

# 2024 ICAO REGIONAL SEMINAR ON ENVIRONMENT

Hosted by



ICAO MID

**MID Region**

12 to 13, August 2024

Cairo, Egypt



ICAO

ENVIRONMENT



ACT SAF

CORSIA





# 2024 ICAO REGIONAL SEMINAR ON ENVIRONMENT

Hosted by ICAO MID

MID Region  
12 to 13, August 2024  
Cairo, Egypt



## State Action Plan "S.A.P." updates in Egypt The Challenges and Opportunities.

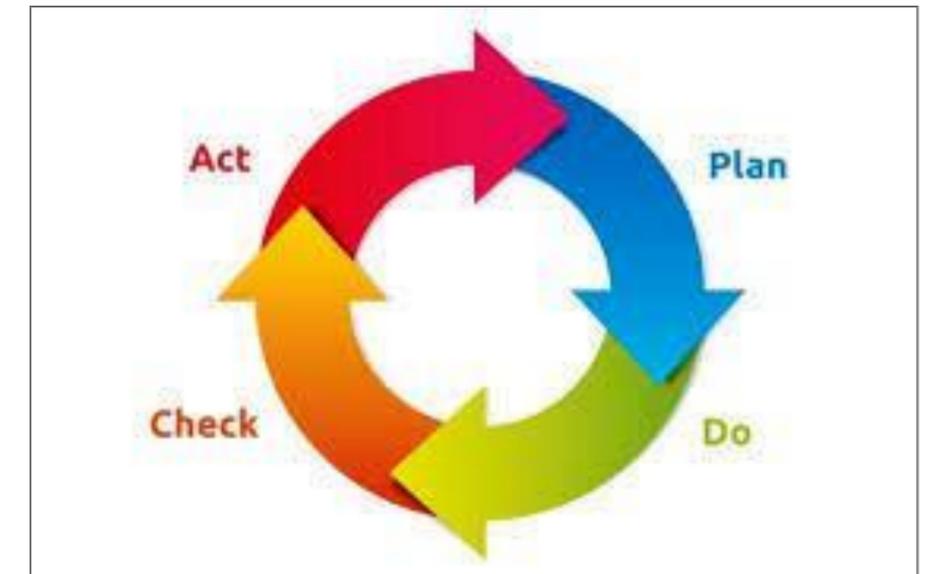
Presented by Engineer ABDELGHAFAR ELSAYED  
Egypt CAEP Member and SAP and CORSIA Focal point of contact



جمهورية مصر العربية  
وزارة الطيران المدني  
Ministry of Civil Aviation

# Historical Background

- Egypt prepared and submitted to International Civil Aviation Organization “ICAO” on June 2016 its 1<sup>st</sup> ECAA Approved Action Plan on Emission Reduction “APER” ;which outlines the Egyptian Civil Aviation policies and actions for addressing Carbon dioxide “CO<sub>2</sub>” emissions from international aviation.; using the secured Interactive website of “ICAO”” <https://portal.icao.int>”. Furthermore Egypt may select another method approved by ICAO to submit its updated “APER”.
- The PLAN – **rather than just the obligation** – is considered **an important tool in providing ICAO** with Egypt’s action plan on its activities to reduce CO<sub>2</sub> emissions, as part of the national plans for capacity building and the assistance which called on States for the first time to reduce CO<sub>2</sub> emissions, where States were for the first time invited to voluntarily take action, starting from the 37th Session of ICAO Assembly in 2010 up to the 41th Session of ICAO Assembly (A41 Resolutions) The PLAN should be based on a **Capacity Building Roadmap, through the grouping of relevant stakeholders in accordance with a specific vision and a number of legislative requirements, in conformity with ICAO Annex 16 & ICAO Assembly Resolutions.**
- Egypt has benefited from CAEP’s support and ICAO MID workshops of the action plans initiative, which provided experts from participating States an overview of ICAO’s activities and direct assistance in the preparation and development of their action plans, as published on the ICAO website.
- Egypt has benefited from the EuroMed Transport Assistance Project (ETAP) in collaboration between ECAA, EASA and EU and hosted a face to face 3-days workshop in May 2024. **More than 35 Egyptian representatives nominated from 12 Air Operators, ANSP and Egyptian Airports.**
- Egypt has benefited from the Arab Civil Aviation Organization (ACAO) Forums up to the 2<sup>nd</sup> Arab Forum for Environment the civil aviation held in Marrakesh Feb 2024.



