OVERVIEW OF POLICY ACTION FOR REDUCING CARBON DIOXIDE EMISSIONS IN AVIATION SECTOR

3rd September 2024

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OUTLINE OF THE PRESENTATION

1. **KCAA Driving Policy**
2. **Kenya's Action Plan for the Reduction of CO_2 Emissions in Aviation Sector**
3. **Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)**
4. **Sustainable Aviation Fuel Development In Kenya (SAF)**
5. **Kenya's Aviation Net Zero Commitments**

Number 1

KCAA DRIVING POLICY

KCAA

- Mandate is derived from the Civil Aviation Act No. 21 of 2013 and the Civil Aviation (Amendment) Act 2016
- The vision is to be “a vibrant, safe, secure and sustainable civil aviation system”
- mission is “to manage, promote and develop a sustainable, safe and secure civil aviation system through effective oversight, economic regulation of air transport, provision of air navigation services and delivery of quality training.”

KCAA Driving Policy

- ICAO Assembly Resolutions
- The Climate Change Act ,2016
- Environment Management and Coordination Act No. 8 of 1999 (amended EMCA Act 2015),
- Climate Change (Carbon Markets) Regulations, 2024.

Resolutions on Environmental Protection from the 41st Session of the ICAO Assembly

- Resolution A41-20: - noise and local air quality
- Resolution A41-21: - Climate change
- Resolution A41-22: - Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)

Resolution A41-21: - Climate change

- Required States and organizations to work through ICAO to achieve a 2% annual fuel efficiency improvement until 2020, and an aspirational goal of 2% per year from 2021 to 2050.
- Requires States to prepare or update action plans, submit them to ICAO promptly, and review them every three years for tracking progress towards these global goals.

Resolution A41-22: - Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)

- Determined CORSIA to be the only global market-based measure for CO_2 emissions from international aviation, preventing a patchwork of overlapping national or regional measures and ensuring emissions are accounted for only once.
- Requested Member States to establish national policies and regulatory frameworks to ensure compliance with CORSIA, following the timeline set out in Annex 16, Volume IV.

Kenya Climate Change Act No. 11 of 2016

- The Kenya Climate Change Act No. 11 of 2016 requires each state department and national government public entities to report on their sectorial greenhouse gas emissions for the national inventory.

- They must also establish a dedicated unit with sufficient staff and financial resources, led by a senior officer, to integrate climate change action plans and statutory functions into their sectoral strategies.

Number 2

KENYA’S ACTION PLAN FOR THE REDUCTION OF CO_2 EMISSIONS IN AVIATION SECTOR

State Action Plan

State Action Plan - is a tool that a State can use to showcase and communicate both at the national and international level, efforts to address their CO_2 emissions from both international and domestic aviation

Action plan process can help States:

1) To report International Aviation CO_2 Emissions to ICAO;
2) To outline their respective policies and Actions;
3) To provide information to ICAO on the basket of measures considered, reflecting their respective national capacities ,circumstances and on any specific assistance needs;

3rd ACTION PLAN FOR CO2 EMISSIONS REDUCTION IN THE AVIATION SECTOR 2022-2028

- The action plan was completed and Approved by the Director General on 22 September 2022.
- The action plan covers 2022 to 2028

ACTION PLAN FOR CO_2 EMISSIONS REDUCTION IN THE AVIATION SECTOR 2022-2028

KENYA CIVIL AVIATION AUTHORITY

SEPTEMBER 2022

Measures in the action plan

Considered five categories of measures that are expected to have the greatest environmental benefits namely:

1. Technology and standards;
2. Sustainable aviation fuels;
3. Operational improvements;
4. Market-based measures; and
5. Supplemental benefits for domestic sectors on Airport improvements

The Aviation Environmental Working Group

- Kenya Civil Aviation Authority (ANSP and Regulator)
- Ministry of Transport
- National Environment Management Authority (NEMA)
- Ministry of Environment
- Kenya Airports Authority
- Meteorology Department
- Department of Defence

- National Airlines:
  - Kenya Airways
  - SAX/540
  - Air Kenya
  - ALS
  - African Express Airways
  - Kenya Association of Air Operators
  - Ground Handlers

