



MALAYSIAN GREEN SKIES INITIATIVES AND ACTION PLAN **REPORTING AND MONITORING MECHANISM**

CAAM | Vision and Mission



New Vision

Safe Sustainable Skies



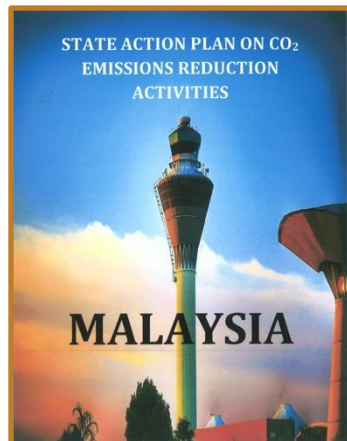
New Mission

***To continuously enhance safety and security
for a sustainable aviation industry***

STATE ACTION PLANS | Enhancement Path

ICAO Doc 9988 - Guidance on the Development of States' Action Plan on CO₂ Emissions Reduction Activities

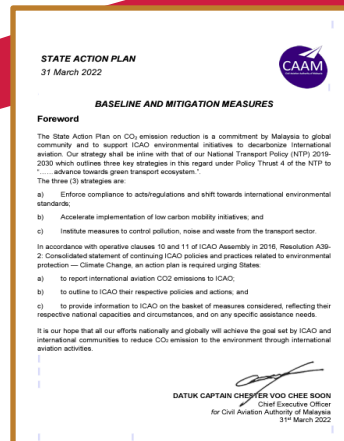
2013



2016



2022



2024



THE MALAYSIAN GREEN SKIES INITIATIVE AND ACTION PLAN (SAP NO.4)



- A strategic document developed in response to the global challenge of climate change and the specific impact of commercial aviation on the environment.
- Malaysia's commitment to ICAO and its initiatives to reduce CO2 emissions from international aviation.
- SAP No.4 builds upon the commitments made in the MADB by integrating measures and policy imperatives essential for the Malaysian aviation sector to achieve ICAO Long Term Aspirational Goals (LTAG).
- Outlines a comprehensive strategy for reducing CO2 emissions from the **international civil aviation**.

MITIGATION MEASURES TO MITIGATE CO₂ EMISSION AND EXPECTED RESULTS

Three comprehensive scenarios has been developed to describe clear decarbonisation goals for the sector, encompassing short-term, medium-term and long-term timeframes.

Category	Decarbonisation Target		
	Short (2024-2029)	Medium (2030-2040)	Long (2041-2050)
Aircraft Technology	1%-6%	7%-13%	18%
Operational Improvement	2%-2.5%	2.5%-4.0%	5%
SAF	0.2%-3.7%	5.1%-19.9%	46.2%
MBM	3.8%-8.0%	16.8%-23.1%	30.8%

