decisions. The resource consumption recorded in this database and the emissions calculated on this basis are also used to determine the Lufthansa Group's carbon footprint, with annual audits by external experts.

Many Lufthansa Group companies use certified environmental management systems

To ensure continuous progress, the environmental management systems in the Lufthansa Group include binding environmental targets and a regular review by the Executive Board.

The Lufthansa Group undertakes central and local ongoing audits of the use of environmental management systems. Around 32% of the divisions were covered by a certified environmental management system in 2021 (measured by the number of employees in companies of the Lufthansa Group/sites with a certified environmental management system).

The environmental management system of Lufthansa German Airlines in Munich has thus been EMAS validated and ISO 14001 certified. In 1999, Lufthansa CityLine was the first passenger airline in the world with an independently certified environmental management system. Since then, the Munich-based airline regularly receives certification based on the demanding EMAS EU environmental standards. Air Dolomiti passed the audit for ISO 14001 certification in 2020 and for the EMAS validation in 2021.

Lufthansa Cargo has been certified according to the environmental management standard ISO 14001 at its location in Frankfurt. The subsidiaries Jettainer and time:matters have been integrated into the environmental management system. Continual improvements are achieved by means of ambitious environmental targets, above all in particularly energy and resource-intensive areas such as flight operations, freight handling and facility management.

The Lufthansa Technik group manages its sustainability activities within a uniform environmental management system. The environmental management system is certified under ISO 14001 and provides a stable organisational basis for implementing the regularly updated environmental strategy, ensuring compliance with relevant legislation and actively managing opportunities and risks. Within the Lufthansa Technik group, the system is also embedded in a process-based, integrated management system. The ISO 14001 certification has been continually expanded to all new locations since 2012. The Lufthansa Technik group passed its recertification audit in the reporting year.

Organisational foundations and responsibilities

The Group function Corporate Responsibility, which reports directly to the Chief Customer Officer, is responsible for defining, agreeing and adopting the overarching environmental management targets and activities.

In addition, all larger subsidiaries have their own environmental departments, an environmental officer or a coordinator. The environmental officers and coordinators meet monthly with other Group sustainability officers in the Sustainability Circle to discuss Group-wide sustainability issues and, in particular, environmental protection concerns. This exchange offers the sustainability and environmental experts in the Lufthansa Group an opportunity to identify potential synergies and to discuss and evaluate new ideas, activities and projects concerned with environmental protection.

Several new formats for Group-wide networking were also introduced in the reporting year, such as the “Campus Weeks”, during which specific content is developed at workshops. This content is then used for subsequent implementation in the various departments. In the reporting year, the Corporate Responsibility department also ensured that environmental issues were addressed internally through increased internal communication, such as the “Ecologue” lecture format on the occasion of the 2021 World Climate Conference in Glasgow (COP26).

CLIMATE PROTECTION

Concept

Four-pillar strategy defines climate protection measures

Progress can only be made through cooperation and by combining various activities of different players, such as manufacturers, airports, air traffic control, airlines and policy-makers. As early as 2007, IATA divided its emission-reduction activities into four action areas in its four-pillar climate protection strategy for the airline industry. This strategy and these action areas also form the basis for the Lufthansa Group’s activities to improve fuel efficiency and reduce CO₂ emissions.

Achieving the goals requires focused political and financial supporting mechanism. This is why the Lufthansa Group is involved in a wide range of private and government-sponsored research and development initiatives. Working with the scientific community, it has also funded atmospheric research for many years to contribute to a better understanding of climate effects.

1. TECHNOLOGICAL PROGRESS

The Lufthansa Group invests continuously in modern, fuel-efficient aircraft and engine technologies, which represent the most important element in reducing CO₂ emissions from flight operations.

Measures to technically modify the existing fleet are also constantly examined and implemented in cooperation with partners from research and industry where appropriate.

C29 THE FOUR PILLARS FOR CLIMATE PROTECTION



Technological progress

Innovation in aircraft and engine technology
 Alternative fuels

Improved infrastructure

Better use of airspace
 Needs-based airport infrastructure
 Expansion of intermodality

Operational measures

Efficient aircraft sizes
 Optimum flight routes and speeds

Economic measures

Global market-based system of emissions reduction (CORSA)
 Voluntary compensation option

In the past decade, the Lufthansa Group has been closely involved with the research, testing and use of sustainable aviation fuel (SAF), i.e. synthetic kerosene made using renewable energy sources. Since then, the Lufthansa Group has worked in partnerships to drive key technologies for producing sustainable aircraft fuels. There is every indication that these fuels will also be needed in the long term, as the development of alternative electric and hydrogen-based propulsion systems for short-haul aircraft is likely to take at least another 15 years, and the development of larger and, in particular, long-haul aircraft is currently not envisaged.

2. IMPROVED INFRASTRUCTURE

The fundamental modernisation and harmonisation of technologies, processes and standards in the European airspace are necessary to realise the potential of airspace infrastructure for greater efficiency. The Lufthansa Group and other airlines, such as those in the “A4E” alliance, have the necessary expertise in this area and have been actively promoting the creation of a reliable and efficient European airspace for years through their participation in committees and projects. The aim is to achieve significant improvements in the punctuality and reliability of aviation, in particular for passengers, in addition to the increased efficiency potential.

The Lufthansa Group also seeks to persuade as many of the passengers as possible who travel via its hubs to make intermodal arrivals or departures to open up additional potential for reducing emissions. By offering appealing and convenient intermodal services, arriving and departing by long-distance train or bus should become just as natural as connecting flights.

3. OPERATIONAL MEASURES

The Lufthansa Group’s operational measures for climate protection comprise the use of efficiently sized aircraft and the optimisation of load factors, as well as reviewing and introducing new flight procedures and navigation technologies, determining optimal routes and speeds, and monitoring the many activities to save fuel.

4. ECONOMIC INSTRUMENTS

Economic measures such as the mandatory CORSIA and voluntary offsetting of CO₂ for climate protection are vitally important as long as sustainable aircraft fuel and sustainable propulsion technologies are not available in sufficient quantities. The Lufthansa Group is continuously expanding the possibilities for offsetting carbon emissions.

Organisational foundations and responsibilities

The Corporate Responsibility department is responsible for the climate protection strategy and is developing appropriate measures, while working closely with the various departments and business units of the Lufthansa Group. To address the growing importance of carbon accounting and environmental regulation and to provide relevant information such as framework assumptions, rules and interpretations to the affected areas and employees, the Corporate Responsibility and Group Controlling areas also established the Emissions Management Committee, where current developments in national and supranational emissions legislation are regularly discussed and their impacts are calculated. In acknowledgement of the importance of sustainable aviation fuels for the Lufthansa Group, the Corporate Responsibility department has established two SAF committees. The core SAF committee (Corporate Responsibility and Fuel Purchasing) defines procurement opportunities and strategic priorities. The broader SAF committee (Corporate Responsibility, Fuel Purchasing and Sales, Lufthansa Cargo and Lufthansa Innovation Hub) jointly promotes sales and emissions-balancing aspects and develops offers that are adapted to the different segments.

Targets

The Lufthansa Group supports the climate protection targets of the aviation sector

According to data from the International Energy Agency (IEA), in 2019 CO₂ emissions from air traffic currently account for around 3% of global carbon emissions from burning fossil fuels.

IATA adopted a resolution for global aviation in October 2021 that commits the global aviation sector (IATA member airlines) to reducing its net carbon emissions to zero by 2050. This commitment is in line with the goal of the Paris Climate Agreement to limit global warming to significantly below 2 degrees Celsius. The Lufthansa Group played a major role in setting the IATA target.

Via the European airline association (A4E), the Lufthansa Group is also involved in the Destination 2050 study – an initiative by five European air transport associations (A4E, ACI EUROPE, ASD, CANSO and ERA) which began in summer 2019. As aviation is generally considered an industry that is “difficult to decarbonise”, the aim of this study was to examine emission reduction potentials, taking into account the current state of the art and science. The focus is on significant reductions by 2030 and achieving carbon neutrality by 2050. The aim is to never exceed the level of emissions recorded in 2019.

Policymakers and industry are also working towards the goal of making flights to and from Europe carbon neutral by the middle of the century as part of the EU Green Deal and the associated “Fit for 55” package of measures. Significant reductions should already be achieved by 2030.

Lufthansa Group expands its own emission reduction targets

As befits its pioneering role, in 2020 the Lufthansa Group defined its own carbon reduction targets, which in some cases are more ambitious. Net emissions are expected to be halved in 2030 compared with 2019. The Lufthansa Group plans to be carbon-neutral by 2050.

In November 2021, the Lufthansa Group further specified its emission reduction targets, made a commitment to science-based targets and submitted an application for validation of these reduction targets for 2030 in accordance with the Aviation Sector Guidance of the Science-based Targets Initiative (SBTi). This initiative has defined science-based targets based on a remaining carbon budget.

The Group also aims to switch to carbon-neutral mobility on the ground in its home markets by 2030.

Emission reduction targets are part of Executive Board remuneration

The Lufthansa Supervisory Board has used emission reduction targets as an element of long-term variable remuneration for the Executive Board of Deutsche Lufthansa AG since 2011. Since the remuneration system was changed in 2019, the Supervisory Board has regularly defined an environmental target as one of the strategic and sustainability targets for the long-term variable remuneration (MVV), which accounts for 15% of target achievement for the MVV (see also the remarks in the remuneration report). As the economic situation remains tense, the Supervisory Board has suspended variable remuneration components for the Executive Board members for financial year 2021. In the spirit of good corporate governance, Executive Board members were nonetheless set specific targets for 2021 and the four-year period from 2021 to 2024. One focus of the long-term targets was again to reduce the fleet’s specific CO₂ emissions per passenger-kilometre flown. ➤ **Remuneration report, p. 271ff.**

Measures

1. TECHNOLOGICAL PROGRESS

Further progress with fleet renewal

Fleet renewal remains the key driver for reducing CO₂ in this decade. Alongside one used aircraft, ten new aircraft went into service with the Lufthansa Group airlines in 2021, including more Airbus A220-300s, A320neos, A321neos and Boeing 777Fs, which are powered by modern engines. The A320neo aircraft is one of the latest and most environmentally friendly aircraft in the world and is much quieter than comparable aircraft types. A total of 55 older aircraft were removed from the Group fleet in exchange. ➤ **Fleet, p. 24ff.**

Even though many projects are still far from being ready for large-scale production, the research and development of new, sustainable technologies in aviation has been very dynamic in recent years. Alongside established manufacturers such as Airbus and Boeing, a number of young companies are making efforts to enrich the aviation market with new ideas and concepts. Alternative fuels, new propulsion systems based on hydrogen and electricity, and new aircraft designs associated with these all play a role in these developments. The Lufthansa Group is monitoring these developments closely and analyzing them on an ongoing basis with respect to their future viability and relevance.

Technical measures are being developed for existing fleet

Measures to technically modify the existing fleet are also constantly examined and implemented where appropriate. By mid 2020, a modified Boeing 747-400 had logged more than 1,500 flight hours demonstrating the effectiveness of a new surface coating developed jointly by Lufthansa Technik and BASF Coatings GmbH. This functional film, known as AeroSHARK, or as sharkskin due its microscopic ribbing, reduces the drag of any aircraft. The approximately 500 square metres of AeroSHARK coating on the modified Boeing 747-400 were calculated to save more than 300 tonnes of fuel per year on regular flights, which translates into more than 900 tonnes of CO₂ emissions.

In May 2021, the decision was made to use the technology for the first time in mass production at a Lufthansa Group airline. Beginning in 2022, Lufthansa Cargo’s entire fleet of Boeing 777 freighters will be retrofitted with AeroSHARK by Lufthansa Technik. At 800 square metres per aircraft, these modifications will be even more extensive, generating cumulative annual savings of more than 4,000 tonnes of fuel and almost 13,000 tonnes of CO₂ for all eleven aircraft.

Lufthansa Technik and BASF are also working on making the further development of AeroSHARK an ongoing process so that this sustainable technology can be used at an even larger scale in the future and can be certified for as many other types of aircraft as possible. To leverage the sustainability potential of this technology on a global scale, Lufthansa Technik plans to market AeroSHARK to airlines outside the Lufthansa Group as well, many of which have already expressed interest in this retrofit.

Increasing the use of sustainable aviation fuel

Aviation will continue to be dependent on sustainable liquid aviation fuels for decades to come. In developing SAF, the Lufthansa Group focuses on synthetic kerosene based on waste materials, ligneous biomass and renewable electrical energy (power-to-liquid – PtL) as well as research into the direct use of sunlight for fuel synthesis.

The partnership with the Swiss Federal Institute of Technology (ETH) Zurich and its two spin-offs Synhelion and Climeworks was intensified in the reporting year. In November 2021, a conference was held in Zurich with representatives of the management board of SWISS and the Lufthansa Group on further cooperation. SWISS signed a letter of intent expressing its interest in becoming the launch customer for Synhelion's solar aviation fuel. The pilot project will be supported by the CleanTech Hub, which was founded by the Lufthansa Group in 2021 and provided with financial resources to promote innovative projects in the field of sustainability.

In the reporting year, the Lufthansa Group became a launching customer for synthetic kerosene from the world's first industrial production facility for PtL fuel in Werlte. In collaboration with a major globally operating customer, Lufthansa Cargo made a commitment to purchase the equivalent of 20 tonnes per year – or about 25,000 litres – of PtL fuel for the next five years. The ability to scale this technology is of paramount importance to the aviation sector. The Lufthansa Group has also supported the Lausitz power-to-X centre of excellence since 2019 and participated as a founding member at the virtual founding event in March 2021.

“Green hydrogen” is vitally important for all synthetic fuels. This is why the Lufthansa Group is taking part in the HySupply initiative launched by the BDI as well as acatech. The aim is to develop a supply chain for green hydrogen from Australia.

The World Economic Forum (WEF) is also driving the market launch of SAF. The Lufthansa Group is a member of the WEF working group Clean Skies for Tomorrow.

As part of the EU's Green Deal and the “Fit for 55” package, a European legislative proposal (“ReFuelEU Aviation”) is being drafted for a progressively increasing SAF blending rate. The objective is to blend 2% SAF into aviation fuels at EU airports from 2025 and 5% SAF from 2030. Within the framework of this legislative proposal, the Lufthansa Group supports a special focus on PtL fuels and the maintenance of competitive neutrality vis-à-vis non-EU airlines. This position is also supported by non-governmental organisations such as Transport & Environment, with which a joint open letter was drafted.

Demand for SAF from corporate customers rose significantly in the reporting year. A major driver for this demand was the nearly 40 cargo flights between Frankfurt and Shanghai that Lufthansa Cargo operated for a customer and whose fuel requirements were completely substituted with SAF. The groundwork for this project was laid in the previous year so that the reduction in emissions associated with SAF use could be passed on to the customer in a targeted and clear manner. The Lufthansa Group has developed a proprietary process for this purpose, which, as part of emissions reporting in accordance with the Greenhouse Gas Protocol, allows Scope 1 emission reductions to be passed on as Scope 3 emission reductions to customers who are willing to pay the additional price for SAF. Emission reduction certificates that are certified by an independent auditor are issued to this end.

Since that time, the Lufthansa Group has been able to offer all customers SAF together with the corresponding reportable Scope 3 emission reductions. In order to safeguard the supply of SAF in the long term, the Lufthansa Group has developed a three-pronged strategy:

1. In the short term, up to USD 250m has been released for the procurement of SAF on the spot market by decision of the Executive Board.
2. In the medium term, options for long-term supply commitments are under consideration around the world. These offer significant production volumes and security of supply from around 2025 onwards.
3. In the long term, the CleanTech Hub established at the Lufthansa Group will provide support for innovative supply concepts with the goal of transforming today's start-ups and developers into tomorrow's suppliers.

2. IMPROVED INFRASTRUCTURE

Single European airspace should reduce emissions

The EU Commission's legislative proposal for the further development of European airspace (SES2+) is intended to help harmonise and optimise European air traffic management. This will be based on the results of the European Single European Sky ATM Research Program (SESAR), a programme that is developing, testing and introducing new technologies, procedures and standards throughout Europe.

The Lufthansa Group has supported SESAR for many years with the clear expectation that measurable operational improvements in air traffic management are implemented. The implementation of these technologies in daily operations is jointly coordinated by the members of the industry consortium SESAR Deployment Manager (SDM). The Lufthansa Group is a member of this consortium and provides local experts. Across Europe, the SDM coordinated 341 projects in the reporting year. The Lufthansa Group is currently participating in 17 of these projects, as in the previous year, and is also actively involved in SESAR research and demonstration projects with various airlines of the Lufthansa Group and Lufthansa Systems as an IT provider. The Lufthansa Group receives funding from the European Union for its active participation in SESAR implementation and demonstration projects. Findings that increase efficiency are implemented at an accelerated pace. In parallel, initial SESAR deployment projects are demonstrating savings in the area of improved flight efficiency through the introduction of the free route airspace concept in European member states. Within selected free route airspaces, air traffic control offers airlines more direct individual flight routes between defined entry and exit points, instead of the usual fixed routes.

Intermodal transport services to Lufthansa Group hubs are being expanded

The Lufthansa Group, in cooperation with the national railway companies (Deutsche Bahn, Österreichische Bundesbahnen and Schweizerische Bundesbahnen) and some bus operators in the home markets, offers a variety of other alternatives for travel to and from the hubs in addition to flights. These intermodal options are integrated into the Lufthansa Group's range of services via a flight number and are treated as largely equivalent to a flight in terms of the service package for the customer.

The joint services on offer are continuously being expanded and optimised. Three national destinations in each country are linked to the hubs in Vienna and Zurich by rail. Expanding the partnership with Deutsche Bahn enabled seven additional destinations to be added to the express rail network in 2021. Lufthansa German Airlines passengers can now book an Express Rail connection as an alternative to their flights on many domestic German destinations from Frankfurt. More than 220 daily connections to and from Frankfurt have been offered since the end of 2021.

To strengthen the appeal of intermodal travel, all intermodal partnerships have worked on making transfers between modes easier and faster for passengers. Since 2021, these measures have included, for example, simplified baggage check-in at the front door for SWISS passengers and priority access to security checks at Frankfurt Airport for Lufthansa Express guests. The Lufthansa Group advises its customers about the special features of the transfer from train to aircraft and vice versa before the journey. Specific announcements are also made on the train and in the aircraft to facilitate a smooth transfer.

3. OPERATIONAL MEASURES

Numerous projects to save fuel significantly reduce carbon emissions

The optimal use of the aircraft fleet to particular routes depending on demand on these routes is an ongoing task in every flight operation, and it leads to the optimisation of the overall passenger load factor of each flight.

In addition, in the financial year 2021, 22 fuel-saving projects were under way across the Group. These projects comprise activities relating to performance and procedures, weight reduction, flight route optimisation and technical developments.

This enabled another 30.4 thousand tonnes of CO₂ emissions to be permanently eliminated in the reporting year. The quantity of kerosene saved amounted to around 9.6 thousand tonnes – this is equivalent to approximately 113 return flights between Munich and New York with an Airbus A350-900 aircraft.

Three of these 22 fuel-saving projects are illustrated by way of example in the following section.

More efficient concepts for take-off and landing are being implemented and the digitalisation of approach technologies advanced

In 2021, Lufthansa German Airlines partnered with German air traffic control (DFS) to save approximately 2,800 tonnes of fuel, which translates into about 8,800 tonnes of CO₂, on approaches to its home bases in Frankfurt and Munich using the Efficient Flight Profile concept (EFP), which was introduced in 2020. This measure optimises lateral and vertical flight efficiency during periods of low traffic volume. Some of the measures can even be used at peak traffic volumes.

