



# KEY MESSAGES ON THE CLIMATE POLICY OF THE LUFTHANSA GROUP



<b>1. We take responsibility for the environment</b>	Air traffic is responsible for almost three percent of global CO <sub>2</sub> emissions. The Lufthansa Group has decided to reduce the environmental impact of its business activities to the unavoidable minimum. .... Page 2
<b>2. Modern and efficient aircraft significantly reduce emissions</b>	New aircraft reduce CO <sub>2</sub> emissions by up to 25 percent per seat kilometre. The Lufthansa Group is investing billions. .... Page 2
<b>3. An internationally coordinated approach is the key to effective climate protection</b>	Since 2012, the EU Emissions Trading Scheme (ETS) has led to CO <sub>2</sub> -neutral growth of national and intra-European air traffic. With CORSIA, this will be achieved internationally from 2021. .... Page 3
<b>4. National taxes have competition-distorting effects and can be counterproductive in terms of climate policy</b>	Unilateral taxes play into the hands of foreign airports and hubs such as Amsterdam, London, Istanbul and Dubai. .... Page 3
<b>5. Creating a market for alternative fuels</b>	Synthetically produced fuels are the only real alternative for neutralising emissions in aviation as an immediate measure. .... Page 4
<b>6. Short-haul flights are indispensable for an efficient system of hubs</b>	Domestic short-haul flights could play an important role for business travellers and as feeder flights. Only 0.3 percent of local CO <sub>2</sub> emissions are attributable to domestic flights. .... Page 4
<b>7. Climate protection investments by the aviation industry require good overall conditions</b>	Governments do not need to raise additional taxes to create CO <sub>2</sub> savings. With a Single European Sky, Lufthansa alone could save up to 1.8 million tonnes of CO <sub>2</sub> annually. .... Page 5
<b>8. "CO<sub>2</sub>-neutral" flying is already possible today</b>	For more than 10 years, every Lufthansa passenger has been able to fly CO <sub>2</sub> -neutrally. The Lufthansa Group balances out the business trips of its own employees. .... Page 5



Aviation is a growth sector. It brings prosperity and international mobility. For the Lufthansa Group, this goes hand in hand with the responsibility to reduce the environmental impact of our business activities to the unavoidable minimum – in the air and on the ground.

Since aviation will continue to require fossil fuels for the foreseeable future, market-based instruments for CO<sub>2</sub> pricing play an important role. Such instruments already exist: Since 2012, aviation growth has been CO<sub>2</sub>-neutral on all intra-European and intra-German flights. From 2020, this will also apply to international flights.

## 1.

### We take responsibility for the environment

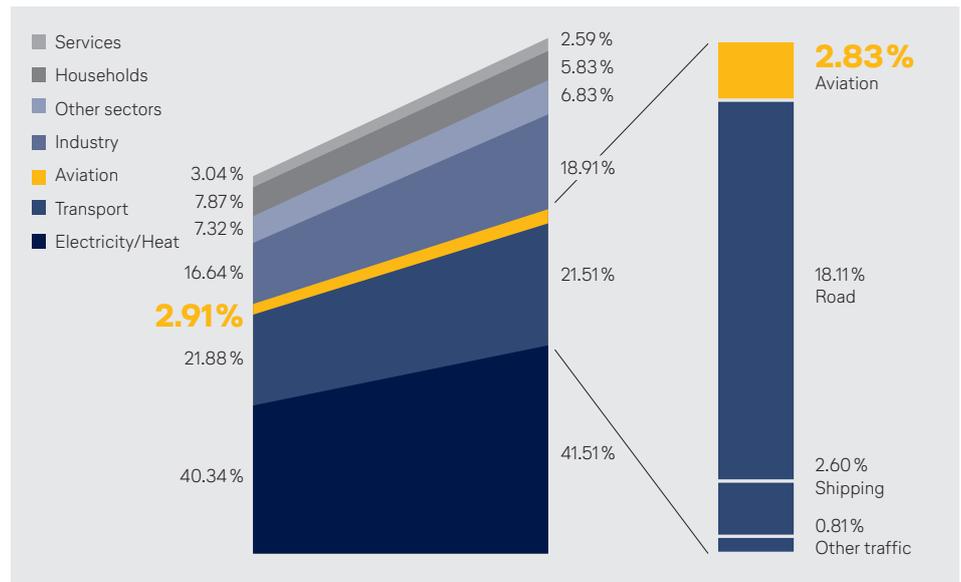
The economic sectors with the highest CO<sub>2</sub> emissions are electricity/energy producers with 41.5 percent globally, followed by transport/air traffic with 24.3 percent.

In 2016, global air traffic accounted for a total of 2.83 percent of CO<sub>2</sub> emissions. It should be noted that approximately 80 percent of CO<sub>2</sub> generated by air traffic is emitted on flights > 1500 km. There are hardly any mobility alternatives for these routes. Domestic air traffic on its own accounted for 0.3 percent of CO<sub>2</sub> emissions in Germany.

#### DEVELOPMENT OF GLOBAL CO<sub>2</sub> EMISSIONS 2000 TO 2016\*

\*Measured in terms of CO<sub>2</sub> emissions from the combustion of fossil fuels

Source: International Energy Agency (IEA) 2019, data for 2016



## 2.

### Modern and efficient aircraft significantly reduce emissions

The biggest lever for reducing emissions in aviation is the use of modern and efficient aircraft. For example, by replacing 4-jet aircraft with modern 2-jet aircraft such as the Airbus A350, jet fuel consumption will be reduced by 25 per cent per seat kilometre (SKO) offered. On short-haul routes, the efficiency gain from modern aircraft is 15 – 20 percent.

