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**Second Meeting of the ICAO EUR Environment Task Force, Environment
Capacity Building Activities (Minsk, Belarus, 8-10 October 2019)**

ICAO Action Plan on CO₂ Emission Reduction of Switzerland

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Minsk, 9th October 2019



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European Civil Aviation Conference ECAC



Albania
Armenia
Austria
Azerbaijan
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France

Georgia
Germany
Greece
Hungary
Iceland
Ireland
Italy
Latvia
Lithuania
Luxembourg
Malta
Moldova
Monaco
Montenegro

Netherlands
Norway
Poland
Portugal
Romania
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland

North Macedonia
Turkey
Ukraine
United Kingdom



1. European Civil Aviation Conference ECAC

- Based in Paris, ECAC is Europe's largest and longest-standing aviation organisation and is part of the ICAO air transport global community.
- Its mission is the promotion of the continued development of a safe, efficient and sustainable European air transport system.
- ECAC plays a key role in supporting its 44 Member States as they address issues affecting the European civil aviation sector, in particular in relation to safety, security, facilitation, environment, training, economic and legal matters.



1. European Civil Aviation Conference ECAC

- ECAC's priorities to fulfill its mission are threefold: to act as a pan-European aviation think-tank, to support its Member States in developing harmonised positions and serve as a centre of expertise.
- ECAC also acts as a forum for joint discussions between Europe and other regions or States, promoting understanding on policy matters between its Member States and other regions of the world.



1. European Civil Aviation Conference ECAC

- 1st round June 2012: 37 ECAC States submitted an Action Plan in order to fulfill the ICAO Assembly Resolution A37
- 2nd round June 2016: 42 ECAC States submitted their individual Action Plans in order to fulfill the ICAO Resolution A38-18
- 3rd round August 2018: 18 ECAC States submitted their updated individual Action Plans in order to fulfill the ICAO Resolution A39-2



1. European Civil Aviation Conference ECAC

Action Plans include

- (i) a section common to all European Action Plans presenting measures taken collectively across Europe, which was developed collectively ACCAPEG and endorsed by the DG's
- (ii) a national section, which further describes the national contribution to the European measures, and/or describes additional measures taken by individual States and their stakeholders.



1. European Civil Aviation Conference ECAC

- Six States submitted only the common section, without any additional national section. Also, for the first time in 2016, an aggregated baseline (for the 44 ECAC States) was provided by EUROCONTROL, including data and a robust set of forecasted traffic and emissions for the region.
- Directors General agreed in 2017 that a common section presenting the mitigating measures taken collectively and including a robust European baseline scenario provided by EUROCONTROL, should be maintained in European States' national action plans for emissions reductions.



1. European Civil Aviation Conference ECAC

In summary:

- Harmonized approach throughout ECAC States
- Illustrate and emphasize the ongoing commitment of European States to limit or reduce the impact of aviation to climate change
- The specificity of the European region is to have adopted a comprehensive and coordinated approach for mitigating climate change, with actions taken collectively



2. Common Section (Supranational Measures)

- 1) Robust European baseline scenario provided by EUROCONTROL
 - 2016: first baseline for all 44 ECAC States
 - Based on EUROCONTROL PRISME data warehouse including the actual flight distance and the cruise altitude by airport pair
 - Future year fuel burn and emissions (2020, 2035) are modelled based on actual flight distances and cruise altitudes by airport pair in 2014.



2. Common Section (Supranational Measures)

- Scenario of engine-technology freeze, as of 2014.

Year	Traffic (millions of departing flights)	Total Fuel burn (in million tonnes)	CO ₂ emissions (in million tonnes)
2010	7,12	40,34	127,47
2020	8,48	48,33	152,72
2035	11,51	73,10	231,00

Total fuel burn and CO₂ emissions



2. Common Section (Supranational Measures)

2) Mitigating measures taken collectively

- Aircraft related technology development
- Alternative Fuel
- Improved Air Traffic Management and Infrastructure Use
- Economic / Market-Based Measures
- EU Initiatives in Third Countries
- Support to Voluntary Actions: ACI Airport Carbon Accreditation



3. Action Plan of Switzerland: National Measures

Importance of national section

- Although measures taken commonly on a supra-national manner, the are also measures taken on a national level
- Swiss Action Plan comprises measures taken by State as well as by private entities (airlines, airport, ASNP)
- Measures addressed are not restricted to flying the fleet of aircraft