A new departure route introduced at Dusseldorf Airport in August 2020 based on satellite navigation technology reduced the fuel consumption of Eurowings aircraft by 11 tonnes in 2021 by shortening the departure route, which prevented 35 tonnes of CO₂ emissions. The Lufthansa Group is collaborating with DFS on various projects to introduce this technology at other airports in Germany as well.

The Lufthansa Group was able to generate additional savings through improvements in flight path planning, which lead to a reduction in the amount of fuel used in refuelling. The optimisation of planned flight paths for arrivals and departures reduced fuel consumption in Frankfurt and Munich by 560 tonnes (around 1,800 tonnes of CO₂) in 2021.

Jointly with DFS, the Lufthansa Group is seeking new possibilities for flight track analysis based on artificial intelligence methods as part of a research and development project. The first-time application of this innovative concept should allow for “greener flying” in the future through the development of new airspace structure measures. The first data analyses were carried out in 2021.

4. ECONOMIC INSTRUMENTS

Economic measures to protect the environment are vitally important as long as sustainable propulsion technologies are not in place and sustainable aircraft fuel is not available in sufficient quantities.

Mandatory offsets of CO₂ emissions

The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which was concluded with the International Civil Aviation Organization (ICAO) in October 2016, has offset growth-related CO₂ emissions in international air traffic by the purchase of certificates since 2021. CORSIA is designed to offset all residual emissions from the aviation sector that exceed the carbon emissions of the base year 2019, as defined by the ICAO. In 2021, which was the first year of the CORSIA pilot phase (2021 to 2023), the Lufthansa Group did not make any CO₂ compensation payments due to the decline in traffic caused by the crisis. Whether and how many CORSIA offsets will be required in 2022 and 2023 depends primarily on how fast air traffic recovers in the states participating in the CORSIA pilot phase.

The EU Emissions Trading Scheme (EU ETS) for air traffic has managed and limited CO₂ emissions by way of certificate trading since 2012. All flights carried out by the Lufthansa Group within the European Economic Area (EEA) are subject to this system. The emissions trading schemes of Switzerland (CH ETS, since January 2020) and the United Kingdom (UK ETS, since January 2021) for flights between the EEA and Switzerland and the United Kingdom impose additional obligations to surrender emission allowances.

The companies in the Lufthansa Group emitted some 3.97 million tonnes of CO₂ under EU ETS, CH ETS and UK ETS in the reporting year. In 2021, the Lufthansa Group expects national registry authorities (including the UK ETS) to allocate approximately 3.87 million emission certificates, corresponding to 3.87 million tonnes of CO₂ emissions, for its companies. For further information on the provisions recognised in connection with the obligation to submit CO₂ emissions certificates to the competent authorities, we refer to [Notes to the consolidated financial statements, Note 36, p. 208ff.](#)

The European Emissions Trading Scheme is currently being revised, and the Lufthansa Group is also involved in this process at the political level. The project aims to harmonise CORSIA and EU ETS in order to avoid double regulation.

Lufthansa Group voluntarily offsets its employees' business travel

As an additional contribution to protecting the climate, the Lufthansa Group itself has been offsetting the carbon emissions of all employees' business flights around the world since 2019. In 2021, 24,989 tonnes of CO₂ were offset via the climate protection organisation myclimate, with which the Lufthansa Group has been partnering since 2008.

Offsetting measures through economic instruments are to be considered independently of the options for voluntary offsetting by customers. In the reporting year, the Lufthansa Group simplified the process for customers to voluntarily offset their carbon emissions during the booking process and expanded existing programs with business customers.

[Customer concerns/Product and services, p. 112f.](#)

Other climate protection measures

CleanTech Hub seeks innovative approaches to climate protection

In November 2021, the Lufthansa Group launched the CleanTech Hub with the goal of bundling the latest technologies and advancing sustainable innovations for climate protection. The Lufthansa Group is specifically seeking technology-driven ideas and project partners that can contribute to sustainable aviation. Since November 2021, regular events (pitch days) have offered companies, start-ups and research institutes the opportunity to present their concepts and ideas. If a pitch is received well, the Lufthansa Group will work with the participants to further develop the concepts.

Early testing of the maintenance and ground processes of future generations of aircraft

In 2021, Lufthansa Technik initiated a project funded by the Hanseatic city of Hamburg, together with its partners from industry and research, in which extensive maintenance and ground processes in handling hydrogen technology will be designed and tested over the next two years. In 2022, an Airbus A320 will be converted into a fully functional stationary laboratory and equipped with a liquid hydrogen (LH2) infrastructure. In parallel to this, the German Aerospace Center is creating a new development platform that will provide impetus for the design process of the next generation of aircraft through high-precision virtual models.

In light of this, the main contribution Lufthansa Technik will make to the project will be its operational expertise in the maintenance and modification of commercial aircraft. The company can also incorporate the customer's perspective thanks to its close contacts to airlines around the world.

Lufthansa Group aircraft collect data for climate research

The Lufthansa Group has been involved in various research projects examining the atmosphere and the climate since 1994. Particularly within the framework of the European research infrastructure IAGOS (In-service Aircraft for a Global Observing System), the Lufthansa Group, in close collaboration with its research partners from the Karlsruhe Institute of Technology and the Jülich Research Centre, has equipped selected passenger aircraft with measuring instruments that collect information about the condition of the atmosphere on regular scheduled flights. In future, Lufthansa German Airlines' Airbus A350 "Erfurt" will serve as the new platform for the IAGOS-CARIBIC (Civil Aircraft for the Regular Investigation of the Atmosphere Based on an Instrument Container) measurement system. The conversion process began in March 2021. Additional conversion measures and approval are planned for 2022.

Since the beginning of the cooperation in 1994, data has been collected on more than 30,000 Lufthansa German Airlines flights. This data is freely and openly accessible for global research and is currently used by about 300 organisations worldwide. It helps scientists to acquire new knowledge about climate change and the composition of the atmosphere and to detect long-term changes.

With the key data collected by Lufthansa German Airlines' research aircraft at the beginning of the pandemic, scientists investigated the impact of the global lockdown on air quality and the climate. In a study published in 2021, IAGOS researchers found that the ozone concentration over Frankfurt rose by more than 30% in May 2020 compared with the long-term trend obtained from 27 IAGOS measurements. The researchers conclude that the reduction of ground-level nitrogen oxide sources (road traffic) during the lockdown in Frankfurt led to less ozone depletion than usual. The data also plays a crucial role in an ongoing international study on the impact of pandemic lockdowns on global air quality.

In 2021, the Lufthansa Group, in collaboration with the German Aerospace Center, the DFS, the German Meteorological Service (DWD) and Airbus (and others), has designed another research project on the feasibility of climate-optimised flight routes and applied for funding in the German Federal Aviation Research Programme. The project is designed to identify ways to prevent contrails, whose climate impact was quantified for the first time by major research institutes (such as Manchester Metropolitan University and the German Aerospace Center) in 2020. These findings will be used for further research into mitigation measures and for informing the political debate.

Performance indicator

Absolute CO₂ emissions rise to 13.7 million tonnes; specific CO₂ emissions per passenger-kilometre lower at 101.6 grammes

Absolute CO₂ emissions of Lufthansa Group aircraft in 2021 increased by 20% to 13.7 million tonnes (previous year: 11.4 million tonnes). CO₂ emissions per freight tonne-kilometre were reduced by 1% to 869 grammes (previous year: 880 grammes). Specific CO₂ emissions per passenger-kilometre were 3% lower than in the previous year at 101.6 grammes (previous year: 105.2 grammes). ↗ **T001 Lufthansa Group performance indicators, p. 2.**

The decline in the Group fleet's specific consumption compared with the previous period was mainly due to changes in the route network and the resulting increase in average flight length. Longer flight segments have a better specific consumption because the energy-intensive take-off and landing account for a lower proportion of the total flight length.

ACTIVE NOISE ABATEMENT

Concept

Active noise abatement comprises five areas

Since 2001, the Lufthansa Group has played an active and continuous role in research projects and noise abatement activities organised by discussion forums. This intensive research and development work forms the basis of successful active noise abatement and makes a major contribution to optimising the existing fleet and flight operations. Active noise abatement measures at the Lufthansa Group cover the following five areas: investment in quieter aircraft, noise-reducing technologies for the existing fleet, participation in noise research, development of optimised flight procedures and routes, and dialogue with residents near airports and other interest groups.

Organisational foundations and responsibilities

The Lufthansa Group has a multi-airline expert committee under the direction of the Operations Support Lufthansa Airlines department, which meets regularly to discuss current operational and technical developments on the topic of active noise abatement and works with the Strategic System Partnership Management Group Airlines department. The committee is the central point of contact and stakeholder of the Chief Operations Officer department in relation to airports, air traffic control, handling agents, regulatory and political institutions (e.g. ministries) and industry associations. As the central coordinating unit within the Group on the issue of aircraft noise, it represents the Lufthansa Group in the committees of the Airport and Region Forum and supports the Lufthansa Group's participation in various aircraft noise commissions.

Targets

Aircraft noise to be reduced at source

The Lufthansa Group has numerous ongoing activities and measures intended to achieve a noticeable reduction in aircraft noise. The primary goal is to sustainably reduce aircraft noise at its source and to develop optimised flight procedures together with system partners. This is based on involvement in research and development projects where ideas for new noise abatement measures are tested. Measures are tested and implemented at various locations under the oversight of various noise protection committees and with the collaboration of Lufthansa Group experts.

Measures

1. INVESTMENTS IN MODERN AND THUS QUIETER AIRCRAFT

The best method of reducing aircraft noise at the source is the modernisation of the fleet. The Lufthansa Group modernises its fleet continuously. Aircraft that went into service in 2021, including Airbus A220-300s, A320neos, A321neos and Boeing 777Fs, have modern engines and are much quieter than comparable older aircraft types. ➔ [Fleet, p. 24ff.](#), and [Climate protection/Technological progress/Fleet renewal, p. 102.](#)

2. NOISE-REDUCING TECHNOLOGIES FOR THE EXISTING FLEET

In addition to modernising the fleet, retrofitting existing aircraft also results in measurable noise reduction. At the beginning of 2014, Lufthansa German Airlines became the first airline worldwide to start operations with a new Airbus A320 equipped with noise-reducing vortex generators, thus setting an industry standard. Aircraft with vortex generators are up to four decibels quieter on their approach, so the Company pays lower noise fees in Frankfurt than for comparable aircraft without these components. All aircraft in the A320 family at Lufthansa German Airlines and SWISS were retrofitted with vortex generators in 2015 and 2016.

One aircraft was retrofitted at Austrian Airlines in 2021 as planned. Due to the pandemic, the retrofitting of the expanded fleet of six A320 aircraft is still pending. Retrofitting Eurowings A320 aircraft that have not yet been equipped with vortex generators has been postponed due to the crisis and is scheduled to be completed by the start of the summer flight schedule in March 2023. The modification will be carried out in the course of routine technical maintenance cycles.

3. PARTICIPATION IN NOISE RESEARCH

For many years, the Lufthansa Group has been involved in noise research initiatives such as the one on increasing the efficiency of flight operations (EffFlug), which is funded by the German Federal Ministry for Economic Affairs. Working with experts from the German Aerospace Center, the Lufthansa Group is looking for noise sources that can be eliminated. Such a process was tested in 2019, in which noise measurements from airports were synchronised with the corresponding flight data from a Lufthansa German Airlines approach and then analysed for anomalies by flight noise experts from the German Aerospace Center. This process was further refined by the German Aerospace Center in 2021 and will be tested in 2022 on the basis of additional example cases.

Since 2019, the Low Noise Augmentation System (LNAS) developed by the German Aerospace Center has been tested in a broad study by the Lufthansa Group, in cooperation with the Environment and Neighbourhood House (UNH) in Frankfurt. The LNAS uses aircraft data to recommend optimal configuration and speed. The aim is to examine whether approaches can be made more efficient and quieter while observing safety regulations. A large number of pilots support the testing of the system on a voluntary basis. Due to the crisis, only 350 of the planned 500 LNAS approaches were made by the end of 2021, so the research period was extended to include 2022.

C30 ACTIVE NOISE ABATEMENT



Investments in quieter aircraft

Introduction of the latest aircraft, such as the Airbus A320neo and A350-900
 Retirement of older models



Noise-reducing technologies for the existing fleet

Retrofitting of noise-reducing vortex generators to the existing fleet



Participation in noise research

Continuous collaboration and exchange with partners from research and industry
 Development and analysis of new noise-reduction measures



Development of optimised flight procedures and flight routes

Cooperation with system partners
 Development and testing of new methods
 Use of new navigation technology



Dialogue with residents near airports and other stakeholders

Continuous exchange with residents, as in the Airport and Regional Forum
 Active participation to aircraft noise commissions

4. DEVELOPMENT OF OPTIMISED FLIGHT PROCEDURES AND FLIGHT ROUTES IN COOPERATION WITH SYSTEM PARTNERS

Optimising the vertical flight profile (flight procedures) and horizontal flight management (flight routes) contributes to reducing noise. The Lufthansa Group is active in this area in many ways, with German air traffic control as well as international partners. ➔ **Climate protection, p. 100ff.**

In the European project DREAMS within the framework of the development of a single sky, the Lufthansa Group, together with Eurocontrol, Airbus and other partners, tested steeper approaches with offset landing thresholds at Twente airfield. This is made possible by the new GBAS approach technology, which reduces approach noise because aircraft fly over the surrounding area at a higher altitude. Another sub-project the Lufthansa Group is participating in paved the way for the world's first test of precision approaches under low-visibility conditions and increased glide angles of up to 3.2 degrees in 2021. Tests scheduled for 2022 in Frankfurt will use GPS technology (called GBAS-CAT II) for approach guidance.

This modern satellite-based RNP navigation standard also permits more precise flying to reduce noise and CO₂ emissions. For example, Austrocontrol, Austrian Airlines and Lufthansa German Airlines have jointly developed an innovative RNP approach procedure for the Vienna site, with a shorter flight path. The new procedure was tested in the flight simulator at the end of 2021. In Stuttgart, planning and analyses for a new shortened RNP westbound departure route ("TEDGO" route) continued in the reporting year. Experts from the Lufthansa Group and Eurowings acted in an advisory capacity during the extensive dialogue in the committees. In 2021, the Lufthansa Group worked with German air traffic control to design and implement the trial operation of the segmented approach in Frankfurt. RNP technology is also used in this case.

5. DIALOGUE WITH RESIDENTS NEAR AIRPORTS AND OTHER INTEREST GROUPS

In addition to technical and operating improvements, the Lufthansa Group has been involved for many years in various dialogue forums with residents near airports, including in Frankfurt and Vienna. The experts from the Lufthansa Group contribute to the development of active noise abatement measures in the multilateral working groups. At Frankfurt Airport, Deutsche Lufthansa AG (representing the Lufthansa Group) participates in the Noise Abatement Alliance together with the Hesse state government, Fraport AG, the Airport and Region Forum, German Air Traffic Control and the airline association BARIG. The airline is an influential member of the Active Noise Abatement expert panel and its various sub-working groups. The focus of these activities is on optimising flight procedures.

The Lufthansa Group also works in some of the aircraft noise commissions (Fluglärmmmissionen) required in Germany by the Air Traffic Act (Luftverkehrsgesetz).

Performance indicator

99.6% of the operational Group fleet meet standard for aircraft noise

Improvements in noise abatement from modernising the operational Group fleet can be seen in the number of aircraft that meet or exceed the ten-decibel criterion set by the ICAO Chapter 4 standard. This standard defines noise limits and stipulates that all civil aircraft newly licensed after 2006 must cumulatively fulfil the older Chapter 3 noise limits by a margin of ten decibels or more. As of 30 October 2021 (end of the summer flight schedule), 99.6% of the aircraft – virtually the Group's entire operating fleet – fulfilled this criterion.

WASTE MANAGEMENT

Concept

Lufthansa Group airlines reduce single-use plastic and food waste in line with international guidelines

The Network Airlines and Eurowings are committed to the responsible use of resources and, in particular, to the reduction of single-use plastic and food waste. The concept for comprehensive waste reduction (identification, action planning and assessment) follows the waste hierarchy of EU Directive 2008/98/EC: Reduce – Reuse – Recycle – Replace.

The focus is on the reduction of single-use plastic waste in accordance with the EU Directive 2019/904 and in line with the expectations of customers. This has been pursued for the in-flight products of Lufthansa German Airlines, SWISS and Austrian Airlines since 2019. In addition to reducing single-use plastics, Network Airlines and Eurowings are also introducing measures to avoid in-flight food waste and are laying the groundwork for waste reduction before and after the flight. Due to airline-specific conditions, the relevant regulations, including certain national regulations, for handling catering waste must still be adhered to. Various players along the value chain, such as manufacturers, catering partners, cabin crew and waste disposal companies, are also involved to ensure the reduction of waste is efficient.

Organisational foundations and responsibilities

The program launched in 2019 by Lufthansa German Airlines, SWISS and Austrian Airlines to improve the sustainability of in-flight and lounge offerings was transferred to the Lufthansa Group's line organisations in 2021. This made the concept and the objectives as well as the measures for achieving them binding for Brussels Airlines, Eurowings Discover and Eurowings as well. The Corporate Responsibility department is tasked with anchoring the waste goals in the Lufthansa Group's environmental strategy.

The conception and planning of measures to achieve the objectives and the assessment of their effectiveness are the responsibility of Lufthansa Group product management as well as Network Airlines and Eurowings. Network Airlines and Eurowings use a decentralised approach to implement the measures.

Lufthansa Group product management also participates in the Sustainability and Environment Advisory Council and the Single Use Plastics working group of the industry association IATA. Experiences, challenges and knowledge are regularly discussed through participation in joint events.

Targets

Airlines focus on reducing single-use plastic waste

The Lufthansa Group airlines are committed to fostering the sustainable use of resources in-flight and in the lounges. In 2021, the Executive Board confirmed waste management as a focus area of the Lufthansa Group's ESG objectives. The in-flight and lounge waste reduction targets are currently being revised.

In light of EU Directive 2019/904 and passengers' expectations with regard to the reduction of single-use plastics, Network Airlines and Eurowings are focusing in particular on reducing single-use plastic waste in-flight in their short-term objectives. Lufthansa German Airlines, SWISS and Austrian Airlines identified 370 million used single-use plastic products in 2019. The pandemic prevented the goal of completely replacing or removing them with sustainable alternatives by 2021 from being achieved, so it was extended to 2025.

Measures

The Lufthansa Group continues measures to reduce in-flight single-use plastic waste

1. REDUCE

Lufthansa German Airlines, SWISS and Austrian Airlines changed the food and beverage selection on short-haul flights to purchase-only for Economy Class guests in the 2021 financial year. This has resulted in significantly fewer single-use plastic items being loaded. For example, SWISS has been able to significantly reduce the load of single-use plastic cups on a typical short-haul flight.

2. REUSE

Reusable products, particularly in in-flight products, are a firmly established element of product concepts. The potential for switching to reusable products is examined regularly when products are modified. The load is adjusted if necessary when considering available storage space on board, weight, service times during the flight, and the number of items required.

For example, SWISS implemented the switch to reusable cutlery and plates on short-haul flights for Economy Class guests in the reporting year.

Changes being made to processes for reloading unused items (such as sugar sachets, unopened snacks and unused amenity items) in cooperation with the catering partners were suspended at the beginning of the coronavirus pandemic and will be resumed after the pandemic.

3. RECYCLE

Processes for increasing the use of recyclable products are being developed and implemented in collaboration with suppliers, caterers, cleaning and disposal services.

For example, since the beginning of 2019, Austrian Airlines has been using single-use plastic cups that are recycled with other single-use packaging in a patented process that turns them back into synthetic crude oil. Up to 1 litre of crude oil can be extracted from 1 kilogram of single-use plastic collected.

