Eastern Caribbean Civil Aviation Authority

MULTI-STATE ACTION PLAN

2025-2027



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Antigua & Barbuda



Eastern Caribbean Civil Aviation Authority

Multi-State Action Plan on CO_2 Emissions Reduction from International Civil Aviation

I) PREAMBLE

The government of the ECCAA Participating State, **Antigua and Barbuda**, recognizes the importance of reducing emissions from international civil aviation to protect the environment and ensure a sustainable future. The State is committed to collaborative efforts in reducing CO_2 emissions through effective measures and policies, sharing resources and best practices, and supporting each other in emission reduction plans.

The State will implement measures consistent with national priorities, monitor progress, ensure transparency, raise public awareness, and seek international assistance for emission reduction efforts.

This agreement signifies our commitment to environmental stewardship and our determination to actively contribute to the global effort to combat climate change. By working together with the other ECCAA Participating States, we aim to achieve significant reductions in CO_2 emissions and pave the way for a greener, more sustainable future for our region and the world.

Dated ..... September 2025.

CHARLES FERNANDEZ
Minister of Tourism, Civil Aviation, Transportation and Investment
Antigua & Barbuda

The government of the ECCAA Participating State, **the Commonwealth of Dominica**, recognizes the importance of reducing emissions from international civil aviation to protect the environment and ensure a sustainable future. The State is committed to collaborative efforts in reducing CO_2 emissions through effective measures and policies, sharing resources and best practices, and supporting each other in emission reduction plans.

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Dated ..... September 2025.

DENISE CHARLES-PEMBERTON
Minister of Tourism, International Transportation and Maritime Initiatives
Dominica

The government of the ECCAA Participating State, **Grenada**, recognizes the importance of reducing emissions from international civil aviation to protect the environment and ensure a sustainable future. The State is committed to collaborative efforts in reducing CO_2 emissions through effective measures and policies, sharing resources and best practices, and supporting each other in emission reduction plans.

The State will implement measures consistent with national priorities, monitor progress, ensure transparency, raise public awareness, and seek international assistance for emission reduction efforts.

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Dated ..... September 2025.

DICKON MITCHELL
Prime Minister
Minister of Infrastructure, Public Utilities, Civil Aviation and Transportation
Grenada

The government of the ECCAA Participating State, **St. Kitts and Nevis**, recognizes the importance of reducing emissions from international civil aviation to protect the environment and ensure a sustainable future. The State is committed to collaborative efforts in reducing CO_2 emissions through effective measures and policies, sharing resources and best practices, and supporting each other in emission reduction plans.

The State will implement measures consistent with national priorities, monitor progress, ensure transparency, raise public awareness, and seek international assistance for emission reduction efforts.

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Dated ..... September 2025.

MARSHA HENDERSON
Minister of Tourism, Civil Aviation, International Transport,
Employment and Labour and Urban Development
St. Kitts & Nevis

The government of the ECCAA Participating State, **Saint Lucia**, recognizes the importance of reducing emissions from international civil aviation to protect the environment and ensure a sustainable future. The State is committed to collaborative efforts in reducing CO_2 emissions through effective measures and policies, sharing resources and best practices, and supporting each other in emission reduction plans.

The State will implement measures consistent with national priorities, monitor progress, ensure transparency, raise public awareness, and seek international assistance for emission reduction efforts.

This agreement signifies our commitment to environmental stewardship and our determination to actively contribute to the global effort to combat climate change. By working together with the other ECCAA Participating States, we aim to achieve significant reductions in CO_2 emissions and pave the way for a greener, more sustainable future for our region and the world.

Dated ..... September 2025.

ALVA BAPTISTE
Minister of External Affairs, International Trade, Civil Aviation & Diaspora Affairs
Saint Lucia

The government of the ECCAA Participating State, **St. Vincent and the Grenadines**, recognizes the importance of reducing emissions from international civil aviation to protect the environment and ensure a sustainable future. The State is committed to collaborative efforts in reducing CO_2 emissions through effective measures and policies, sharing resources and best practices, and supporting each other in emission reduction plans.

The State will implement measures consistent with national priorities, monitor progress, ensure transparency, raise public awareness, and seek international assistance for emission reduction efforts.

This agreement signifies our commitment to environmental stewardship and our determination to actively contribute to the global effort to combat climate change. By working together with the other ECCAA Participating States, we aim to achieve significant reductions in CO_2 emissions and pave the way for a greener, more sustainable future for our region and the world.

Dated ..... September 2025.

CARLOS JAMES
Minister of Tourism, Civil Aviation, Sustainable Development and Culture
St. Vincent & the Grenadines

The Eastern Caribbean Civil Aviation Authority (ECCAA) recognizes the importance of reducing emissions from international civil aviation to protect the environment and ensure a sustainable future. During a regional meeting on the State Action Plan (SAP) organised in collaboration with the International Civil Aviation Organisation (ICAO), supported by Canada and the EU-CORSIA Africa and Caribbean project, all ECCAA Participating States agreed to commence work on the SAP. This decision was made notwithstanding existing limitations and the requirement to develop procedures for stakeholders within the States to effectively monitor outcomes related to the implementation of mitigation measures.

As such, the ECCAA is committed to collaborative efforts in reducing CO_2 emissions through effective measures and policies, sharing resources and best practices, and supporting each other in emission reduction plans.

The ECCAA will continue to support measures consistent with national priorities, monitor progress, ensure transparency, raise public awareness, and seek international assistance for emission reduction efforts.

This agreement signifies the Authority's commitment to environmental stewardship and its determination to actively contribute to the global effort to combat climate change. By working together with its Participating States, we aim to achieve significant reductions in CO_2 emissions and pave the way for a greener, more sustainable future for our region and the world.

Dated ..... September 2025.

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Figure 1: The Eastern Caribbean Civil Aviation Authority's headquarter in Antigua & Barbuda

IV) GLOSSARY

ABBREVIATIONS

ACT-CORSIA – Assistance Capacity-Building and Training on CORSIA
AMAN – Arrival Management
ANSP – Air Navigation Services Provider
AO – Aeroplane Operator
ATCO – Air Traffic Control Officer
ATM – Air Traffic Management
CAEP – Committee on Aviation Environmental Protection
CBU – Competitive Business Unit
CCO – Continuous Climb Operation
CDA – Continuous Descent Approach
CDO – Continuous Descent Operation
CEF – CORSIA Eligible Fuel
CO_2 – Carbon Dioxide
COM – Council of Ministers
CORSIA – Carbon Offsetting and Reduction Scheme for International Aviation
DMAN – Departure Management
DME – Distance Measuring Equipment
EAC – Economic Affairs Council
EASA – European Union Aviation Safety Agency
ECCAA – Eastern Caribbean Civil Aviation Authority
ECCB – Eastern Caribbean Central Bank
ECSC – Eastern Caribbean Supreme Court
EMP – Emissions Monitoring Plan
EU – European Union
GHG – Greenhouse Gas
GMBM – Global Market-Based Measure
GNSS – Global Navigation Satellite System
GSE – Ground System Equipment
IATA – International Air Transport Association
ICAO – International Civil Aviation Organisation
IFP – Instrument Flight Procedure
LAC – Legal Affairs Committee
LTAG – Long-Term Global Aspirational Goal
MBM – Market-Based Measures
MRV – Monitoring, Reporting and Verification
MSAP – Multi-State Action Plan
NACC – North American, Central American, and Caribbean
NDB – Non-Directional Beacon
OECS – Organisation of Eastern Caribbean States
PBN – Performance-Based Navigation
PPS – Pharmaceutical Procurement Services
RNAV – Area Navigation
RNP – Required Navigation Performance
RTK – Revenue Tonne per Kilometer
SAF – Sustainable Aviation Fuel
SAP – State Action Plan
SARPs – Standard and Recommended Practices
SGF – Sector Growth Factor
SIDS – Small Island Developing States
STAR – Standard Terminal Arrival Route
SVG – St. Vincent and the Grenadines
VHF – Very High Frequency
VOR – VHF Omnidirectional Range

DEFINITIONS

Area Navigation (RNAV) – A navigation method that enables aircraft to fly on any desired flight path within the coverage of ground- or space-based navigation aids.

Baseline – The starting point or reference level used for comparison when measuring changes, such as emissions or performance. The baseline is critical for assessing the impact of new environmental measures.

Baseline Scenario – A projected situation used as a reference, demonstrating what would happen without new measures or interventions. This helps evaluate the effectiveness of policies or the basket of measures aimed at reducing emissions.

Basket of Measures – The ICAO basket of measures are measures that aims to reduced CO_2 emissions in the aviation industry. It includes improvement of aircraft technology, operational improvements, sustainable aviation fuels and market-based measures.

Co-benefit – The reduction of CO_2 emissions in the aviation industry that is attributed to local/domestic efforts.

Continuous Climb Operation – The steady climb of an airplane to its cruising height after takeoff, without pausing at different levels. This method helps save fuel and reduces noise and pollution.

Continuous Descent Approach – A landing technique where an aircraft descends continuously rather than in steps, reducing fuel use and noise.

Continuous Descent Operation – The practice of maintaining a steady descent during arrival to minimize fuel consumption and environmental impact.

CORSIA – The Carbon Offsetting and Reduction Scheme for International Aviation, a global initiative to address greenhouse gas emissions from international flights.

CORSIA Eligible Fuel – Types of fuel approved under CORSIA that contribute to reducing aviation carbon emissions.

Domestic Aviation – A flight stage not classifiable as international. Domestic flight stages include all flight stages flown between points within the domestic boundaries of a State by an air carrier whose principal place of business is in that State. Flight stages between a State and territories belonging to it, as well as any flight stages between two such territories, are classified as domestic.

ECCAA Participating State – States that have passed the Eastern Caribbean Civil Aviation Act. Also referred to as "ECCAA Member States".

Flight Stage – the operation of an aircraft from take-off to its next landing and is classified as either international or domestic based.

Focal Point – The designated contact person and/or office responsible for coordinating activities and/or information.

Global Market-Based Measure – A framework developed by ICAO to address CO_2 emissions from international aviation.

Global Navigation Satellite System – Satellite systems (like GPS) that provide worldwide positioning, navigation, and timing services.

Greenhouse Gas – Gases (such as CO_2) that trap heat in the atmosphere and contribute to global warming.

International Aviation – A flight stage with one or both terminals in the territory of a State, other than the State in which the air carrier has its principal place of business.

Instrument Flight Procedure – Standardized methods for flying aircraft using navigation instruments, especially when visibility is poor.

Long-Term Global Aspirational Goal – The ICAO goal to achieve net zero carbon emissions by 2050 in international aviation.

Mitigation measure – A strategy taken to lower carbon emissions in aviation through improved technology, operational practices, sustainable aviation fuels and/or GMBM.

Net zero – The achievement of balancing the amount of GHG being removed from the atmosphere with the amount being emitted.

Offset – A credit that represents a reduction in emissions made elsewhere to compensate for emissions produced.

Performance-Based Navigation – Navigation standards based on aircraft performance rather than specific ground-based aids, allowing for more efficient routes, reduced fuel consumption and lower emissions.

Required Navigation Performance – A set of criteria that aircraft must meet to fly in certain airspace, ensuring accuracy and safety.

Revenue Tonne per Kilometer – A measure of how much paying cargo or passengers are transported over a distance.

Runway Designation Marking – Each runway is numbered according to its direction on a compass. A runway heading west (270 degrees) is numbered "27." The other end, heading east (090 degrees), is numbered "09." Therefore, the runway would be 09/27. This helps pilots know which direction they are landing or taking off.

Sector Growth Factor – A multiplier used to project future growth in the aviation sector.

SIDS – A Small Island Developing State is a coastal island that faces sustainable development challenges due to its size, geographic location, financial restraints and vulnerability to environmental impacts.

Standard Terminal Arrival Route – A standard flight procedure or path that guides aircraft when approaching a destination airport.