The success of continuous fleet renewal can be measured. On average in 2018, the passenger airlines of the Lufthansa Group needed only 3.65 litres of jet fuel to fly a passenger 100 kilometres. Compared with 1990, this is an improvement of more than 41 percent.

The latest order for 40 state-of-the-art long-haul Airbus A350-900 and Boeing 787-9 aircraft with an investment volume of 12 billion US dollars (list prices) supports these ambitions.



3.

### **An internationally coordinated approach is the key to effective climate protection**

Air traffic is global. Effective climate protection in aviation must therefore be an international effort. While internationally harmonized taxation is difficult for various reasons, market-based regulatory approaches using emissions certificates are more promising. There are two basic types of certificate systems:

- Cap-and-trade like the EU Emissions Trading System (ETS) for several sectors and
- Sector-specific compensation systems like CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation).

With the European ETS introduced in 2012, the EU states set upper limits for CO<sub>2</sub> emissions for periods of several years, which are converted into certificates. In a second step, these certificates are allocated to companies or can be purchased by auction and then traded with. As a result, air traffic growth has been CO<sub>2</sub>-neutral for several years on domestic German and European routes. The EU has been making efforts to include international flights in the EU-ETS, but ultimately failed in the face of stiff resistance from other countries. This EU-ETS limit thus imposes a special burden on European air traffic.

CORSIA is a global approach that includes all international flights, making climate protection neutral in competitive terms. CORSIA stabilises CO<sub>2</sub> emissions from international aviation at the level of 2020. How it works: Airlines purchase certificates corresponding to the emissions of their air traffic growth. The revenues are used to fund CO<sub>2</sub>-compensating projects. This makes the aviation industry the world's only industrial sector to date with its own climate protection scheme.

4.

### **National taxes have competition-distorting effects and can be counterproductive in terms of climate policy**

The international community, under the umbrella of the UN's aviation organisation ICAO, agreed decades ago that air traffic should not finance its infrastructure costs through taxes, but through user-based financing at airports and air traffic control. The German federal government has contravened this worldwide principle of user financing by introducing an air traffic tax: Since 1 January 2011, airlines have had to pay a tax for every passenger who starts their journey at a German airport. In 2019, this will raise 1.215 billion euros for the tax authorities.

An additional national jet fuel tax or CO<sub>2</sub> levy would thus constitute an extra burden that would distort competition. In Germany, more than 50 percent of Lufthansa flights refuel before take-off. Foreign competitors would therefore only be marginally affected. Many passengers would then no longer fly with German airlines via German hub airports, but instead book cheaper connections with foreign companies via hubs such as Istanbul or Doha. This would only shift CO<sub>2</sub> emissions, rather than reduce them.



5.

## Creating a market for alternative fuels

Synthetically produced fuels are the only real alternative for completely neutralising emissions in aviation.

- However, significantly more sustainable fuel would have to be produced. This will require even more research and development efforts. Policy makers should prioritise this topic.
- Alternative fuels – if available – are currently about 3 to 5 times more expensive than conventional jet fuel. This price difference is not feasible for airlines on a larger scale, as, even today, the cost of jet fuel accounts for about 25 - 30 percent of the operating costs.

Aviation is still a long way from the electric or hydrogen powered systems used for road traffic. The main problem is the lower energy density of known alternative energy sources (battery and hydrogen) compared with jet fuel. In addition, the storage of large quantities of hydrogen – which would be necessary for long air journeys – is extremely complex in terms of the technology required.

6.

## Short-haul flights are indispensable for an efficient system of hubs

The share of domestic flights in the total traffic capacity of German airlines amounts to 5 percent. 0.3 percent of German CO<sub>2</sub> emissions are generated by domestic flights.

Why is domestic air traffic nonetheless important? Firstly, business travellers often prefer to fly. Secondly, these connections play an important role as feeder flights. Airlines take passengers to aviation hubs to fly them all around the world from there. For example, two thirds of air passengers change planes at German hubs. This means that larger aircraft can be used and utilisation rate can be increased. This in turn means more ecologically and economically viable flights.

Lufthansa relies on intermodal transport wherever possible. This means: The better the hubs are connected to long-distance rail services, the more feeder traffic will shift to rail. There is a need for improvement in Munich in particular.

At the same time, Lufthansa also competes on long-haul routes. Example: Nuremberg – Singapore: Turkish Airlines offers this connection with one change in Istanbul. Lufthansa offers the connection via Frankfurt. Passengers who do not use the train to FRA – the connection takes about an hour longer – would choose Turkish. 95 percent of passengers on the Nuremberg – Frankfurt Lufthansa route change planes.



7.

## **Climate protection investments by the aviation industry require good overall conditions**

Lufthansa is committed to qualitative growth that conserves resources. The company invests billions of euros in fuel-efficient aircraft and supports the development and use of alternative fuels.

However, airlines have limited possibilities. Lufthansa cannot be involved in the operational side of constructing aircraft or producing alternative fuels. This is mainly the domain of manufacturers and new technology partners. It is the task of the international community and politicians to create the necessary framework conditions and to systematically stimulate markets.

The long overdue Single European Sky is an excellent example. It would eliminate unnecessary detours – between 0.8 and 1.6 tonnes of CO<sub>2</sub> per flight could be saved. For Luftansa, that would be between 1 and 1.8 million tonnes less CO<sub>2</sub> each year.

8.

## **“CO<sub>2</sub>-neutral” flying is already possible today**

For more than 10 years, every Lufthansa passenger has been able to fly CO<sub>2</sub>-neutrally. The Lufthansa Group cooperates with the Swiss non-profit foundation „myclimate“ and the „ClimateAustria“ initiative. Based on the jet fuel consumption of their flight, passengers can support projects that demonstrably reduce CO<sub>2</sub> emissions.

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