Between September and October 2021, Lufthansa German Airlines conducted a field trial at the Frankfurt hub to transfer water bottles made of recycled PET that were left in the cabin to a closed cycle for reuse as water bottles in the food sector. This meant that around 5 tonnes of recycled PET were reused for refilling each month. The outcomes will be analysed and reviewed for whether the process can be adopted permanently.

In the standard process, all other beverage bottles that are collected on board by the cabin crew of Lufthansa German Airlines, SWISS and Austrian Airlines are then passed on by the catering partners in accordance with local regulations to be sent to the recycling system.

In preparation for a future recycling loop, cups made of recycled PET were introduced at Lufthansa German Airlines in 2021, which can be included in a recycling process as a result of special official approval given by German authorities. This will affect around 135 million cups per year.

When introducing new products, care is taken to ensure that unmixed recycling can be further increased. One example is the “Onboard Delights” beverage range introduced by Lufthansa German Airlines in spring 2021, which does not use beverage cans. Instead, the beverage bottles used are primarily made of recycled PET.

4. REPLACE

Lufthansa German Airlines promotes the development of new types of materials for in-flight use. Single-use plastic items that today are essential to the Network Airlines’ product and service concepts will be gradually replaced by those made from renewable resources (for example bamboo) or recycled raw materials (for example recycled PET). This approach has already been adopted for the plastic packaging for the children’s toys of Lufthansa German Airlines, SWISS and Austrian Airlines.

A significant share of the fresh food for Economy Class guests on short-haul flights will be offered in packaging made from agricultural waste material, which is produced with 100% renewable energy and is carbon-neutral, when Lufthansa German Airlines and SWISS restructure their food and beverage offerings.

Food covers were switched to recycled PET at Lufthansa German Airlines and Brussels Airlines in the reporting year.

Eurowings’ in-flight magazine has been made of 100% recycled paper since November 2021. The single-use plastic stirrers at Eurowings have also been replaced by wooden stirrers.

The Lufthansa Group launches measures to avoid in-flight food waste

By switching the food and beverage offering on short-haul flights for Economy Class guests to a purchase-only offering, Network Airlines can now use an algorithm to more accurately plan the loading of perishable products for individual flights based on sales figures. Since the introduction of the new concept in spring 2021, the share of discarded volumes in the amount of leftover perishable products had been reduced as follows by September 2021:

- Lufthansa German Airlines by 16 percentage points
- SWISS by 14 percentage points
- Austrian Airlines by 26 percentage points

In future, the option of pre-ordering meals will further optimise the volume of products loaded. The Lufthansa Group plans to introduce this service in 2022.

Measures to reduce in-flight food waste on the last flights of each day were also implemented in 2021. At Eurowings, for example, leftover food is offered at a reduced price, which reduces the amount of food that has to be disposed of. SWISS has tested a similar process. Its permanent introduction in 2022 is still being reviewed.

Methodology for the collection of waste is being developed

Lufthansa German Airlines, SWISS and Austrian Airlines plan to revise the systematic logging of in-flight waste in order to determine waste structures and weights based on the recommendations of the IATA Cabin Waste Manual. The possible use of waste data from the catering and cabin cleaning partners will also be reviewed.

At Lufthansa German Airlines, SWISS and Austrian Airlines, the goals of reducing single-use plastic and regular monitoring will be achieved with the help of article lists for benchmark flights, which will be filled with data from the inventory management systems and the loading lists for these flights. This should also enable an analysis using the categories Reduce, Reuse, Recycle and Replace.

Performance indicators

The reporting year marked the achievement of 71% of the goal of reducing the annual consumption of single-use plastic articles in the in-flight products of Lufthansa German Airlines, SWISS and Austrian Airlines by a total of 370 million single-use items, measured against consumption in 2019.

These 370 million single-use items consist of 144 million single-use plastic items that were required to be replaced by 3 July 2021 under the EU Directive, and 226 million additional single-use plastic items identified by airlines for voluntary replacement.

With the Europe-wide implementation of EU Directive 2019/904, the three airlines have already cut down 74% of the 144 million prohibited individual items. These items have been replaced with more sustainable alternatives (bamboo, wood, reusable). Remaining stocks resulting from the reduced flight schedule during the coronavirus pandemic are still being used in accordance with the law.

To date, 69% of the target of replacing the identified 226 million additional single-use plastic items has been achieved (based on the annual consumption in 2019).

Customer concerns



High customer satisfaction is a key success factor for the Lufthansa Group

Flight safety and the health of passengers always have top priority for the Lufthansa Group. In order to meet this elementary requirement, all airlines in the Lufthansa Group have a comprehensive safety management system. Every two years, independent auditors review the safety standards applied Group-wide in an IATA Operational Safety Audit (IOSA).

A clear focus on customers, operating stability, innovative products and services and a focus on quality are essential for a service provider like the Lufthansa Group. Particularly when dealing with the coronavirus pandemic, these topics are a priority more than ever because long-term customer relations require attentive customer services, straightforward, flexible processes and positive individual travel experiences. In the reporting year, they included measures to boost public trust in the safety of air travel with Lufthansa Group airlines during the coronavirus pandemic. The remaining effects of the pandemic, such as numerous changes to the flight schedule and flight cancellations, did not always allow the Lufthansa Group to meet its high standards of customer service in full. The exceptional situation in the volume of customer service cases resulted in some delays in processing requests for refunds, for instance.

Capital expenditure on a modern Group fleet and the continuous further development of the offerings – including in terms of sustainability and digital service – ensure that flying remains attractive for the customers of the Lufthansa Group, both during and after the coronavirus crisis. Regular surveys of passengers ensure that their needs are included in the development of innovative products and services.

Awards confirm the Lufthansa Group's innovation and quality strategy

Lufthansa German Airlines received several awards at the World Travel Awards in 2021. It was named Europe's leading airline in Economy Class, serving Asia and for its in-flight magazine. The airline also received the Hospitality Award for the best economy snack and the German Design Award for the best packaging design.

Eurowings received the Airline Punctuality Award as the world's most punctual airline for the high-traffic holiday months of July and August 2021. Eurowings was also awarded first place by the Deutsche Gesellschaft für Verbraucherstudien mbH (DtGV) at the German Customer Awards 20/21 in three categories: customer service, customer satisfaction and value for money.

THE LOFT by Brussels Airlines & Lexus at Brussels Airport was named Europe's Leading Airline Lounge 2021 at the renowned World Travel Awards for the third time in a row.

Data protection and data security play an increasingly important role

The secure handling of data in compliance with legislation forms the basis for a trust-based relationship with customers. The Lufthansa Group has a data protection management system that meets the requirements of the European General Data Protection Regulation (GDPR) in the Group companies. The Group has established an organisational structure for data protection that is dedicated to ensuring compliance with the rights of data subjects and the duties of controllers. This entailed creating easily reachable points of contact, both internally and externally, and establishing processes to fulfil information requests by data subjects within the required period, for example. Current information about the processing of personal data is also provided on the Group companies' websites. Measures are also in place for the comprehensive prevention of cyber risks, which have become more important due to the increasing digitalisation of business processes.

➤ **Opportunities and risk report, p. 76ff.**

OPERATIONAL STABILITY

Concept

Reliability and punctuality are key criteria for operating stability

A high level of reliability and punctuality ensures a smooth travel experience for customers. Within the Lufthansa Group, this is monitored continuously by management. In addition to daily reports from the hub control centres, operational performance is also discussed regularly at the Executive Board level.

In the reporting year, the passengers of Lufthansa Group airlines continued to be affected by changes in flight schedules, flight cancellations and delays due to the coronavirus crisis. Reasons included global travel restrictions, the demands of local authorities and required changes to operating processes to enable disinfection and social distancing.

Organisational foundations and responsibilities

The functional responsibility for operational stability lies with the Executive Board's Chief Operations Officer and directly with the airlines of the Lufthansa Group.

At the monthly Operations Board meetings, the Chief Operations Officers of all Lufthansa Group airlines, together with the responsible functional heads of flight operations, ground handling, safety and security, and technical fleet management, provide the Executive Board with regular information. They also discuss and approve the results of their analyses and measures to improve operational stability.

Interdisciplinary performance dialogues are also in place for Lufthansa Group airlines' operational processes in order to discuss current performance and improvement measures.

Targets

To guarantee safe, punctual and reliable flight operations

Operational stability is a prerequisite for high customer satisfaction. The top priority for all Lufthansa Group airlines is safe, punctual and reliable flight operations. Since this cannot be guaranteed by the airlines in the Lufthansa Group alone, work on solutions for further improvements in operational stability is carried out jointly with system partners. This cooperation focused in particular in preparation for the higher-demand summer operations in 2021.

Measures

Numerous measures to ensure operational stability and improve the customer experience

In the reporting year, a special focus was on the structured relaunch of flight operations at the Lufthansa Group within the framework of the Group-wide, interdisciplinary ReStart programme. The programme comprised the recommissioning of almost 500 temporarily grounded aircraft, flexibly updating the flight schedule and making adjustments to necessary processes, such as document checks. The ReStart phase was largely completed by the end of the year. Ongoing issues are further addressed in the line functions. In addition to improving the in-flight customer experience, customer processes on the ground are also a key priority. Processes for verifying documents required by the pandemic, such as vaccination and test certificates, will be continually automated in accordance with valid local, national and international regulations, which should lead to an increase in operational stability.

Wide-ranging initiatives launched with system partners

Together with system partners such as airport operators and German air traffic control, the Lufthansa Group airlines are working hard on solutions to ensure that the demands made by the coronavirus pandemic of security checks or in the observance of minimum social distancing are met throughout the entire travel process. For example, in regular joint events with the major German airports, summer operations in 2021 were prepared based on capacity planning.

Performance indicator

Departure punctuality at Lufthansa Group airlines below target but better than pre-crisis level

The main performance indicator for judging operational stability is the airlines' departure punctuality. As is common internationally, all flights taxiing to the runway no later than 15 minutes after the planned departure time are defined as punctual. The departure punctuality target for the passenger airlines in the Lufthansa Group is 85% and was not achieved in the reporting year.

The annual average departure punctuality was 81.3%, which is 5.3 percentage points above the pre-crisis year 2019 and still 7.3 percentage points below the previous year. The improvement compared with the pre-crisis year can be attributed, among other things, to the continued lower volume of flights, which resulted in the decongestion of the air traffic control system. Modifications to ground processes as a result of the pandemic, significant fluctuations in passenger load factors and staff shortages in the ground services provided by system partners did have an adverse effect on departure punctuality, however.

PRODUCT AND SERVICES

Concept

Product and service development focuses on customer needs

Focus on the customer is an essential factor in the success of a service company like the Lufthansa Group. For this reason, regular customer surveys are used to continuously review all products and services along the travel chain to measure their concrete benefit to the customer. Questions cover improvements to seats, sustainability topics and new in-flight and ground products and services. Digitalisation, individualisation and sustainability aspects play an increasingly important role in better meeting differentiated customer needs. The travel experience for passengers should become even more convenient, especially through greater personalisation of the products and services along the entire travel chain. This includes, in particular, personalised information for the customer and the flexibility to rebook flights and rules on goodwill gestures introduced as a result of the coronavirus pandemic.

Findings from timely customer involvement form the basis for strategic decisions

Passengers are involved at the early conceptual phase of product and service design and development, as with the development of new seating concepts or meals, for instance. The Lufthansa Group's online customer panel makes it possible to receive feedback on specific questions very quickly and to gain a better understanding of passenger expectations and requirements.

The Network Airlines in the Lufthansa Group track customer satisfaction continually using Passenger Satisfaction Tracking (PST) and in-depth surveys to obtain information about the travel experience of their passengers that is as granular as possible. Customer satisfaction data is tracked separately for different service aspects along the entire travel chain. The results are made available to the responsible department and management on a monthly basis and are used to derive measures, among other things. To reflect dynamic changes in customer expectations especially during the pandemic, customer feedback has been factored into service adjustments at a higher frequency than before.

Organisational foundations and responsibilities

Responsibility for products and services for Lufthansa German Airlines, SWISS, Austrian Airlines and Brussels Airlines is pooled centrally and reports are addressed to the Executive Board's Chief Customer Officer. Each airline has a person in charge with the same portfolio of responsibilities.

The Executive Board's Chief Customer Officer also has functional responsibility for the brand management of Eurowings. Responsibility for implementing the in-flight and ground products lies with the Executive Board's Chief Customer Officer.

Representatives from both Executive Board functions meet regularly in the Customer Commercial Board to discuss and make decisions on customer-oriented topics and on an annual basis regarding the product project portfolio.

Targets

Raising customer satisfaction is an integral part of Group strategy

Customer needs play a vital role for ensuring the long-term success and profitability of the Lufthansa Group. The customer strategy for all airlines in the Lufthansa Group has the objective of increasing customer satisfaction. Understanding and meeting the individual needs of customers along the entire travel chain is a prerequisite for this. The Net Promoter

Score (NPS), which is derived from the passenger's willingness to recommend, is used to measure performance. A target of 60 is set for the NPS for the Network Airlines and 45 for Eurowings.

Measures

Customer value will be implemented as a customer satisfaction metric

In future, twelve selected customer KPIs, for example on the topic of sustainable travel, will constitute customer value. Follow-up measures are to be developed by year-end 2022 on the basis of these findings. In a second step, they will be analysed to gain a better understanding of the customer and identify the customers' greatest "pain points", i.e. what annoys them most. Another example is the "Smart Dialogue and Communication", which measures customer satisfaction with communication with the Lufthansa Group and indicates potential for improvement.

Range of measures implemented for a smooth customer experience during the pandemic

Aviation is one of the sectors worst affected by the coronavirus pandemic. This makes it all the more important to reinforce trust in flying as a safe means of travel. Since the beginning of the coronavirus pandemic, comprehensive hygiene and safety measures have been developed on the ground and in-flight, and continued compliance and development of these measures is being ensured. Key standards were developed jointly by the airlines and central product management. These include the obligatory wearing of face masks, which was initiated early on; the filtering of cabin air and increased ventilation of aircraft, including on the ground; working towards digital track-and-trace procedures; and physical distancing, both on the ground and during boarding/disembarking. Customer feedback was continuously collected and evaluated during this process.

The availability and presentation of travel information has also been continuously improved and developed. Dedicated web pages, for example, allow passengers to search for user-specific travel policies for their departures and destinations and to see which travel restrictions apply. Enhanced service measures make travelling under pandemic conditions even easier. Extensive control measures required as a result of the pandemic have been introduced to improve customer satisfaction with punctuality. These measures include, for example, the implementation of the Health & Entry Support Centers for digital document verification in April 2021, online check-in and travel information (information on flight changes and updates on entry requirements for the flight), and the drive-through test centre located directly at Frankfurt Airport since June 2021. Passengers making use of these pre-screenings can move quickly and conveniently through the airport security checks.

Lufthansa German Airlines, SWISS, Austrian Airlines and Eurowings have offered optional additional insurance services for flight bookings since November 2020. If they take out insurance, passengers receive compensation in the event of a coronavirus infection if they are required to quarantine at their destination, and are also covered in the event of illness, necessary treatment or emergency medical repatriation. Lufthansa German Airlines, SWISS and Austrian Airlines have also offered the purchase and reservation of coronavirus tests for selected destinations via their web portals since May 2021.

The measures and restrictions introduced are regularly reassessed according to the course of the pandemic. A number of lounges and the First Class Terminal in Frankfurt have been reopened, the limousine service has been restarted in some cases, and in-flight services have been customised and expanded.

Against the background of the pandemic, the Network Airlines in the Lufthansa Group have adjusted their fare structure in order to offer passengers more flexibility. All tickets with Lufthansa German Airlines, SWISS, Austrian Airlines and Brussels Airlines can be rebooked as often as needed. This applies worldwide for bookings on short-, medium- and long-haul routes in all booking classes.

New products and services continuously improve the travel experience

The Lufthansa Group invests continuously in new aircraft, products and services to keep improving the travel experience for its passengers. For instance, from 2023 Lufthansa German Airlines plans to introduce a completely new Business Class featuring optimal sleeping comfort and more private space, along with more individual seating options for passengers.

The digitalisation and innovation initiatives already under way were pursued further by the Lufthansa Group in the reporting year in order to develop new products and services. At the Lufthansa Innovation Hub, the Company drives the systematic use of the innovative online business model for the airlines in the Lufthansa Group and develops digital solutions along the travel chain for passengers and tour operators. The aim is to provide passengers with intuitive services right where they want them: from check-in and digital luggage receipts to dynamic and situation-based information and service offers and biometric services.

As a pilot initiative, one SWISS Airbus A320 has been equipped with EAN (European Aviation Network) broadband internet technology since the summer of 2021 to improve the connectivity of passengers in-flight and to allow them to use instant messaging. In 2021, customers benefited from enhanced usability thanks to the roll-out of new operating software, including the new FlyNet Portal, on the Airbus A320 aircraft, which are equipped with broadband Internet access by Lufthansa German Airlines and Austrian Airlines.

The self-compensation tool developed by Eurowings enables passengers to automatically check possible claims for compensation in cases of delays and cancellations, independently and without a service hotline, and to apply for compensation if appropriate.

Customer-facing employees made aware of customer satisfaction

Cabin crew at Lufthansa German Airlines were again provided with awareness training in the area of customer orientation in 2021. This was embedded in both voluntary, digital events and mandatory training courses. Employees in Customer Service were trained mainly through virtual workshops on the topic of customer feedback handling.

Dynamic development of refund requests continues

Travel restrictions and warnings continued to change in 2021, resulting in a high level of refund obligations due to necessary changes in flight schedules and flight cancellations. The Group has succeeded in keeping backlogs low by introducing automation measures and increasing staffing levels. Particularly in the second half-year, it reduced the average processing time for refunds to pre-crisis levels, so there was no backlog of refunds at year-end 2021. However, following the extreme congestion and delays in 2020, there were also a high number of complaints, increasing inspections by the regulatory authorities and the processing and clarification of some complex individual cases in 2021. The airlines in the Lufthansa Group refunded customers around EUR 1.6bn in 2021.

Increasing demand for sustainable products and services

The Lufthansa Group is responding in various ways to customers' wishes as expressed in surveys for sustainability aspects to play a greater role in products and services. The focus is on sustainable catering, intermodal travel and easy access to carbon offsets for the flight.

Demand-oriented catering and responsible product selection are being expanded

Customers consider the reduction of single-use plastics in-flight, cooperation with sustainable partners and the regional origin of the products offered to play an important role. Since May 2021, Network Airlines has offered a new in-flight food and beverage service for purchase that focuses on quality and sustainability: The goal is to minimise waste through more demand-oriented production and smart load planning as well as responsible cooperation with selected partners (🔗 [Environmental concerns/Waste management, p. 108ff.](#)). In cooperation with one of the best-known German coffee brands, one of the products Lufthansa German Airlines offers is a coffee from the Dano region in Ethiopia, where this partner is economically, socially and ecologically committed.

On Austrian Airlines flights, for example, passengers are offered water from a Lower Austrian brand whose products are 100% carbon-neutral. SWISS is committed to using regional ingredients with short supply chains and cooperates with partners such as a Geneva cooperative that processes agricultural residues for its tomato juice to avoid food waste.

Intermodal services offer sustainable alternative forms of travel to the hubs of the Lufthansa Group

To strengthen the appeal of intermodal travel, all intermodal partnerships have worked on optimising processes and especially on making transfers between modes easier and faster for passengers.

The Lufthansa Group, in cooperation with the national railway companies and some bus operators in the home markets, also offers a variety of other options for travel to and from the hubs in addition to flights. These intermodal options are integrated into the Lufthansa Group's range of services via a flight number and are treated as largely equivalent to a flight in terms of the service package for the customer. ➤ **Environmental concerns/Intermodal transport, p. 104.**

Voluntary offsetting or reduction of CO₂ emissions

The Lufthansa Group enables its passengers to voluntarily offset or reduce the carbon emissions generated by their flights. The Lufthansa Group has partnered with the well-known carbon offset provider myclimate and with Climate Austria for Austria for more than ten years. Business customers also have the option of automatically offsetting the emissions of flights within Europe and within Germany via myclimate using the Corporate Value Fares programme. Private customers of the Lufthansa Group have the option of offsetting or reducing their emissions through the Compensaid platform.