State Action Plan – A document that highlights the strategies developed by a State to address the reducing of aviation emissions and promoting sustainable aviation through targeted policies and measures.

Sustainable Aviation Fuel – Fuel made from renewable sources that can reduce the environmental impact of flying compared to traditional jet fuel.

1.0) OVERVIEW OF THE EASTERN CARIBBEAN CIVIL AVIATION AUTHORITY

1.1) ECCAA's Origin:

The Eastern Caribbean Civil Aviation Authority (ECCAA) evolved from the Directorate of Civil Aviation (DCA) - Eastern Caribbean States, which may be considered one of the oldest institutions, if not the oldest, in the Eastern Caribbean Region. From inception, the Directorate was seen as a vehicle for facilitating a collective and uniform approach to civil aviation matters affecting the then Windward and Leeward Islands, which now includes some of the Organisation of Eastern Caribbean States (OECS). The OECS comprises seven Protocol Members – Antigua & Barbuda, the Commonwealth of Dominica, Grenada, Montserrat, St. Kitts & Nevis, Saint Lucia and St. Vincent & the Grenadines and five Associate Members – Anguilla, the British Virgin Islands (BVI), Guadeloupe, Martinique and Saint Martin. The Protocol Members, with the exemption of Montserrat, are the ECCAA Participating States.

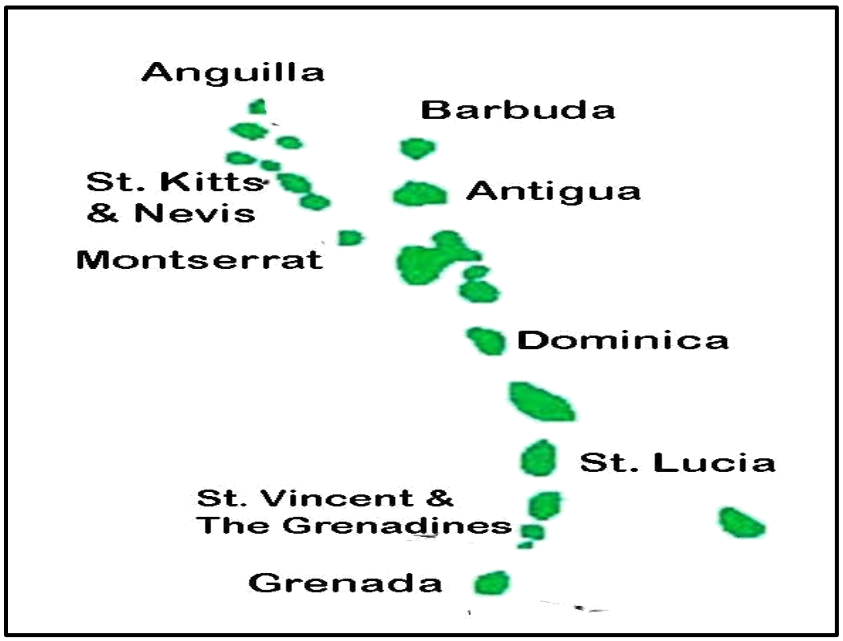


Figure 2: Map of the ECCAA Member States and British Outstations

A Director of Civil Aviation was first appointed in 1957 by the Government of the United Kingdom. In 1961, the responsibilities of the post were advertised as "To advise the Governments of the Windward and Leeward Islands on all matters relating to civil aviation including airfields and airport development, the implementation of ICAO conventions and the adequacy of air services."

The dissolution of the West Indies Federation in 1962 and reversion of the islands to their former colonial status meant that the Directorate was again exercising the functions on behalf of the UK Government.

Administration of the Directorate was assigned to the Antigua and Barbuda Government until 1968, when the West Indies Associated States (WISA) Council of Ministers assumed responsibility for its operation. In 1982, the Directorate became an institution of the OECS through the Treaty of Basseterre, which established the OECS. At the 35th Meeting of the OECS Heads of Governments in 2002, the Heads decided that:

"***A fully autonomous body should be established with the responsibility to regulate civil aviation activities within OECS Member States".***

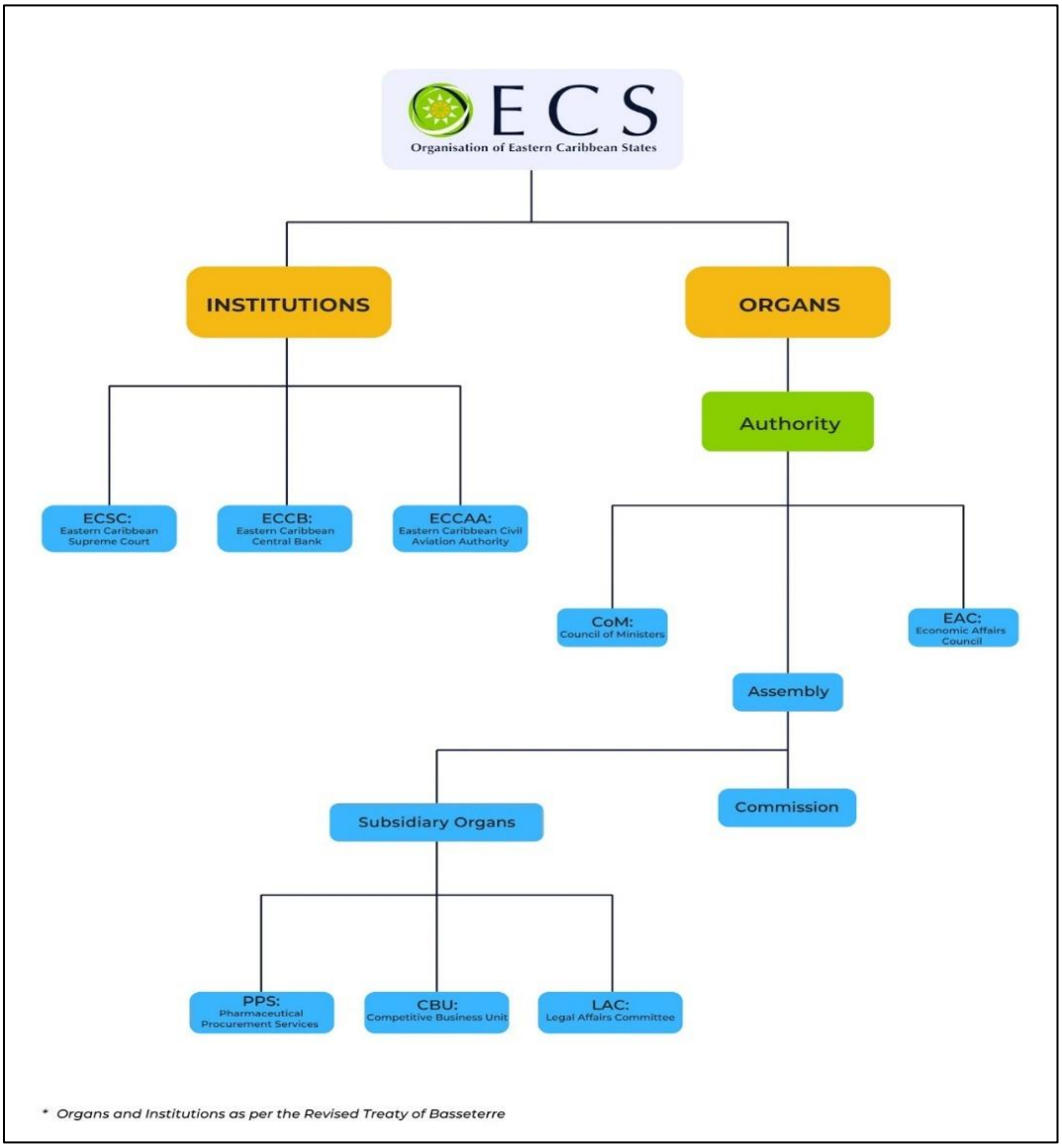


Figure 3: Diagram of the OECS organizational structure[1]

Acting upon this mandate; in October 2003, at St. Georges, Grenada, the OECS Ministers responsible for civil aviation signed the agreement establishing ECCAA; however, this

[1] Abbreviations can be found in the Glossary

agreement had to be given legal effect through an Act of Parliament in each participating State.

By October 2004, five participating States had passed the Eastern Caribbean Civil Aviation Agreement, which signaled ECCAA's birth.

At present, six (6) OECS Member States have passed the Civil Aviation Act.

1.2) The ECCAA in the OECS Region:

As signatories to the Chicago Convention, which established the International Civil Aviation Organization (ICAO), the OECS Member States are obligated to comply with the Standards and Recommended Practices (SARPs) contained in the nineteen Annexes of ICAO. They agree on certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner. They must collaborate to the highest degree to achieve standardisation and harmonisation of regulations, rules, standards, procedures and practices. Thus, they should establish and implement a system that enables them to satisfactorily discharge their obligations and responsibilities.

The ECCAA, therefore, provides civil aviation safety and security oversight through a system of inspecting, investigating, monitoring and licensing as well as regulating civil aviation activities in all Member States, consistent with ICAO SARPs.

1.3) ECCAA's Activities:

The ECCAA, at present, operates out of its headquarters in Antigua and Barbuda. It regulates civil aviation matters for and within the following States:

- Antigua and Barbuda
- Commonwealth of Dominica
- Grenada
- St. Kitts and Nevis
- Saint Lucia
- St. Vincent and the Grenadines

The ECCAA also provides Communications, Navigation and Surveillance (CNS) services to the above-mentioned States as well as to:

- Anguilla
- British Virgin Islands

- Montserrat

1.4) ECCAA's Responsibilities:

The services provided by the ECCAA include, but are not limited to:

- Maintenance of CNS and security screening equipment
- Ensure compliance in civil aviation safety and security through audits, inspections, surveys and tests
- Issuance of security circulars
- Flight inspections and verification of navigation and surveillance aids
- Engineering and maintenance services to States with respect to procurement and maintenance of CNS
- Ensuring that civil aviation legislation is in effect and adhered to
- Relationship with ICAO and other international civil aviation authorities and agencies
- Accident and incident investigations
- Sourcing and facilitation of aviation related training
- Provision of civil aviation technical advice to OECS Member States
- Personnel licensing: pilots, aeronautical engineers, air traffic controllers and others
- Certification – aircraft, air operators and ancillary services
- Certification of aerodromes (airports) and ancillary services

2.0) OVERVIEW OF THE EASTERN CARIBBEAN CIVIL AVIATION AUTHORITY'S MEMBER STATES

2.1) Antigua & Barbuda

The V. C. Bird International Airport (VCBIA) was named in honor of the country's first prime minister Sir Vere Cornwall Bird. VCBIA was converted into a civilian airport in 1949 after the Coolidge Airforce Base, formerly known as the U.S. Army Air Forces, was decommissioned. In 2015, a new terminal building and tower was opened; the runway (07/25) is 9,967ft (3,038m) and able to accommodate most international wide-body airliners. The airport layout consists of one main ramp to the North connecting the runway with 4 taxiways.

Codrington Airport was a public airport serving the village of Codrington, on the island of Barbuda. Its runway was only 500 metres long, only sufficient for short takeoff and landing or very light aeroplanes. On October 2nd 2024, the airport was decommissioned and permanently closed. The Burton-Nibbs International Airport was commissioned thereafter and remains operational to date. The airport was named in honour of the late Sir Eric Burton and Arthur Nibbs, two Barbudans who helped shape the political landscape and development of the twin island nation. In comparison to the previous airport, the Burton-Nibbs International Airport's runway is 6100ft, making it ideal for aircrafts which range from the LIAT ERJ 145, ATR 46, the ERJ 175 and the slightly larger Embraer E 170.

2.2) Commonwealth of Dominica

Douglas–Charles Airport, formerly Melville Hall Airport, is on the northeast coast 2 mi (3.2 km) northwest of Marigot. The runway is 6,352ft in length, designation 09/27. The site was chosen in 1944 for its extensive flat land. The airport was renamed from Melville Hall Airport to Douglas–Charles Airport on 27 October 2014 in honour of Prime Ministers Rosie Douglas and Pierre Charles.