Number 3

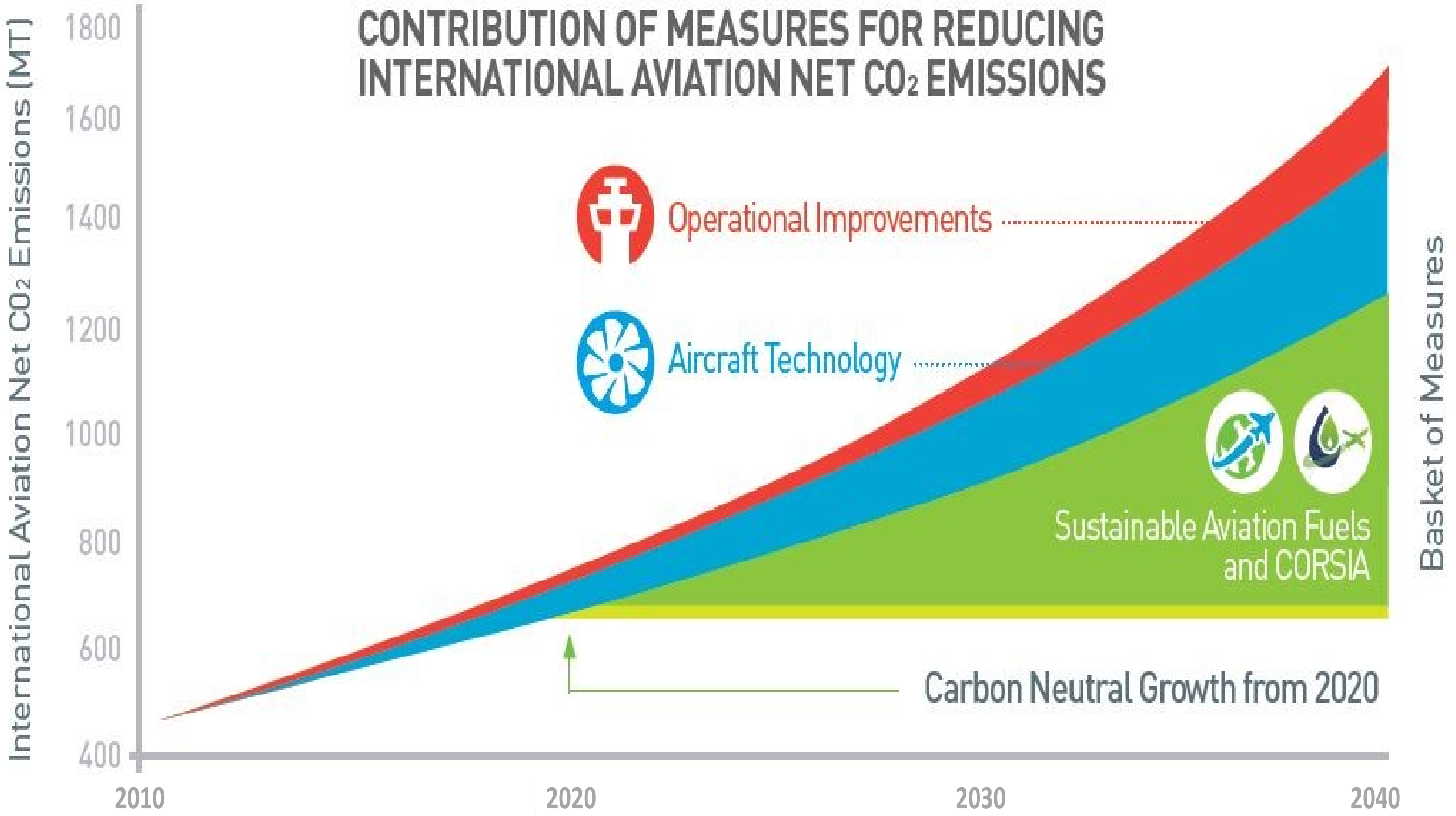
CARBON OFFSETTING AND REDUCTION SCHEME FOR INTERNATIONAL AVIATION (CORSIA)

Carbon Offsetting and Reduction Scheme for International Aviation(CORSIA)

Adopted through Assembly Resolution 39-3
The **first global MBM scheme** for any industry sector

To achieve ICAO's global aspirational goal of carbon neutral growth from 2020 (CNG 2020), CORSIA is **one complementary element in the basket of measures** to:

- **aircraft technology**
- **operational improvements**
- **sustainable aviation fuels**