Carbon emissions generated by flights can also be offset by purchasing sustainable fuels (SAF), in addition to offsetting through a portfolio of high-quality carbon offset projects from myclimate. Passengers are free to combine these two options in any transaction. The Lufthansa Group only uses certificates for its carbon offsets that meet the highest quality standards (CDM Gold Standard and Plan Vivo). Austrian Airlines and its partner Climate Austria also use some of the funds for national offset projects that have been certified by the Austrian Environment Ministry.

By directly engaging customers with easy access to climate protection measures, the Lufthansa Group encourages the transformation of the industry and is striving to increase the level of participation among its passengers. The integration of a direct link to the Compensaid compensation platform in the flight booking process of all Lufthansa Group airlines was completed for private customers in 2021. As of the start of 2022, Eurowings plans to fully integrate the Compensaid platform into the booking process, which will allow customers to offset their emissions directly. This new functionality is also being developed in parallel at the Network Airlines for introduction in 2022.

The principle of reducing the carbon impact for individual air transport services was transferred to the Logistics business segment in 2021. Lufthansa Cargo customers can offset individual shipments through climate projects with the Sustainable Choices product, or reduce CO₂ emissions in combination with SAF.

Performance indicator

Net Promoter Score below target

The leading indicator of customer satisfaction at the Network Airlines and at Eurowings is the Net Promoter Score (NPS), which is based on the monthly analysis of around 17,000 passengers (average in 2021). In 2021, the NPS was 49 for the Network Airlines, which was below the target of 60. This is due to the steep increase in flight operations and corresponding passenger numbers, particularly from the second quarter of 2021. Combined with mandatory measures resulting from the pandemic, such as extensive document checks, this had an adverse effect on processes and punctuality and so on customer satisfaction. The NPS at Eurowings was 47 in 2021, above the target of 45.

The NPS is a component of the target agreement and the variable remuneration of the Executive Board. ➤ **Remuneration report, p. 271ff.**

Employee concerns



Employees are a company's most important asset. Employees are one of the most important factors for success, especially in this phase of significant expansion of business activities after the crisis-related downturn and the transformation of the Lufthansa Group. Employee concerns are thus a central focus of the Lufthansa Group's personnel strategy.

During the ongoing coronavirus pandemic, the Lufthansa Group is positioning itself as an attractive and modern employer. On the one hand, this is to strengthen employee loyalty and, on the other hand, to be perceived as an employer that is able to attract talent from outside the Company.

Changes within the aviation sector and structural transformations in today's working world have a direct impact on the employees of the Lufthansa Group. These developments demonstrate clearly that the continuous development of employee skills and knowledge is essential for economic success. The Lufthansa Group makes use of extensive training and continuing education opportunities to ensure the Company's ability to transform itself in the future.

Employee health and occupational safety also continue to be key areas of action for the Lufthansa Group, especially against the backdrop of the ongoing coronavirus pandemic. The Lufthansa Group uses preventive measures and takes a holistic approach to maintaining its employees' constant, long-term ability to work.

In addition, the Lufthansa Group promotes the strengthening of diversity and equal opportunities for employees in its strategic orientation in order to further promote creativity, flexibility and the ability to innovate and to minimize legal liability risks. Various initiatives, such as increasing the quota of women in management and the long-established organisational foundation of the equal opportunities commissioner, are used to promote gender equality and to position the Company as an employer with integrity and responsibility.

Organisational foundations and responsibilities

Employee concerns are bundled in the various specialist areas within the Executive Board function of the Chief HR & Legal Officer. Close cooperation among all departments facilitates the development of sustainable measures to improve action relating to employee concerns. At the same time, the Chief HR & Legal Officer is responsible for ensuring that the measures developed are implemented in all departments and within the subsidiaries through the HR Committee, which comprises the function's top HR senior executives and the Chief Human Resources Officers of the Lufthansa Group's largest companies. The implementation of the measures can be continuously monitored through direct reporting channels within the Executive Board function.

ATTRACTIVENESS AS AN EMPLOYER

Concept

Being an attractive employer is highly relevant for the Lufthansa Group

The success of the Lufthansa Group depends largely on the competence, the enthusiasm, the commitment and the ideas of its employees. At a time when the flight programme is significantly reduced due to the pandemic, it is particularly important to keep employee morale high, to have an underlying personnel strategy, and to take steps to ensure the Company remains an attractive employer. This is particularly important for employees who were on short-time work in 2021. The willingness of these employees to work is a decisive factor in the economic recovery at a time during which business activities have resumed at a higher level. Various initiatives were also carried out to enable successful reintegration of employees after short-time work. The criteria for qualifying as an attractive employer have changed fundamentally in the current situation and are particularly relevant for existing staff. Employee retention and attractiveness measures will be further developed to ensure that employee loyalty is maintained during reduced business operations and scaled-down flight programme in 2021. At the same time, the needs of the workforce are very different, since the Group comprises more than 172 nationalities.

Unrestricted freedom of association is an established feature of the Lufthansa Group

The Lufthansa Group has a long tradition of working with its labour union partners in the works councils and trade unions, as well as in the Supervisory Board with its co-determination rules. This practice is aimed at acting collectively based on mutual interests. The joint search for solutions in the interest of the companies involved and their employees is based on an understanding of how valuable freedom of association is, forming part of the corporate culture as well as being enshrined in the German constitution.

Working and employment conditions for employees and managers are flexible and are adapted continually

The Lufthansa Group has helped its employees to work flexibly for many years, both in terms of when and where they work. When personal interactions, including those at work, had to be reduced to a minimum as a result of the coronavirus outbreak, this was achieved very rapidly thanks to the existing framework for remote work and the near ubiquity of mobile computing devices.

Flexible working time models have been an important element in the Lufthansa Group for many years in supporting as well as possible the balance between work and family life. Job adverts, also for management positions, offer the opportunity of part-time work and shared leadership. This means that someone has the opportunity to share a management position with another manager who also works part time. In addition, managers and non-payscale employees can take sabbaticals.

Organisational foundations and responsibilities

The overall topic of employer attractiveness is primarily the responsibility of the two areas of HR Policies, Services & Digitalisation and HR Management Executives, Leadership and Cultural Development. Both areas report directly to the Chief HR & Legal Officer and are responsible for maintaining and further strengthening the Lufthansa Group's position as an attractive employer. Within the areas, the topics Compensation and Benefits, Employer Branding, Talent Management and Human Resources Marketing, which have a significant influence on employer attractiveness, are foundational.

Targets

Lufthansa Group strives to become more attractive as an employer

Attractiveness as an employer is considered from both an internal and an external perspective. In view of the widespread recruitment freeze due to the difficult economic situation, the perception of existing employees is mainly relevant for the reporting year. It is precisely in the context of the coronavirus pandemic that the employees in the Lufthansa Group make a decisive contribution to the satisfaction of passengers and thus to the success of the Company. Employees, some of whom are still on short-time work, also have to be motivated to resume their commitment to the Company once short-time work comes to an end. This is vital to ensure a rapid and high-quality resumption of business operations. One important goal is therefore to increase the motivation of existing employees and improve the internal employer attractiveness at the same time. In addition, the Lufthansa Group aims to establish itself again as an attractive national and international employer.

Measures

Information and transparency for the workforce

Since the beginning of the coronavirus pandemic, the Executive Board of the Lufthansa Group has continuously kept the entire workforce up to date on current developments by means of webcasts and podcasts. The Board members and managing directors of the individual subsidiaries have also held regular live online meetings with their workforces, with questions from employees expressly encouraged. In line with applicable health rules, the first employee information events have again been offered in hybrid form (mix of face-to-face and webcast) since autumn 2021. The latest developments and background information were made available to the entire workforce in German and English via the very popular intranet and a news app that can also be used on private devices. The purpose of this is to provide employees with continuous and transparent information about current developments and goals, and to promote loyalty to the Company, especially in times of working from home and short-time work.

Managers were also asked to stay in permanent contact with their staff, regardless of whether they were working from home or on short-time work, in order to identify personal needs and concerns and respond to them. The managers were also able to download specific daily information on their mobile devices using a special app for managers.

Various groups were set up on Yammer, an enterprise social network platform with exclusive access for Lufthansa Group employees, in order to stay in touch when working from home or to share information about different topics in the context of short-time work. These include initiatives to coordinate the social engagement of employees on short-time work. Over 60,000 employees in the Lufthansa Group have access to the platform.

Salary cuts and redundancies should be arranged in a socially responsible way

The Lufthansa Group uses additional payments to reduce the net salary losses for its employees who are on short-time work.

In Germany the reduction of 10,000 positions compared with the headcount at year-end 2020 has either already taken place, or is contractually agreed for the years 2022 and thereafter. This includes departures for age reasons. New recruitment at Eurowings and Eurowings Discover is not included. Outside Germany too, all the job reduction targets in the “ReNew” restructuring programme were met by year-end 2021. The successful implementation of structural measures depends heavily on effective cooperation between employers, the collective bargaining partners and co-determination within the Company. In particular, intensive discussions on these subjects are held with trade unions and works councils on an ongoing basis. Crisis agreements have been concluded with the trade unions for the years 2020 and 2021 and in some cases beyond that. Various initiatives such as the voluntary programme “now!”, which offers employees of Deutsche Lufthansa AG benefits such as professional reorientation outside the Lufthansa Group, made a major contribution to the socially responsible reduction of jobs in the reporting year. Various offers could be made within this programme to accommodate the individual needs of employees who are close to retirement and those who are not. Approximately 4,500 employees (1,800 ground staff, 400 cockpit staff and 900 cabin crew at Deutsche Lufthansa AG and 1,400 employees at Lufthansa Technik AG) had decided to leave the Group in the context of voluntary redundancy programmes as of the reporting date 31 December 2021. 800 employees of the Lufthansa Group left in the course of the reporting year.

Uniform performance and potential assessment ensures the retention of talent

To ensure that employees have the opportunity to shape their career within the Group in line with their individual talents and interests, there is a standard process for identifying top performance and high potential for most of the administrative staff. This was not completed in 2021 for the assessment year 2020 in many companies because of short-time work. However, starting from 2022, the process for identifying top

performance and high potential for the majority of administrative employees and for senior executives will return to a fully regular schedule. A structured talent retention programme has been established to avoid losing this talent. These employees receive close support and are involved in various special projects, even during the pandemic.

Even though the internal reorganisation within the Group and the associated reduction of positions meant it was difficult to maintain staff development by means of job rotation, promotions, or specific support for female managers during the reporting year, talented employees were approached individually to work on projects related to the crisis and to develop their skills on the job. These programmes – especially the apprenticeship and trainee programmes – will be reactivated as the economy continues to recover.

Performance indicators

Engagement Index is down – dedication is up

The Engagement Index also provides information about the Company’s attractiveness as an employer. This has been tracked by the voluntary annual employee survey, “involve me!” since 2015, and enables a comparison with employers in many different sectors. It measures the extent to which employees identify with the Company, as well as their commitment and willingness to recommend the Company to others. The survey was carried out again in 2021, despite and also because of the coronavirus pandemic. With the exception of the LSG group, all major Group companies were included. Whereas the scope of the employee survey was reduced in the previous year, the 2021 survey was detailed and comprehensive. This alternation between comprehensive and shorter surveys corresponds to past practice.

The results are measured on a scale from 1 (best) to 5 (worst). In the reporting year, the Engagement Index value was 2.3 and decreased by 0.3 compared with the previous year’s value of 2.0. The decline is being driven by redundancies, restructuring and the cost-cutting measures required to maintain competitiveness. However, the survey showed that employees’ willingness to work increased compared with 2020.

The results of the employee survey are presented to the Supervisory Board and the Executive Board, where they are discussed in workshops. As a rule, these results affect the targets and the remuneration of the Executive Board. The senior executives of the Lufthansa Group and the business segments will use the results of the survey as a basis for deriving measures together with their teams with the aim of improving the Engagement Index.

Labour union partners are firmly established at the Lufthansa Group

For the Lufthansa Group, it goes without saying that no one suffers any positive or negative discrimination because they are a member of a trade union or not. The Lufthansa Group enables all employees to join or form a trade union. Of 60,517 Lufthansa Group employees in Germany (as of 31 December 2021), some 83% benefit directly from collective bargaining arrangements. The remaining 17% are largely managers and non-payscale employees in senior positions. However, many of the rules for these non-payscale employees are also based on the collective bargaining agreements.

Employer ranking reflects Lufthansa Group companies' attractiveness

To position itself as an employer that attracts new talents, the Lufthansa Group places particular emphasis on the opinions of young people in its employer rankings. In the 2021 reporting year, Deutsche Lufthansa ranked 13th among economics students in the Trendence Institute Ranking and 9th in the Universum Global Ranking (previous year: 6th and 7th). In engineering, the Company ranked 13th and 10th (previous year: 11th and 9th). In view of the significant economic challenges that the air transport industry is facing, the Lufthansa Group nevertheless considers this result to be satisfactory.

DIVERSITY AND EQUAL OPPORTUNITIES

Concept

Diversity and equal opportunities are key elements of the HR strategy

Diversity and equal opportunities make an organisation more flexible and creative, and it also emphasises the respect it shows for all employees. These are central elements of the Lufthansa Group's strategic personnel orientation. They are indispensable for the Group's global and cross-generational positioning as an employer that acts responsibly and with integrity – today and in the future. This fulfils both legal requirements and creates the basic conditions for the Group to remain innovative and capable of change.

The Lufthansa Group supports work-life balance

The Lufthansa Group uses a broad portfolio of activities to make it easier for employees to combine work and family and to care for loved ones. At the Frankfurt and Munich locations,

for example, the Lufthansa Group offers Company-subsidised childcare to support employees with children under the age of three. Throughout Germany, employees have access to a family service portal where they can search for day-care centres in the vicinity and find information about other forms of childcare from the cooperation partners of the Company. In Germany, this includes help in finding carers, ad hoc and regular daycare places for children, and the use of parent-and-child offices if a need arises. Caregivers also have a wide range of counselling options, such as lectures and webinars, as well as free telephone counselling sessions.

Inclusion of people with disabilities is part of social responsibility

For the Lufthansa Group, employment and inclusion of people with disabilities is not only a legal obligation, it also fulfils a social responsibility. This is why the Group is committed to treating people with disabilities fairly and considerately. Providing targeted support for their professional development is a matter of course for the management boards, Human Resources management and representatives of disabled employees, who meet regularly to discuss further steps to include people with disabilities. Other ways of supporting them are also advanced, such as placing orders with workshops for disabled people, and the partnership with the National Paralympic Committee Germany.

Organisational foundations and responsibilities

The HR Policies, Governance and Legal department is responsible for managing legal issues associated with the topic of diversity and equal opportunity as well as the Group's political and strategic positioning. This includes such aspects as mandatory training and the establishment of binding governance for human resources departments. These issues are also continuously developed by the equal opportunities commissioner, who is assigned to this area. In particular, the focus is on gender equality, work-life balance and promoting a working environment that is free of discrimination.

The HR Management Executives, Leadership & Cultural Development department is responsible for operational implementation with regard to the development of the corporate culture. Both departments report directly to the Chief HR & Legal Officer.

Targets

The Lufthansa Group positions itself as a company of integrity

The Lufthansa Group addresses diversity and equal opportunities using a variety of approaches. The revised German Act on Equal Participation of Men and Women in Executive Positions in the Public and Private Sectors (FüPoG II) stipulates that when the executive board of a listed company subject to co-determination has more than three members, at least one must be a woman and at least one must be a man. Deutsche Lufthansa AG meets this requirement. To comply with the FüPoG in 2016, Deutsche Lufthansa AG also set the following targets for women managers below the level of the Executive Board as of 31 December 2021: 20% at management level 1 and 30% at management level 2. At the end of the target period, the Executive Board again set targets for the proportion of women at the two management levels below the Executive Board of Deutsche Lufthansa AG. They are 25.7% for the first management level and 30.6% for the second management level. The deadline for achieving the new targets was set for 31 December 2025.

In addition to the statutory targets for Deutsche Lufthansa AG, the Lufthansa Group has set another target on a voluntary basis. By 2025, the Lufthansa Group aims to increase the proportion of women managers to 25% (as of 31 December 2021: 18.7%). Management refers here to the managers at Leadership Circle level.

In addition to the general fulfilment of legal requirements, the Lufthansa Group strives to tap the full potential of all employees, particularly by positioning the Lufthansa Group as an employer that acts with integrity and responsibility. This effort includes minimising liability risks and strengthening the zero-tolerance policy within a work environment that is free of discrimination and harassment.

Measures

Gender equality is promoted by a wide range of measures

The Lufthansa Group introduced gender-neutral language throughout the Group in June 2021 to take all genders into account in both internal and external communication. Various supporting measures had already been put in place in the run-up to this. Group Communications, in cooperation with the equal opportunities commissioner, held several internal informational events on the new guidelines and the correct

use of gender-neutral language. A dedicated email address for questions about the application of gender-neutral language has been set up, and employees can find additional tools via an intranet page, in addition to general information and background information. For example, this includes a glossary of everyday business terms and their gender-neutral alternatives, as well as a continuously updated FAQs.

Even at a time of crisis, endeavours continued to achieve greater awareness and sensitivity towards this whole subject. In the context of cooperation with public, cross-divisional agencies, Deutsche Lufthansa AG was also selected by the German Federal Anti-Discrimination Agency as a best practice example for the issue of Sexual Harassment.

Proportion of women in management positions shall be increased

Within the Executive Board project “Female Leadership Boost”, the Lufthansa Group has set itself the task of sustainably establishing the topic of gender diversity in its leadership culture. The project includes awareness training for all senior executives of the Lufthansa Group as well as a broad portfolio of individual development measures for talented women, in addition to a fixed percentage of women on shortlists for management positions.

Support for LGBTI concerns

The LGBTI employee network “Diversify” (LGBTI = lesbian, gay, bisexual, transgender, intersex) acts as a contact and mediator to foster a working environment that is free of discrimination and where all employees can develop their talents, regardless of their sexual orientation, identity or origin. This network also actively advocates for the interests of the community and promotes the development and implementation of policies and guidelines to prevent discrimination. It also encourages internal and external exchanges of experience and provides advice on new business ideas and projects relating to the LGBTI target group. In addition to social media campaigns on IDAHOBIT (International Day Against Homophobia, Biphobia, Interphobia and Transphobia) under the hashtag #QUEERatWORK and on Christopher Street Day, in-house and external online lectures and panel discussions on the topic of LGBTI and sexual orientation were organised with the participation of invited representatives from business and politics. The rainbow flag was hoisted in front of the Group headquarters in Frankfurt and at Munich Airport from May to July 2021 as a sign of the Lufthansa Group's support. An in-house fundraising campaign was also held in December in support of the German AIDS Foundation.

Establishing new business networks to give diversity a personal touch

The coronavirus pandemic has shown that staying connected and sharing personal experiences has a significant impact on our day-to-day well-being. Many new initiatives and employee networks have been established within the Lufthansa Group during this time in support of the goals of diversity and equal opportunity. Examples include the #CourageUp network, which focuses on minimizing discrimination in the workplace on the basis of ethnic origin, and Lufthansa Technik's Female Network. The new Group-wide Lufthansa Power Up Network acts as a multiplier, providing a common technical platform for the mutual exchange of knowledge and support with the aim of raising awareness of the programmes beyond the scope of the respective divisions and Group companies and giving diversity within the Company a visible identity as the most important goal.