Canefield Airport is an airport on the west coast of the island. It is 3 miles (5 km) north of Roseau, the capital. The runway is 3,130ft (954m) in length and 75ft (23m) in width, designation 01/19. There is mountainous terrain to the east, and rising terrain north and south, with the Caribbean sea to the west.

2.3) Grenada

Maurice Bishop International Airport, formerly known as Point Salines Airport, is Grenada's international airport located in the parish of St. George's. It is named after former Prime Minister Maurice Bishop who championed the construction of the airport in 1979. The runway is 45ft above sea level, designated 10/28, measuring 8967ft (2733m) in length and 148ft (45m) in width.

Lauriston Airport is an airport located west of Hillsborough, the main town on the island of Carriacou in Grenada. The runway is 800m in length and designator 09/27.

2.4) St. Kitts & Nevis

Robert L. Bradshaw International Airport formerly known as Golden Rock Airport, is located just northeast of Basseterre on the island of Saint Kitts. It was renamed in 1998 to honor Robert Llewellyn Bradshaw, the first Premier of St. Kitts-Nevis-Anguilla. The airport features a single asphalt runway, designated 07/25, measuring approximately 2,322 meters (7,618 feet) in length and 45 meters (148 feet) in width and is 170 feet (52 meters) above sea level. This runway accommodates various aircraft, including wide-body jets such as the Boeing 747. A major renovation completed in December 2006 expanded the parking apron to accommodate up to six wide-bodied aircraft simultaneously and included a complete resurfacing of the runway. The largest aircraft operating at the airport include wide-body jets like the British Airways Boeing 777 and American Airlines and Air Canada A321. The airport does not have a published ILS (Instrument Landing System), so approaches are non-precision or RNAV/GNSS-based. The primary approach is NDB/DME (Non-Directional Beacon / Distance Measuring Equipment) approaches and the secondary approach is Navigational Approach (RNAV). Visual approaches are used frequently due to favorable weather. The airport's layout and regional weather usually support straight-in approaches over water or mountainous terrain, depending on the runway in use.

The Vance Amory International Airport is situated just west of Newcastle village in Saint James Windward Parish, approximately 13 kilometers northeast of Charlestown, the capital of Nevis. It was originally known as Bambooshay Airport and later as Newcastle Airport. In 2002, following significant upgrades including a modern terminal and new control tower, the airport was renamed in honor of Vance Winkworth Amory, a former Premier of Nevis who was a prominent political leader and public servant in the Federation of Saint Kitts and Nevis. The runway designation is 10/28 and is approximately 1,220 meters (4,000 feet) in length, 30 meters (98 feet) in width and 8 meters (25 feet) above sea level. The airport primarily accommodates regional and smaller aircraft, including turboprops and light jets; private and charter flights, with an annual average of 1,600 private aircraft movements, such as GLEX 7500. Due to runway length limitations, the airport is not suitable for larger commercial jets. The primary approach available is the NDB/DME (Non-Directional Beacon / Distance Measuring Equipment) approaches while the secondary approach is Navigational Approach (RNAV), both done by R. L. Bradshaw Air Traffic Controllers. Visual approaches are commonly utilized under favorable weather conditions. Consideration to the terrain should

be given as Hurricane Hill, a 273-foot elevation. is located approximately 4,800 feet from the airport.

2.5) Saint Lucia

Hewanorra International Airport (HIA) is located in the southern part of the island. HIA handles most international long-haul flights and is the primary hub for tourism and cargo transport. The runway (10/28) is 2,722m in length and can accommodate wide-body aircraft up to ICAO ARC 4E and long-haul aircraft. VOR, VOR/DME, RNAV (GNSS), and NDB approaches are available. Rubis and SOL provide Jet A-1 fuel for aircraft.

George F. L. Charles Airport (GFLCA) is situated near the city of Castries in the northern part of the island. GFLCA primarily serves regional flights within the Caribbean. Its shorter runway and proximity to the capital make it ideal for inter-island travel and regional business connections. The runway (09/27) length is 1,898 meters and primarily supports turboprop and regional jet operations. RNAV (GNSS) and NDB approaches are available at this airport. Rubis, which also operates at HIA, is the sole provider Jet A-1 fuel at GFLCA.

2.6) St. Vincent & The Grenadines

Argyle International Airport is the primary international gateway to St. Vincent and the Grenadines, located in Argyle, approximately 5.17 miles from the capital city, Kingstown. Officially opened on February 14, 2017, it replaced the former E.T. Joshua Airport, addressing the growing need for enhanced air traffic capacity and modern facilities. In 2017, the operations and management of all State owned aerodromes, Argyle International Airport (TVSA), J.F. Mitchell Airport (TVSB), Canouan Airport (TVSC) and Union Island Airport (TVSU) was delegated to the Argyle International Airport Incorporated (AIA Inc.). The airport boasts a single asphalt runway (04/22) measuring 9,000 feet (2,743 meters) in length, accommodating a wide range of aircraft, including large commercial jets. The terminal is designed to handle up to 1.5 million passengers annually, and offers 23 commercial spaces, three restaurants, and a few kiosks, providing travelers with a variety of amenities.

Canouan Airport is located on the island of Canouan in St. Vincent and the Grenadines. It serves as a critical hub for both domestic and international flights, particularly catering to the luxury tourism sector. The airport features a single asphalt runway (13/31) measuring 5,875 feet (1,791 meters) in length, accommodating aircraft such as the Boeing 737 and Airbus A320. The terminal is designed in traditional Grenadines style, featuring an open-air

structure with cane palm frond roofing and eucalyptus log construction, reflecting the indigenous Taino and Arawak architectural influences.

J.F. Mitchell Airport serves the island of Bequia in the Grenadines Parish of Saint Vincent and the Grenadines. Located near Paget Farm, approximately four (4) kilometers southwest of Port Elizabeth, the island's capital. The airport was officially opened on May 15, 1992, and is named after Sir James Fitz-Allen Mitchell, a former Prime Minister of Saint Vincent and the Grenadines. The airport features a single asphalt runway (12/30) measuring 1,100 meters (3,609 feet) in length and 30 meters in width. The passenger terminal is a single-story building comprising check-in desks, a departure lounge, baggage handling areas, and customs and immigration facilities. The control tower is integrated into the terminal building.

Mustique Airport is a privately owned airfield located on Mustique Island, part of Saint Vincent and the Grenadines. Established in 1969, it is owned and operated by the Mustique Company and serves as a vital link for residents and visitors to this exclusive island destination. The airport features a single asphalt runway (09/27) measuring 992 meters (3,255 feet) in length. Due to its relatively short runway, Mustique Airport primarily accommodates turboprop aircraft capable of short takeoff and landing (STOL) operations. The passenger terminal is a single-story building that includes check-in counters, a departure lounge, baggage handling areas, and customs and immigration facilities.

Union Island Airport serves Union Island in the Grenadines Parish of Saint Vincent and the Grenadines. Located approximately 0.25 miles from Clifton, a major tourist destination, the airport is a key hub for both domestic and regional flights. The airport features a single asphalt runway (08/26) measuring 752 meters in length. Due to its relatively short runway, Union Island Airport primarily accommodates turboprop aircraft capable of short takeoff and landing (STOL) operations. The passenger terminal includes essential facilities such as check-in counters, security, customs, and immigration services.

2.7) Overview of the ECCAA Member States' International Aviation

The OECS Member States are privileged to receive a myriad of scheduled and non-scheduled flights, encompassing international, domestic, and cargo operations on a daily basis. This extensive network of aviation services significantly contributes to the connectivity and economic vitality of the region. Below is a comprehensive list of the distinguished airlines that frequently operate within the majority of the Member States, facilitating seamless travel and transport across borders:

MAIN AIRLINES OPERATING WITHIN THE REGION	
AIR ADELPHI LIMITED	**JET BLUE**
AIR CANADA	**LIAT (2020) LTD**
AMERICAN AIRLINES	**MUSTIQUE AIRWAYS**
AMERIJET	**SUNRISE AIRWAYS**
BRITISH AIRWAYS	**SVGAIR LTD (1990)**
CARIBBEAN AIRLINES	**TRANS ANGUILLA**
DELTA	**UNITED AIRLINES**
DHL	**VIRGIN ATLANTIC AIRWAYS**
FEDEX	**WEST JET**
INTERCARIBBEAN AIRLINES	**WINAIR**

Table 1:Illustrating the main airlines operating within the region

The ECCAA Member States network, a testament to unity and cooperation, encompasses fourteen international airports, with St. Vincent & the Grenadines hosting four – the largest amount – while each of the other States boast two significant air travel gateways. The comprehensive details of the airports, including names, addresses, ICAO, and IATA designators, are listed following:

Name of Country	Name and Address of Airport	ICAO Designator	IATA Designator
Antigua & Barbuda	V. C. Bird International Airport, Coolidge, St. George's	TAPA	ANU
	Burton-Nibbs International Airport, Codrington *Codrington Airport, Codrington (decommissioned October 2024)*	TAPB	BBQ
Commonwealth of Dominica	Douglas-Charles Airport, Melville Hall Road, Marigot, St. Andrew's	TDPD	DOM
	Canefield Airport, Canefield, Roseau	TDCF	DCF
Grenada	Maurice Bishop International Airport, Point Salines, St. George's	TGPY	GND
	Lauriston Airport, Hillsborough, Carriacou	TGPZ	CRU
St. Kitts & Nevis	Robert L. Bradshaw International Airport, Basseterre	TKPK	SKB
	Vance W. Amory International Airport, Newcastle, St. James	TKPN	NEV
Saint Lucia	Hewanorra International Airport, Beanfield, Vieux Fort	TLPL	UVF
	George F. L. Charles Airport, Vigie, Castries	TLPC	SLU
St. Vincent & the Grenadines	Argyle International Airport, Argyle	TVSA	SVD
	Canoun Airport, Canoun	TVSC	CIW
	J. F. Mitchell Airport, Port Elizabeth, Bequia	TVSB	BQU
	Mustique Airport, Mustique	TVSM	MQS
	Union Island Airport, Clifton, Union Island	TVSU	UNI

Table 2: Illustrating the information about the airports within the ECCAA Member States

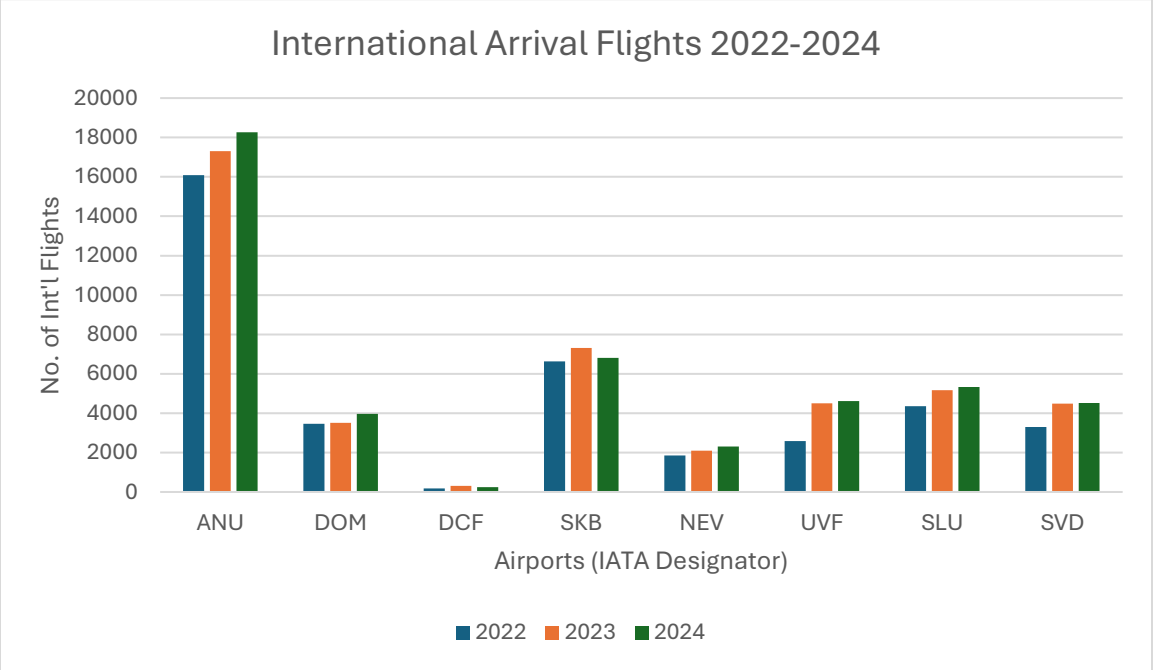
All of the States' airports are governed by airport authorities responsible for overseeing airport operations and providing essential services. This includes the operation and supervision of airports; construction, modification, and management of terminals; development and maintenance of apron infrastructure; provision of communication, navigation; and surveillance (CNS) services and ensuring safety and security during operations. However, in Antigua & Barbuda, these services are shared with the Ministry of Civil Aviation, and in St. Vincent & the Grenadines, they are governed by Argyle International Airport Inc.