Table 3: Decarbonisation Target

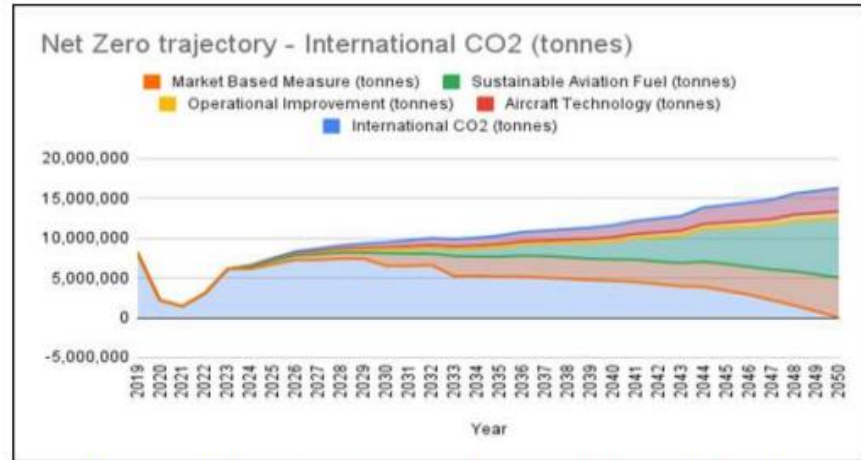
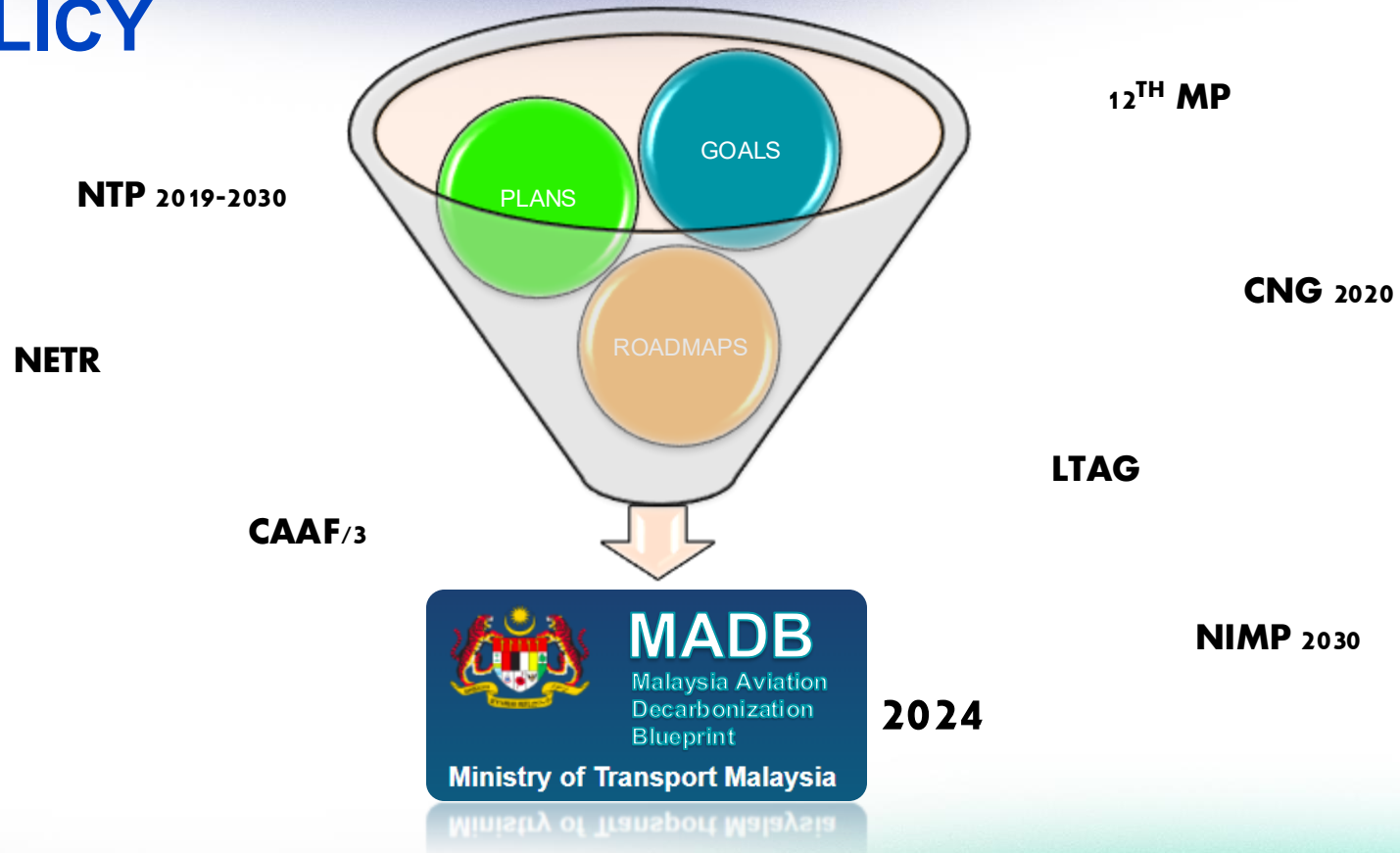
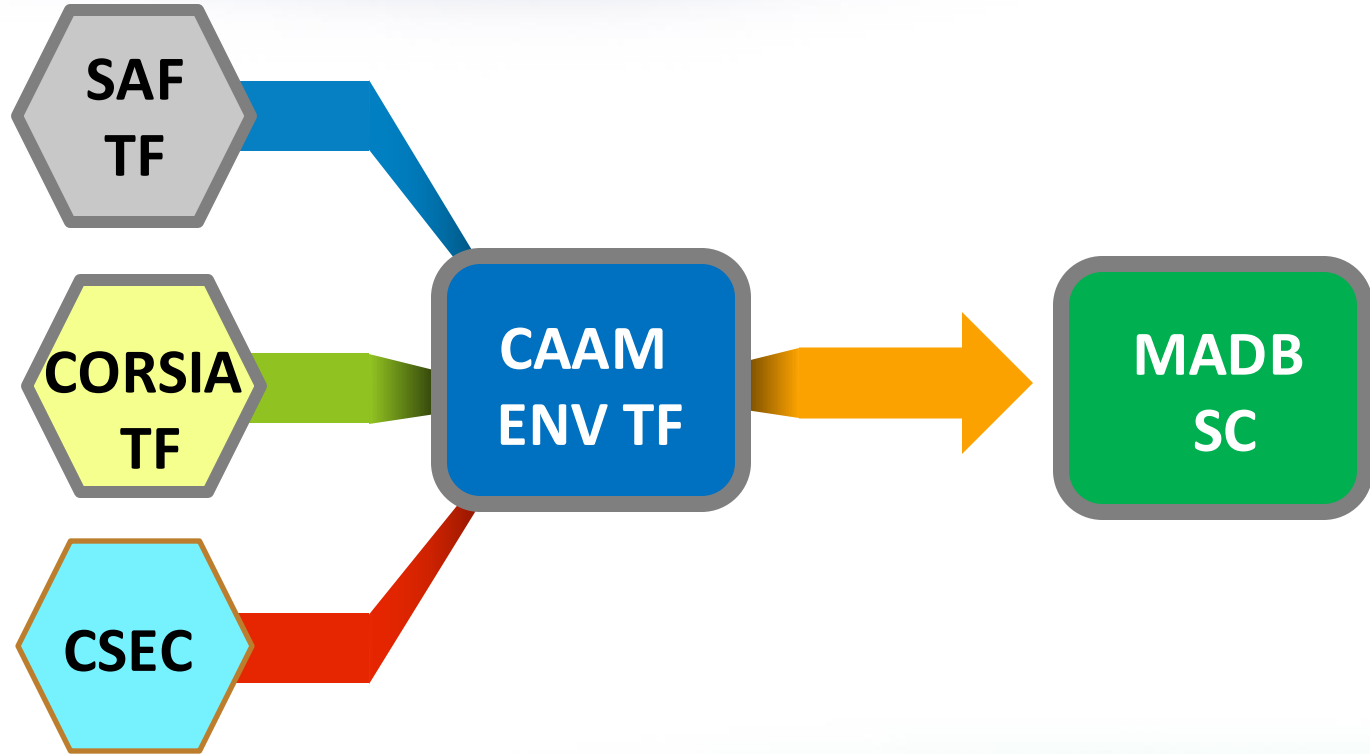


