

CIVIL AVIATION AND THE ENVIRONMENT

NOISE

Aviation generates noise emissions too. However, the number of people exposed, in relation to other transport carriers, is rather low.

Exceeding the emission limit value pursuant to LSV:

Transport Carrier	Exposed population over IGW ¹⁾	
	Day	Night
Road	1'200'000	700'000
Railroad	70'000	140'000
Aviation	27'000	57'000

The noise-exposed area ²⁾ around Zurich Airport has decreased over the last 20 years by two thirds, despite an increase in flight movements. At the same time, the population in the affected areas increased by 83%.

ENERGY / CO₂

Around 2% of worldwide fossil energy consumption is assignable to civil air transport. This results in a share of about 2% of man-made CO₂ output. ³⁾ Air transport contributes with approximately 12% of worldwide CO₂ emissions within the entire transport industry. Considering transport carriers in Switzerland, around 24% of all consumed fuel is used for continental and intercontinental flights. ⁴⁾ During an intercontinental flight a modern airliner consumes within a range of 100 km around 3 litres of fuel per passenger carried.

CLIMATE

According to the report „Aviation and the Worldwide Atmosphere“ of UNEP and WMO (IPCC 1999) ⁵⁾, the worldwide air traffic contributes with 3.5% ⁶⁾ to the man-made greenhouse effect. With increasing air traffic that share could grow up to 5% by 2050. The state of scientific research on the impact of nitric oxides and water vapour arising from aircraft engines on the greenhouse effect still shows significant uncertainties. In the long-run the climatic influence will be dominated by the CO₂ emission. The latest scientific studies assume that based on an assessment period of 100 years these materials strengthen the greenhouse effect of CO₂ by the factor 1.35 ⁷⁾. CO₂ emissions at cruise altitude have the same effect as ground-level emissions (e.g. road traffic, industry or heating). Approximately one third of the nitrogen oxide at cruising level originates from shipped ground-level emissions, from aircraft or has natural origins (thunderstorm).

¹⁾ IGW – mission limit value (aircraft noise: night-time > 50 dB(A) Leq) Principles: Zurich 2013, Geneva 2012

²⁾ 60 dB(A) Leq day-time noise (IGW ES II)

³⁾ Metz, B., Davidson, O. R., Bosch, P., Dave, R., & Meyer, L. 2007. *Climate change 2007: Mitigation of climate change. Working group III contribution to the fourth assessment report of the IPCC*

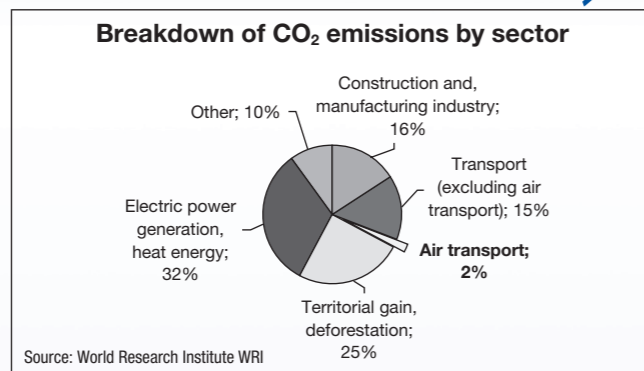
⁴⁾ Overall energy statistics of the Federation

⁵⁾ IPCC is the scientific body of UNEP (United Nations Environmental Program) and WMO (World Meteorological Organisation).

⁶⁾ Besides the impact of CO₂, further effects such as nitric oxides and condensation trails related to emissions released to date are included herein.

⁷⁾ D.S. Lee et al. Transport impacts on atmosphere and climate/Aviation Atmospheric Environment 44 (2010) 4678–4734

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The global aviation industry is engaged to further mitigate greenhouse gas emissions.

This engagement is based on four pillars:

- **1st pillar: improved technology** (e.g. lower-emission engines, lighter aircraft equipment, alternative fuels from renewable resources)
- **2nd pillar: operational measures** (e.g. shorter and more direct air routes, fuel-saving start and landing procedures)
- **3rd pillar: more efficient infrastructure** (e.g. better use of airspace and airports)
- **4th pillar: economic measures** (e.g. voluntary CO₂-offset, emission trading)

EMISSION TRADING

In 2012, aviation became subject to the European Emissions Trading System (EU ETS). Airlines must thereby compensate their CO₂ emissions by acquiring CO₂ emission rights. According to the EU Directive, the EU ETS should initially apply to all flights to and from destinations in Europe. Due to international opposition against its extraterritorial legal effects, the EU ETS currently applies to flights within the EU only. The Federal Council intends including Swiss air transport when associating the Swiss emissions trading system with the EU ETS. A corresponding agreement was initiated early 2016. In autumn 2016, ICAO decided introducing the Carbon Offsetting and Reduction Schemes (CORSA). This requires aviation to compensate for CO₂ emissions that exceed the level of 2020. To date, 68 countries (including Switzerland), being responsible for more than 85% of the CO₂ emissions from international civil aviation, have expressed their intention to participate in this system. The possible influence of CORSA on the future design of emissions trading in Europe is currently not foreseeable yet. The aviation sector supports the introduction of CORSA, however, rejects regional measures such as EU ETS. These would lead to competitive distortions and induce detour traffic via hubs outside Europe.