Below is a table of the airport authorities within our member states:

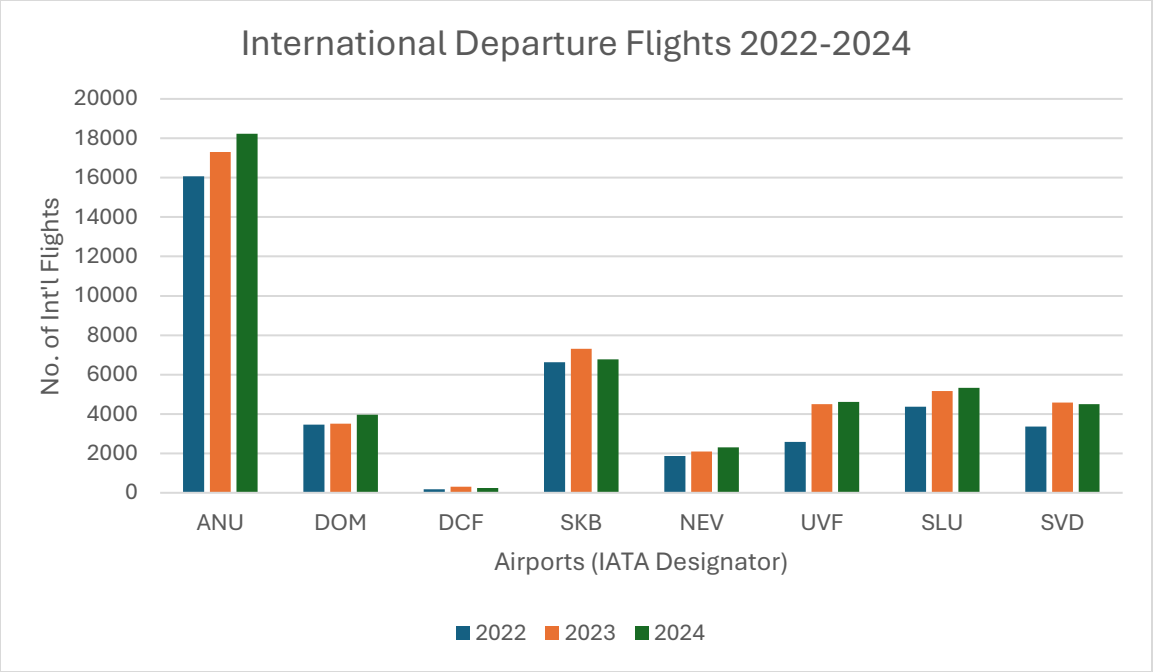
Name of Country	Airport Authority	Acronym
Antigua & Barbuda	Antigua & Barbuda Airport Authority	ABAA
Commonwealth of Dominica	Dominica Air & Sea Port Authority	DASPA
Grenada	Grenada Airport Authority	GAA
Nevis	Nevis Air & Sea Port Authority	NASPA
St. Kitts	St. Christopher Air & Sea Port Authority	SCASPA
Saint Lucia	St. Lucia Air & Sea Port Authority	SLASPA
St. Vincent & the Grenadines	Argyle International Airport Incorporated	AIA Inc.

Table 3: Illustrating the airport authorities within the ECCAA member states

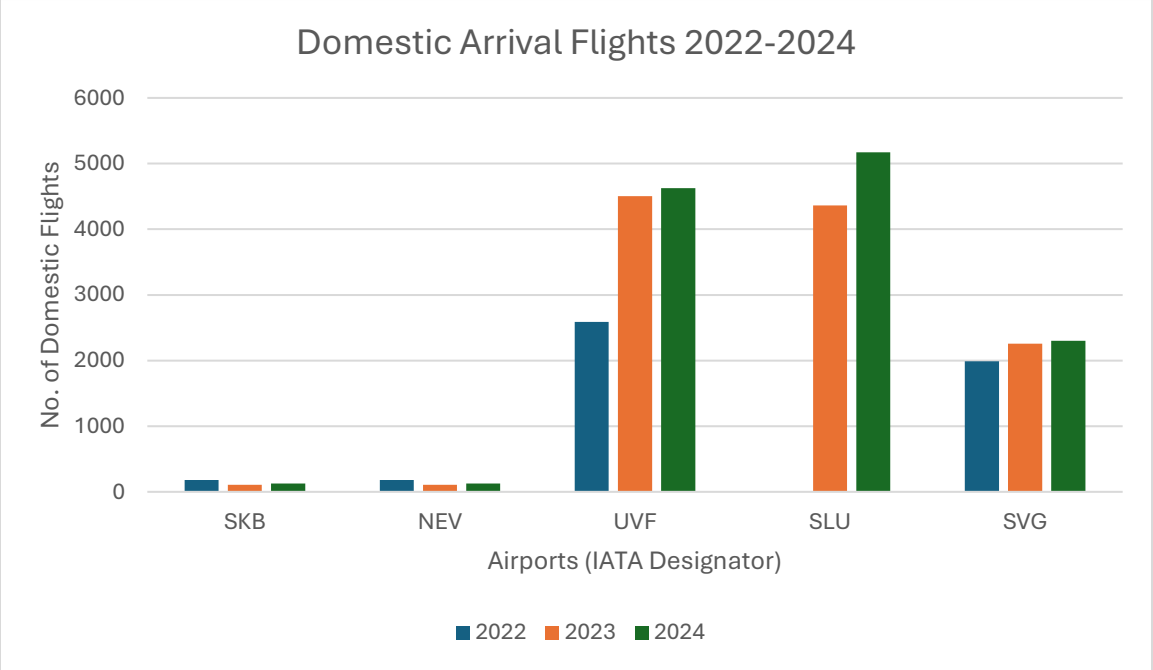
Each state experiences a varying number of daily arrivals and departures. Over a three-year period, data was gathered to establish a comprehensive baseline. This detailed analysis recorded the number of arrivals, departures, and passengers for both international and domestic flights in each State.



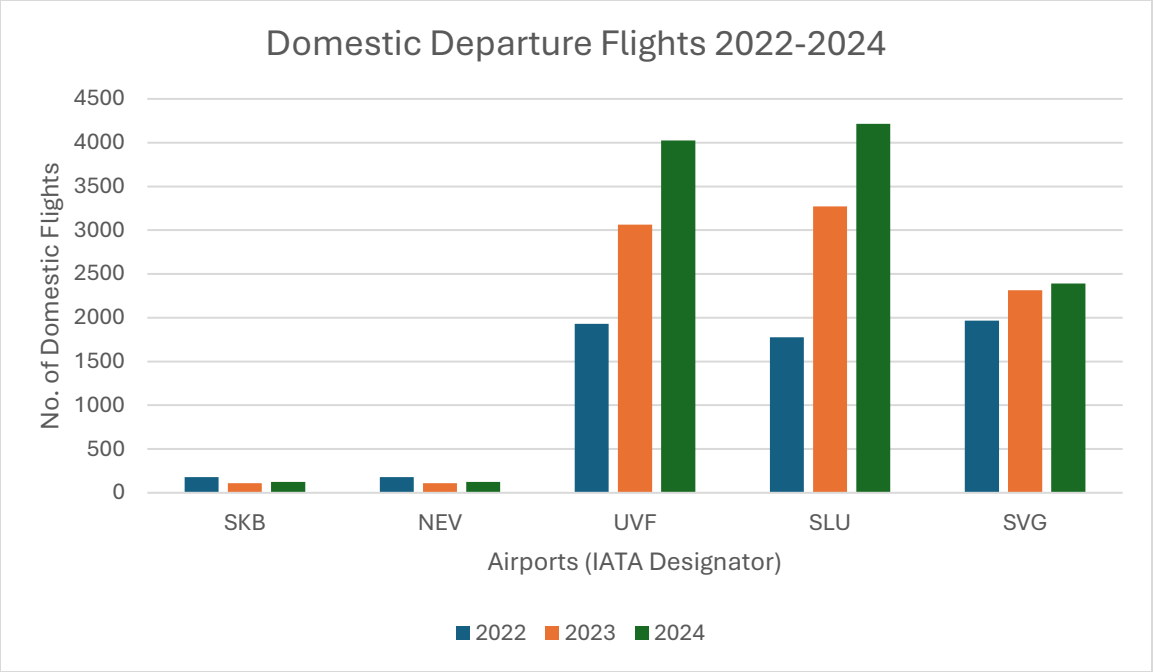
Bar graph 1: International flight arrivals at the airports from 2022 – 2024



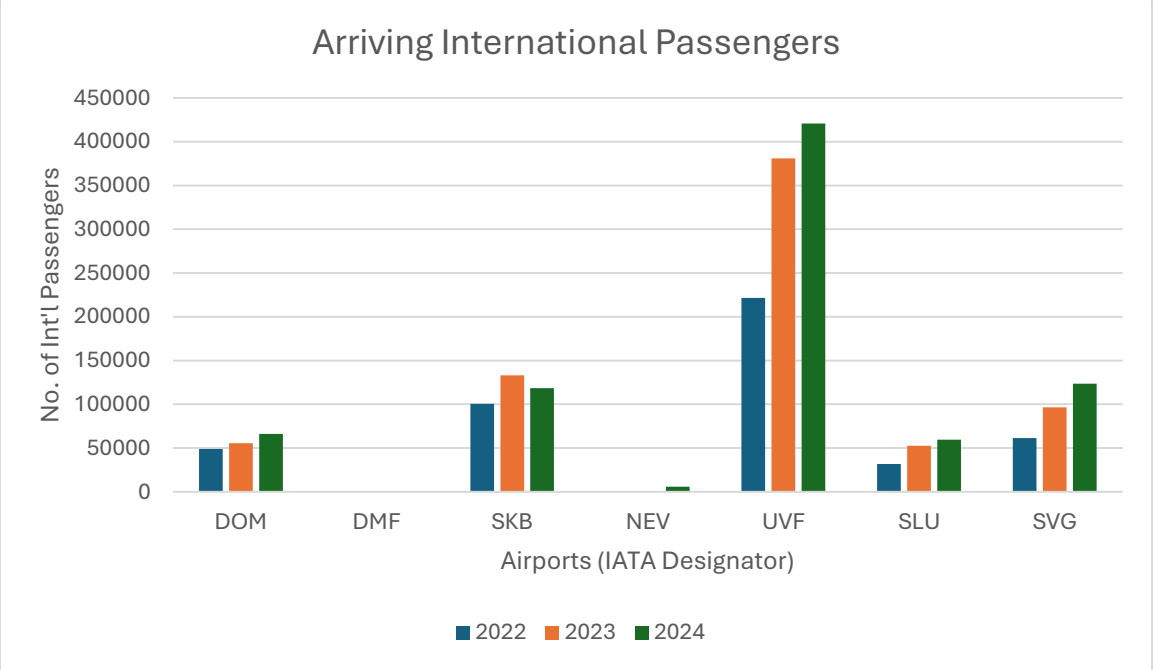
Bar graph 2: International flight departures at the airports from 2022 – 2024