Figure 5: Mitigation Measures on CO₂ Emission and Expected Result

POLICY



COMMITTEES



METHODOLOGY | Committees

- Ministry of Transport
- Ministry of Finance
- Ministry of Natural Resources and Environment Sustainability
- Ministry of Economy
- Ministry of Investment, Trade and Industry
- Ministry of Plantation and Commodities; Ministry of Science, Technology and Innovation (MOSTI)
- Civil Aviation Authority of Malaysia (CAAM)
- Malaysia Aviation Commission (MAVCOM)
- Local Airline Operators
- Local Airport Operators
- Fuel Producers
- Other stakeholders as required.

CAAM | TF on Environment Matters (Main)



OBJECTIVE

Ensure effective implementation of CORSIA and other environmental initiatives.

FUNCTIONS

- Provide a forum for aviation stakeholders to discuss any environmental issues.
- Advise stakeholders on policies, procedures and programs on environmental matters.
- To outline SAP and targets on CORSIA/ environment initiatives
- Develop a CORSIA MRV system for CO2 emissions from international aviation.
- Provide feedback and propose amendments to ICAO on environmental SARPs / CORSIA.
- To implement SARPs on CORSIA

MEMBERSHIP

- The Chair of the TF shall be the CEO or Deputy CEO of CAAM.
- Comprised of government agencies, airline and airport operators, and relevant aviation environment stakeholders.
- Periodically report CORSIA and environmental implementation status to MOT.

OBJECTIVE

The objective of the Task Force is to ensure the effective implementation of Sustainable Aviation Fuel (SAF) in Malaysia.

FUNCTIONS

- To conduct a feasibility study on the impact and usage of SAF.
- To conduct a cost benefit analysis on the impact of SAF in any possible scenario.
- To identify the need for assistance on SAF development.
- To establish a roadmap for SAF development.
- To do a comparative study on the impact of SAF versus CORSIA and how it will impact the fuel price and the cost of doing business.

MEMBERSHIP

- Chairman: Malaysia Aviation Group (MAG)
- Comprised of government agencies, airline and airport operators, and relevant aviation environment stakeholders.
- Ministry of Plantations & Commodities - SAF

OBJECTIVE

Ensure effective implementation of CORSIA in Malaysia.

FUNCTIONS

- To study ICAO Resolution A41-22 and to adopt and implement.
- To conduct a cost-benefit analysis on the impact of CORSIA.
- To do a comparative study on the impact of SAF versus CORSIA and how it will impact the fuel price and the cost of doing business.
- To conduct a feasibility study on having the National Emission Units Program and Projects

MEMBERSHIP

- Chairman: AirAsia
- Comprised of government agencies, airline and airport operators, and relevant aviation environment stakeholders.

CAAM | CAAM Stakeholder Engagement Comm.(CSEC)



OBJECTIVE

Foster strategic collaboration among aviation stakeholders for seamless air traffic management and mutual understanding on technical aspects of air navigation services..