Performance indicators

Targets for proportion of women managers nearly achieved

The target set in 2016 for management level 1 was met with a share of women of 20.5%. At management level 2, Deutsche Lufthansa AG narrowly missed the target, with a current share of women at 26.9%. The target was not met because of the extensive restructuring activities, the reduction in management positions and new appointments.

People from 172 nations work for the Group today.

TRANSFORMATION CAPABILITY

Concept

Multiple changes call for continuous transformation process

Structural transformations will produce increasing changes in jobs and content at ever shorter intervals. Consequently, there will be a permanent need for transformation. Demographic trends are intensifying this effect. Digitalisation and an increasing level of automation using artificial intelligence are progressively supplanting the cognitive abilities of humans in various professions and job profiles.

To adapt to this development, companies are well advised to establish a continuous transformation process for their workforce, focusing, in general, on achieving future viability and performance. This should be accomplished through targeted training, the development of the ability to adapt and learn,

and the transfer of knowledge. The Lufthansa Group considers transformation capability an important topic due to the downsizing of the Company and the changed requirements for sustainability in order to maintain the competitiveness and future viability of the Company.

Transformation support and training established as routine processes

Well educated and committed employees are indispensable for the sustainable business success of the Lufthansa Group. Because it is not possible to simply draw on knowledge acquired at one point in time to sustain an entire career, employees have to expand their knowledge and abilities and keep them up to date at all times.

Employees are offered regular professional training courses, particularly in safety-related areas. At the same time, a separate department has been created to evaluate the impact of the current transformation on the future roles and competence profiles of employees in all professional groups in a structured process, and to accompany the change process.

In this context, a process was established that is intended to enable administrative staff in particular to analyse the future viability of their own competencies, and to compare them with the current and future requirements of their tasks. All the employees in the Lufthansa Group have access to over 15,000 innovative learning opportunities from LinkedIn Learning. The online learning programme can be used on a voluntary basis, also by employees on short-time work. With the return of employees from short-time work, the existing learning programme will be expanded to include additional training opportunities during 2022.

The Lufthansa Group CAMPUS offers targeted strategic activities for ongoing cultural and organisational development with a special focus on the challenges of operations that remain below pre-crisis levels. Qualification courses for managers and top management support a modern corporate culture of collaboration and assist with organisational changes. Established partnerships with leading international business schools will be reactivated as business picks up again.

Routine training courses are fundamental part of the job for cockpit and cabin crew

Regular training is obligatory for cockpit and cabin crew in the Lufthansa Group. It is provided by Lufthansa Aviation Training, which continuously develops and optimises the training courses. As one example, virtual reality technology has been used to improve training elements for flight attendants. No new cockpit staff training is taking place at present.

Developing working environments

Mobility and flexibility are key building blocks for modern working environments. As of 31 December 2021, about 54,000 employees of the Lufthansa Group currently have access to cloud-based Office software. This is 9,000 more than in the previous year due to the inclusion of various subsidiaries. In addition to hardware, cloud-based software is an important basis for remote working and flexible working.

All Lufthansa Group employees are offered modern net-working tools for communicating information and working together. They focus on efficient working methods across national borders and hierarchical levels, and empower individual end users.

Organisational foundations and responsibilities

The Workforce Transformation and Learning Management units work together to address the issue of transformation capability. Both units are assigned to the Group-wide HR Policies, Services & Digitalisation department, which pools the topics and reports directly to the Chief HR & Legal Officer. The topic is supported by the HR Management Executives, Leadership and Cultural Development department.

Targets

Pursuing ongoing development of staff skill sets

The ongoing changes in market conditions and the restructuring through which the entire aviation sector is adapting to the altered market conditions place high demands on the ability of employees and companies to transform. The aim is for employees to continuously develop the knowledge and skills they have acquired during their training and professional life. The Lufthansa Group offers administrative and operational employees a wide range of training opportunities. At the same time, employees must be willing and able to deal constructively with this process of permanent change.

Measures

Developing the Company's transformation capability

In 2021, various initiatives and ideas were developed to further improve the Lufthansa Group's transformation capability. In one initiative, an IT tool will be used in 2022 to record

the number of training courses carried out for all employees to ensure data transparency, which will make it possible to measure success and identify targeted follow-up measures. In another, a structured assessment of employee skills is intended to create a basis for offering individualised training opportunities and appropriate jobs.

The CanDo! platform was developed in the reporting year to strengthen collaboration and agile working within the Lufthansa Group as an internal skills platform. The purpose of the platform is to promote the exchange of knowledge and experience among different employees and experts within the Lufthansa Group and to encourage interdisciplinary work on projects and topics. The platform is currently in the pilot phase.

Apprenticeship as Service Management Professional continues

The Service Management Professional apprenticeship for training Lufthansa German Airlines cabin crew continued successfully in 2021, albeit in reduced form due to the coronavirus pandemic. It is recognised as an additional professional qualification by the Chamber of Industry and Commerce (IHK). The programme covers professional service know-how, basic business knowledge, intercultural communication and project management and promotes the employability and development opportunities of employees within the Lufthansa Group. The state qualification recognises the value of the profession of flight attendant and opens up new career paths (e.g. purser), while at the same time promoting individual personal development. In 2021, 581 employees successfully completed the qualification programme. Since the start of the programme, 1,170 employees have successfully completed the training to become Service Management Professionals.

Performance indicators

Detailed survey provides comprehensive information about capacity for transformation

Since 2019, the Lufthansa Group's general and digital transformation abilities can be determined by the comprehensive employee survey "involve me!", which is conducted every year. The necessary detailed survey is carried out every two years. The results of the survey from 2021 allow management to identify specific fields of action and initiate specific measures that lay the groundwork for the Lufthansa Group's capacity for transformation and prepare staff for relevant changes.

HEALTH AND SAFETY AT WORK

Concept

Occupational health and safety are material action areas

Occupational health and safety have been central action areas at the Lufthansa Group for several decades. As an operating company, the health of employees is particularly important for the commercial success of the Lufthansa Group.

The close networking between the occupational safety function and the Medical Services, including psychosocial counselling and health management, with all other business units of the Lufthansa Group is designed to ensure a rapid response and the effective development and implementation of preventive approaches for long-term employee health.

The Medical Services act as a comprehensive centre of excellence at the three sites in Hamburg, Frankfurt and Munich and are easily accessible to employees and senior executives. New information and exchange formats have been developed on a big scale during the coronavirus pandemic that allow digital accessibility as well. The Medical Services of SWISS and Austrian Airlines cooperate closely.

The occupational safety function consistently implements preventive measures to avoid accidents, health risks and occupational illnesses. In the Group companies in Germany, the Group's occupational safety experts review all professional activities using risk assessments and regular safety inspections. For many years, psychological stress at work has been assessed using a procedure developed by the University of Heidelberg and adapted for the Lufthansa Group.

Specific guidelines make managers aware of their responsibility for occupational safety. Managers must deal with this directly when they are appointed to their position. This is checked in an automatic process.

Medical Services managed as holistic centres of excellence

The Medical Services at Lufthansa German Airlines, SWISS and Austrian Airlines are holistic centres of excellence. Even when airline operations have been scaled back, they offer the full range of services for aviation and occupational medicine, vaccinations and travel medicine, outpatient care, a comprehensive social and medical advisory service and other preventive and healthcare treatments. Along with occupational health and aviation medical qualifications, a lot of doctors have other complementary specialist qualifications that are used in the context of the weekly case review conferences. Transnational meetings are also held by the

heads of the medical centres at Lufthansa German Airlines, SWISS and Austrian Airlines. The authorisation for further training of occupational medicine specialists ensures a steady flow of new talent and guarantees their expertise within the Lufthansa Group.

Both the Medical Services and the Psychosocial Centre have a certified quality management system in accordance with ISO 9001:2015.

As a globally operating company, the Lufthansa Group attaches particular importance to providing expert advice to employees from all areas in Germany and abroad and to administering both required and recommended vaccinations. An example of prevention through vaccination is the flu vaccine, which was offered to employees of Lufthansa German Airlines, SWISS and Austrian Airlines in 2021 between October and November as part of the employer's duty of care.

Lufthansa German Airlines' worldwide network of physicians makes it possible to provide medical care for cockpit and cabin crews on assignments abroad. The schedule of medical care services provided during foreign assignments is currently being revised in order to ensure even more efficient care for the flight staff.

The range of medical offers is supplemented by the optimisation of socio-medical counselling for occupational reintegration management processes. The Medical Services also work with employer and employee representatives to support the integration of employees with health-related restrictions.

In various areas of responsibility, the Medical Services provide advice to decision-makers, committees and employee representatives concerning all issues of occupational health and safety.

Psychosocial counselling provides stability in difficult situations

Psychological and psychosocial factors have an important influence on health, safety and productivity at work. Psychological stress and crises are part of life and cannot always be separated from an employee's professional life.

The Lufthansa Group has long offered individual counselling at in-house, confidential psychosocial counselling centres so that employees experiencing difficult circumstances can regain their stability as quickly as possible.

In addition to virtual services, employees, managers and teams at the Medical Services & Health Management sites can find quick and confidential help on professional and private issues or issues with teamwork.

In the counselling centres networked with the external help system and specialists, these counsellors work together with those seeking guidance to develop sustainable individual paths and approaches to solutions.

Health Management helps to deal with health challenges

The aim of the Lufthansa Group's Health Management is to bring about conditions conducive to health, to exert a positive sustainable influence on corporate culture and to support and encourage employees and managers to adopt healthy lifestyles.

Health officers in the individual Group companies identify needs specific to target groups and implement health promotion offers. Group-wide interventions and the strategic development of health management are headed by Lufthansa Group Health Management.

Organisational foundations and responsibilities

Occupational safety and health is jointly managed by the Occupational Safety and Medical Services & Health Management departments, which report directly to the Chief HR & Legal Officer. The central steering body for all issues concerning health and safety in the Lufthansa Group is the Occupational Safety Committee, which monitors the implementation of all aspects of health and safety across the Group. The minimum standards that have been adopted there are binding throughout the entire Lufthansa Group. This will be fed back to the individual companies through their own occupational safety coordinators.

The occupational safety specialists required by law in Germany are assigned centrally to the Occupational Safety function for the majority of the Lufthansa Group's companies. The other Group companies in Germany and worldwide are responsible for providing the necessary specialists themselves, in accordance with local laws.

Participation in occupational health and safety committees provides close networking between employer concerns and employee concerns, on which the Medical Services and Group Occupational Health and Safety provide objective, professionally independent advice.

This organisational structure enabled a very fast and highly effective response to the global spread of the coronavirus.

Targets

Employee health and preventing work accidents remain core areas of focus

The core responsibility of the Medical Services & Health Management department is to maintain and improve the health and working capacity of the Lufthansa Group's employees and thus support its business activities and reliable flight operations. Occupational health and safety also has the goal of preventing accidents at work and occupational illnesses through preventive action and, if they nonetheless occur, of drawing the necessary conclusions from accidents to prevent them from happening again, to the extent possible.

Special focus on the prevention of coronavirus infections among staff

Since the beginning of the coronavirus pandemic, the main aim of the Medical Services has been to reduce the risk of exposure for employees in all work areas to a minimum and to prevent staff from inadvertently infecting their colleagues or customers.

Measures

Various measures create the conditions for ongoing prevention of coronavirus infections

In the second year of the pandemic, the focus continued to be on providing a wide range of information on new scientific findings, for example regarding the development of tests and vaccine approvals, as well as recommendations for action to prevent infection, together with the further development and adaptation of the protection strategy and how work-spaces are used. A regular, twelve-episode podcast with company-related information for employees on the pandemic was made available starting in January 2021. A live programme on the topic was also offered in September 2021, during which participants could ask questions anonymously and receive answers directly, as well as via the email box provided and managed by Group doctors. The specific regulatory requirements to be implemented in the corporate environment present the participants in the working group with a high level of consulting expenses when implementing the measures. In November 2021, for example, the protective measures required by regulations had to be transferred to the business conditions of the Lufthansa Group.

Employees and managers receive further support through a specific digital range of health promotion services. For example, a number of voluntary webinars address the special circumstances of the pandemic and the business situation and provide participants with concrete tools for action and ways of managing the situation.

The Medical Services and Group Health & Safety are in regular contact with external agencies like the Robert-Koch Institute and local authorities and public health offices to apprise themselves of the latest developments, government recommendations and scientific findings and factor these into the Company's own strategy.

Lufthansa Group supports national vaccination strategies and offers coronavirus vaccines to employees

One special development in the reporting year was the establishment of three vaccination centres in Hamburg, Frankfurt and Munich for the coronavirus vaccination by the Medical Services of Deutsche Lufthansa. The vaccination centres complemented the structures created within the framework of the national vaccination strategy and promoted the vaccination of the population. More than 14,000 employees of the Lufthansa Group in Germany were vaccinated between June and August 2021. Depending on the legal situation in Switzerland and Austria, employees at SWISS and Austrian Airlines were also offered vaccinations. In December 2021, the Lufthansa Group also offered a booster vaccination for its employees in Germany.

The Lufthansa Group's commitment to addressing the coronavirus pandemic can be clearly seen through external publications and lectures as well as by the fact that the Group won the German Human Resources Management Award 2021 in the category of occupational health management.

Psychosocial counselling and occupational health management strengthen managers and employees in the crisis

Online courses on health promotion and stress prevention were made available to overcome the health challenges posed by the coronavirus pandemic. Psychosocial Counselling offered additional information on preventive measures in the form of newsletters and podcasts on psychosocial topics.

Further development of occupational safety

Extensive training materials and several web-based training courses were developed and introduced on a large scale in the reporting year to ensure a high standard of instruction across the Group in the area of occupational safety and health. Issues related to working from home, which is particularly important in the fight to control infections, were also discussed.

During the reporting year, a company-wide international survey on the state of occupational safety in the Lufthansa Group was prepared for other areas; it will be conducted in 2022 as business operations return to normal.

In addition, work began on creating more transparency at the Group level regarding occupational injuries in the various parts of the Lufthansa Group. These efforts will initially be rolled out only to some of the companies. In subsequent years, additional companies will be gradually integrated into the data collection process.

Performance indicators

Health Index as a key indicator for employee health declined slightly year-on-year

In the reporting year, the Health Index was again tracked through the "involve me!" employee survey. Despite the unusual situation confronting the Company, the value fell only slightly to 2.3 compared with 2.2 in the previous year. The results are measured on a scale from 1 (best) to 5 (worst). With the exception of the LSG group, all major Group companies were included in the reporting year.

Only employees on active service, i.e. those working at least 20% of their regular hours and not completely furloughed, were asked about their health in an occupational context. This ensures that the answers can be compared on a like-for-like basis.

In addition to the assessment of the Health Index, work factors closely related to the Health Index were again analysed in the reporting year. All executives and the health managers of the individual Group companies receive a separate health report on the results concerning their fields of responsibility. The report contains a selection of specific recommendations and supporting measures. In addition, Health Management employees are available to provide further analysis of the report and advice.

Accident figures enable effectiveness audits

In 2021, the accident figures were initially collected for relevant companies that are insured in Germany by the largest employers' liability insurance association (BG-Verkehr) and that employ a total of 48% of the Lufthansa Group's employees worldwide and 83% of its employees in Germany. All events that resulted in downtime of at least one calendar day are included in this indicator. This translates into 3.7 work-related injuries per one million hours worked. Other companies will be included in the figures over time.

Social concerns



Concept

Lufthansa Group is committed to social issues

As an international aviation company, social responsibility is an important topic for the Lufthansa Group. This also applies in the particularly challenging circumstances caused by the global coronavirus pandemic. The Lufthansa Group connects people, cultures and economies in the most sustainable way possible. Credible corporate citizenship aligned with the Group's core competencies enhances its image, increases the loyalty of its employees and strengthens the trust of its customers.

Voluntary work by employees

The focus of the activities is on social and humanitarian projects, pooled and managed by the help alliance, the Lufthansa Group's aid organisation. This focus enables the efficient and targeted use of available funds. help alliance works with local partners who have many years of experience in development cooperation. The employees of the Lufthansa Group who work as volunteers in help alliance projects and local help alliance communities all over the world are at the heart of the help alliance.

In 2021, the Lufthansa Group covered all of the costs of administration, fundraising and communication for help alliance. This ensures that 100% of all other donations are used to fund project work. This also applies to voluntary donations made via salary deduction by employees of the Lufthansa Group.

Professional and rapid emergency aid in humanitarian crises and catastrophes is also an established element of the Lufthansa Group's corporate citizenship concept. Lufthansa Cargo cooperates with well-known aid organisations.

Organisational foundations and responsibilities

help alliance is a non-profit entity (gGmbH) held by the Lufthansa Group and based in Frankfurt am Main. The help alliance team in Frankfurt manages global aid projects and coordinates cooperation with project leaders, local volunteering communities and partner organisations on the ground. The help alliance staff also develop and implement

fundraising measures and communicate the work of the aid organisation to the public. The importance of the help alliance is emphasised by the fact that the company reports to the Executive Board's Chief Customer Officer. There is close cooperation with the Corporate Responsibility department, whose management is responsible for participation.

Targets

A contribution to sustainable social development

The main objective of help alliance is to provide disadvantaged young people access to education and empower them to lead a self-sufficient life. The charitable activities and projects are designed to make a contribution to the sustainable development of society that reflects the importance and size of the Lufthansa Group and is transparent, credible and verifiable all at the same time. Projects are continuously assessed to ensure that help alliance's work contributes to sustainable development.

Measures

help alliance reacted quickly to the changed situation and developed new digital fundraising platforms, among other things, to ensure a stable financial situation. Despite the massive impact of the coronavirus pandemic, the quickly adapted fundraising system made it possible for help alliance to fund seven new projects in 2021: five in Europe and two in Africa.

Expansion of local volunteering communities

In 2021, help alliance continued to build up local volunteering communities at various locations of the Lufthansa Group. By 2020, the existing communities in Hamburg, Frankfurt and Munich had already grown to include communities in India and Europe. Professional onboarding of the communities and their targeted networking with each other means that there are currently more than 15 communities in all regions of the world, with more than 3,000 volunteers working on social and environmental issues. Volunteering empowers and motivates employees of the Lufthansa Group to establish contacts at the local level and to actively participate in doing good together, while at the same time being connected globally and exchanging ideas with like-minded people

worldwide. The role of help alliance consists in bringing together Lufthansa Group employees who would like to engage in volunteer work and guiding them as a sparring partner and expert consultant in the area of civic engagement to create a self-organised community. help alliance and different local communities have jointly initiated several projects as well as global actions, including two large clean-up campaigns (#CommunityCleanups).

Lufthansa Cargo supports global vaccine distribution by UNICEF

In the reporting year, Lufthansa Cargo and other airlines signed an agreement with UNICEF to support the priority delivery of coronavirus vaccines, essential medicines, medical equipment and other important relief supplies to fight the pandemic. Enhanced by the freight capacities of the available flights of Lufthansa German Airlines, Austrian Airlines, SWISS, Brussels Airlines, and Eurowings, Lufthansa Cargo and SWISS, with its Swiss WorldCargo division, are two of the airlines that transported the vaccines around the globe.

Performance indicator

Help for disadvantaged people

In 2021, help alliance was responsible for 48 aid projects in some 20 countries with a total project volume of EUR 2.7m. 87% of the funds were used for educational projects. Approximately 40,000 disadvantaged people around the world received help through these projects.

In addition, Lufthansa Group employees at 15 locations have participated in local volunteering communities.

Impact assessment of corporate citizenship published

Projects are continuously assessed to ensure that help alliance's work contributes to sustainable development. The detailed results of an impact assessment are published on the website of the Lufthansa Group in the annual activity report of help alliance.