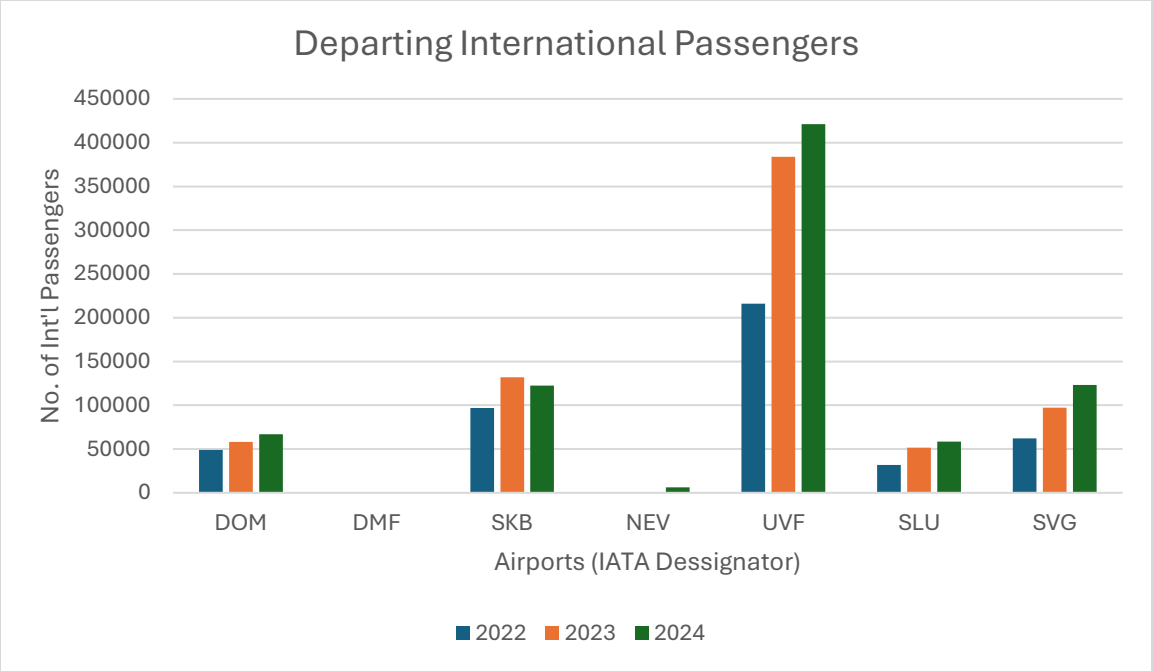
Bar graph 3: Domestic flight arrivals at the airports from 2022 – 2024



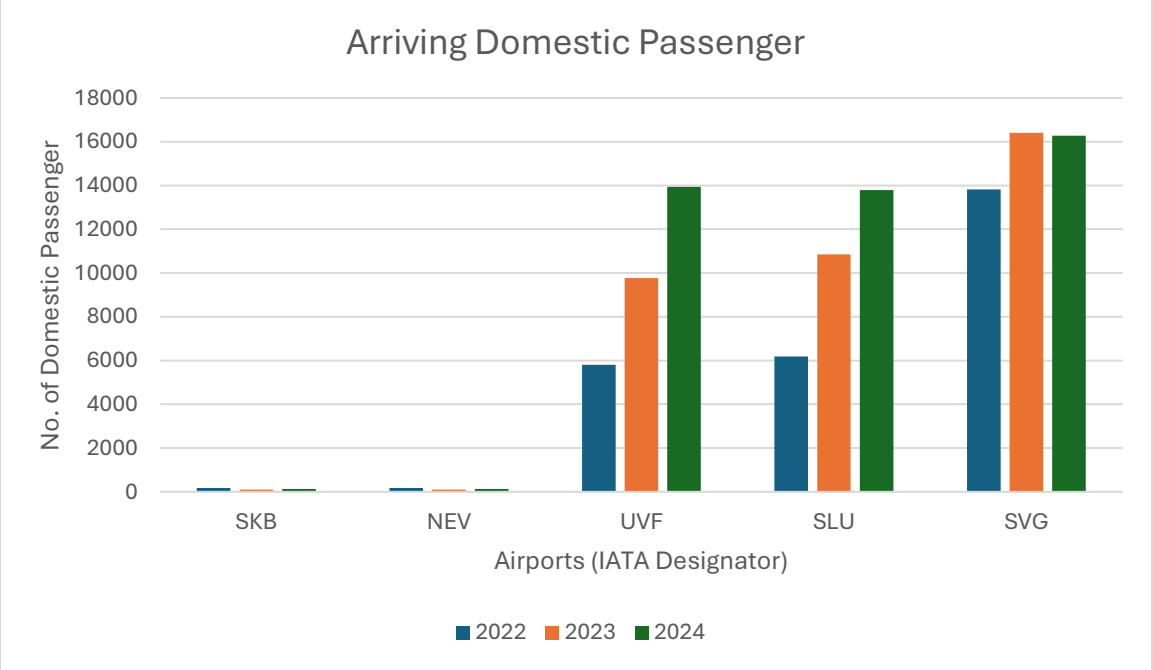
Bar graph 4: Domestic flight departures at the airports from 2022 – 2024



Bar graph 5: International arriving passengers at the airports from 2022 – 2024



Bar graph 6: International departing passengers at the airports from 2022 – 2024



Bar graph 7: Domestic arriving passengers at the airports from 2022 – 2024

3.0) CLIMATE CHANGE, BASELINE SCENARIO, MITIGATION MEASURES and EXPECTED RESULTS

3.1) ECCAA MEMBER STATES AND CLIMATE CHANGE

Climate change has had profound effects on various sectors across the Caribbean, significantly impacting the aviation industry. The increased frequency and severity of weather events such as hurricanes pose substantial challenges to airport operations, infrastructure, and safety. Notable hurricanes like Beryl, Irma, and Maria highlight the urgent need for adaptation and resilience in aviation.

Greenhouse gases, including carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O), contribute to global warming by trapping heat in the atmosphere. This process, known as the greenhouse effect, leads to global temperature increases and alters weather patterns. In the Caribbean, the rise in sea surface temperatures and changing atmospheric conditions amplify the intensity and frequency of hurricanes and tropical storms. These changes directly impact the aviation industry by triggering inclement weather conditions. The sector must adapt by enhancing infrastructure resilience, improving forecasting capabilities, and implementing robust disaster preparedness measures.

The increasing intensity of hurricanes poses a significant threat to airports. Hurricanes such as Ivan in 2004, and subsequent events, have demonstrated the destructive power of these phenomena. For instance, Hurricane Irma in September 2017 caused substantial damage to infrastructure, led to power outages, and disrupted flight operations, highlighting the vulnerability of the aviation sector to extreme weather events.

Certain States, due to their rugged terrain and limited infrastructure, are particularly vulnerable to climate change. The impact of Hurricane Maria in September 2017 resulted in widespread destruction and severely disrupted air travel. Primary airports in affected States suffered significant damage, necessitating extensive repairs and impairing connectivity for both passenger and cargo flights.

Climate change continues to pose risks to aviation operations, underscoring the need for enhanced resilience measures. Airports have encountered numerous challenges, including rising sea levels and increased hurricane activity. Runways and terminals are at risk from severe weather, necessitating investments in strengthening and protecting critical aviation assets. The increasing frequency of hurricanes demands robust disaster preparedness and mitigation strategies to ensure the continuity of aviation operations.

In conclusion, climate change poses significant challenges to the aviation industry due to the increased frequency and severity of hurricanes that disrupt airport operations and damage infrastructure. Addressing these vulnerabilities is crucial. Airports are at higher risk from extreme weather events, which can cause power outages, flight cancellations, and physical damage. Furthermore, the contribution of greenhouse gases to climate change

necessitates urgent action to mitigate risks and ensure the continuity and safety of air travel within the ECCAA Member States. As such, there is a need to implement stronger infrastructure, improve forecasting, and enhance disaster preparedness to protect airport operations. Additionally, since greenhouse gases drive climate change, taking steps to reduce emissions and adopting mitigation strategies is essential to maintain safe and reliable air travel across ECCAA Member States. This combined approach helps ensure the resilience and continuity of aviation in the face of ongoing climate risks.

3.2) BASELINE SCENARIO

DEFINITION OF DOMESTIC AND INTERNATIONAL AVIATION

Based on different flight stages, the ICAO has used and applied specific definitions for the collection of fuel consumption and traffic data. According to the ICAO, a flight stage is defined as the operation of an aircraft from take-off to its next landing and is classified as either international or domestic based on the following:

International: A flight stage with one or both terminals in the territory of a State, other than the State in which the air carrier has its principal place of business.

Domestic: A flight stage not classifiable as international. Domestic flight stages include all flight stages flown between points within the domestic boundaries of a State by an air carrier whose principal place of business is in that State. Flight stages between a State and territories belonging to it, as well as any flight stages between two such territories, are classified as domestic.

According to ICAO Doc 9988, States must report fuel consumption and traffic through Statistical Air Transporting Form M – Fuel Consumption and Traffic – International and Total Services, Commercial Air Carriers on an annual basis. Due to the lack of data, a baseline could not be determined; therefore, a data gap analysis for the multi-state action plan (MSAP) was performed. This analysis identifies the data needed to support the development and implementation of effective SAPs, ultimately contributing to a more sustainable aviation industry. The purpose of the data gap analysis is to ensure that plans are based on accurate and complete information, leading to more effective mitigation strategies.

This MSAP is developed for the three-year period of 2025–2027. During this time, measures will be put into place to ensure monitoring and evaluation for proper data collection, which will be used to develop a baseline for the second MSAP (2028–2030).

Currently, all the data required for baseline development could not be procured, due to the effects of COVID-19, an airplane operator would have ceased operations while another emerged; therefore, the data collected from the period 2022–2024 would not have been representative of current affairs.

Moving forward, it will be ensured that all aeroplane operators submit Form M to their respective ministries and that flights are categorized by international or domestic for both arrivals and departures. The data would then be procured by the authority to facilitate baseline creation. Accessibility of this data will guarantee the success of a complete and comprehensive baseline.

With all the limits mentioned above and considering the importance of starting to shape procedures for the collection of statistical data from the airlines within the ECCAA member States, the LIAT (2020) Ltd data was used for the initial design of the SAP baseline which will be based only on data of one year (2024).

This data from the airline attributed to Antigua and Barbuda was reported for the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) purposes. This data was passed through a check by the authority; it was shared with ICAO for the 2024 reporting exercise and will be used by ICAO accordingly.

ECCAA is fully aware that data of one year for the generation of a reliable baseline is not the best option and it does not give the real trends/expected trends in a scenario with no actions. However, this value of one year represents the engagement of the ECCAA Member States to progress and improve the approach to be used with data.

In addition to what is mentioned above, it must be noted that another airline from the ECCAA Member States is expected to improve quality of data and have data available for the update of the next state action plan.

Below is the data submitted by LIAT (2020) Ltd., reported under CORSIA, used for shaping the baseline scenario with no actions.

Year	Status	CO2 t	RTK	FE
2024	Historic	1470	n/a	n/a

Table 4: LIAT (2020) LTD historic data

As per ICAO Doc 9988, the baseline scenario shall reflect and estimate what will happen in scenario without measures and how CO_2 emissions will grow from 2025 to 2050 if no actions, no mitigation measures are considered.

For illustrative purposes and considering the recent establishment of LIAT (2020) Ltd., a constant growth of 0.01% CO_2 emissions annually from 2025 to 2050 has been used for the forecast of trends of emissions from 2025 to 2050 if no actions are used.