# 1) Development of SARP's on National Legislations is your CORE for any Action Plan

## ❖ Environmental Protection Legislation in Egypt :-

I-Chicago Convention  
“specially Art.37&44”

Egyptian Aviation Law # ” 28/1981 amended by 136/2010”  
“specially Art.2 bis. & Art. 30”

## II-Regulations

○ **Aircraft Noise**

*Egyptian Regulations is available to the public on the website” [www.civilaviation.gov.eg](http://www.civilaviation.gov.eg)”*

“Annex 16 Volume I”

→ ECAR Part 36

○ **Aircraft Engine Emissions**

“Annex 16 Volume II”

→ ECAR Part 34

○ **Aeroplane CO<sub>2</sub> Emissions Certification Standard** “Annex 16 Volume III”

→ ECAR Part 38

○ **CORSIA** “Carbon Offsetting and Reduction Scheme for International Aviation” “Annex 16 Volume IV”

→ ECAR Part 40

○ **Local Air Quality (LAQ)**

“Annex 14 Volume IV”

→ ECAR Part 139

“GUIDANCE MATERIAL ON THE ENVIRONMENTAL ASPECTS OF THE DEVELOPMENT AND OPERATION OF AN AERODROME IS INCLUDED IN THE **EAC 139-16** “

WHILE THE GUIDANCE ON ICAO [DOCUMENT 9889 "AIRPORT AIR QUALITY MANUAL"](#).

Continued 1) Development of SARP's on National Legislations is your CORE for any Action Plan

### ❖ Challenges & Opportuntirs:

**1-No independent Governing Body within ECAA is responsible for Environmental issues yet.**

✓ Now All STAKEHOLDERS together with All Egyptian Operators have be represented in the Ministerial Decree dedicated to updating the SAP during 2024.

✓ Now proposed a new General Directorate within ECAA for the Environmental issues in the civil aviation, pending approval by the Government.

**2- Most of the legislations above have great effects on sustainable developments in Egypt & Economical aspects for the Aviation STAKEHOLDERS. Including Sustainable Alternative Fuels(SAF)/Lower Carbon Aviation Fuel (LCAF).**

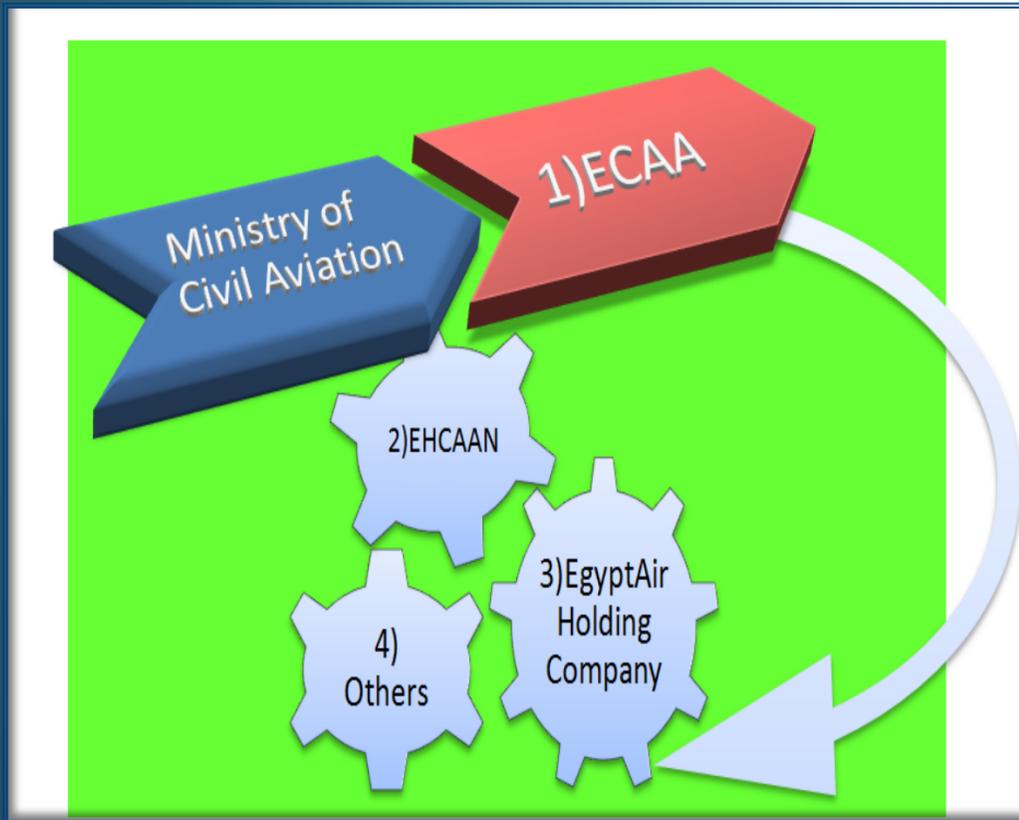
✓ ALL EGYPTIAN Stakeholders are invited & involved in any Process for our National Legislations development.