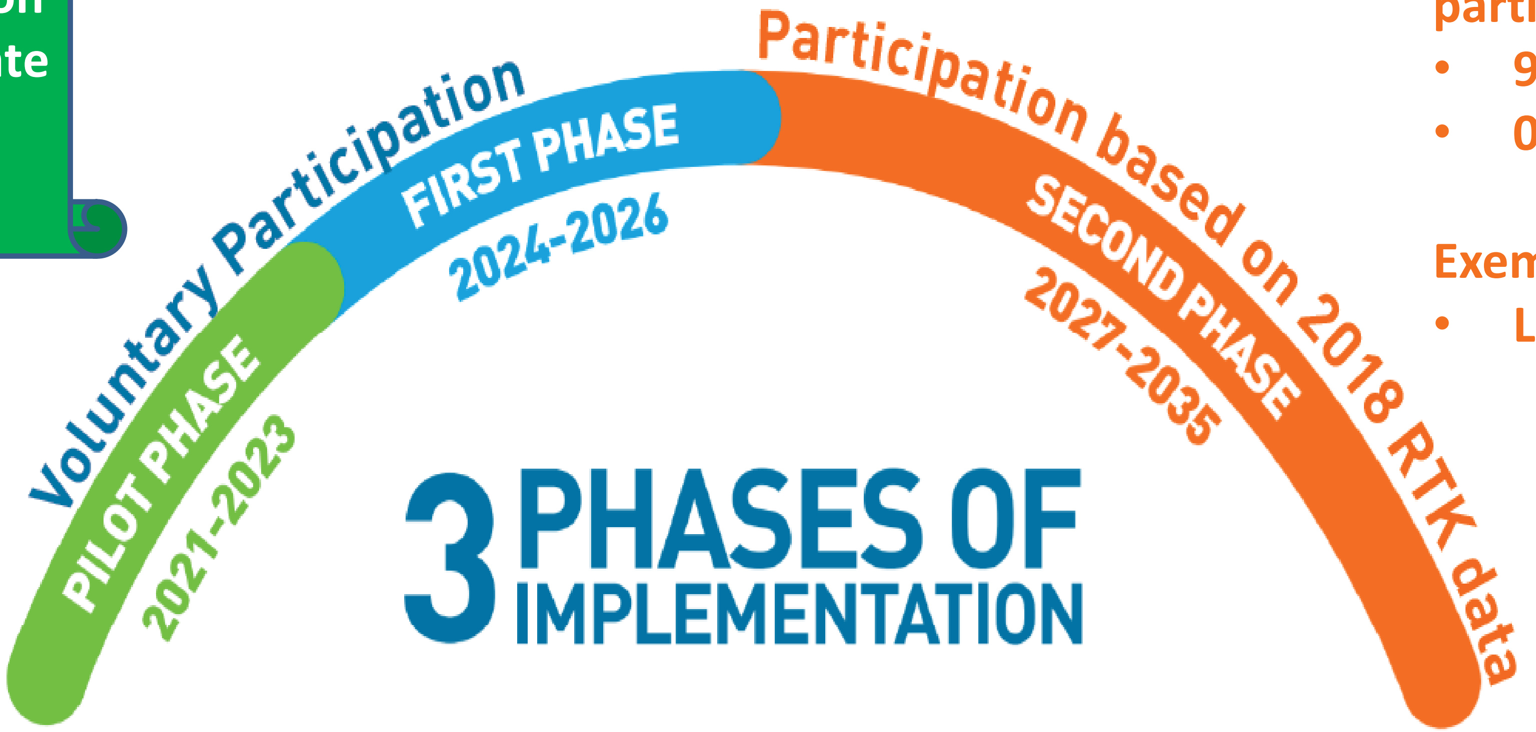
Assembly Resolution A39-3

- Key design features of CORSIA:
  - Phased implementation (paragraph 9)
  - Emissions coverage: route-based approach (paragraph 10)
  - Offsetting requirements (paragraph 11)
  - New entrants (paragraph 12)
  - Technical exemptions (paragraph 13)
  - Review mechanism (paragraphs 9g and 18)

- CORSIA implementation features:
  - Monitoring, Reporting and Verification (paragraphs 15, 20a and 20b)

Phased Implementation

128 States of international aviation activity) to participate in the First phase
(As of 1 August 2024



Second phase participation criteria:

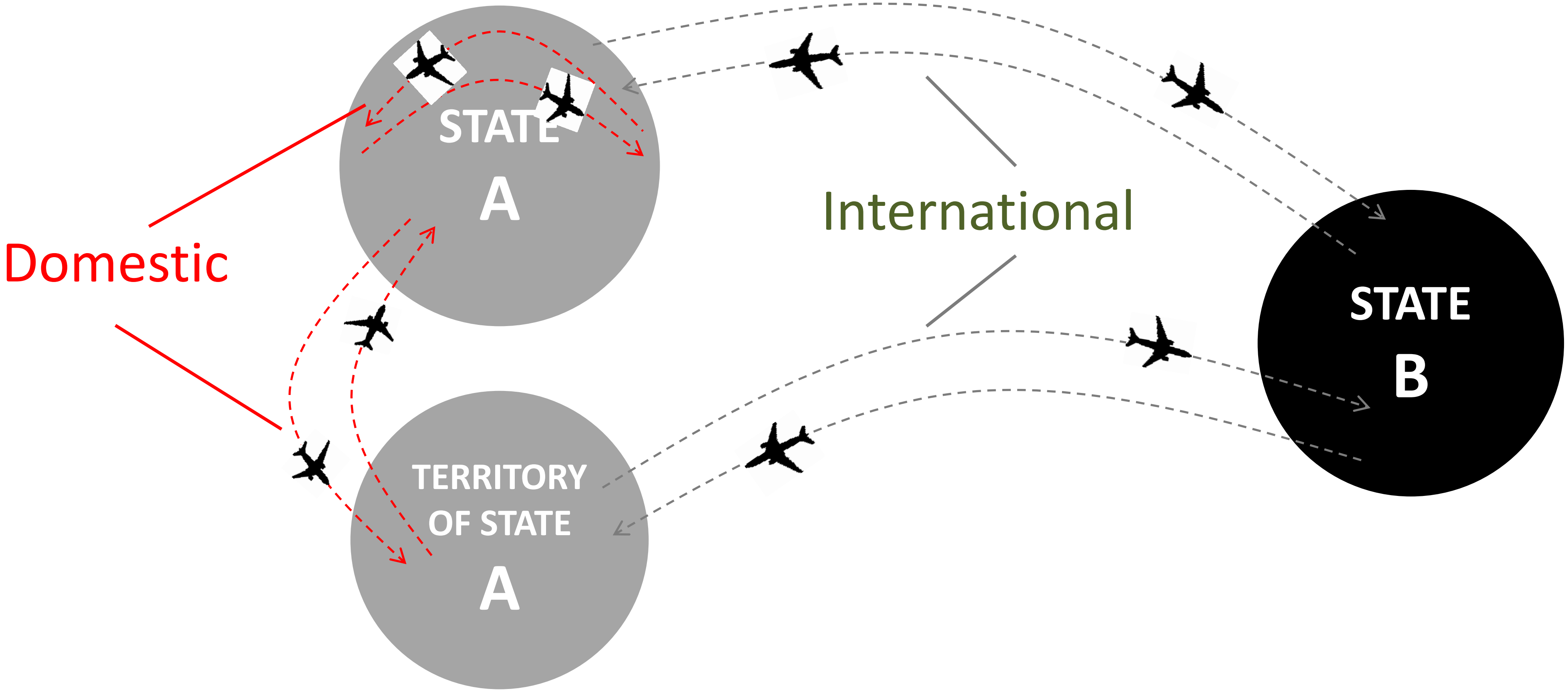
- 90% of global RTK
- 0.5% of RTK

Exemptions:

- LDCs, LLDCs, SIDS

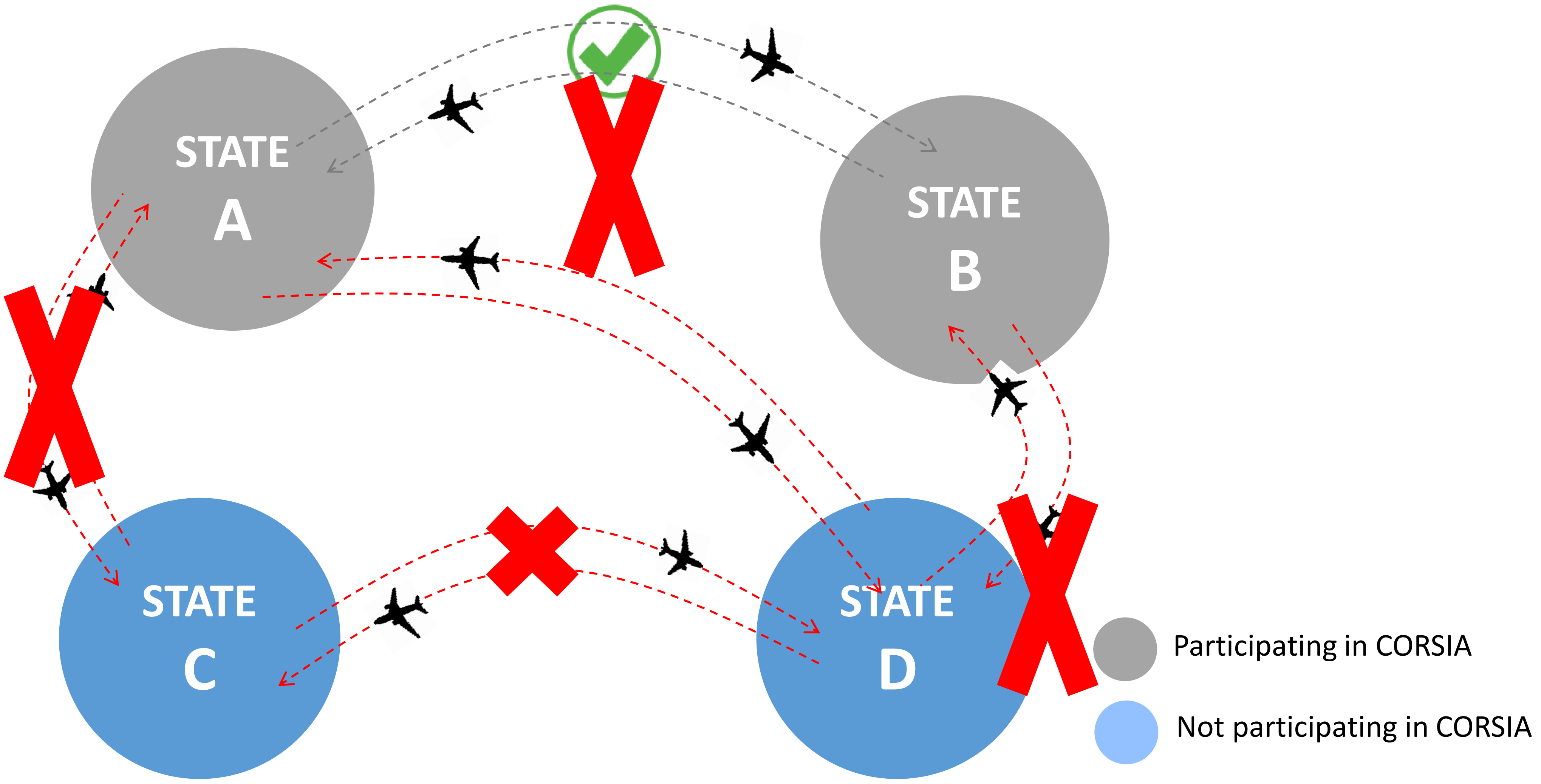
All Member States are encouraged to participate in the pilot and first phase of the CORSIA