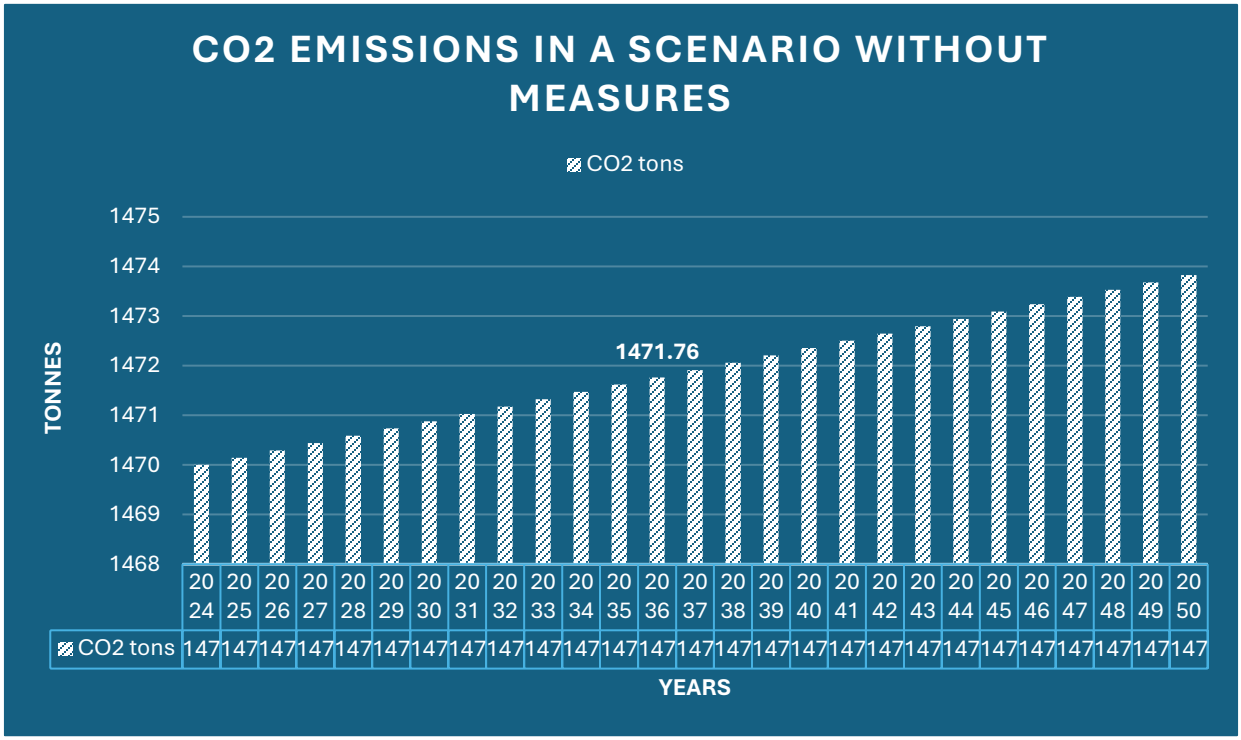
Below is the forecast from 2025 to 2050 in a scenario with no actions, reflecting only data of one airline from the ECCAA States, starting the operations only in 2024.

Years	Status	CO2 (t) Emissions
2024	Historic	1470.00
2025	Forecast	1470.15
2026	Forecast	1470.29
2027	Forecast	1470.44
2028	Forecast	1470.59
2029	Forecast	1470.74
2030	Forecast	1470.88
2031	Forecast	1471.03
2032	Forecast	1471.18
2033	Forecast	1471.32
2034	Forecast	1471.47
2035	Forecast	1471.62
2036	Forecast	1471.76
2037	Forecast	1471.91
2038	Forecast	1472.06
2039	Forecast	1472.21
2040	Forecast	1472.35
2041	Forecast	1472.50
2042	Forecast	1472.65
2043	Forecast	1472.80
2044	Forecast	1472.94
2045	Forecast	1473.09
2046	Forecast	1473.24
2047	Forecast	1473.38
2048	Forecast	1473.53
2049	Forecast	1473.68
2050	Forecast	1473.83

Table 5: CO_2 emissions from 2025 to 2050 in a scenario without measures

The table above outlines that there will be an increase of 0.003% of CO_2 emissions from 2025 to 2050. Although this number appears to be of very small value, it shall be noted that all ECCAA Member States are SIDS and are very vulnerable to climate change impacts. Their main source of income derives from tourism and aviation is the easiest and fastest way for connectivity amongst the States. For such a reason, considering the characteristics of the

aviation sector (a very hard to abate sector), the efforts by the States to reduce each ton of emissions should be considered.



Bar graph 8: Projected CO_2 emissions in a scenario without measures

Baseline Scenario Estimation Methodology

Baseline Scenario table			
Year	*International RTK (tonne-kilometres)*	*International fuel consumption (metric tonnes)*[2]	*International CO_2 emissions (metric tonnes)*
Historic year 2024	n/a	465,18	1470.00[3]
Future year 2025	n/a	465,23	1470.15
Future year 2030	n/a	465,46	1470.88
Future year 2040	n/a	465,93	1472.35
Future year 2045	n/a	466,16	1473.09
2050	n/a	466,40	1473.83

Table 6: Illustrating the estimated baseline scenario

[2] This value has been calculated using CO2 emissions under CORSIA CERT 2024 and diving this value by 3.16.
[3] Estimated value using ICAO CERT 2024 and controlled by the competent authority before reporting such data to ICAO through the CCR

3.3) MITIGATION MEASURES – SCENARIO WITH MITIGATION MEASURES

ICAO guidance (Doc. 9988) proposes 4 "basket of measures" to reduce international aviation emissions, consisting of:

1. Technology and Standards
2. Operational Improvements
3. Sustainable Aviation Fuels
4. Market-Based Measures

This State Action Plan focuses on mitigation measures from the operational improvements and market-based measures of the ICAO basket of measures. These measures include only those that can be implemented and monitored by i) airlines, ii) airports and iii) ANSP as part of their future commercial and programming plans.

In addition, by acknowledging the importance of distinguishing mitigation measures that impact international aviation from those that provide co-benefits by reducing emissions at the domestic level, a clear distinction between mitigation measures and co-benefits has been made and applied throughout this exercise.

The expected benefits shown in the following tables (for each mitigation measure) are based on detailed discussions with each State to assess the level of implementation planned from 2025 to 2027 and the potential for further improvements thereafter.

Mitigation Measure	CO2 saved	2025	2026	2027
CORSIA volunteered by all the states			To start	
Improved Air Traffic Management Procedures and Routing Structure Improve pre-departure planning and arrival planning (departure management (DMAN) and arrival management (AMAN))-Grenada in cooperation with T&T				To start
Implement Surveillance System, Performance-Based Navigation (PBN), Direct and Preferred Route Structure, and Continuous Descent Operation (CDO) and Continuous Climb Operation (CCO)				To start

Table 7: Illustrating implemented mitigation measures from 2025 - 2027

For each involved states/stakeholders in the state, there will be the table summarizing/assuming the results and the template provided by the specific stakeholders to ECCAA by January 01st 2025.

ECCAA acknowledges the unique situations and respective abilities and constraints of each state and stakeholder; therefore, mitigation measures were identified and listed by state.

All the ECCAA Member States have volunteered to CORSIA despite being exempted. This decision has allowed the CORSIA offsetting mechanism to progress in its function and rationale. The quantification of these benefits, and the role CORSIA offsetting will play in achieving net zero by 2050, will be determined and quantified in the future across all its dimensions. Indeed, the 2024 sector growth factor (SGF) is expected to be positive, indicating that offsetting under the CORSIA First Phase will be necessary. Based on estimates from the Committee on Aviation Environmental Protection (CAEP), the offsetting requirement at the end of the CORSIA First Phase is expected to be between 105 and 150.8 Mt CO2.

There is currently only one aeroplane operator, attributed to one of the six (6) ECCAA Member States, that operates internationally. Despite this airline being below the CORSIA MRV applicability threshold, all six ECCAA Member States have expressed interest in voluntarily participating in CORSIA. Furthermore, going forward, the respective States may consider exploring the possibility of participating in CORSIA-eligible projects, recognizing the potential benefits it may yield.

Mitigation Measure No. 1.:

ECCAA PARTICIPATING STATES

Title	CORSIA implementation in all ECCAA Participating States
Description	Implementation of CORSIA
Category	Market Based Measures
Measure	
Action	MRV system under CORSIA in place and all the states under ECCAA volunteering
Start Date	2026
End Date	2035
INDICATOR	
BASELINE	
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	Offsetting at the end of the CORSIA First Phase:(2024 SGF*CO2 emissions for the flights subject to offsetting compensation+2025 SGF* CO2 emissions for the flights subject to offsetting compensation +2026 SGF* CO2 emissions for the flights subject to offsetting compensation)
List of stakeholders involved	All ECCAA Member States and LIAT 2020 (but for the time being below MRV applicability)
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	Offsetting at the end of the CORSIA First Phase:(2024 SGF*CO2 emissions for the flights subject to offsetting compensation+2025 SGF* CO2 emissions for the flights subject to offsetting compensation +2026 SGF* CO2 emissions for the flights subject to offsetting compensation)

Table 8: Description on market-based measure CORSIA

Mitigation Measure No. 2.:

GRENADA

Title: Improved Air Traffic Management Procedures and Routing Structure	Improve pre-departure planning and arrival planning (departure management (DMAN) and arrival management (AMAN))
Description	Implement Surveillance System, Performance-Based Navigation (PBN), Direct and Preferred Route Structure, and Continuous Descent Operation (CDO) and Continuous Climb Operation (CCO)
Category	Operational Improvements
Measure	Measures to improve fuel efficient departure and approach procedures (PBN STAR, CCO, CDO, etc.)
Action	• Improve instrument approach procedures (IAP) • Develop STARs and SIDs to accommodate CDO and CCO operations, • Implement Direct and Preferred Route Structure, • Train ATCOs.
Start Date	2027
End Date	2030
INDICATOR	
BASELINE	Conventional vectoring and direct routing.
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	
Date of full implementation	2029
Economic cost	$600,000
Currency	USD
Reference to existing legislation	
Legislation is proposed	No
Compliance	ICAO PBN Standards
Assistance needed	Technical, Document Preparation
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Airport Authority, Ministry of Civil Aviation Grenada, Eastern Caribbean Civil Aviation Authority (ECCAA), Airline Trinidad and Tobago Civil Aviation Authority (TTCAA)

After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	

Table 9: Description on operational improvement DMAN and AMAN in Grenada

Mitigation measures No. 3.:

ST. VINCENT AND THE GRENADINES

Title	**Implement Surveillance System, Performance-Based Navigation (PBN), Direct and Preferred Route Structure, and Continuous Descent Operation (COD) and Continuous Climb Operation (CCO)**
Description	Implement Surveillance System, Performance-Based Navigation (PBN), Direct and Preferred Route Structure, and Continuous Descent Operation (COD) and Continuous Climb Operation (CCO)
Category-	Operational Measure
Measure	Management and Optimization of Traffic Flow and En-route Navigation Optimization
Action	Install ADS-8 Surveillance System, revise instrument approach procedures (IAPs) aligned with associated Arrival Route and implement STARs to accommodate COO, and accordingly revise SIDs to accommodate CCO, Implement Direct and Preferred Route Structure, Review and Implement relevant documents, Train ATCOs, Coordinate with Airlines, the ECCAA, Airport Operator for effective Implementation
Start Date	2027
End Date	2030
INDICATOR	Average fuel saved per flight, Average 10 nautical miles per flight reduced
BASELINE	Conventional vectoring, direct routing and reduction of fuel burn, Avg1250NM per typical international flight
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	300 tons CO, annually Fuel saved per flight: 10 nm savedx2.5 kg fuel/nm=25kg fuel saved/flight

	Total fuel saved annually: 25 kgx1000 flights=25,000kg fuel/year CO, Emissions Factor for Jet Fuel: • 1 kg fuel➔ 3.16 kgCO,(Jet A-1) • 25,000 kgfuelx3.16 kg CO/kg fuel=79,000 kgCO, • 79,000 kgC0+1,000= 79 tons COJyear per flight
Date of full implementation	
Economic cost	Studies, Procurement of ADS-B Surveillance System, ATC System upgrades, consultation, and Instrument Flight Procedure Design - Costs $2.5 Million
Currency	USD
Reference to existing legislation	
Legislation is proposed	
Compliance	
Assistance needed	Technical (Training, Software), Document Preparation, IFPs revision, ICAO implementation support
Amount of assistance needed	$350,000.00
Currency for financial assistance	
List of stakeholders involved	ANSP SVG/regional involvement
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	400 tons co, reduced (Climb and Descend/Cruise Optimization, Reduction in Holding Procedures, saves ~so-100 kg CO, per flight)

Table 10: Description on implementing various operational measures in St. Vincent & the Grenadines

ECCAA and the Participating States realize the importance of quantifying the expected outcomes in terms of fuel savings and reduced CO_2 emissions associated with the implementation of mitigation measures. For this reason, ad hoc indicators have been identified to facilitate smooth monitoring of the progress of each action within three years of this document submission. At the same time, given the unique nature of this State Action Plan and the stakeholders involved, ECCAA and its Member States have prioritized the listing of activities that are realistically expected to be implemented over the next three years, based on current procedures and ongoing discussions. This document will serve as a foundation to scale up the scope of activities aimed at reducing emissions from aviation and strengthening the resilience of ECCAA Member States to the impacts of climate change.