✓ Proposed to sign the “Terms and conditions” of ICAO ACT-SAF to the Ministerial levels.

✓ SAF Deploy (interest in the state-under considerations)

## 2) Bringing ALL STAKEHOLDERS together is your magic key for Success

- There are Internal and External **STAKEHOLDERS**. The focal point of contact of SAP should make a good strategy of communications throughout ALL STAKEHOLDERS (including EXTERNAL).
- External “out of your Organization” maybe either within your STATE or Outside it. Some of the External STAKEHOLDERS *such as –but not limited to-* are:-



❑ ICAO HQ/ICAO MID , ACAO, AFCAC ,ETAP, IATA ,CANSO ,ACI ,EUROCONTROL ,MIDRMA...etc

- ❖ "MSEA": Ministry of State for Environmental Affairs
- ❖ "MOE" : Ministry of Energy
- ❖ **EHCAAN**: Egyptian Holding Company for Airports and Navigation
- ❖ Air Operators 12 instead of only 3 on the 1<sup>st</sup> APER
- **Airworthiness department within ECAA**
- **Others**

### 3) Prioritising & Selecting your best suited Mitigation Measures from the ICAO Basket of Measures (BOM)

**a) Modern technological improvements for aircraft (including fleet renewal);**

**b) Improvement of Air Traffic Management (ATM);**

**c) The more effective operational measures.**

*Note: it is expected that the new Egyptian plan for the long term (2030-2050) will include the SAF/LCAF*

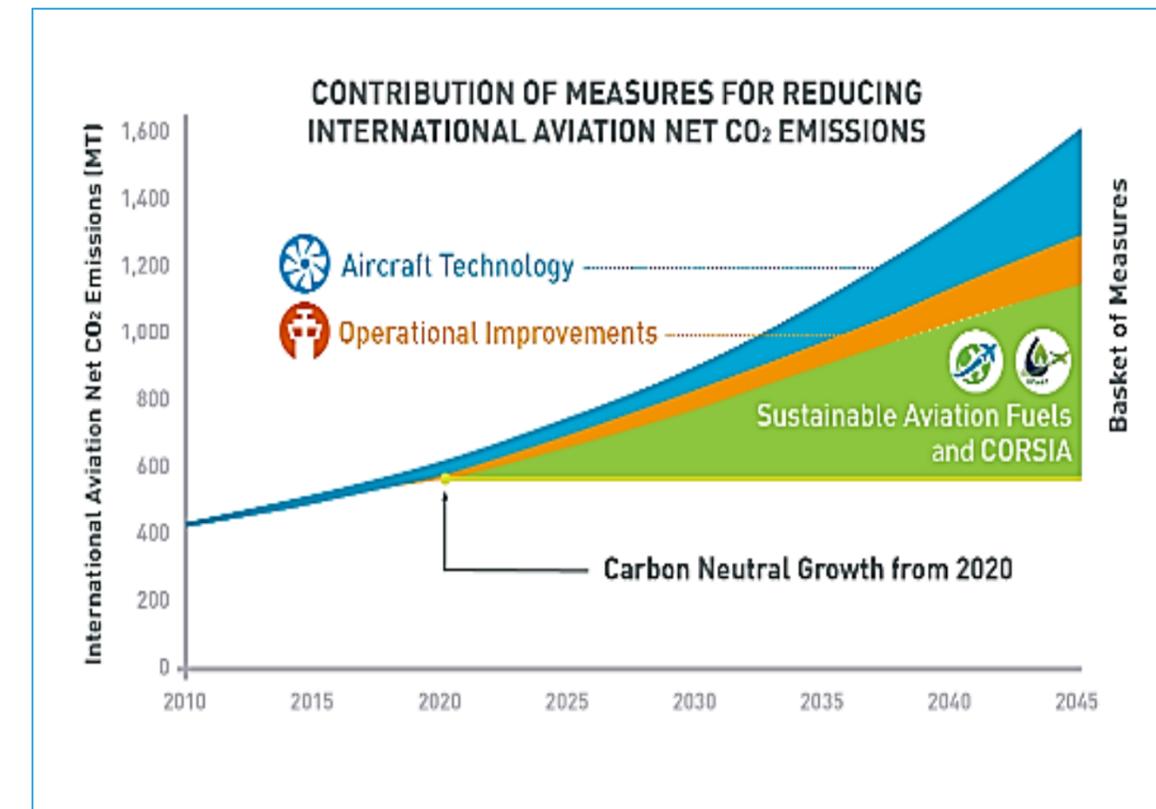
- ❑ Egypt's 1<sup>st</sup> APER: entering the estimated baseline of fuel consumption and CO<sub>2</sub> emissions for international aviation (using time series methodology for a period of 5 past consecutive years excluding their extremes)
- ❑ Then, enter the projected fuel consumption and CO<sub>2</sub> emissions (i.e. after implementation of mitigation actions) that Egypt envisages to reach.
- ❑ Noting that this year-by-year description of the projected **Revenue Tonne Kilometres (RTK)**, fuel consumption, and CO<sub>2</sub> emissions can be done consecutively or periodically

