ENVIRONMENTAL REPORT

THE ESSENTIALS
Highlights 2019

63
direct flight routes above Switzerland

-33,500 t/y CO₂
Improved approach/arrival management

142 t/y
Use of drones instead of aircraft for calibration flights

-90%
Holding time around Zurich Airport

+37.4%
Energy efficiency since 2006

-200 MWh/y
New "Smart Radio" system

-202 MWh/y
Lower electricity consumption through energy savings

-40%
Electricity consumption through virtualised telephone exchange
Skyguide continues to consistently implement its environmental strategy, investing in efficiency measures on the ground and better traffic handling in the air. Its actions are having their impact.

Since 2006, Skyguide has raised its energy efficiency by over 37%. Parallel to this, Switzerland’s air navigation services provider is actively involved in various European projects to enhance the entire air traffic management system’s environmental credentials.

Many of our long-term goals here have already been achieved. But, by maintaining a dialogue with our partners and customers and developing green innovations, we will continue to pursue the most efficient flight procedures, in the interests of safety and the environment.

Alex Bristol
CEO Skyguide
Sustainability and protecting the environment are prime Skyguide priorities. The company is committed to reducing the impact of its business and operations in ecological terms.

1. Skyguide **handles its air traffic efficiently** to help reduce the CO2 this generates as much as possible. The more direct its route, the less impact a flight will have in environmental terms.
2. Skyguide ensures **efficient energy use** in its premises and facilities, to minimise its own environmental footprint.

The global aviation sector has been improving its energy efficiency for years. But additional actions are still required to offset the CO2 emissions caused by growing air traffic volumes. Skyguide aims to play its full part here, by developing **green innovations** such as the use of drones for calibration flights.
Air traffic control can influence the route a flight takes between takeoff and landing. Skyguide has identified three action areas here: optimised routes, new flight procedures and efficient traffic management.

Skyguide is steadily developing an extensive network of direct flight routes for air traffic passing through Swiss airspace. These shorten flight distances, ease airspace pressures and reduce aircraft weights, since less fuel

Developing green innovations
Airport instrument landing systems must be regularly calibrated by special flights. In the past, these have been performed by specially equipped aircraft. Skyguide has now started to use drones for these purposes instead. This should reduce such special aircraft flights by 50% from 2020 and by 70% from 2023, with annual CO2 savings of 142 and 199 tonnes respectively.

A drone being used for calibration purposes at Geneva Airport:

skyguide.ch/CNSdrone
needs to be carried. Skyguide has provided airlines with over 60 optimised route segments in the last five years.

Enhanced arrival sequences keep traffic fluid during the approach phase of flight, and avoid holding patterns. Together with the airlines, skyguide has developed XMAN, an extended arrival management system under which flights en route to Zurich Airport will adjust their speed while still in adjacent airspace to optimise their arrival time.

Assigning arrival slots to every Zurich-bound aircraft is also having a positive impact in environmental terms. Here skyguide has been working with SWISS and airport operator Flughafen Zürich under SESAR’s AIRE programme, which is helping to improve the efficiency of eastbound transatlantic flights. AIRE has already reduced holding times for such flights by 90%, which cuts their annual CO2 emissions by some 2100 tonnes.
Direct routes

Skyguide has established some 60 optimised flight routes in its airspace since 2015. One example: time and fuel savings in the Geneva area by using a direct route between Pontarlier (Jura) and Chambéry (Savoie).

XMAN: optimised arrival sequences

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Skyguide is also keen to optimise its own energy consumption, and is an active participant in the “Energy Strategy 2050” of the Swiss Confederation. To this end, the company constantly adopts actions under the Confederation’s “Exemplary in Energy” initiative. With success: despite increasing automation, skyguide has raised its energy efficiency by 37.4% since 2006 – over 10% more than the initiative prescribes.

Skyguide is particularly active in three action areas here: buildings & renewable energy, mobility and computer centres & green IT. For several years now, the company has been pursuing some 36 different actions, 80% of which it seeks to have implemented by 2020. By 2019 the degree of such implementation had already reached 79.9% (compared to 76% for the previous year). Skyguide expects to exceed its 80% target in 2020.

“Buildings & renewable energy” covers all the actions to ensure energy-efficient construction and conversions, obtaining electricity and heating from renewable energy sources and eco-power procurement. Some 80% of these
actions had been taken by 2019. In “Mobility”, which includes promoting public transport and reducing duty travel, skyguide had adopted 94% of the actions agreed by the end of 2019. And in “Green IT”, where its focus is on virtualising company systems, good progress is also being made, with 66% of the actions defined in the Swiss Confederation’s “Exemplary in Energy” drive already taken by 2019.
Promoting wind energy

The adoption of alternative energy sources is well under way. The renewable energies here include wind energy, whose importance should rise substantially in the next few years.

Skyguide has been receiving a growing number of requests for impact assessments from wind farm operators. Wind turbines produce clean energy. But they can interfere with air traffic management systems. In this video, the Head of the Competence Centre for Wind Energy Facilities explains how skyguide ensures their safe coexistence with aviation activities.

skyguide.ch/windturbines

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Finding the right compromise

Time and again in the aviation world, conflicts arise between noise, capacity and cost considerations and environmental concerns. Finding a middle way is no easy task. In all its dealings with customers, partners and authorities, skyguide champions safe and efficient flight procedures.

But at Zurich Airport in particular, complex procedures and longer routings are being developed for noise abatement reasons. The operating concept switches several times a day between northerly, easterly and southerly approaches. This creates multiple crossings on the ground and in the air, adding to the operating complexity.

This has ramifications, for flight operations and the environment alike. Balanced solutions here can only derive from an intelligent collaboration among all partners. Which is what skyguide seeks daily to ensure.
More complete information can be found in the Environmental report 2019

www.skyguide.ch/annual-report