CO-BENEFITS

As previously mentioned, ECCAA and its Member States have distinguished between activities aimed at reducing emissions from domestic aviation and those impacting international aviation. Below is a list of co benefits by state and activity, to be implemented over the next three years. A total of nine (9) co-benefits has been engaged by stakeholders from four ECCAA Member States: Saint Lucia, St. Kitts & Nevis, Grenada and the Commonwealth of Dominica.

SAINT LUCIA

CO-BENEFIT No. 1.:

Title	**Installation of LED Lighting Instead of Classic Lighting**
Description	Improve energy efficiency at Hewanorra International Airport (TLPL / UVF) by replacing traditional airfield ground lighting with energy-efficient LED systems.
Category-	Airport Improvements
Measure	Reduce energy consumption at TLPL / UVF using LED airfield ground lighting.
Action	Replace existing conventional airfield lighting with LED systems under the Caribbean Regional Air Transport Connectivity Project (CATCOP).
Start Date	2024
End Date	
INDICATOR	
BASELINE	
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	
Date of full implementation	2027
Economic cost	
Currency	
Reference to existing legislation	
Legislation is proposed	
Compliance Mechanism	Implementation through the CATCOP project which started in 2020.
Assistance needed	
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Airport operator

After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	

Table 11: Description of airfield ground lighting improvements at HIA

CO-BENEFIT No. 2.:

Title	**Reduce Electrical Demand**
Description	Implementation of energy efficiency measures at Hewanorra International Airport (TLPL / UVF) and George F. L. Charles Airport (TLPC / SLU) terminal buildings through LED lighting upgrades and optimized air conditioning systems.
Category-	Airport Improvements
Measure	Lower electricity consumption at airport terminals through lighting and AC efficiency improvements.
Action	• Replace all terminal building light fixtures with energy-efficient LED lighting. • Optimize air conditioning schedules in public areas to reduce unnecessary usage. • Ensure all new equipment projects include solar panel integration where feasible.
Start Date	2025
End Date	
INDICATOR	
BASELINE	
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	
Date of full implementation	
Economic cost	
Currency	
Reference to existing legislation	
Legislation is proposed	
Compliance Mechanism	Implemented through airport energy management practices.
Assistance needed	
Amount of assistance needed	
Currency for financial assistance	

List of stakeholders involved	Airport Operator
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	

Table 12: Description of airport terminal electricity consumption and AC efficiency improvements

CO-BENEFITS No. 3.:

Title	**Use Cleaner Alternatives Sources of Power Generation**
Description	Introduce clean energy solutions at Hewanorra International Airport (TLPL / UVF) through the installation of a solar PV carport with EV charging infrastructure, LED lighting systems, and solar powered aviation safety equipment.
Category	Airport Improvements
Measure	Reduce carbon emissions and reliance on fossil fuels at TLPL / UVF by deploying solar-powered systems and electric vehicle infrastructure.
Action	• Construct a solar PV carport (minimum 430 kWp) at TLPL / UVF public car park. • Install two Level 3 EV chargers (50kW+), LED under-carport lighting, and 26 solar-powered streetlights. • Procure and install a solar-powered aerodrome beacon and a solar-powered obstruction beacon.
Start Date	2025
End Date	
INDICATOR	
BASELINE	
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	
Date of full implementation	
Economic cost	
Currency	
Reference to existing legislation	
Legislation is proposed	
Compliance Mechanism	Implemented as part of sustainable airport infrastructure upgrades.
Assistance needed	

Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Airport operator
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	

Table 13: Description of the use of cleaner alternative energy

ST. KITTS AND NEVIS

CO-BENEFITS No. 1.:

Title Solar PV Systems at Airport Facilities	Installation of Solar PV Systems at Airport and ANSP Facilities
Description	Installation of 500kW solar PV systems to power airport buildings and radar/ATC installations
Category	Renewable Energy
Measure	Solar Energy
Action	Design, procure, and install systems on rooftops and ground
Start Date	TBN Jan 2026
End Date	December 2028
INDICATOR	% of total airport electricity from solar
BASELINE	0%
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	500 tons CO_2 annually
Date of full implementation	2028
Economic cost	1,200,000
Currency	USD
Reference to existing legislation	Potential - Environment Legislation
Legislation is proposed	YES
Compliance	Voluntary, supported by airport authority
Assistance needed	Technical & Financial

Amount of assistance needed	800,000
Currency for financial assistance	USD
List of stakeholders involved	Airport Authority
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	1,500 tons of CO_2 avoided • 500 kW×4 hrs/day×365=730,000 kWh/year • 730,000 kWh/year=730 MWh/year • CO_2 avoided=730 MWh/year×0.7 tons/MWh= 511 tons CO_2/year

Table 14: Description of the installation of solar PV systems at airports and ANSP facilities

CO-BENEFITS No. 2.:

Title Electrification of Ground Support Equipment	Transition of Airport Ground Support Equipment (GSE) to Electric Models
Description	Replace diesel/Petrol-powered GSE (baggage tractors, tugs) with electric alternatives
Category-	Energy Efficiency
Measure	Electrification of GSE
Action	Procure electric GSE, install charging infrastructure
Start Date	2026
End Date	2028
INDICATOR	% of GSE fleet electrified
BASELINE	100% fossil-fuel GSE
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	200 tons CO_2 annually (average 6000 Litres) 10 units x 5 litres = 50 litres Per day 50 x 365 days = 18,250 per Annum 18,250 liters×2.68 kg CO_2/liter=48,910 kg CO_2 48,910 kg÷1,000= 48.91 tons CO_2/year reduction

Date of full implementation	2035
Economic cost	400,000 to buy electric tugs
Currency	USD
Reference to existing legislation	National Energy Policy
Legislation is proposed	Yes
Compliance	Airport Green GSE Program
Assistance needed	Co-financing and supplier sourcing
Amount of assistance needed	300,000
Currency for financial assistance	USD
List of stakeholders involved	Airport Operators, Airlines, Ministry of Public Infrastructure
After five-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	240 tons CO_2 saved

Table 15: Description of the electrification of GSE measure

GRENADA

CO-BENEFITS No. 1.:

Title: Enhanced Ground Support Equipment (GSE) Management	**Efficient utilization and operation of GSE**
Description	Manage the use and operation of all GSE in the most efficient manner.
Category-	Airport Improvements
Measure	Reduce distance travelled, avoid unnecessary idling of equipment
Action	Implement Standard operating procedures to: • Reduce distance travelled • Reduce unnecessary idling of equipment
Start Date	2025
End Date	2026
INDICATOR	Reduced fuel/energy consumption
BASELINE	

EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	
Date of full implementation	
Economic cost	
Currency	
Reference to existing legislation	
Legislation is proposed	No
Compliance	
Assistance needed	
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Ground Handlers, Airport Authority
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	

Table 16: Description of efficient utilization and operation of GSE

CO-BENEFITS No. 2.:

Title: Utilization of Electric Ground Support Equipment (GSE)	**Usage of Electric Ground Support Equipment (GSE) and Operations Vehicles**
Description	Utilization of Electric GSE and vehicles associated with airport operations
Category-	Operational Improvements
Measure	Electrically operated GSE and Operations Vehicles
Action	• Conduct a Feasibility Study to Identify and procure the most suitable electric vehicles/equipment to be utilized for Grenada's airport operations. • Install charging infrastructure. • Train maintenance personnel
Start Date	2026
End Date	2028
INDICATOR	% of GSE and Operations vehicles, electric or hybrid
BASELINE	100% fossil fuel
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	

Date of full implementation	2028
Economic cost	$20,000,000
Currency	USD
Reference to existing legislation	
Legislation is proposed	
Compliance	
Assistance needed	Supplier and Finance Sourcing
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Ground Handlers, Airports Authority
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	

Table 17: Description of operational improvement by using electric GSE

CO-BENEFITS No. 3.:

Title: Solar Farm Project	**Installation of Solar System at Airport Facilities**
Description	Manage the use and operation of all GSE in the most efficient manner.
Category	Airport Improvements
Measure	Installation of a Solar System aimed at reducing the reliance on fossil fuels to power the airport terminal building
Action	Procure and install Solar Farm at the Maurice Bishop International Airport
Start Date	2027
End Date	2028
INDICATOR	Reduced fuel/energy consumption
BASELINE	100% Fossil Fuel
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	
Date of full implementation	2029
Economic cost	$1,000,000
Currency	USD
Reference to existing legislation	
Legislation is proposed	No
Compliance	
Assistance needed	Technical, Infrastructural & Financial
Amount of assistance needed	

Currency for financial assistance	
List of stakeholders involved	Airport Authority
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	

Table 18: Description of airport improvement by installing solar systems

COMMONWEALTH OF DOMINICA

CO-BENEFITS No. 1.:

Title	**Implementation of Renewable Energy and Energy Efficiency Measures at Dominica's Airports**
Description	The State of Dominica, in collaboration with key aviation and energy stakeholders, is advancing a comprehensive transition of airport operations towards renewable energy and energy-efficient systems. This initiative encompasses both Douglas Charles Airport and the forthcoming International Airport facility, and includes the integration of solar photovoltaic generation, geothermal power, and energy-efficient infrastructure. By prioritizing sustainable airport operations, Dominica seeks to significantly reduce reliance on fossil-fuel-based energy, lower aviation-related operational emissions, and align with ICAO's global aspirational goals for carbon-neutral growth.
Category-	Airport Improvement: - (Renewable Energy/Energy Efficiency/ Green Operations)
Measure	Progressive adoption of renewable energy systems, energy-efficient infrastructure, and sustainable ground support operations at Douglas Charles Airport and the new International Airport facility.
Action	• **Electric Ground Power Units (GPUs)** – ongoing electrification of ground support equipment (2020–2025). • **Large-Scale Green Energy Integration Project** – renewable power supply (solar and geothermal) for Douglas Charles and the new International Airport (2026–2030).