FUNCTIONS

- Facilitate communication and consultation with key stakeholders on ANS best practices solutions.
- Identify stakeholders' views and concerns on ANS matters.
- Provide stakeholders with information on ANS developments and initiatives.
- Seek feedback and input from stakeholders on ANS plans and proposals.

MEMBERSHIP

- Chairman: CAAM
- Comprised of government agencies, airline and airport operators, GA and flying schools.

Key Considerations for Malaysia

- ❖ Policy Framework and Alignment
- ❖ Investment Incentives and Funding Mechanisms
- ❖ Technological Innovations and Efficiency
- ❖ Feedstock Security and Sustainability
- ❖ SAF – Significant towards Net Zero 2050



Challenges – SAF related:

Its not good or bad feedstock, its approved or not?

Feedstock – largest constraint

SAF: DEMAND vs SUPPLY vs PRICING

Globally, SAF supply shortage is projected

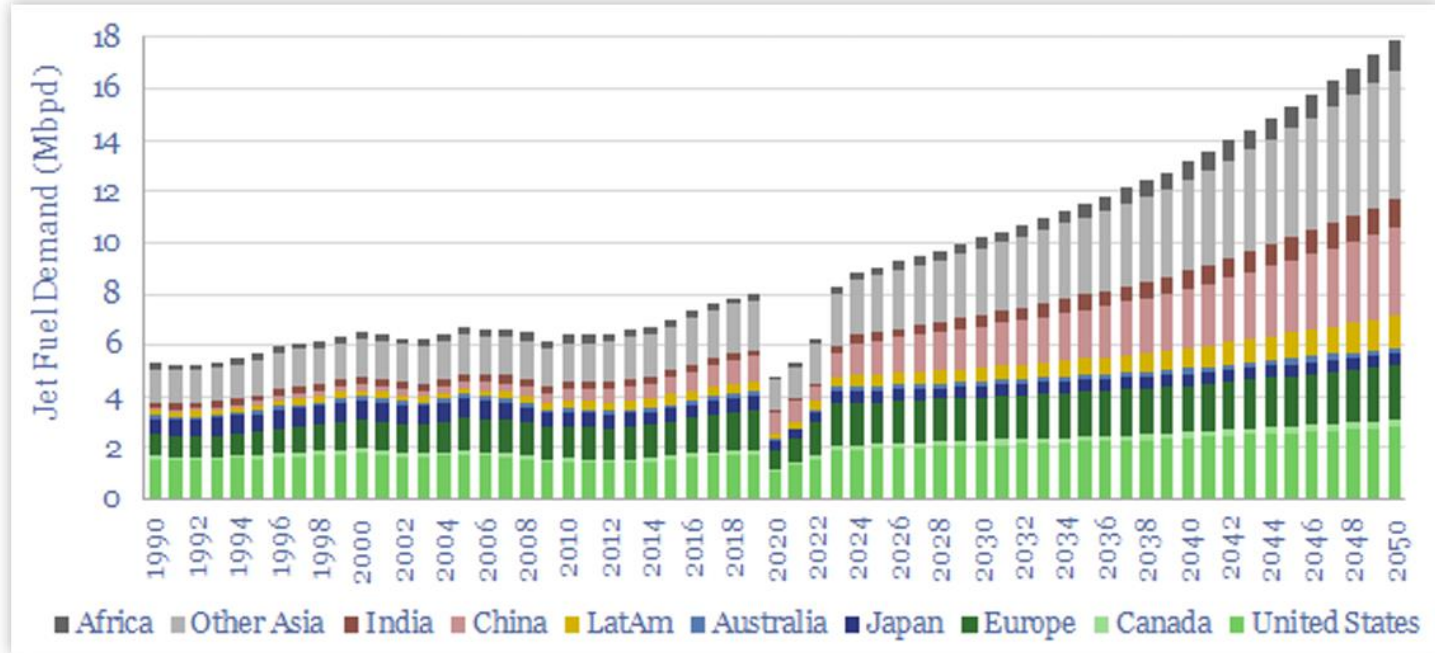
Orchestrating MITIGATION methodology...

SAF investment – investors may ready but the projects ?

SAF, subsidies fm gov...