Definition of Flights in CORSIA



Reference: Annex 16, Volume IV, Part II, Chapter 1, paragraph 1.1.2

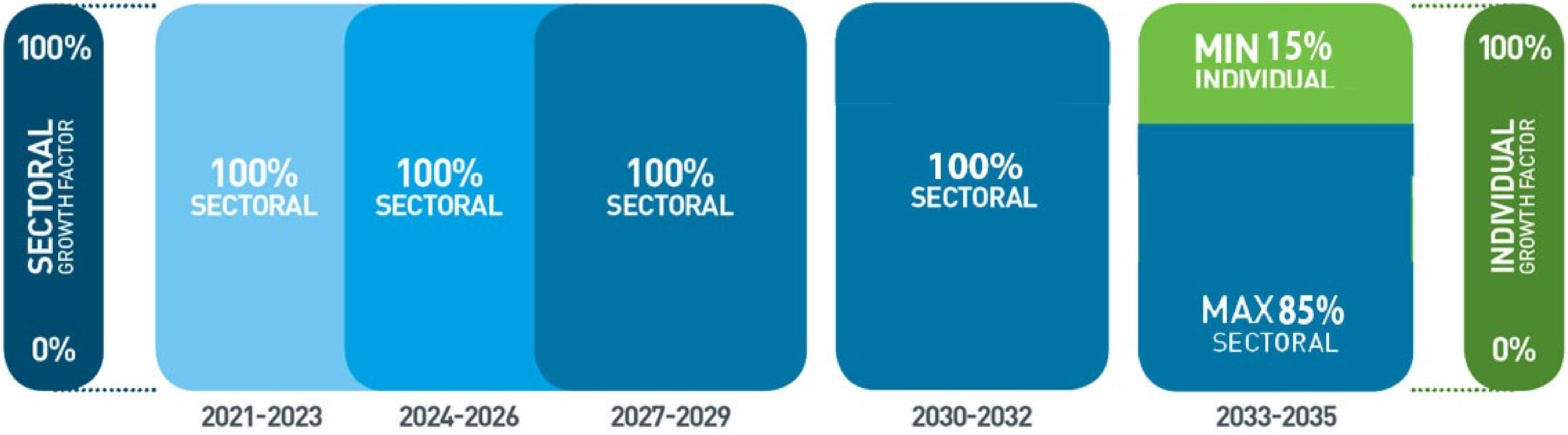
Emissions Coverage: Route-based Approach



Offsetting Requirements

Operator's annual emissions X Growth Factor = CO_2 offset requirements

The Growth Factor changes every year taking into account both the sectoral and the individual operator's emissions growth. The Growth Factor is the percent increase in the amount of emissions from the baseline to a given future year, and is calculated by ICAO.



New Entrants

- New entrant (aero plane operator) is exempted from CORSIA offsetting requirements for the first 3 years or until its annual emissions exceed 0.1% of total 2020 CO_2 emissions from international flights, whichever comes first.
- Example: Operators A and B start operations in year 2022 as shown in the table below. According to the paragraph above, Operator A will have offsetting requirements in 2025, and Operator B in 2024

Operator	Emissions (% of total emissions in 2020)			
	2022	2023	2024	2025
A	0.02	0.04	0.06	0.08
B	0.06	0.11	0.16	0.21

Technical Exemptions

- Outside CORSIA scope:
  - Emissions from aero plane operators emitting less than 10,000 metric tones of CO2 emissions from international aviation per year
  - Emissions from aircraft with less than 5 700 kg of Maximum Take Off Mass (MTOM)
  - Emissions from humanitarian, medical and firefighting operations

Review Mechanism

Periodic review will allow the Council to make informed recommendations to the Assembly on whether it is necessary to make adjustments to the next phases of the scheme

– Periodic review of the CORSIA every three years starting in 2022
– Special review by the end of 2032 on termination of the scheme, its extension or any other improvements of the scheme beyond 2035

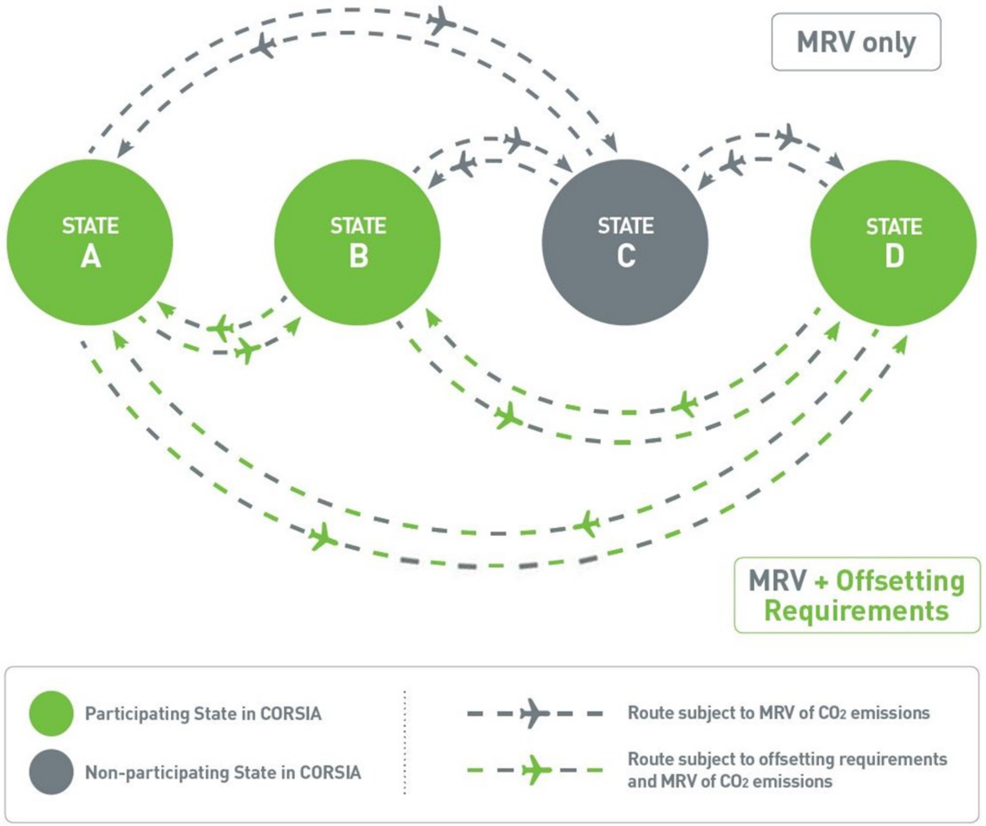
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Phases	Pilot Phase (voluntary, 3 years)			First Phase (voluntary, 3 years)			Second Phase (all non-exempted States, 9 years)								
Compliance cycles	Cycle 1 (3 years)			Cycle 2 (3 years)			Cycle 3 (3 years)			Cycle 4 (3 years)			Cycle 5 (3 years)		
Periodic reviews		Review 1			Review 2			Review 3			Review 4	Special		Review 5	
Assemblies		A41			A42			A43			A44			A45	