## Combined 3) Prioritising & Selecting your best suited Mitigation Measures from the ICAO (BOM)

### DEFINE A BASELINE SCENARIO:

→ SAP n. 1 was Developed based on data from 3 operators operating internationally. For SAP n. 2 there are 8 operators operating internationally (i.e. Air Arabia Egypt, Air Cairo, Alexandria Airlines, AlMasria Universal Airlines, Egyptair Airlines, FlyEgypt, Nesma Airlines, Nile Air)

→ The ICAO FORMs M, C and A shall be collected to calculate the RTK and the average fuel efficiency



- States are encouraged to aggregate the fuel burn and emissions data submitted by all of their international aeroplane operators for each year.
- Using this aggregated data, the State Action Plan Focal Point can forecast the future fuel burn and emissions data in order to develop the emissions data in order to develop the State Action Plan Baseline Scenario.

## Combined 3) Prioritising & Selecting your best suited Mitigation Measures from the ICAO (BOM)

### NEW ACTIONS FOR SAP N2

#### → Modern technological improvements

- ✓ Engine Core Water Wash (Optimize the existing engine core water wash program)- **data to be provided**
- ✓ Reduction of APU usage of Maintenance- **to be changed in GPU; PCA application**
- ✓ Fleet renewal: ECAR 47 (max 20 years): **new actions for SAP N2**
- ✓ Reduction of the onboard weight & the assessment of other reduction potentials (ALL MEASURES AGGREGATED AS REDUCE WEIGHT ON BOARD FOR ALL ACTIONS)- **data to be provided**

#### → Ground Operations

- Reduce weight of onboard magazines
- Reduction of the onboard catering & the assessment of other reduction potentials
- Optimize the weight of Duty Free Material carried on-board
- Reduce the quantity of on-board water
- Reduction of Cargo Container Weight
- Introducing the paperless cockpit (Electronic Flight Bag)
- Stir awareness & ensure Best Practices application

## Combined 3) Prioritising & Selecting your best suited Mitigation Measures from the ICAO (BOM)

### NEW ACTIONS FOR SAP N2

#### → Flights Operations

- Reduce Flap Landing- required for SAP 2
- Reduced contingency fuel (from 5% to XXX). Quantification in terms of % of application.
- Single engine taxi:
  - i) TAXI-IN: maximisation of application through % of operations where SET is applied.
  - ii) TAXI-OUT: increase the application of Single engine taxi-out.
  - iii) Fuel load optimisation based on airport taxi time averages: accurate fuel for taxi.
  - iv) Optimal Flap Landing.

#### → More efficient ATM planning (requiring collaborative national/regional working groups):

- i) Explore more direct routes Improved aerospace efficiency .
- ii) SID/STARs

#### → Airport Operations

- Reduction taxi fuel by assigning gates near to Take-Off/LDG runways
- Optimizing fuel uplift on final Zero Fuel Weight (Dispatch and not airport)
- Introducing of RNAV SID/STARs at Cairo Airport ( “4 airports”)

**Challenges & Opportuntirs :**

**1-No RTK data base for many of the new Air Operator STAKEHOLDERS.**

✓ **Capacity Building and Assistance to be defined for solutions. (Years 2020-2024 identified as a target)**

**2- Lack of Experts within many of the STAKEHOLDERS.**

✓ **ECAA to continue make workshops/Seminars internally for Capacity Building.**

**3- Great Challenge on how to quantify each Mitigation Measure contribution for emission reduction.**

✓ **ECAA to continue attend and host workshops/Seminars for Capacity Building. On monthly basis, the Environment Committee to follow the planned roadmap and to adjust it accordingly.**

Finally, Egypt as one of the developing countries faced many challenges in the field of development and in the sustainable building of their capacity. However Egypt intends to act on updating its 1<sup>st</sup> Action Plan, seeking guidance from the ICAO /ICAO MID- and all of available STAKEHOLDERS - as well as the updated Doc 9988 in addition to using the ICAO tool of Environmental Benefits Tool (EBT) to built a quantified SAP.

# Thank You