Projections for Jet Fuel Demand and Emissions

Figure 2: Jet Fuel Demand by Region



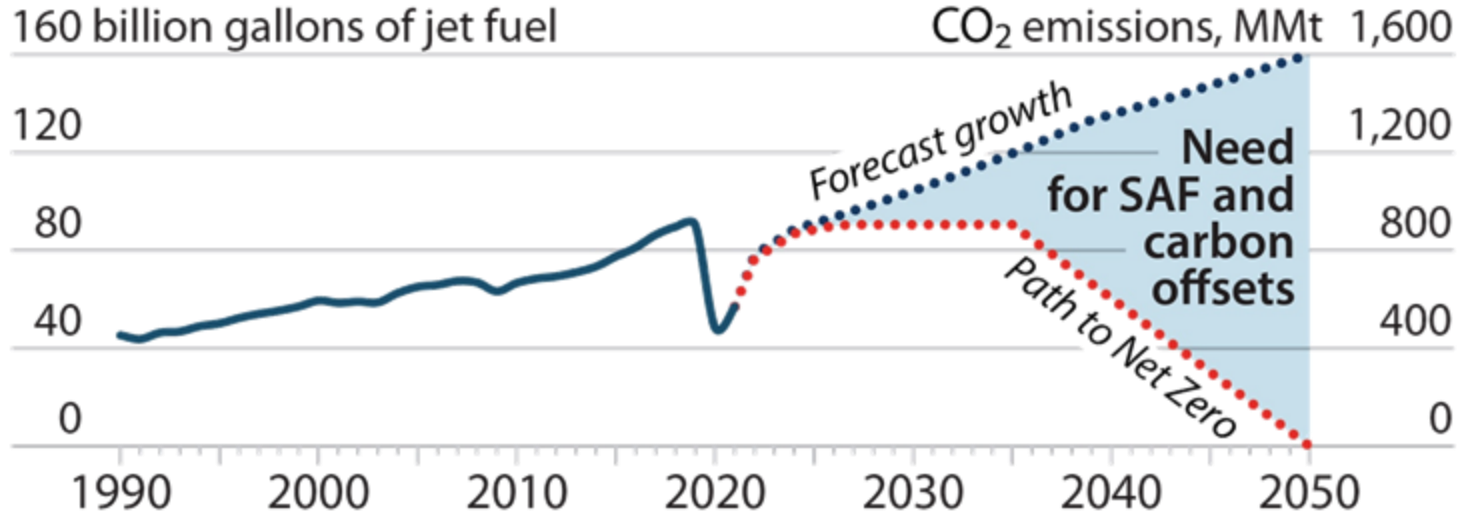
Source: [Thunder Said Energy](#)

Projections for Jet Fuel Demand and Emissions

The Potential Role for Sustainable Aviation Fuel

Used as an alternative to fossil fuels, SAF could cut CO₂ emissions

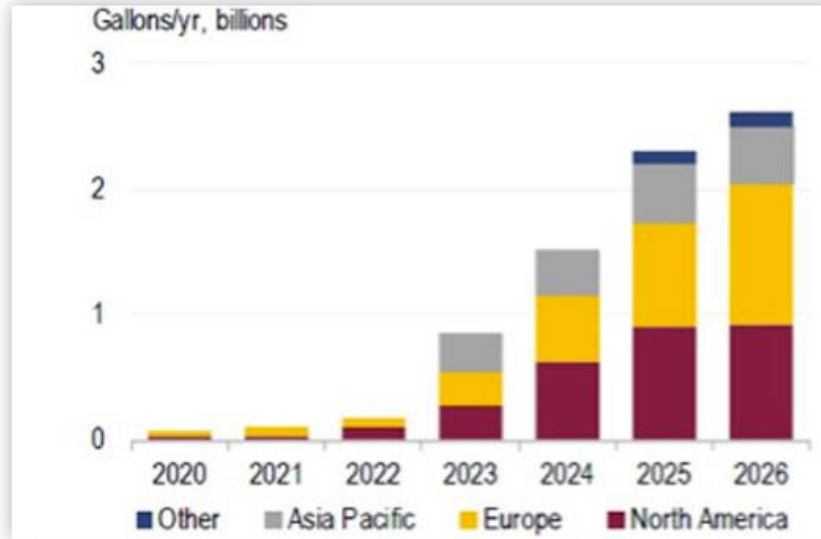
160 billion gallons of jet fuel



Sources: IATA, Air Transport Action Group and Barclays Research (2022) IEEFA

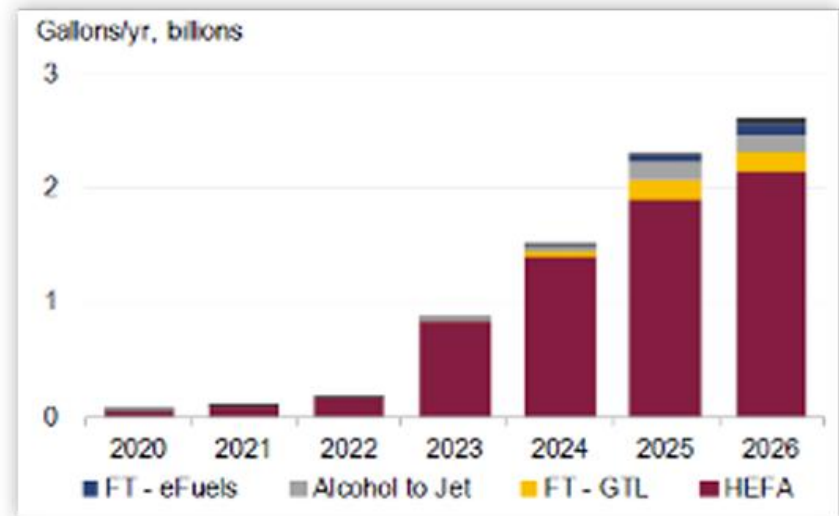
SAF Production Levels by Region and Process Type