Monitoring, Reporting and Verification

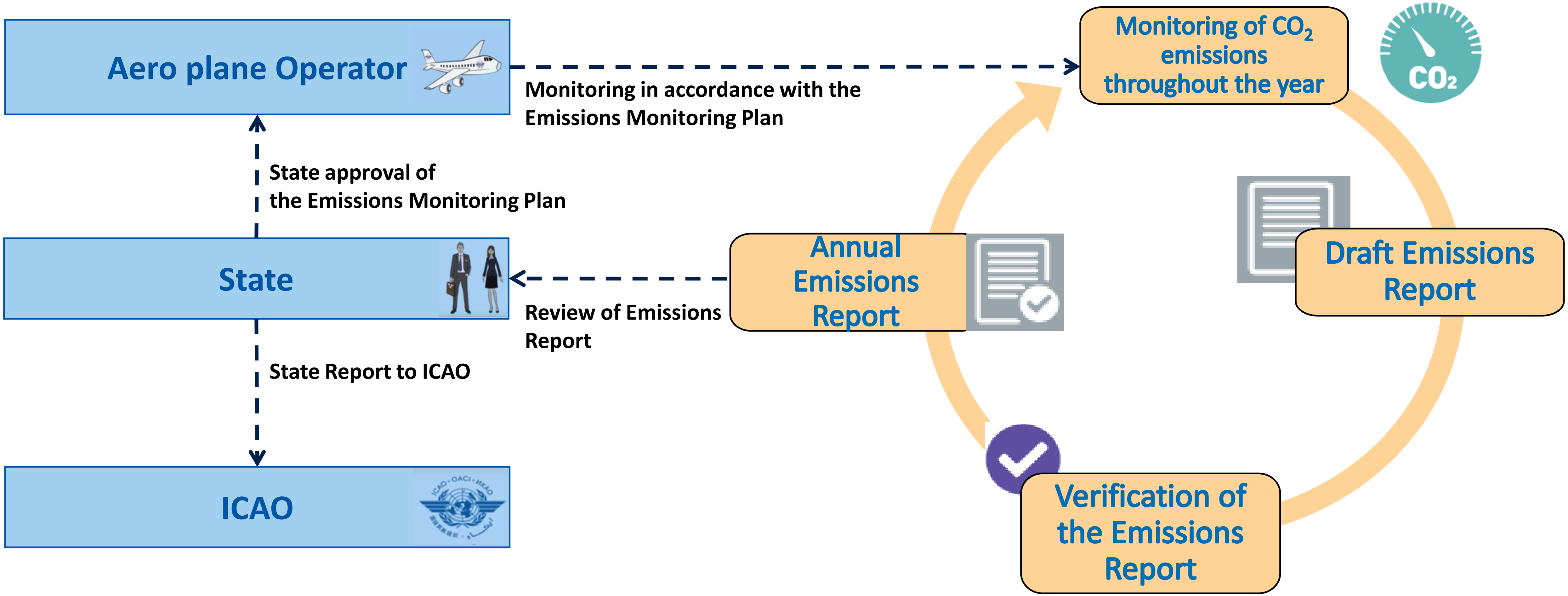
- **Monitoring, Reporting and Verification (MRV) is the backbone for the successful implementation of CORSIA, which requires:**
  - Reliable information on CO_2 emissions, and on compliance with offsetting requirements