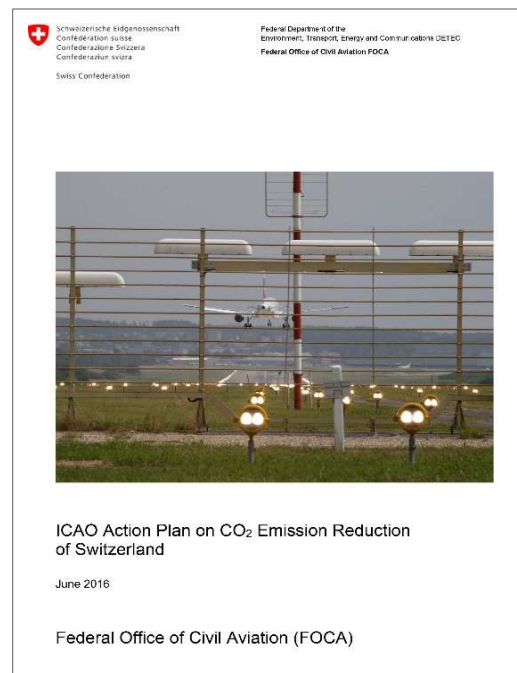


3. Action Plan of Switzerland: National Measures

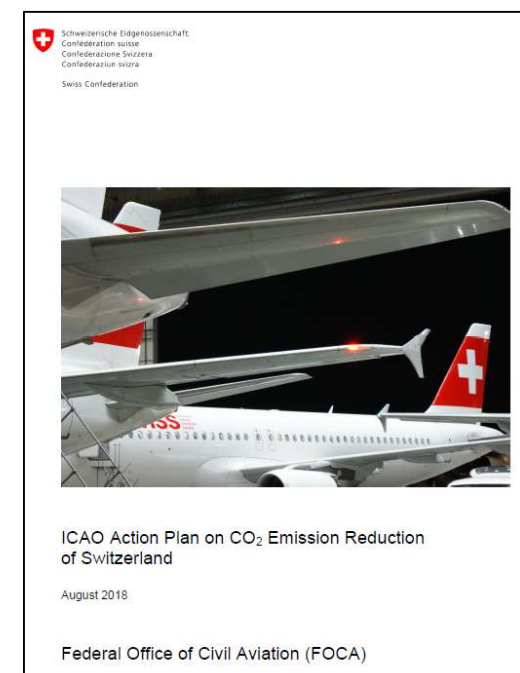
June 2012



June 2016

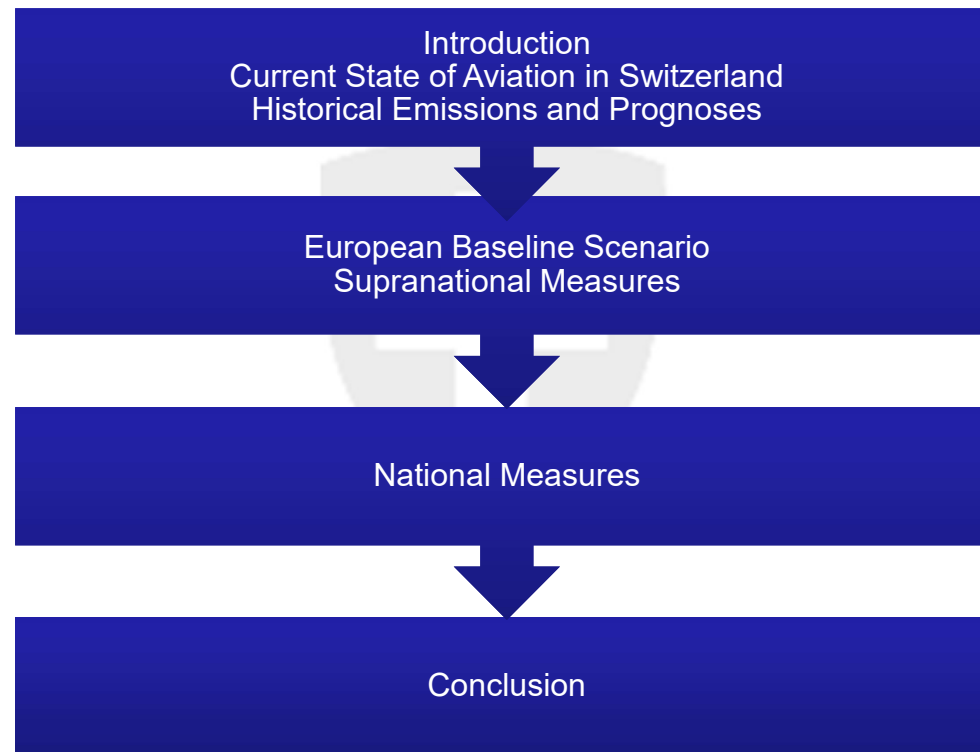


August 2018





3. Action Plan of Switzerland: National Measures





3. Action Plan of Switzerland: National Measures

A) Aircraft related technology

- Purchase of new aircraft:

SWISS Int. Air Lines replaced its short-haul aircraft fleet with the new Bombardier C-Series from 2016 to 2017 ordered and put into service Boeing 777-300ER as well as placed orders for A320_{NEO}



3. Action Plan of Switzerland: National Measures

A) Aircraft related technology

EasyJet ordered 100 A320neo and 35 A320ceo aircraft for 2020T on a global scale (numbers cannot be separated for one country)

An operator replaced five Aérospatiale Alouette III (SA 316B) with four Eurocopter AS 350 B3 and two Eurocopter EC 135 helicopters.



3. Action Plan of Switzerland: National Measures

A) Aircraft related technology

Retrofitting and upgrade improvements on existing aircraft

- Airline operators install winglets or sharklets on the wing of their aircraft, which reduces the CO₂ emissions approximately from 2 to 3.4 %.



3. Action Plan of Switzerland: National Measures

B) Alternative Fuels

- Tax exemption of bio fuels used for domestic purposes

C) Improved Air Traffic Management and Infrastructure Use

- More efficient use and planning of airport capacities (Greener Wave, iStream ,Fuel Uptake Planning)



3. Action Plan of Switzerland: National Measures

C) Improved Air Traffic Management and Infrastructure Use cont'd

- More efficient ATM planning, ground operations, terminal operations (departure, approach and arrivals), en-route operations, airspace design and usage, aircraft capabilities (Free Route Airspace FRA, Extended Arrival Manager XMAN, AVISTRAT).



3. Action Plan of Switzerland: National Measures

D) More efficient operators

- Update of flight planning software
- Analysis of fuel relevant data (SOCRATES)
- Use of ECON Cost Index
- Weight reduction
- Optimised of take-off power settings
- Single engine taxiing
- Optimised Descent Profiles ODP
- Optimising of Contingency Fuel (ACF)



3. Action Plan of Switzerland: National Measures

E) Market Based Measures

- (Passenger duty is currently under discussion in Parliament but is not part of the Action Plan)
- Accredited offset schemes: Airlines offer passengers access to voluntary offset schemes (e.g. through myclimate: www.myclimate.org)



3. Action Plan of Switzerland: National Measures

F) Other Regulatory Measures

- Special financing of civil aviation: use of earmarked funds from Swiss domestic mineral oil tax; the special financing is intended to support measures to limit the impacts of civil aviation on the environment, to prevent unlawful acts against civil aviation operations (enhancement of security) and to promote a high standard of technical safety. In order to qualify for special financing, a planned measure; 12.5 to 25% of funds dedicated to environmental measures



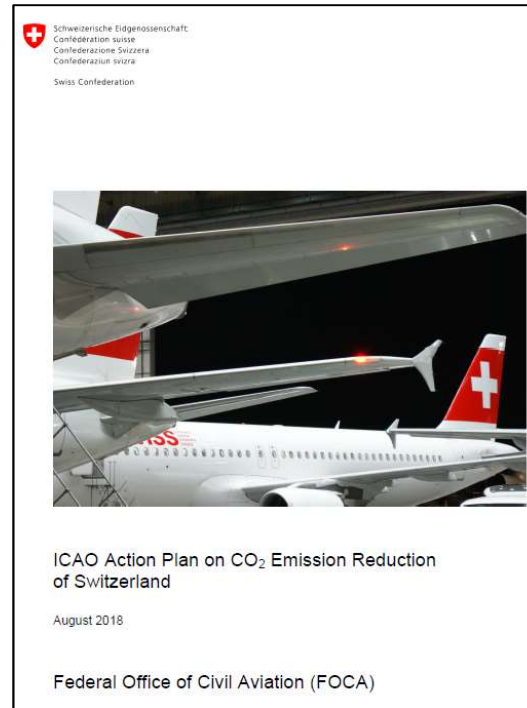
3. Action Plan of Switzerland: National Measures

G) Airport improvements

- Reduced energy demand and preferred cleaner energy source
- Enhanced Ground Support Equipment (GSE) management
- Conversion of GSE to cleaner fuels
- Improved transportation to and from airport



3. Action Plan of Switzerland: National Measures



The Swiss Action Plan has been published in the internet:

<https://www.bazl.admin.ch/bazl/de/home/fachleute/regulation-und-grundlagen/umwelt/icao-aktionsplan-zur-reduktion-von-co2-emissionen-der-schweizer-.html>



4. Discussion / Q & A