SAF Production by Region



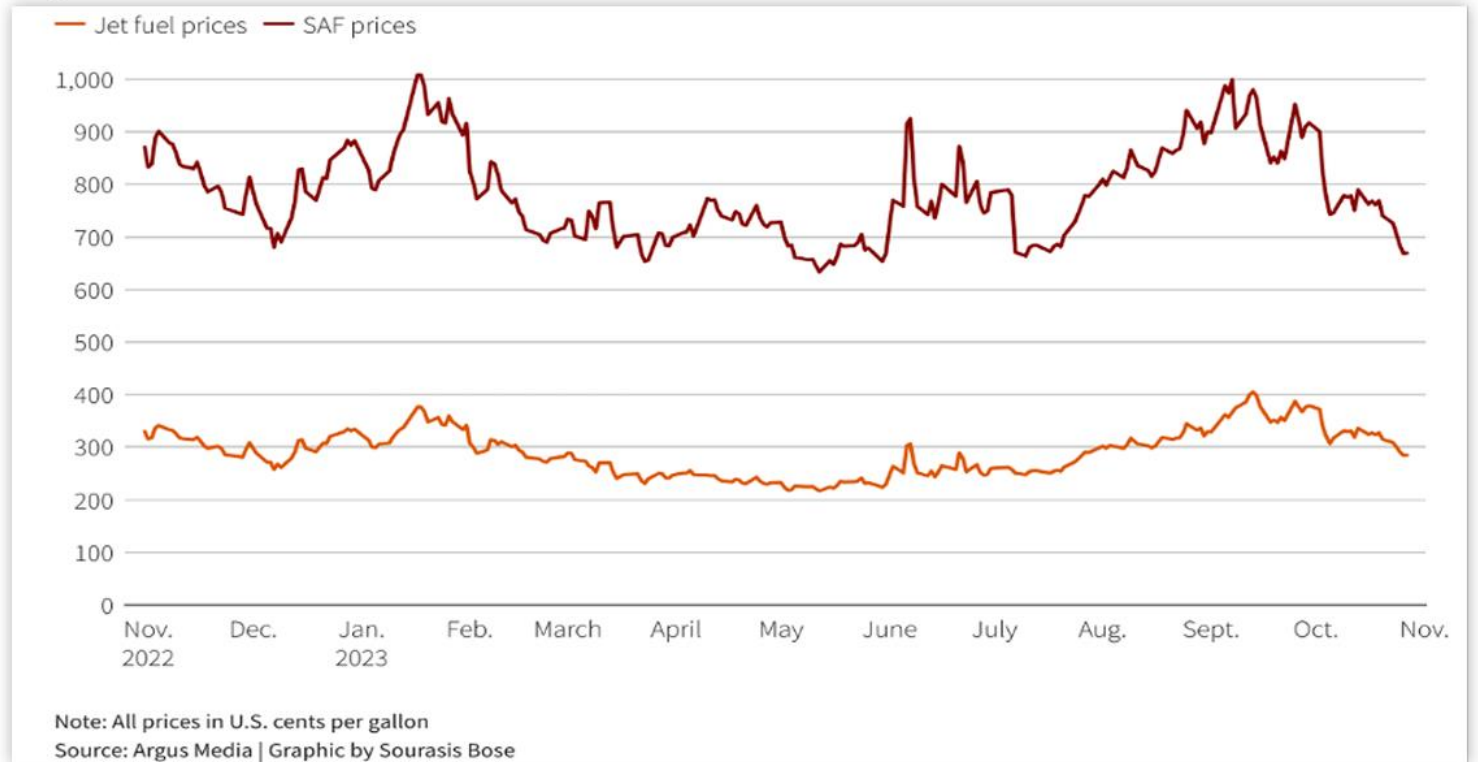
Source: CIBC World Markets

SAF Production by Process Type



Source: CIBC World Markets

SAF Cost Is a Problem



Proposed guidelines to ensure timely reporting by airlines

- Coordination with the CAAM Flight Operations Division.
- ACT by NRES

General/ICAO Statistics

1. Aeroplane Operator shall fulfil its obligation under this document to the satisfaction of the Authority. Failure to comply may affect its AOC approval.
2. AOC holders shall submit ICAO Statistical Air Transport Reporting Forms to the Authority. The forms may be downloaded from <https://www.icao.int/sustainability/Pages/eap-sta-excel.aspx>.
3. The forms and the submission period are as follows:

Form	Data requirement	Submission deadline
Form A, Traffic — Commercial Air Carriers	Monthly	By second week of the following month
Form A-S, Traffic — Commercial Air Carriers	Annual (Jan-Dec)	By February of the following year
Form B, On-flight Origin and Destination	Quarterly	By end of the month following the quarter
Form C, Traffic by Flight Stage	Annual (Jan-Dec)	By February of the following year
Form D, Fleet and Personnel — Commercial Air Carriers	Annual (Jan-Dec)	By February of the following year
Form EF, Financial Data — Commercial Air Carriers	Annual (Jan-Dec)	By February of the following year
Form M, Fuel Consumption and Traffic	Annual (Jan-Dec)	By February of the following year

4. The procedure on collection, control and submission of the forms shall be included in Operating Manual.

CORSIA

5. Aeroplane operator (AO) that produces annual CO₂ emissions greater than 10,000 tonnes from the use of an aeroplane(s) with a maximum certificated take-off mass greater than 5,700 kg conducting international flights, on or after 1 January 2019, with the exception of humanitarian, medical and firefighting flights shall be applicable to the requirements in this document. This document shall be read together with Annex 16 Vol IV.
6. To determine applicability in paragraph 5, AO shall estimate its emission for the year using ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT) which is

available in the ICAO CORSIA website. The estimation result shall be submitted to CAAM.

7. Once applicability confirmed by CAAM, the AO shall be required to follow the requirements in Annex 16 Vol IV which includes:
 - (a) Submission of emission monitoring plan including changes, for CAAM approval
 - (b) Submission of verified emission report including its supplementary as applicable
 - (c) meeting its offsetting requirements according, as calculated by the Authority by cancelling CORSIA Eligible Emissions Units in a quantity equal to its total final offsetting requirements for a given compliance period
 - (d) Submission of verified emission unit cancellation report.

SAP/MADB

8. The applicability requirement in paragraph 5 is extended to the applicability under State Action Plan and the Malaysia Aviation Decarbonisation Blueprint (MADB). In supporting the State Action Plan outlined in MADB, the AOs shall submit an environmental protection action plan and approved by the Authority.
9. The environmental protection action plan shall include as follows:
 - a) commitment to emissions reduction;
 - b) stakeholder's engagement;
 - c) resources allocation;
 - d) emission reduction targets;
 - e) emission mitigation measures; and
 - f) mechanisms to measure and record results.
10. Changes to the environmental protection action plan shall be submitted to the Authority for approval.
11. AOs shall monitor and submit reports on the implementation of each emission mitigation measures listed in its environmental protection action plan to the satisfaction of the Authority.

CAAM – UTM COLLABORATION

- UTM will assist CAAM in developing a system for reporting and analyzing of airline emissions and mitigation actions as required by SAP & MADB;
- The reports would include international & domestic flights.