ALL ICAO MEMBER STATES with aeroplane operators conducting international flights are required to monitor, report and verify CO_2 emissions from these flights every year from 2019, independent of their participation in CORSIA.

ICAO MEMBER STATES PARTICIPATING IN CORSIA need to ensure that their aeroplane operators comply with the CORSIA offsetting requirements every three years (starting in 2021), in addition to annual CO_2 MRV.



Monitoring, Reporting and Verification (MRV) of CO_2 Emissions – Annual MRV Cycle



Number 4

SUSTAINABLE AVIATION FUEL DEVELOPMENT IN KENYA (SAF)

Kenya SAF Status

Results from SAF feasibility Studies report 2018_ SAF Recommendation

Used Cooking Oil (UCO)	• Large volumes – high growth/energy dense • Proven conversion technologies/can utilise existing petroleum infrastructure • Sustainable/waste does not compete with food/improved environmental outcomes
Sugar Cane Tops	• Large volumes/NOT energy dense/region limited • Conversion technologies still to be commercialised/some conversion tech certified • Sustainable - does not compete with food/reward for farmer • Medium to long term option requiring further study
Municipal Solid Waste	• Very large volumes/Not energy dense • Conversion technologies still to be commercialised/some conversion tech certified • Sustainable - does not compete with food/social and environmental outcomes • Medium to long term option requiring further study
Water Hyacinth	• Medium to large volumes possible/region limited/low energy density/hi moisture • Would help solve significant social, environmental and economic issues • Difficult to harvest and process • Long term option requiring in-depth study

Lesson Learnt

RESULTS FROM SAF FEASIBILITY STUDIES REPORT 2018 CONT.

FURTHER STUDIES RECOMMENDED FOR USED COOKING OIL

TECHNO-ECONOMIC ASSESSMENT OF HEFA PATHWAY → INVESTIGATE VOLUME OF UCO → REVIEW POLICY ON UCO COLLECTION

→ CREATE AWARENESS ON UCO AGGREGATION → NEED FOR SUSTAINABILITY ASSESSMENT AND RISK REVIEW → ASSESSMENT OF VIABLE CONVERSION TECHNOLOGY

→ QUANTIFICATION OF AVAILABLE VOLUMES

OPPORTUNITIES IN THE IMPLEMENTATION OF SAF IN KENYA

large **volumes of wastes** and residues

Strong **government commitment** to renewable energy

Social, **environmental** and economic benefits

SAF Development Priority Actions

The following are the Key priority Actions/Collaborations for SAF development in Kenya

Development of National SAF policy

Develop SAF National Strategy and Roadmap

Review of incentive policy to increase production of SAF

Capital investment to scale up SAF production

Capacity building through technical training to experts and Knowledge transfer.

Support SAF pilot project development

Support and collaborate in SAF through research and development.

Creation of stakeholder awareness & Working Groups

Establishment of local, Regional and international partnerships to Scale up SAF developments

Number 5

KENYA’S AVIATION NET ZERO COMMITMENTS

Kenya 's Aviation Net Zero Commitments

Implementation of The Climate Change (Amendment) Act, 2023

Implementation of ICAO Annex 16 on Environmental protection by developing relevant regulations.

Created an Aviation environmental protection department in KCAA

Development, implementation and review **of State Action plan for the environment.**

Kenya decided to **voluntarily participate in the CORSIA** scheme with effect from 2021 to 2023.

SAF feasibility study was conducted in 2018

- The second implementation of the State Action Plan of 2015 resulted in the reduction of 1,252,503.78tCO2e in five years

KCAA

efficiently managing air safety

REPUBLIC OF KENYA

Kenya Civil Aviation Authority

Implementation report of the Kenya's Action Plan for the Reduction of CO_2 Emissions in the Aviation Sector for the period 2015-2020

March 2021


THANK YOU