Business ethics and compliance



Responsible conduct in compliance with legislation and respect for human rights are key elements of the Lufthansa Group's corporate culture. As a participant in the UN Global Compact, the Lufthansa Group attaches great importance to aligning its business with the internationally acknowledged principles laid down in the Compact. The Lufthansa Group is convinced that sustainable economic success can only be achieved through business practices that are value-oriented and based on integrity. Business management based on values, integrity and a sense of responsibility sustainably strengthens the loyalty of employees, customers, investors and business partners to the Company.

The Code of Conduct provides a framework for acting with integrity

Acting with integrity and in accordance with internationally acknowledged values and standards requires that all board members, senior executives and employees comply with applicable laws, internal regulations and voluntary commitments at all times. By adopting a Code of Conduct, the Executive Board of Deutsche Lufthansa AG has created a framework through which all business decisions are made. The key principles of the Code of Conduct include compliance with the rules of fair competition, fighting corruption and bribery, respect for human rights and compliance with

labour and social standards. These principles constitute the foundation of the Lufthansa Group's value system and define guidelines for the actions of its boards, senior executives and employees. The Code of Conduct is available on the Lufthansa Group website.

COMPLIANCE MANAGEMENT

Concept

Central compliance management system helps ensure compliance requirements are met

The Lufthansa Group has a central compliance management system to complete the framework provided by the Code of Conduct and to maintain a clear system of rules that enables and supports the boards, senior executives and employees to make decisions that comply with the rules at all times. The Compliance Management System follows the auditing standard of the Institute of Public Auditors in Germany (IDW PS 980) and is based on the pillars of compliance culture, compliance targets, identification of compliance risks, compliance programme, compliance organisation, compliance communication and compliance monitoring.

The Compliance Management System is continually developed and optimised, taking into consideration the specific risks relevant to the Lufthansa Group's business, and we are increasingly looking at and introducing application possibilities for system-based and digital support solutions. It is currently made up of the following elements: Integrity (Anti-Corruption), Capital Market Compliance, Competition Compliance, Embargo Compliance, Export Compliance, Outside Staff Compliance and Money Laundering Compliance. Each module includes one or more guidelines that support the boards, senior executives and employees in making decisions that comply with the rules.

Fighting corruption and bribery is an integral part of the Compliance Management System

Its global operations mean that the Lufthansa Group is obliged to comply with national anti-corruption legislation around the world, in some cases with extraterritorially applicable anti-corruption and anti-bribery laws. Breaches of these legislative requirements hinder fair competition and jeopardise confidence in the integrity of economic entities as well as the state, its authorities and representatives. That is why fighting corruption and bribery is a priority for the Lufthansa Group's compliance efforts. The Lufthansa Group has established rules in several guidelines for compliant conduct with business partners and government representatives as well as its own conduct to avoid conflicts of interest.

The Lufthansa Group's Compliance Management System is based on the above-mentioned pillars and takes various approaches with reference to the individual elements to ensure that its boards, senior executives and employees act in accordance with the law and the rules. The Lufthansa Group's boards and senior executives communicate regularly on these approaches. Their expectations regarding the integrity of all business decisions and all business actions of employees are expressed consistently.

All Group companies worldwide were assessed for corruption risks

All Group companies were assessed for corruption and antitrust risks during a compliance risk assessment carried out in 2018. The measures derived from the results of the compliance risk assessment to prevent the identified risks from occurring were collected centrally and implemented together in the individual Group companies. Ongoing implementation was delayed by the consequences of the coronavirus pandemic.

Advisory services are an integral part of the Compliance Management System

Advisory services are an integral part of the Compliance Management System. Any employee can contact the local Compliance Managers or the Group Compliance Office with questions related to compliance at any time.

Answers to questions on how to deal with business partners and public officials, as well as on proper conduct in situations where there may be a conflict of interest can be found on a Group Compliance Office app, which helps employees comply with the applicable guidelines even on business trips and on an ad hoc basis. Overall, the advisory services contribute to making decisions in the Lufthansa Group that are in compliance with the rules.

Web-based compliance training increases risk awareness

Where relevant, all boards, senior executives and employees in relevant areas or functions are required to complete web-based compliance training in the compliance modules of Capital Market Compliance, Competition Compliance, Outside Staff Compliance or Integrity (Anti-Corruption). The objective is to raise awareness of potential compliance risks, to identify alternative courses of action that comply with the law and regulations, and to provide contacts for any advice that may be required. Participants must pass a test at the end of the training in order to receive the required certificate. The training courses are designed to be completed when joining the Lufthansa Group and then every two years after that. If the training courses are not completed within the given deadlines, the participants will be sent a reminder and, if they fail to complete the training on a timely basis after receipt, their supervisors will be informed. This escalation process was temporarily suspended in 2021 due to the coronavirus crisis.

Risk-based business partner due diligence aims to ensure integrity of suppliers and service providers

Risk-based business partner due diligence is intended to ensure the integrity of suppliers and service providers. During the business partner audit, compliance screenings are conducted by the responsible employees in order to identify at an early stage any compliance risks that could arise from cooperation with external business partners. Depending on the result, various measures, including the avoidance or termination of a business relationship, may be necessary for dealings with the business partner.

Ombudsman system enables suspected offences to be reported confidentially

The Lufthansa Group set up an ombudsman system to enable information to be provided confidentially and, if requested, anonymously, about possible compliance violations, including potential breaches of anti-corruption legislation and regulations. An external, independent lawyer who is not an employee of the Lufthansa Group acts as the ombudsperson. Whistle-blowers can provide information to the ombudsperson by phone, in writing or in person. The ombudsperson's contact information is available on the Lufthansa Group website.

The Internal Audit department audits the effectiveness and appropriateness of the Compliance Management System

The Compliance Management System is monitored during audits that are regularly performed by the Internal Audit department to examine effectiveness and suitability.

Organisational foundations and responsibilities

The Group-wide implementation, development and communication of the Lufthansa Group Compliance Management System is the responsibility of the Group Compliance Office, which is part of the central Legal department. The head of the Legal department and Chief Compliance Officer reports directly to the Chief HR & Legal Officer and presents two Compliance Reports per year to the Executive Board and Supervisory Board's Audit Committee and one per year to the Supervisory Board. The Executive Board has created a web of committees, consisting of a Group Compliance Committee, central compliance committees in the main subsidiaries and local compliance committees as needed to provide support with steering and implementing the central Compliance Management System across all companies. The Group Compliance Office is supported by a worldwide network of compliance managers at the Group companies.

Targets

Compliance Management System aims to ensure rules-compliant conduct and prevent unlawful conduct

The Compliance Management System aims to ensure rules-compliant conduct and prevent unlawful conduct across the Group. Violations of the law can result, in particular, in criminal penalties, fines, damages and reputational damage for the companies concerned, as well as personal criminal and labour law consequences for the employees concerned, the responsible senior executives and the boards.

➤ **Opportunities and risk report, p. 76ff.**

Measures

Electronic whistle-blower system complements the existing ombudsman system

In 2021, the Lufthansa Group set up an electronic whistle-blower system to complement the existing ombudsman system in order to facilitate the submission of confidential and, if requested, anonymous tips about possible compliance violations. Whistle-blowers can provide information in writing at any time via the electronic whistle-blower system, which is available in nine languages. The electronic whistle-blower system is available on the Lufthansa Group website.

Any information received is assessed for plausibility using an established procedure. If there is actually a suspicion of a compliance violation, the tip will be investigated by the Group Compliance Office in cooperation with Corporate Business Security under strict observance of confidentiality and control by the responsible Compliance Committee.

Business partner due diligence and risk assessment approach to be refined

The ongoing development of the previous requirements for business partner due diligence and the planned Group-wide implementation in the reporting year have been delayed due to the effects of the coronavirus pandemic and will be continued in 2022.

The Group Compliance Office began revising the risk assessment concept in 2021 in order to regularly survey and assess compliance risks for the Lufthansa Group in the future. Preparations for conducting ongoing risk assessments will begin in 2022 on this basis.

Performance indicators

The Lufthansa Group will analyse and implement suitable indicators in line with its targets.

RESPECT FOR HUMAN RIGHTS

Concept

Respect for human rights is a key issue for the Lufthansa Group

As an employer, the Lufthansa Group directly contributes to the livelihoods of more than 105,000 employees and their families worldwide. Its value chain also includes a large number of business partners whose employees contribute indirectly to the Lufthansa Group's business success and may be dependent on it. This means that it shares responsibility for the concerns of its own workforce and indirectly also for those of the employees along the value chain. This is also reflected in working conditions at the Group companies, the guarantee of freedom of association and assembly, rules to ensure gender equality and the inclusion of minorities as a matter of course. It is also demonstrated in the expectation expressed in the Supplier Code of Conduct that the business partners included in the value chain should also adhere to the same principles.

In this connection, the following internationally recognised standards are among those that are significant for the Lufthansa Group:

- United Nations' Universal Declaration of Human Rights
- Fundamental principles and core work standards of the International Labour Organization (ILO)
- Ten principles of the UN Global Compact
- UN's guiding principles regarding business and human rights
- Sustainable Development Goals (SDGs)
- National Action Plan for Business and Human Rights (NAP)
- OECD Guidelines for Multinational Enterprises
- IATA Resolution against Trafficking in Persons

The German National Action Plan on Business and Human Rights (NAP) provides a framework for measures related to human rights

With regard to protecting human rights, the Lufthansa Group is guided by the recommendations of the National Action Plan for Business and Human Rights (NAP) adopted by the German Federal Government in late 2016. With regard to corporate respect for human rights, the Federal Government expects all enterprises to comply with human rights due diligence and to respect human rights along their supply and value chains. The NAP describes five core elements of due diligence in the field of human rights. These core elements comprise a policy statement, procedure for identifying actual or potential adverse impacts on human rights, measures and effectiveness audits, reporting and a grievance mechanism.

C31 CORE ELEMENTS OF HUMAN RIGHTS DUE DILIGENCE

- ① Human Rights Policy Statement
- ② Procedures for the identification of actual or potential adverse impact on human rights
- ③ Measures to ward off potentially adverse impacts and review the effectiveness of these measures
- ④ Reporting
- ⑤ Grievance mechanism

The Group's procurement policy and Supplier Code of Conduct state that the Lufthansa Group expects its suppliers to respect human rights. Supplier contracts should contain obligations and provisions for terminating the contract if they are breached. ➤ **Responsible supply chain management, p. 133f.**

The ongoing development of the management approach will be reported on in detail

As part of its efforts to create transparency about the further development of its management approach to respecting human rights and in order to meet its reporting obligations, the Lufthansa Group publishes a declaration in accordance with the UK Modern Slavery Act 2015 in addition to an annual progress report as a participant in the UN Global Compact. The declaration as required by the UK Modern Slavery Act is available on the Lufthansa Group's website. The Lufthansa Group regularly reviews whether it will also be subject to reporting obligations under other regulations.

The Lufthansa Group develops management approach for addressing human trafficking

As a signatory to the IATA Resolution against Trafficking in Persons, ensuring an environment that is free from modern slavery and human trafficking is a matter of course for the Lufthansa Group, however, the legal prosecution of human trafficking is the responsibility of governments and national law enforcement agencies. Nevertheless, the Lufthansa Group is aware of the importance of this topic and recognises that as an aviation company it can play a significant role in identifying potential criminal offences. It has therefore implemented a reporting process for flagging suspected cases of human trafficking that has been approved by the authorities.

In accordance with IATA recommendations, the Lufthansa Group has integrated the topic into regular training for flight personnel. These employee groups are made particularly aware of potential signs of human rights violations. Ongoing regular training sessions have been suspended due to the effects of the coronavirus pandemic. Steering and developing the management approach is the responsibility of the Anti-Human Trafficking Task Force, in which all passenger airlines in the Lufthansa Group and the relevant Group Functions are represented.

Awareness programmes for target groups of managers and employees

Based on an analysis carried out by Verisk Maplecroft, an advisory company, an overview was drawn up of all Group companies operating in countries where the risk of human rights abuses is particularly high. This country overview is updated annually. Based on this overview, the managers and Human Resources departments at Group companies in these countries should be made aware of their duty of care to avoid human rights abuses. A corresponding annex has been successively added to the employment contracts with these managers.

In addition, awareness is heightened by means of intranet communications on the topic to all the employees and senior executives in the Group. This includes a statement by the Chief HR & Legal Officer emphasising the responsibility of the Lufthansa Group as a global company to respect human rights. Further information on this topic is available.

Processes for reporting human rights violations have been implemented

The companies are obliged to identify human rights risks and the type and number of suspicious incidents. Individual complaints can be made also by third parties to the external ombudsperson – 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 used for many different kinds of complaints and can also be used for to complaints regarding human rights violations.

“Zero tolerance” for cases of sexual harassment

Respect for one another is particularly important to the Lufthansa Group. This includes creating the conditions for 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. It is implemented by means of extensive communication and mandatory web-based training for managers on the General Act on Equal Treatment, which also addresses sexual harassment in the work environment. The diverse support programme for employees affected by sexual harassment was evaluated and continued accordingly, following the incorporation of user suggestions.

Organisational foundations and responsibilities

The human rights working group’s regular meetings serve to communicate general information and develop a uniform, Group-wide position and strategy. In the reporting year, the working group was coordinated by the Group Compliance Office, which reports to the central legal department under the Chief HR & Legal Officer of the Executive Board and was responsible for managing the topic of human rights in the Lufthansa Group in 2021. The Group Compliance Office coordinated closely with the departments Corporate Responsibility, Procurement Lufthansa Group and Corporate HR Steering & Labor Relations. In addition, selected contacts advise, support and follow up on the topic at the core companies in the Lufthansa Group.

The Group Compliance Office reports regularly on developments to the Executive Board as part of the resolution on the annual declaration under the UK Modern Slavery Act 2015 and as part of compliance reporting.

Targets

Human rights abuses are to be avoided

The ultimate objective of the management approach is to ensure that human rights are respected worldwide to the extent that this lies within the Lufthansa Group’s sphere of influence and responsibility, i.e. in particular in the companies of the Lufthansa Group and their supply chain. At the same time, human rights violations in the Lufthansa Group and its supply chain must be avoided by means of organisational and process-based measures.

Measures

Preparations for the German Corporate Due Diligence in Supply Chains Act are being made

The German Corporate Due Diligence in Supply Chains Act (Lieferkettensorgfaltspflichtengesetz – LkSG), passed in the reporting year, establishes far-reaching due diligence obligations for various companies in the Lufthansa Group starting on 1 January 2023. These obligations are intended to ensure that human rights are respected throughout the supply chain. Obligations imposed under the LkSG include the establishment of an effective risk management system for compliance with due diligence obligations. In addition to an ongoing risk analysis, this system must include, among other elements, the establishment of preventive measures as well as the adoption of remedial actions in the event of a breach, a complaints mechanism and reporting obligations. The central functions of Corporate Responsibility, Procurement Lufthansa Group, Corporate HR Steering & Labor Relations and the Group Compliance Office are working closely with each other to develop and establish such a risk management system by the time the due diligence requirements take effect for the Lufthansa Group. In the reporting year, cooperation focused in particular on the preliminary clarification of legal issues in the context of the new law, preparation of the future organisational structure for implementation and on preparatory measures for the required risk analysis. In 2021, Procurement Lufthansa Group set up a project to implement the due diligence obligations of the LkSG in the external supply chain.

➤ **Responsible supply chain management, p. 133f.**

Performance indicator

The Lufthansa Group will analyse and implement suitable indicators in line with its targets.

RESPONSIBLE POLITICAL ENGAGEMENT

Concept

Lufthansa Group strives for responsible political engagement

The Lufthansa Group also strives to voice its legitimate interests at the political level and to discuss them with representatives of the various national and international authorities and institutions, and to provide specific information on concrete issues. Depending on the occasion and the topic, this is done at the Company or Group level or in consultation with other companies or interest groups.

The Group's political engagement focuses on transport (market access and traffic rights), climate policy and fair competition. Positions are also formulated on developments at the regional and local level that are relevant to the Lufthansa Group, and shared with the responsible authorities. Recommendations for action are frequently put forward in close cooperation with the industry associations IATA, A4E and BDL as well as other bodies such as the BDI, BDA and the Forum Nachhaltige Entwicklung der Deutschen Wirtschaft e.V. (econsense).

Organisational foundations and responsibilities

The central department Corporate International Relations and Government Affairs, which reports directly to the Chief Executive Officer, is responsible for representing the political interests of the Lufthansa Group. It has offices in Berlin, Frankfurt and Brussels as well as liaison offices in Washington, Moscow and Beijing. In addition, the principal foreign companies of the Lufthansa Group coordinate their own responsibilities for national political issues with the central department.

Targets

Lufthansa Group aims to safeguard its interests

The Lufthansa Group seeks to identify political developments that are relevant for the Group and its subsidiaries at an early stage, to formulate positions and to introduce recommendations for action into the political decision-making process. The aim is to safeguard the interests of the Lufthansa Group in national and international regulations to protect its competitiveness and economic viability.

Measures

Focus on regular exchange and transparency

Lufthansa Group employees who work in the Corporate International Relations and Government Affairs department maintain frequent dialogue with ministries and members of parliament at the state and federal level as well as with representatives of the various EU institutions. This includes supplying facts and figures and working through the issues, some of which are complex. The Lufthansa Group also contributes to legislative processes to protect the Company's interests.

The Lufthansa Group attaches great importance to transparency in its political engagement, and it has been reported in the EU Transparency Register since 2008 under the number 0714344663-32. The Lufthansa Group regularly publishes its position on current political issues and upcoming decisions in its Policy Brief, which is addressed to political decision-makers but is also accessible to the general public. Six issues of the Policy Brief were published in the reporting year and are available on the Company's website.

Responsible supply chain management



Concept

Sustainability in the supply chain firmly established in the Company

Taking sustainability aspects in the supply chain into account is an important element of responsible production. This means that, in addition to economic aspects, impacts on the environment and society are taken into consideration during the procurement process. To meet the standards the Lufthansa Group sets for the sustainability of its own products, the Lufthansa Group relies on close collaboration with suppliers who share and implement these standards. This also forms part of the Lufthansa Group's Code of Conduct, which is available on the Lufthansa Group website.

The Group procurement policy includes the obligation to assume social and environmental responsibility

The obligation to assume social and environmental responsibility is a key element of the Group procurement policy. The policy is to be understood as an overriding specification for all procurement units at the Group companies. In addition, it serves as a handbook for buyers and all employees with contacts in the procurement markets. Appropriate training is available to all employees and is mandatory for the management level. 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,
- to comply with the four basic principles of the International Labour Organisation (ILO),
- the right 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.

By imposing these obligations, the Lufthansa Group endeavours to ensure responsible practices by its direct suppliers and so to meet its own standards for corporate responsibility.

The Lufthansa Group's expectations of its suppliers in terms of social, environmental and ethical responsibility are summarised in the Supplier Code of Conduct, which can be found on the Lufthansa Group website.

Risks are identified

To identify the type and level of supplier risks, the procurement units responsible for product groups carried out a risk assessment for the suppliers. The risk assessment is included in the result of Group risk management.

The procurement process also includes supplier screening to identify risks during the onboarding process so that appropriate measures can be taken. To ensure compliance with Group standards, suppliers are subject to a comprehensive screening process (Business Partner Due Diligence – BPDD) before being contracted. If a supplier falls into a risk category (e.g. due to the country or product group), such a screening is carried out, including consultation with external sources if necessary. The screening process is designed to help identify potential problems, determine what mitigating measures are required, or prohibit cooperation with the supplier in question.