AEROSUISSE

LIST OF ITS 145 MEMBERS (as at 30th April 2017)

Zassistu GmbH, Brugg
 Aero-Club of Switzerland, Lucerne
 Aéroport de Neuchâtel SA, Colombier
 Aéroport de Sion, Sion
 Aéroport Région Lausannoise
 La Blécherette SA, Lausanne
 Aéroport Régional Les Eplatures SA, La Chaux-de-Fonds
 AFS all-financial-solutions gmbh, Lupfig
 Air-Espace Flight Academy, Colombier
 Airline Assistance Switzerland AG, Zurich-Airport
 Airport Altenrhein AG, Altenrhein
 Airport Buochs AG, Buochs
 Air Service Basel GmbH, Basel-Airport
 Albinati Aeronautics, SA, Geneva-Airport
 Alljets AG, Zurich-Airport
 Altran AG, Lausanne
 Amac Aerospace Switzerland AG, Basel
 AOPA Switzerland, Zurich
 Association Genevoise de l'aviation d'affaires AGAA, Geneva-Airport
 Avex Aviation Experts AG, Wallisellen
 Aviasuisse, Zurich
 Aviation Experts Group, Eglisau
 Aviation Media AG, Teufen
 AviMall GmbH, Zurich
 Avionix GmbH, Winterthur
 AviSwiss GmbH, Zollikon
 Belair Airlines AG, Glattpfug
 BGI Bertil Grimme AG Insurance Brokers, Zug
 Breitling SA, Grenchen
 BTEE SA Environnement & Sécurité/ AIRTRACE, Geneva
 Cargologic AG, Zurich-Airport
 Cat Aviation AG, Zurich-Airport
 Cessna Zurich Citation Service Center, Zurich-Airport
 CGS Corporate Group Service AG, Zurich-Airport
 Clemessy Switzerland AG, Basel
 Clin d'Ailes, Musée de l'Aviation Militaire, Payerne
 COREB Communauté régionale de la Broye, Payerne
 Custodio AG, Zurich-Airport
 Dasnair SA, Geneva-Airport
 ddpConcepts GmbH, Ennetbürgen
 Dnata Switzerland AG, Kloten
 Dufry International AG, Basel
 Easyjet Switzerland SA, Geneva-Airport
 E-Aviation Swiss Sagl, Agno
 Ecole de parachutisme de Château d'Oex, Le Vaud
 EFOS Flight Charter AG, Kloten
 Engadin Airport AG, Samedan
 Ermini AG, Zurich
 EuroAirport Basel-Mulhouse-Freiburg, Basel-Airport
 European Business Aviation Association EBAA (Switzerland), Zollikon
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 groWING of Switzerland GmbH, Hünenberg
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 Huber + Suhner AG, Pfäffikon
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 IG AirCargo, Zurich-Airport
 IG Berner Luftverkehr, Bern
 IG Flughafen Zürich, Zurich-Airport

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Zurich-Airport
 SPAS Seaplane Pilots Association Switzerland, Lutry
 SR Technics Switzerland, Zurich-Airport
 SSG Swiss Space Industries Group, Zurich
 Super Constellation Flyers Association, Basel
 Swiss Aerodromes, Zurich
 Swiss Aerospace Cluster, St. Gallen
 Swiss Aircraft Maintenance Association SAMA, Basel
 Swiss Air Force, Dübendorf
 SWISS ASD The Aeronautics, Security and Defence Division of Swissmem, Zurich
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AEROSUISSE

Established in 1968, AEROSUISSE as umbrella association aims to maintain the interests of the Swiss aerospace sector and to ensure its means of existence. It takes influence on the formation of the legal framework in the domain of aviation and space. Today, AEROSUISSE represents 145 companies and organisations including scheduled and charter airlines, international and regional airports, airfields, fixed base operators, air traffic control, maintenance shops, aircraft and subcomponents manufacturers, Swiss Air Force, companies within the space industry, flight training schools as well as all influential aviation associations and other companies being related to aerospace in a broader sense.

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- Aero-Club of Switzerland, Lucerne
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- The Federal Office of Civil Aviation, Bern
- Federal Statistical Office, Neuchâtel
- Federal Office for the Environment, Bern
- Deutsche Forschungsanstalt für Luft- und Raumfahrt, Oberpfaffenhofen (D)
- Flughafen Zürich AG, Zurich-Airport
- IATA International Air Transport Association, Geneva
- IDT Institut für öffentliche Dienstleistungen und Tourismus, St.Gallen
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- Luftfahrtpolitischer Bericht des Bundesrates 2004
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- Swiss Hanggliding & Paragliding Association SHPA, Zurich
- Switzerland Tourism, Zurich
- SIAA Swiss International Airports Association, Zurich
- skyguide, swiss air navigation services Ltd., Geneva
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