Start Date	2025
End Date	2030
INDICATOR	• % reduction in fossil fuel energy consumption achieved through the implementation of renewable energy sources (RES). • Estimated fuel savings and corresponding CO_2 reduction • % reduction in CO_2 emissions attributable to the transition to electric ground power units and the implementation of large-scale energy integration initiatives. • Number of energy audits completed.
BASELINE	
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	• Progressive reduction of fossil-fuel consumption at Douglas Charles Airport, with more than 70% of its energy demand met by renewables by 2027 through ongoing efficiency and solar integration measures. • The new International Airport, commissioning in 2027, is designed for 90–100% renewable energy supply, immediately avoiding emissions associated with conventional fossil-fuel generation. • Measurable reductions from energy efficiency upgrades, including LED lighting, inverter-type HVAC systems, and energy audits, at airports. • Phased replacement of diesel-powered ground support equipment with electric GPUs, reducing emissions from airport ground operations. • Combined effect: substantial overall reduction in fossil-fuel consumption and CO_2 emissions from airport operations, contributing to ICAO's carbon-neutral growth goals, with incremental benefits realized from Douglas Charles Airport until 2027, and full benefits realized after the new airport becomes operational.

Date of full implementation	2030
Economic cost	
Currency	
Reference to existing legislation	National Energy Policy
Legislation is proposed	Yes
Compliance	Voluntary
Assistance needed	• Technical expertise in solar and geothermal integration. • Financial assistance for renewable infrastructure and ground equipment electrification. • Capacity-building for emissions monitoring and reporting.
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Ministry of Tourism (Ministry responsible for Civil Aviation) Ministry of Foreign Affairs, International Business, Trade and Energy Ministry of Environment, Rural Modernization, Kalinago Upliftment and Constituency Empowerment Dominica Air & Sea Ports Authority Ground Handling Agents ECCAA
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	

Table 19: Description of the Implementation of Renewable Energy and Energy Efficiency Measures at Dominica's Airports

MITIGATION MEASURES IN THE MEDIUM -LONG TERM PERIOD TO REACH NET ZERO BY 2050 PER STATE PER MEASURES

This section is for illustrative purposes only, to emphasize that ECCAA, together with the six Member States, has begun considering processes and plans to be implemented in alignment with the ICAO's LTAG objective of reaching net zero by 2050.

Each State, based on its specific context, readiness and circumstances will work with ECCAA to improve and make progress towards these goals.

ST KITTS & NEVIS

1) Optimization of Air Traffic Flow and Route Efficiency (based on 1000 annual flights) 2030 – 2033

Title Improved Air Traffic Management Procedures	Optimization of Air Traffic Flow and Route Efficiency – (based on 1000 annual flights)
Description	Implement Performance-Based Navigation (PBN) and Continuous Descent Approaches (CDA)
Category	Operational Measures
Measure	Air Traffic Flow Optimization
Action	Train ATCOs, update procedures, implement with airline coordination
Start Date	2030
End Date	2033
INDICATOR	Average fuel saved per flight
BASELINE	Conventional vectoring and step descents
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	100 tons CO_2 annually
Date of full implementation	2033
Economic cost	Includes studies, ATC system upgrades, consultation, and procedure design - Costs typically $250,000–$1M regionally
Currency	USD

Reference to existing legislation	ICAO PBN Implementation Plan
Legislation is proposed	Not required
Compliance	ICAO PBN standards
Assistance needed	Technical (training, software)
Amount of assistance needed	Technical (training, software)
Currency for financial assistance	$250,000
List of stakeholders involved	ANSP
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	300 tons CO_2 reduced (Climb/cruise optimization saves ~50–100 kg CO_2 per flight)

Table 20: Description of operational measures to be implemented by 2030

2) Promotion and Use of Sustainable Aviation Fuels at RLB International Airport

Title Use of Sustainable Aviation Fuels (SAF)	**Promotion and Use of Sustainable Aviation Fuels at RLB International Airport**
Description	Partner with fuel suppliers to introduce SAF blends of up to 10% at airport fuel depot- based on 1m Litres per annum
Category	Alternative Fuels
Measure	SAF introduction
Action	Assess feasibility, develop supply chain, initiate SAF availability
Start Date	2035
End Date	
INDICATOR	Litres of SAF used per year
BASELINE	0 litres
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	700 tons CO_2 reduction annually (based on 10% SAF blend usage) 1 liter Jet A1 → 2.5 kg CO_2 100,000 liters = 250,000 kg = 250 tons

	CO_2 (from Jet A1) SAF CO_2 savings=250 tons CO_2 × 75% / 100= 187.5 tons CO_2/year
Date of full implementation	2035
Economic cost	Average 250,000 to set up infrastructure
Currency	USD
Reference to existing legislation	National Climate Resilience Strategy
Legislation is proposed	Yes
Compliance	
Assistance needed	Feasibility studies, policy development
Amount of assistance needed	250,000
Currency for financial assistance	USD
List of stakeholders involved	Ministry of Transport
REPORTING OUTPUTS in terms of CO2 reduction	250 tonnes per annum

Table 21: Description of the implementation of alternative fuels by 2035

3) Use of RNAV/RNP Direct Routes for Greater Efficiency

Title: Implementation of More Direct Routes (RNAV/RNP)	**Use of RNAV/RNP Direct Routes for Greater Efficiency**
Description	Introduce Performance-Based Navigation (PBN) routes to shorten en-route distances
Category	Operational Measures
Measure	En-route Navigation Optimization
Action	Redesign airways, publish new RNAV procedures
Start Date	2035
End Date	2040
INDICATOR	Avg 10 nautical miles per flight reduced
BASELINE	Avg 1250NM per typical international flight

EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	200 tons CO_2 annually Fuel saved per flight: 10 nm saved×2.5 kg fuel/nm=25 kg fuel saved/flight Total fuel saved annually: 25 kg×1000 flights=25,000 kg fuel/year CO_2 Emissions Factor for Jet Fuel: • 1 kg fuel → 3.16 kg CO_2 (Jet A-1) • 25,000 kg fuel×3.16 kg CO_2/kg fuel=79,000 kg CO_2 • 79,000 kg CO_2÷1,000= 79 tons CO_2/year per flight
Date of full implementation	2040
Economic cost	TBN
Currency	
Reference to existing legislation	ECCAA CNS/ATM Master Plan
Legislation is proposed	Yes (for regional coordination)
Compliance	ICAO PBN mandates
Assistance needed	ICAO implementation support
Amount of assistance needed	Technical Training
Currency for financial Assistance	
List of stakeholders involved	ANSP
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	237 tons CO_2 saved

Table 22: Description of the introduction of PBN by 2035

ST. VINCENT AND THE GRENADINES

1) Use of SAF and CEF

Title	Use of SAF and CEF
Description	Partner with fuel suppliers to Introduce CEF blends of up to 10% at airport fuel depot- based on lm Litres per annum
Category	SAF
Measure	
Action	Assess feasibility, develop supply chain, initiate CEF availability
Start Date	2035
End Date	
INDICATOR	
BASELINE	
EXPECTED BENEFITS IN TERMS OF CO2 REDUCTION	
Date of full implementation	
Economic cost	Average 250,000 to set up Infrastructure
Currency	
Reference to existing legislation	
Legislation is proposed	
Compliance	
Assistance needed	Feasibility studies, policy development, Infrastructure development and Implementation of project
Amount of assistance needed	$400,000.00
Currency for financial assistance	
List of stakeholders involved	Ministry of Transport, Ministry of Energy, Airline
After three-year compliance period: REPORTING OUTPUTS in terms of CO2 reduction	350 tonnes per annum

Table 23: Description of the implementation of SAF and CEF use by 2035

4.0) CONCLUSION

CONCLUSION

ECCAA and the Participating States recognize the embryonic, yet laudable efforts demonstrated by all stakeholders in preparing the first State Action Plan.

ECCAA and the Member States opted to submit this first SAP to ICAO to demonstrate that a process has been established, working groups have been formed, and each State now has SAP Focal Points. This represents progress and sets the foundation for future improvements. There is a clear awareness of the need to enhance data quality, indicators, and procedures to monitor and report progress against expected targets – key aspects of each programming exercise. In the aviation sector, particularly in the SAP context, this work is pivotal to using the short-term results of each SAP, updated every three years, to plan the roadmap and trajectory to net zero by 2050.

As mentioned in the baseline, ECCAA and its Member States will need to improve data quality, especially regarding statistical approaches, to ensure harmonized and comparable data. This priority will be addressed in the review of SAP No. 2 where RTK considerations, fuel efficiency analysis and estimations will be integrated. The baseline and scenario with no actions will be upgraded to include more accurate information aligned with ICAO Doc 9988 on the SAP.

For the scenario with mitigation measures, although three such measures have been identified and validated by stakeholders, quantification of expected CO_2 emission reductions was not available at the time of this document's preparation.

All ECCAA States volunteered to participate in CORSIA, which is recognized as an achieved result for CORSIA implementation, allowing routes between ECCAA Member States and other volunteering States be included in the CORSIA offsetting. For the specific airline attributed to one ECCAA Member State, emissions remain well below MRV applicability; therefore, no CORSIA offsetting is expected.

Regarding the ATM measure, discussions are ongoing, with activities expected to commence on January 01st, 2027.

Therefore, despite the lack of real quantification for the three mitigation measures mentioned above, it is important to note that ECCAA and the Member States have procedures in place to distinguish CO2 emission reductions affecting domestic aviation (so-called co-benefits) from international emissions. This distinction represents additional progress toward more accurate data collection and analysis aligned with the requirement of ICAO Doc 9988.

Finally, ECCAA and the Member States are exploring and building knowledge on the potential of Sustainable Aviation Fuels (SAF) to support their decarbonisation trajectory by 2050. This initiative will be approached in stages, with assistance needed to frame SAF within the regional geographic context, considering limits and proximity to other continents more advanced in SAF development. This approach will enable ECCAA and the States to be able to plan effectively based on the real level of "data readiness" for each category of measures.

Participation in CORSIA, and the adoption of energy-efficient technologies underscore commitment to operational safety, efficiency, and environmental responsibility. These efforts enhance both functionality and sustainability of the aviation sector, contributing to broader climate change mitigation goals.

As the Caribbean continues to innovate and implement these forward-thinking strategies, ongoing projects promise to bolster the economic viability of the region's aviation industry, ensuring a resilient and eco-friendly future for air transport connectivity.

5.0) ASSISTANCE NEEDS

Assistance needs refer to the types of support that ECCAA and its Member States require to successfully implement their plans to reduce greenhouse gas emissions in aviation. These needs are formally identified in the State Action Plan sector, contributing to broader climate change mitigation goals resources, training, or partnerships are necessary and can better coordinate the appropriate support. By clearly stating these needs, ECCAA and its Members States can help ensure they receive the necessary guidance and assistance for the effective implementation and monitoring of their climate-related measures.

Please mark the assistance needs in the table and provide detailed explanations for each of these needs for the implementation of each selected mitigation measure separately.	
☒	providing technical assistance to States to help them to strengthen their capacity to implement mitigation measures and monitor the implementation progress, including through the development of guidance materials, training on the development of SAP, and use of ICAO tools RATIONALE: Drafting the SAP is the starting point for the planning but without a constant monitoring process based on indicators, the activities will be without effects. Experience from other states will help ECCAA and the states to strengthen their monitoring procedures
☒	providing guidance to States on accessing financial instruments for the implementation of mitigation measures including innovative mitigation measures and projects for emission reductions from international aviation RATIONALE: How to access financial instruments to concretely transform an intended activity into an implemented activity is crucial for all the states
☒	facilitating partnerships, alliances and cooperation between States and all relevant stakeholders for the discovery of the potential of States on the development and implementation of mitigation measures which include but are not limited to feasibility studies, pilot projects, capacity development on environmental data management, etc. RATIONALE: Partnership and alliances for SAF and ATM regional measures are crucial to maximize the results already achieved by others and replicate into the regional context

☒	supporting the development of projects and activities such as feasibility studies, policy and regulatory RATIONALE: projects, feasibility studies, policies and regulations represent the pillars to plan the net zero by 2050. ECCAA and its member states will need assistance in each of these areas to plan the trajectory to net zero by 2050

END