Organisational foundations and responsibilities

The purchasing units in the Lufthansa Group are organised into a single reporting line. They report to the Chief Financial Officer via their respective purchasing managers. In some cases they are centralised, especially for airline-specific actions such as purchasing aircraft or kerosene, and in others, they are decentralised throughout the Group companies (for specific products). Reporting lines are based on responsibilities for different product groups and Group companies. Defining product groups optimises their function by pooling know-how. The Governance, Processes and Sustainability Procurement department was established in 2020 to reflect the growing importance of sustainability. The department, which focuses on the topic of sustainability in purchasing and in the supply chain across the Group, reports directly to the Lufthansa Group's purchasing management function.

The process-based matrix organisation makes it easier to establish sustainability standards because standardised processes and IT systems are increasingly used. Defining responsibilities within the Group also facilitates efficient collaboration. The goal is also to improve the enforcement of sustainability standards.

Targets

The Lufthansa Group expects suppliers to adhere to guidelines

The Lufthansa Group aims for the suppliers of the Group to comply fully with current law, guidelines and regulations concerning fair competition, integrity and responsible practices. The Lufthansa Group seeks to fulfil its due diligence obligations and ensure from the start that no business relationships are entered into with persons or companies that do not act in an ethically sound manner and in compliance with the law. The measures are designed to help identify and screen risky business partners in order to detect, minimise and prevent potential risks in the upstream supply chain. If there are valid reasons, a contractual relationship will not be established or an existing contractual relationship will be terminated.

Measures

Requirements are integrated into supplier contracts

The implementation of the required obligations in supplier contracts was included in the target agreement between the product group managers and the purchasing managers in the Group companies in order to ensure that the required obligations are included in supplier contracts. A monitoring system was also set up during the reporting period to ensure implementation. The results of implementation form part of the performance evaluation for the managers in question.

The Lufthansa Group prepares to implement the German Corporate Due Diligence in Supply Chains Act

For the upstream supply chain, a project was launched in 2021 for the Group-wide, uniform and timely implementation of the requirements under the German Corporate Due Diligence

in Supply Chains Act (Lieferkettensorgfaltspflichtengesetz – LkSG) under the leadership of Group purchasing. The focus here is on determining the necessary adaptations of the existing risk management system to the focus on human rights and related environmental aspects under the LkSG.

A working group consisting of members of the Procurement Lufthansa Group, Group Compliance Office and Corporate Responsibility departments is working on a detailed concept to expand the established risk management system. The working group focused on the requirements of the LkSG and transparently presented the human rights risks mentioned in the law. A structured, initial risk analysis of the direct suppliers will also be used to determine which further implementation measures are required.

The Lufthansa Group's procurement management is confirmed by EcoVadis

In order to demonstrate its sustainability and responsibility towards its customers, the Lufthansa Group participates in EcoVadis, a sustainability assessment platform for global supply chains. In August 2021, the commitment of the Lufthansa Group was reconfirmed for a further year when it received "Silver Status". The procurement processes are also more highly rated than comparable companies in the EcoVadis rating.

Performance indicator

The Lufthansa Group will analyse and implement suitable indicators in line with its targets.

First-time applicability of the EU Taxonomy Regulation (EU) 2020/852



First-time applicability of the EU Taxonomy Regulation (EU) 2020/852

Pursuant to Article 8 of Regulation (EU) 2020/852 of 18 June 2020 establishing a framework to facilitate sustainable investment and amending Regulation EU 2019/2088, Deutsche Lufthansa AG is required to disclose how and to what extent the Lufthansa Group's activities are associated with environmentally sustainable economic activities pursuant to Articles 3 and 9.

Together with the reporting requirements of Delegated Regulation (EU) 2021/2178 published in the Official Journal of the EU on 10 December 2021, Delegated Regulation (EU) 2021/2139 published in the Official Journal of the European Union on 9 December 2021 forms the basis for the first-time publication of taxonomy information.

For financial year 2021, only the share of taxonomy-eligible and the share of non-taxonomy-eligible economic activities in terms of revenues, capital expenditures (CapEx) and operating expenditures (OpEx) as well as supplementary qualitative information are required to be published.

Process

Based on the regulations and delegated regulations in force as of the balance sheet date, the economic activities of the companies covered by the combined non-financial declaration have been analysed to determine whether there are taxonomy-eligible economic activities within the meaning of Article 1 No. 5 of the Supplement to Regulation (EU) 2020/852 of 6 July 2021. Both external revenue-generating and internal economic activities were examined.

The analysis of whether and to what extent taxonomy-eligible economic activities exist is based on the economic activities described in Annex 1 (“climate change mitigation”) and Annex 2 (“climate change adaptation”) of the Supplements to Regulation (EU) 2020/852 of 4 June 2021. The economic activities listed there were first analysed at the company level for their relevance to the Lufthansa Group on the basis of the business purpose of the individual companies. Following that, the share of revenues, CapEx and OpEx of the identified economic activities in relation to the total activities of the group was determined in accordance with the current requirements of the EU taxonomy.

Results

The main economic activities of the Lufthansa Group, the air transport of passengers and freight, were not yet covered by the EU Taxonomy Regulation in the reporting year. As a result, the share of taxonomy-eligible economic activities of the Lufthansa Group in total external revenues amounts to about 2%, in CapEx and OpEx within the meaning of the regulation to about 2% and about 4% respectively.

The Company believes that disclosures should only be included as part of the group management report if they are necessary for an understanding of the Group’s course of business, position and expected development.

This interpretation corresponds to a variant interpretation that the Accounting Standards Committee of Germany also presented in its submission to the European Commission on various issues in connection with the application of Article 8 of the EU Taxonomy Regulation of 7 December 2021.

As the identified share of taxonomy-eligible economic activities within the Group is not considered material in terms of revenues, CapEx and OpEx, reporting is waived.

Summary

The Lufthansa Group believes the responsible and sustainable approach to resources, the environment, customers, employees and suppliers remains an indispensable condition for the acceptance of the Lufthansa Group’s business model, its attractiveness to its stakeholders and ultimately also for its long-term financial stability.

In the financial year 2021, despite the constraints imposed by the pandemic, the Lufthansa Group implemented a variety of measures and applied concepts to strengthen the positive effects of its business activities and further reduce

negative effects wherever possible. These measures are designed to consolidate its position as a leading player in the airline industry, including in terms of corporate responsibility.

This combined non-financial declaration is based on the GRI Standards 2016. The information in this declaration relates to the disclosures and management approaches mentioned in the GRI Content Index, ↗ p. 288. The Lufthansa Group’s contributions to the United Nations global agenda are summarised in the content index Sustainable Development Goals (SDG), ↗ p. 289ff.



GRI Content Index

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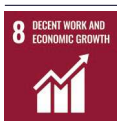
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Climate protection	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 100ff.
	GRI 305-1	Direct GHG emissions Scope 1	➤ p. 106
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Active noise abatement	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 106ff.
	Performance indicator	Percentage of aircraft that meet the 10dB criteria of ICAO Chapter 4 standard	➤ p. 108
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Operational stability	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 111f.
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	Performance indicator	Net Promoter Score	➤ p. 115
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Attractiveness as an employer	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 116ff.
	GRI 102-41	Collective bargaining agreements	➤ p. 119
	Performance indicator	Engagement Index	➤ p. 118
Diversity and equal opportunities	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 119ff.
	Performance indicator	Proportion of women at management level	➤ p. 121
Transformation capability	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 121f.
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	GRI 403-3	Occupational health services	➤ p. 123ff.
	GRI 403-4	Employee participation, consultation, and communication on occupational health and safety	➤ p. 123ff.
	GRI 403-6	Promotion of employee health	➤ p. 123ff.
	GRI 403-8	Employees covered by a management system for occupational health and safety	➤ p. 125
	GRI 403-9	Work-related injuries	➤ p. 125
	Performance indicator	Health Index	➤ p. 125
Social concerns	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 126f.
Business ethics and compliance			
Fighting corruption and bribery	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 127ff.
	GRI 205-1	Operations assessed for risks related to corruption	➤ p. 128
	GRI 205-2	Communication and training on anti-corruption policies and procedures	➤ p. 128
Respect for human rights	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 129ff.
Responsible political engagement	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 132
Responsible supply chain management	GRI 103-1, 103-2, 103-3	Management approach	➤ p. 133f.

Sustainable Development Goals (SDG) Index


T199 SUSTAINABLE DEVELOPMENT GOALS (SDG)

SDG	Sub-target	Aspect/issue	Lufthansa Group's contribution to achieving the global SDGs as defined in the 2030 Agenda of the United Nations	Page
	3.3	Employee concerns/ Health and safety at work	Vaccination against influenza was offered to employees of Lufthansa German Airlines, SWISS and Austrian Airlines in 2021	p. 123
			Diverse measures create the conditions for ongoing prevention of coronavirus infections	p. 124f.
			One special development in the reporting year was the establishment of three vaccination centres in Hamburg, Frankfurt and Munich for the coronavirus vaccination by the Medical Services of Deutsche Lufthansa	p. 125
			More than 14,000 employees of the Lufthansa Group in Germany were vaccinated between June and August 2021	p. 125
			In December 2021, the Lufthansa Group also offered a booster vaccination to its employees in Germany	p. 125
		Social concerns	Lufthansa Cargo supports global vaccine distribution by UNICEF	p. 127
	3.4	Employee concerns/ Health and safety at work	Psychosocial counselling and occupational health management strengthen managers and employees in the crisis	p. 125
	3.8	Employee concerns/ Health and safety at work	Occupational health and safety have been key action areas at the Lufthansa Group for several decades	p. 123ff.
			The Medical Services act as a comprehensive centre of excellence at the three sites in Hamburg, Frankfurt and Munich in close cooperation with the Medical Services of the Lufthansa Group companies of SWISS and Austrian Airlines	p. 123ff.
			The Medical Services at Lufthansa German Airlines, SWISS and Austrian Airlines offer the full range of services for aviation and occupational medicine, vaccinations and travel medicine, outpatient care, a comprehensive social and medical advisory service and other preventive and healthcare treatments	p. 123
Both the Medical Services and the Psychosocial Centre have a certified quality management system in accordance with DIN EN ISO 9001:2015			p. 123	
In the reporting year, the Health Index was again tracked through the "involve me!" employee survey. The rating is 2.3 on a scale from 1 (best) to 5 (worst)			p. 125	
The occupational safety function consistently implements preventive measures to avoid accidents, health risks and occupational illnesses			p. 123	
The occupational safety programme is developed continuously. Extensive training materials and several web-based training courses were developed and introduced on a large scale in the reporting year to ensure a high standard of occupational safety and health instruction			p. 125	
Accident figures allow the effectiveness of training to be monitored: 48% of the worldwide employees of the Lufthansa Group and 83% of the employees in Germany were included. All events that resulted in downtime of at least one calendar day are included in this indicator. This translates into 3.7 work-related injuries per one million hours worked. Other companies will be included in the figures over time	p. 125			
	4.5	Social concerns	A contribution to sustainable social development	p. 126f.
			The main objective of help alliance is to provide disadvantaged young people access to education and empower them to lead self-sufficient lives	p. 126
			In 2021, help alliance carried out 48 aid projects in around 20 countries with a project volume of EUR 2.7m, of which 87% were used to fund education. Approximately 40,000 disadvantaged people around the world received support through these projects	p. 127


T199 SUSTAINABLE DEVELOPMENT GOALS (SDG) (continued)

SDG	Sub-target	Aspect/issue	Lufthansa Group's contribution to achieving the global SDGs as defined in the 2030 Agenda of the United Nations	Page			
	7.2	Environmental concerns/ Climate protection	In the past decade, the Lufthansa Group has paid close attention to the research, testing and use of sustainable aviation fuel (SAF), i.e. synthetic kerosene made using renewable energy sources. Since then, the Lufthansa Group has worked in partnerships to drive key technologies for producing sustainable aircraft fuels	➤ p. 101			
			In developing SAF, the Lufthansa Group focuses on synthetic kerosene based on waste materials, ligneous biomass and renewable electrical energy (power-to-liquid – PtL) as well as research into the direct use of sunlight for fuel synthesis	➤ p. 103			
			The partnership with the Swiss Federal Institute of Technology (ETH) Zurich and its two spin-offs Synhelion and Climeworks was intensified in the reporting year	➤ p. 103			
			SWISS signed a letter of intent expressing its interest in becoming the launch customer for Synhelion's solar aviation fuel	➤ p. 103			
			In 2021, the Lufthansa Group became a launching customer for synthetic kerosene from the world's first industrial production facility for PtL fuel in Werlte	➤ p. 103			
			The Lufthansa Group is taking part in the HySupply initiative launched by the BDI and acatech. The aim is to develop a supply chain for green hydrogen from Australia	➤ p. 103			
			In order to safeguard the supply of SAF in the long term, the Lufthansa Group has developed a three-pronged strategy	➤ p. 103			
				8.2	About this combined non-financial declaration	Value-based management is an integral element of sustainable corporate governance for the Lufthansa Group. Sustainability considerations are increasingly helping to ensure financial resilience. The financial strategy of the Lufthansa Group seeks to increase its Company value in a sustainable manner	➤ p. 96
						The impact of the Company on non-financial aspects is taken into account in the Group risk management system of the Lufthansa Group	➤ p. 95
						Variable management remuneration is also linked to non-financial factors such as specific CO ₂ emissions	➤ p. 96
Employee concerns/ transformation capability	Transformation support and training established as routine processes	➤ p. 121					
	Continuous development of transformation capability	➤ p. 122					
	Apprenticeship as Service Management Professional continues. In 2021, 581 employees successfully completed the qualification programme. Since the start of the programme, 1,170 employees have successfully completed the training to become Service Management Professionals	➤ p. 122					
8.5	Employee concerns/ Attractiveness as an employer	Working and employment conditions for employees and managers are flexible and are adapted continually	➤ p. 117				
		Salary cuts and redundancies to be organised in a socially responsible way	➤ p. 118				
		The Engagement Index also provides information about the Company's attractiveness as an employer and has been tracked by the voluntary annual employee survey, "involve me!" since 2015. In 2021, the value of the Engagement Index was 2.3	➤ p. 118				
8.7	Business ethics and compliance/Respect for human rights	Respect for human rights is a key issue for the Lufthansa Group. This is also reflected in working conditions at the Group companies, the guarantee of freedom of association and assembly, rules to ensure gender equality, and the inclusion of minorities as a matter of course. It is also demonstrated in the expectation expressed in the Supplier Code of Conduct that the business partners included in the value chain should also adhere to the same principles	➤ p. 129ff.				
		The German National Action Plan on Business and Human Rights (NAP) provides the framework for measures related to human rights	➤ p. 130				
		The Lufthansa Group develops management approach for addressing human trafficking	➤ p. 130				
		Target group focused awareness programmes for managers and employees	➤ p. 130f.				
		Procedures for reporting human rights violations have been implemented	➤ p. 131				
		"Zero tolerance" for cases of sexual harassment	➤ p. 131				
		Preparations for the German Corporate Due Diligence in Supply Chains Act are being made	➤ p. 131				


T199 SUSTAINABLE DEVELOPMENT GOALS (SDG) (continued)

SDG	Sub-target	Aspect/issue	Lufthansa Group's contribution to achieving the global SDGs as defined in the 2030 Agenda of the United Nations	Page	
	8.8	Responsible supply chain management/ Procurement practices	The Group procurement policy includes the obligation to assume social and environmental responsibility	➤ p. 133	
			A project was launched in 2021 for the Group-wide, uniform and timely implementation of the requirements for the upstream supply chain under the German Corporate Due Diligence in Supply Chains Act	➤ p. 134	
			Detailed concept for expansion of the established risk management system is being developed	➤ p. 134	
		Employee concerns/ Attractiveness as an employer	Unrestricted freedom of association is an established feature of the Lufthansa Group	➤ p. 117	
			Labour union partners are firmly established at the Lufthansa Group	➤ p. 119	
	9.1	About this combined non-financial declaration	Employee concerns/ Health and safety at work	Of 60,517 Lufthansa Group employees in Germany (as of 31 December 2021), 83% benefit directly from collective bargaining arrangements. The remaining 17% are largely managers and non-payscale employees in senior positions. However, many of the regulations for these non-payscale employees are also based on the collective bargaining agreements	➤ p. 119
				See SDG 3.3, 3.4 and 3.8	
				Contribution to containing the coronavirus pandemic and upholding global supply chains. The Lufthansa Group and in particular its logistics subsidiary Lufthansa Cargo often have a particularly important role to play in responding to crises and natural disasters, because it is only by air that aid workers and equipment can be transported over great distances. Airfreight is also vital for maintaining global supply chains and helps to strengthen global trade. For these reasons, the airlines in the Lufthansa Group also decided in 2021 to maintain relevant flight connections for the transport of passengers and freight despite wide-ranging travel restrictions. This made it possible to deliver urgently needed goods	➤ p. 98
				The Lufthansa Group invests continuously in modern, fuel-efficient aircraft and engine technologies, which represent the most important element in reducing CO ₂ emissions from flight operations in this decade. Measures to technically modify the existing fleet are also constantly examined and implemented in cooperation with partners from research and industry where appropriate	➤ p. 100
				The CleanTech Hub was founded by the Lufthansa Group in 2021 and provided with financial resources to promote innovative projects in the field of sustainability	➤ p. 103
9.4	Environmental concerns/ Climate protection		Up to USD 250m has been released for the procurement of SAF on the spot market by decision of the Executive Board	➤ p. 103	
			Jointly with DFS, the Lufthansa Group is seeking new possibilities for flight track analysis based on artificial intelligence methods as part of a research and development project. The first-time application of this innovative concept is expected to allow for "greener flying" in the future through the development of new airspace structure measures	➤ p. 105	
			In 2021, Lufthansa Technik and its partners from industry and research initiated a project promoted by the Hanseatic City of Hamburg in which extensive maintenance and ground processes for handling hydrogen technology will be designed and tested	➤ p. 105	
			Lufthansa Group aircrafts collect data for climate research	➤ p. 106	
			Data that is freely and openly accessible for global research has been collected on more than 30,000 Lufthansa German Airlines flights. This data is currently used by some 300 organisations around the world		
9.5	Environmental concerns/ Climate protection		In 2021, the Lufthansa Group and partners designed a research project on the feasibility of climate-optimised flight routes and applied for funding from the German Federal Aviation Research Programme. The goal of the project is to identify ways to prevent contrails, whose climate impact was quantified for the first time in 2020	➤ p. 106	

T199 SUSTAINABLE DEVELOPMENT GOALS (SDG) (continued)