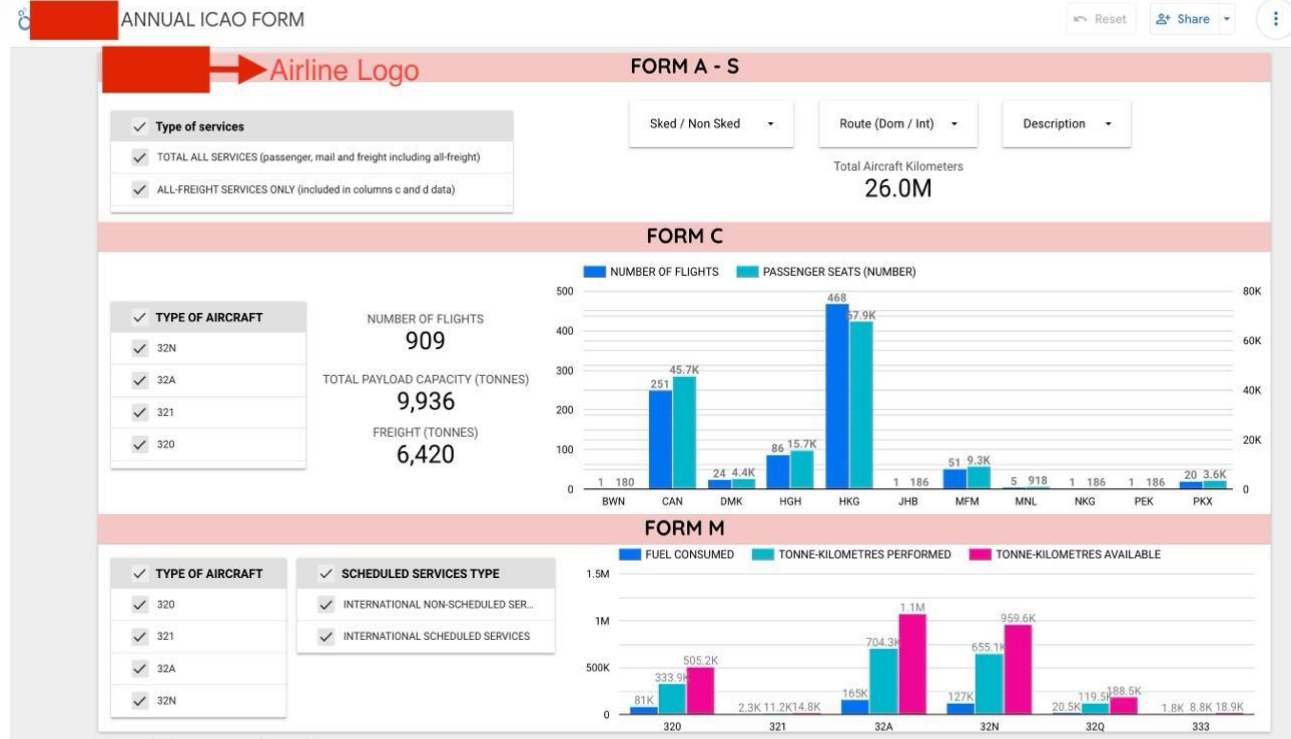
UTM
UNIVERSITI TEKNOLOGI MALAYSIA



Air Transport Reporting Dashboard Interface



CAAM ATR DASHBOARD































https://lookerstudio.google.com/reporting/107f7d11-ffc-4248-90a3-8d13cfd61f74/page/page_12345

AIR TRANSPORT REPORTING (ATR) - ICAO STATISTICS/CORSIA/SAP/MADB

1. Interface for the lists of airlines

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 MJETS INTERNATIONAL	 me	4:56 PM me	—	
 MALAYSIA AIRLINES BERHAD (MHB)	 me	4:56 PM me	—	
 FIREFLY	 me	4:55 PM me	—	
 BATIK AIR	 me	4:55 PM me	—	
 AIRASIA X	 me	4:55 PM me	—	
 AIRASIA	 me	3:41 PM me	—	




2. Interface for the lists of airlines

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



































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3. Interface for the collection of ICAO Air Transport Reporting (ATR) forms

ICAO ATR Forms (Yearly)_AIRASIA   

File Edit View Insert Format Data Tools Help

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A1 

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

FORM A-S

INTERNATIONAL CIVIL AVIATION ORGANIZATION
AIR TRANSPORT REPORTING FORM
TRAFFIC - COMMERCIAL AIR CARRIERS

Contact person: State:

Registration:

Tel:

Fax:

E-mail: Year:

ICAO code	Description	Unit	TOTAL ALL SERVICES (passenger, mail and freight including all freight)		ALL-FREIGHT SERVICES ONLY (included in columns c and d data)	
			Classified by flight stage	Classified by flight stage	Classified by flight stage	Classified by flight stage
			International	Domestic	International	Domestic
1000	1. Aircraft kilometres	000				
1001	2. Aircraft departures	number				
1002	3. Aircraft hours	number				
1003	4. Passengers carried	number				
1004	5. Freight tonnes carried	number				
1005	6. Passenger-kilometres performed	000				
1006	7. Seat-kilometres available	000				
1007	8. Passenger load factor	%				
1008	9. Tonne-kilometres performed	000				
1009	10. Freight (incl. express)	000				
1010	11. Freight (incl. express)	000				
1011	12. Freight (incl. express)	000				
1012	13. Freight (incl. express)	000				
1013	14. Freight (incl. express)	000				
1014	15. Freight (incl. express)	000				

FORM A-S FORM C FORM D FORM EF FORM H FORM I-S FORM J FORM K FORM L FORM M FORM N COST & REVENUE MITIGATION MEASURES

OPERATIONAL IMPROVEMENT & ENHANCEMENT

Mitigation Measures to Mitigate CO₂ Emission and Expected Result

The MADB has developed three comprehensive scenarios that delineate clear decarbonisation goals for the sector, encompassing short-term, medium-term and long-term timeframes.

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Table 3: Decarbonisation Target



TEAM CAAM
Safe Sustainable *Skies*

Thank You



WWW.CAAM.GOV.MY



CIVIL AVIATION AUTHORITY OF MALAYSIA



[CAA_MALAYSIA](#)