SDG	Sub-target	Aspect/issue	Lufthansa Group's contribution to achieving the global SDGs as defined in the 2030 Agenda of the United Nations	Page
	9.4/9.5	Environmental concerns/ Active noise abatement	Since 2001, the Lufthansa Group has played an active and continuous role in research projects and noise abatement activities	➤ p. 106
			Investments in modern and thus quieter aircraft	➤ p. 107
			Noise-reducing technologies for the existing fleet	➤ p. 107
			Participation in noise research	➤ p. 107
			Development of optimised flight procedures and flight routes in cooperation with system partners	➤ p. 108
			Dialogue with residents near airports and other stakeholders	➤ p. 108
			99.6% of the operational Group fleet meet standard for aircraft noise (ten-decibel criterion set by the ICAO Chapter 4 standard)	➤ p. 108
	10.2	Employee concerns/ Diversity and equal opportunities	Diversity and equal opportunities are key elements of the HR strategy	➤ p. 119ff.
			The Lufthansa Group's goal is to increase the proportion of women in management (senior executives at Leadership Circle Level) from 18.7% as of 31 December 2021 to 25% by 2025. The targets for the proportion of women at the two management levels below the Executive Board were set for Deutsche Lufthansa AG at 25.7% for the first management level and 30.6% for the second management level, both to be achieved by the end of 2025	➤ p. 120
			Within the framework of the German Act on Equal Participation of Women in Executive Positions in the Private and Public Sectors, Deutsche Lufthansa AG set itself the following targets in 2016 for the proportion of women at the senior executive level as of 31 December 2021: 20% at management level 1 and 30% at management level 2. The target was met for management level 1, with 20.5% women. At management level 2, Deutsche Lufthansa AG missed the target of 30%, with a current share of women at 26.9%	➤ p. 120 / p. 121
			Flexible working time models have been an important element in the Lufthansa Group for many years to support the reconciliation of work and family life in the best possible manner	➤ p. 117
			The Lufthansa Group supports work-life balance	➤ p. 119
			The Lufthansa Group uses a broad portfolio of activities to make it easier for employees to combine work and family and to care for relatives	
			Inclusion of people with disabilities is part of social responsibility	➤ p. 119
			Gender equality is promoted by a wide range of measures	➤ p. 120
			Support for LGBTI concerns	➤ p. 120
			Establishing new business networks to bring diversity to the fore	➤ p. 121
			People from 172 nations work for the Group today	➤ p. 121
	12.2	Environmental concerns/ Climate protection	Fuel efficiency (see SDG 13.1)	
	12.4	Environmental concerns/ Waste management	Lufthansa Group airlines reduce plastic and food waste in line with international guidelines	➤ p. 108ff.
	12.5	Environmental concerns/ Waste management	The concept for comprehensive waste reduction follows the waste hierarchy of EU Directive 2008/98/EC: Reduce - Reuse - Recycle - Replace	➤ p. 108
			Reduce: Lufthansa German Airlines, SWISS and Austrian Airlines changed the food and beverage selection on short-haul flights to purchase-only for Economy Class guests in the 2021 financial year. This has resulted in significantly fewer plastic items being loaded	➤ p. 109
			Reuse: The provision of reusable in-flight products is a firmly established concept. The potential for switching to reusable products is examined regularly when products are modified and the load is adjusted if necessary. SWISS switched to reusable cutlery and plates on short-haul flights for Economy Class guests in the reporting year	➤ p. 109



T199 SUSTAINABLE DEVELOPMENT GOALS (SDG) (continued)

SDG	Sub-target	Aspect/issue	Lufthansa Group's contribution to achieving the global SDGs as defined in the 2030 Agenda of the United Nations	Page
			Recycle: Processes for increasing the use of recyclable products are being developed and implemented in collaboration with suppliers, caterers, cleaning and disposal services – Since 2019, Austrian Airlines has been using single-use plastic cups that are recycled with other single-use packaging in a patented process that turns them back into synthetic crude oil. Up to 1 litre of crude oil can be extracted from 1 kilogram of plastic collected – In 2021, Lufthansa German Airlines conducted a field trial on incoming flights. In a closed-loop cycle, recycled PET water bottles that were left behind in the cabin were transferred to the food sector for reuse as water bottles. This meant that around 5 tonnes of recycled PET were reused for refilling each month. The outcomes will be analysed and reviewed to determine whether the process can be adopted permanently – In preparation for a future recycling loop, cups made of recycled PET, which were specially approved by German authorities to be included in a recycling process, were introduced at Lufthansa German Airlines in 2021. This will involve around 135 million cups per year	p. 109f.
			Replace: – Lufthansa German Airlines promotes the development of new types of materials for in-flight use. Single-use plastic items that today are essential to the Network Airlines' product and service concepts will be gradually replaced by those made from renewable resources (for example bamboo) or recycled raw materials (for example recycled PET) – When Lufthansa German Airlines and SWISS restructure their food and beverage offerings a significant share of the fresh food for Economy Class guests on short-haul flights will be offered in packaging made from agricultural waste material, which is produced with 100% renewable energy and is carbon-neutral.	p. 110
			The annual consumption of single-use plastic articles in the in-flight products of Lufthansa German Airlines, SWISS and Austrian Airlines was reduced by 71% in 2021	p. 110
			The Lufthansa Group launches measures to avoid in-flight food waste	p. 110
			Methodology for the collection of waste is being developed	p. 110
	12.6	Responsible supply chain management	Sustainability in the supply chain firmly established in the Company	p. 133f.
			The Lufthansa Group's expectations of its suppliers in terms of social, environmental and ethical responsibility are summarised in the Supplier Code of Conduct, which can be found on the Lufthansa Group website	p. 133
	12.8	Customer concerns/ Product 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 expressed in surveys	p. 114f.
			Demand-oriented catering and responsible product selection are being expanded	p. 114f.
			Intermodal services offer sustainable alternative forms of travel to the hubs of the Lufthansa Group	p. 115
			Voluntary offsetting or reduction of CO ₂ emissions	p. 115
	13.1	Environmental concerns/ Climate protection	The Lufthansa Group expands its own emission reduction targets	p. 102
			Net emissions are expected to be halved in 2030 compared with 2019.	p. 102
			The Lufthansa Group aims to be carbon-neutral in 2050	
			The Group aims to switch to carbon-neutral mobility on the ground in its home markets by 2030	p. 102
			In November 2021, the Lufthansa Group further specified its emission reduction targets, made a commitment to science-based targets and submitted an application for validation of these reduction targets for 2030 in accordance with the Aviation Sector Guidance of the Science-based Targets Initiative (SBTI)	p. 102
			Sustainable aviation fuel to be increasingly usable (see SDG 7.2)	
			In addition to one used aircraft, ten new aircraft went into service with Lufthansa Group airlines in 2021	p. 102
			Technical measures are being developed for existing fleet	p. 102f.
			In addition to the use of efficiently sized aircraft and the optimisation of load factors, the Lufthansa Group's operational measures for climate protection include the review and introduction of new flight procedures and navigation technologies, determination of optimal routes and speeds, and monitoring of the numerous fuel-saving measures	p. 101

T199 SUSTAINABLE DEVELOPMENT GOALS (SDG) (continued)

SDG	Sub-target	Aspect/issue	Lufthansa Group's contribution to achieving the global SDGs as defined in the 2030 Agenda of the United Nations	Page
			In 2021, 22 fuel-saving projects were under way across the Group. These projects comprise activities relating to performance and procedures, weight reduction, flight route optimisation and technical developments. This allowed another 30.4 thousand tonnes of CO ₂ emissions to be permanently eliminated and saved about 9.6 thousand tonnes of kerosene	➤ p.104
			More efficient concepts for take-off and landing are being implemented and the digitalisation of approach technologies advanced	➤ p. 104f.
			Mandatory offsets of CO ₂ emissions (ICAO/CORSIA, EU-ETS, CH-EHS, UK ETS)	➤ p. 105
			The Lufthansa Group voluntarily offsets its employees' business travel. In 2021, 24,989 tonnes of CO ₂ were offset via the climate protection organisation myclimate, with which the Lufthansa Group has been partnering since 2008	➤ p. 105
			In 2021, the Lufthansa Group simplified the process for customers to voluntarily offset their carbon emissions during the booking process and expanded existing programmes with business customers	➤ p. 105
			Absolute CO ₂ emissions rose by 13.7 million tonnes in 2021; specific CO ₂ emissions per passenger-kilometre fell to 101.6 grams	➤ p. 106
13.2		Environmental concerns/ Climate protection	Single European airspace should reduce emissions	➤ p. 103f.
			The Lufthansa Group has supported SESAR (the Single European Sky ATM Research Program) for many years with the clear expectation that measurable operational improvements in air traffic management are implemented. The Lufthansa Group is currently participating in 17 projects and is also actively involved in SESAR research and demonstration projects with various airlines of the Lufthansa Group and Lufthansa Systems as an IT provider	➤ p. 104
13.3		About this combined non-financial declaration	In 2021, the Corporate Responsibility department, which reports directly to the Chief Customer Officer, was expanded significantly in terms of content and personnel in order to meet the growing requirements and aims of the Lufthansa Group	➤ p. 97
			In 2021, the Group Policy Committee (GPC) was established and is chaired by the Chief Executive Officer. The GPC discusses politically significant issues, also relevant to sustainability, and prepares decisions	➤ p. 97
			The Sustainability Circle, led by the Corporate Responsibility department, was established in 2021. Its objective is to promote a Group-wide exchange on sustainability topics	➤ p. 97
			The Lufthansa Group's sustainability management is rated above average by external agencies	➤ p. 98
		Environmental concerns/ Climate protection	The Corporate Responsibility department is responsible for the climate protection strategy and develops appropriate measures	➤ p. 101
			To address the growing importance of carbon accounting and environmental regulation and to provide relevant information to the affected areas and employees, the Corporate Responsibility and Group Controlling areas also established an Emissions Management Committee	➤ p. 101
			In acknowledgement of the importance of sustainable aviation fuels for the Lufthansa Group, the Corporate Responsibility department has established two SAF committees	➤ p. 101
13.1 – 13.3		Environmental concerns/ Climate protection	The Lufthansa Group supports the climate protection targets of the aviation sector (IATA, "Destination 2050", EU Green Deal)	➤ p. 101f.
			Intermodal transport to Lufthansa Group hubs is being expanded	➤ p. 104
			Three national destinations are connected by rail to the hubs in Vienna and Zurich, and the expanded cooperation with Deutsche Bahn will add seven more destinations to the Express Rail network in 2021. Passengers on Lufthansa German Airlines can now book an Express Rail connection as an alternative to their flights on almost all domestic German destinations from Frankfurt. More than 220 daily connections to and from Frankfurt have been offered since the end of 2021	
		EU Taxonomy	First-time applicability of the EU Taxonomy Regulation (EU) 2020/852 reported	➤ p. 134f.

T199 SUSTAINABLE DEVELOPMENT GOALS (SDG) (continued)

SDG	Sub-target	Aspect/issue	Lufthansa Group's contribution to achieving the global SDGs as defined in the 2030 Agenda of the United Nations	Page
	16.5	Business ethics and compliance/Compliance management and fighting corruption and bribery	The Code of Conduct provides a framework for acting with integrity	➤ p. 127
			Fighting corruption and bribery is an integral part of the Compliance Management System	➤ p. 128
			All Group companies worldwide were assessed for corruption risks	➤ p. 128
			Web-based compliance training increases risk awareness	➤ p. 128
			Risk-based business partner due diligence aims to ensure integrity of suppliers and service providers	➤ p. 128
	16.10	About this combined non-financial declaration	Deutsche Lufthansa AG is publishing a combined non-financial declaration for the 2021 financial year in accordance with Sections 315b and 315c of the German Commercial Code (HGB) in conjunction with Sections 289b to 289e HGB	➤ p. 95
			The results of the materiality analysis were reviewed by the management in August 2021 in accordance with Section 289c (3) HGB and again formed the basis for selecting the aspects and concerns to be covered in this combined non-financial declaration	➤ p. 96
			The Lufthansa Group reports according to TCFD and SASB standards and bases its reporting on GRI Standards 2016	➤ p. 95
			Business ethics and compliance/Compliance management and fighting corruption and bribery	➤ p. 128
			Electronic whistle-blower system complements the existing ombudsman system	➤ p. 129
Business ethics and compliance/Responsible political engagement		The Lufthansa Group also strives to voice its legitimate interests at the political level and to discuss them with representatives of the various national and international authorities and institutions, and to provide specific information on concrete issues	➤ p. 132	
		The Group's political engagement focuses on transport (market access and traffic rights), climate policy and fair competition	➤ p. 132	
		The Lufthansa Group attaches great importance to transparency in its political engagement, and it has been reported in the EU Transparency Register since 2008 under the number 0714344663-32. The Lufthansa Group regularly publishes its position on current political issues and upcoming decisions in its Policy Brief, which is addressed to political decision-makers but is also accessible to the general public. Six issues of the Policy Brief were published in 2021 and are available on the Company's website	➤ p. 132	
Customer concerns		The Lufthansa Group has a data protection management system that meets the requirements of the European General Data Protection Regulation (GDPR) in the Group companies. The Group has established an organisational structure for data protection that is dedicated to ensuring compliance with the rights of data subjects and the duties of controllers. This entailed creating easily reachable points of contact, both internally and externally	➤ p. 111	
	17.16	About this combined non-financial declaration	Since 2002, the Company has applied the principles of the UN Global Compact for sustainable and responsible corporate governance. In addition, it supports the Sustainable Development Goals (SDGs) of the 2030 Agenda, as adopted by the UN member states in 2015	➤ p. 95
		Environmental concerns	The Lufthansa Group actively participates in relevant national and international business and industry associations and their environmental and sustainability working groups. These include active memberships of the International Air Transport Association (IATA), Airlines for Europe (A4E), Federal Association of the German Aviation Industry (BDL), Federal Association of German Industry (BDI), German Lawyers Institute (DAI) and econsense	➤ p. 99
			Other partnerships and cooperation agreements (see SDG 9.4, 9.5 and 13.1 – 13.3)	

Independent auditor's report on a limited assurance engagement regarding the Non-Financial Declaration

To Deutsche Lufthansa Aktiengesellschaft, Köln,

We have performed a limited assurance engagement on the non-financial declaration of Deutsche Lufthansa Aktiengesellschaft (hereinafter the "Company") which is combined with the non-financial declaration of Deutsche Lufthansa Group as well as the "Principles of the Group" section of the group management report incorporated by reference, for the period from 1 January 2021 to 31 December 2021 (hereinafter the "non-financial declaration").

Not subject to our assurance engagement are other references to disclosures made outside the non-financial declaration.

Responsibilities of the executive directors

The executive directors of the Company are responsible for the preparation of the non-financial declaration in accordance with Sec. 315c in conjunction with Secs. 289c to 289e HGB ["Handelsgesetzbuch": German Commercial Code] and Art. 8 of Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment and amending Regulation (EU) 2019/2088 (hereinafter the "EU Taxonomy Regulation") and the Delegated Acts adopted thereunder as well as in accordance with their own interpretation of the wording and terms contained in the EU Taxonomy Regulation and the Delegated Acts adopted thereunder as set out in section "First-time applicability of the EU Taxonomy Regulation (EU) 2020/852" of the non-financial declaration.

These responsibilities of the Company's executive directors include the selection and application of appropriate non-financial reporting methods and making assumptions and estimates about individual non-financial disclosures that are reasonable in the circumstances. Furthermore, the executive directors are responsible for such internal control as the executive directors consider necessary to enable the preparation of a non-financial declaration that is free from material misstatement, whether due to fraud (manipulation of the non-financial declaration) or error.

The EU Taxonomy Regulation and the Delegated Acts adopted thereunder contain wording and terms that are still subject to considerable interpretation uncertainties and for which clarifications have not yet been published in every case. Therefore, the executive directors have disclosed their interpretation of the EU Taxonomy Regulation and the Delegated Acts adopted thereunder in section "First-time applicability of the EU Taxonomy Regulation (EU) 2020/852" of the non-financial declaration. They are responsible for the defensibility of this interpretation. Due to the immanent risk that undefined

legal terms may be interpreted differently, the legal conformity of the interpretation is subject to uncertainties.

Independence and quality assurance of the auditor's firm

We have complied with the German professional requirements on independence as well as other professional conduct requirements.

Our audit firm applies the national legal requirements and professional pronouncements – in particular the BS WP/vBP ["Berufssatzung für Wirtschaftsprüfer/vereidigte Buchprüfer": Professional Charter for German Public Accountants/German Sworn Auditors] in the exercise of their Profession and the IDW Standard on Quality Management issued by the Institute of Public Auditors in Germany (IDW): Requirements for Quality Management in the Audit Firm (IDW QS 1) and accordingly maintains a comprehensive quality management system that includes documented policies and procedures with regard to compliance with professional ethical requirements, professional standards as well as relevant statutory and other legal requirements.

Responsibilities of the auditor

Our responsibility is to express a conclusion with limited assurance on the non-financial declaration based on our assurance engagement.

We conducted our assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised): "Assurance Engagements other than Audits or Reviews of Historical Financial Information" issued by the IAASB. This standard requires that we plan and perform the assurance engagement to obtain limited assurance about whether any matters have come to our attention that cause us to believe that the Company's non-financial declaration is not prepared, in all material respects, in accordance with Sec. 315c in conjunction with Secs. 289c to 289e HGB and the EU Taxonomy Regulation and the Delegated Acts adopted thereunder as well as the interpretation by the executive directors disclosed in section "First-time applicability of the EU Taxonomy Regulation (EU) 2020/852" of the non-financial declaration. Not subject to our assurance engagement are other references to disclosures made outside the non-financial declaration.

In a limited assurance engagement, the procedures performed are less extensive than in a reasonable assurance engagement, and accordingly, a substantially lower level of assurance is obtained. The selection of the assurance procedures is subject to the professional judgment of the auditor.

In the course of our assurance engagement we have, among other things, performed the following assurance procedures and other activities:

- Gain an understanding of the structure of the sustainability organization and stakeholder engagement,
- Inquiries of the relevant employees regarding the selection of topics for the non-financial declaration, the risk assessment and the policies of the Company and the Group for the topics identified as material,
- Inquiries of employees of the Company and the Group responsible for data capture and consolidation as well as the preparation of the non-financial declaration, to evaluate the reporting system, the data capture and compilation methods as well as internal controls to the extent relevant for the assurance of the disclosures in the non-financial declaration,
- Identification of likely risks of material misstatement in the non-financial declaration,
- Inspection of the relevant documentation of systems and processes relating to the collection and validation of selected data in the relevant departments during the reporting period,
- Analytical procedures on selected disclosures in the non-financial declaration at the level of the Company and the Group,
- Evaluation of the process to identify the taxonomy-eligible economic activities and the corresponding disclosures in the non-financial declaration,
- Evaluation of the presentation of the non-financial declaration.

In determining the disclosures in accordance with Art. 8 of the EU Taxonomy Regulation, the executive directors are required to interpret undefined legal terms. Due to the immanent risk that undefined legal terms may be interpreted differently, the legal conformity of their interpretation and, accordingly, our assurance engagement thereon are subject to uncertainties.

Assurance conclusion

Based on the assurance procedures performed and the evidence obtained, nothing has come to our attention that causes us to believe that the non-financial declaration of Deutsche Lufthansa Aktiengesellschaft and Deutsche Lufthansa Group for the period from 1 January 2021 to 31 December 2021 is not prepared, in all material respects,

in accordance with Sec. 315c in conjunction with Secs. 289c to 289e HGB and the EU Taxonomy Regulation and the Delegated Acts adopted thereunder as well as the interpretation by the executive directors as disclosed in section "First-time applicability of the EU Taxonomy Regulation (EU) 2020/852" of the non-financial declaration.

We do not express an assurance conclusion on the other references to disclosures made outside the non-financial declaration.

Restriction of use

We draw attention to the fact that the assurance engagement was conducted for the Company's purposes and that the report is intended solely to inform the Company about the result of the assurance engagement. As a result, it may not be suitable for another purpose than the aforementioned. Accordingly, the report is not intended to be used by third parties for making (financial) decisions based on it. Our responsibility is to the Company alone. We do not accept any responsibility to third parties. Our assurance conclusion is not modified in this respect.

General Engagement Terms and Liability

The "General Engagement Terms for Wirtschaftsprüfer and Wirtschaftsprüfungsgesellschaften [German Public Auditors and Public Audit Firms]" dated 1 January 2017 are applicable to this engagement and also govern our relations with third parties in the context of this engagement (www.de.ey.com/general-engagement-terms). In addition, please refer to the liability provisions contained there in no. 9 and to the exclusion of liability towards third parties. We accept no responsibility, liability or other obligations towards third parties unless we have concluded a written agreement to the contrary with the respective third party or liability cannot effectively be precluded.

We make express reference to the fact that we will not update the report to reflect events or circumstances arising after it was issued, unless required to do so by law. It is the sole responsibility of anyone taking note of the summarized result of our work contained in this report to decide whether and in what way this information is useful or suitable for their purposes and to supplement, verify or update it by means of their own review procedures.

Munich, 1 March 2022

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Nicole Richter	Yvonne Meyer
Wirtschaftsprüferin	Wirtschaftsprüferin
[German Public Auditor]	[German Public Auditor]