SOLOMON ISLANDS ACTION PLAN TO REDUCE CO_2 EMISSIONS FROM INTERNATIONAL AVIATION

Civil Aviation Authority of Solomon Islands

2nd Version – September 2025

CONTENTS PAGE

FOREWORD BY DIRECTOR OF CIVIL AVIATION

Mr. Tao Ma
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International Civil Aviation Organization (ICAO)
Asia & Pacific Regional Office
United Nations Specialized Agency
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Dear Mr. Ma

RE: STATE ACTION PLAN ON CO2 EMISSIONS – SOLOMON ISLANDS

I am pleased to submit this updated State Action Plan 2025 for the reduction of carbon emissions, IAW ICAO Resolution A41-21. The SAP forms an integral part of the broader sustainable development priorities and objectives of Solomon Islands and seeks to support sustainable growth of international aviation.

As a PSIDS, Solomon Islands contributions to international CO2 emissions are very minimal however we are prone to the impacts of climate change at catastrophic scale through recurring natural disasters.

However, as a member state and participant in the global aviation system, the SAP outlines how the country's efforts and priorities will be implemented by the state and industry to ensure ICAO's global LTAG can be realized.

As part of our development agenda, Solomon Islands is committed to continuous investment in new aircraft technology and green airport initiatives for a start. New CO2 reduction initiatives will be adopted as the state progresses and adapts its Plan.

Yours sincerely

Brian Halisanau
Director of Civil Aviation

EXECUTIVE SUMMARY

This updated State Action Plan 2025 is a continuation of the plan where Solomon Islands would undertake to reduced C02 emission from international flights.

Reducing the Civil Aviation industry carbon footprint is one of the Solomon Islands priorities while simultaneously enhancing safety and efficiency. The development of this State Action Plan adhered to the methodology set forth by the International Civil Aviation Organization (ICAO). Solomon Islands recognized the impacts of global warming, and strived to decarbonized the aviation sector through measures such as, Purchasing of New Aircraft (A320), New glass cockpit twin otter Aircraft and a New twin Otter aircraft in 2024. And also plan to upgrades the airline ageing aircrafts.

With this current accomplishment so far, this State Action Plan establishes a goal for reducing CO2 emissions from aviation activities. This goal aligns with the ICAO's global aspirational goals for the international aviation sector, which include a 2% annual fuel efficiency improvement through 2050 and carbon-neutral growth from 2020 onwards, and a long-term global aspirational goal (LTAG) of net-zero carbon emissions by 2050.

As a living document this State Action Plan is subject to continual reviews and updates in accordance with the ICAO Assembly Resolution A41-21: Consolidated statement of continuing ICAO policies and practices related to environmental protection and Climate change. The Solomon Islands remain resolute in its commitment to implementing ICAO's environmental protection programs by promoting greener aviation practices.

Figure 1. Munda International Airport

Section 1 – Introduction

1.1 Background

This updated Action Plan provides an overview of the current circumstances of civil aviation activities in the Solomon Islands, including the roles of key stakeholders that have undertaken initial efforts to mitigate CO_2 emissions in the aviation sector. It further identifies and describes the mitigation measures selected by the National Action Plan Team to address CO_2 emissions reduction from international aviation at the national level.

The Action Plan includes projections of CO_2 emissions trends under two scenarios: (i) a baseline case without the implementation of additional measures, and (ii) a case reflecting the implementation of the identified measures. This comparison highlights the anticipated contribution of these initiatives to reducing the overall carbon footprint of international aviation activities in the Solomon Islands.

The mitigation measures prioritized in this Action Plan are focused on the following areas:

a) Aircraft technology improvement
b) Operational improvement
c) Airport infrastructure improvement
d) Deployment of sustainable aviation fuels (SAF)
e) Implementation of market-based measures

Collectively, these measures reflect the Solomon Islands' contribution to the achievement of the global aspirational goals established by the International Civil Aviation Organization (ICAO). At its 41st Session in 2022, the ICAO Assembly reaffirmed the following global aspirational goals for international aviation:

- An annual average fuel efficiency improvement of 2 per cent through 2050; and
- Carbon-neutral growth from 2020 onwards.
- In addition, the Assembly adopted a long-term global aspirational goal (LTAG) of achieving net-zero carbon emissions from international aviation by 2050.

The submission of this Action Plan demonstrates the Solomon Islands' commitment to contributing to these collective global objectives. It also responds to ICAO's invitation, made at the 41st Assembly, for Member States to voluntarily submit Action Plans outlining their strategies, measures, and progress toward ICAO's environmental goals, and to request international support where necessary to facilitate the effective implementation of such measures.

Figure 2. Honiara International Airport

1.2 Contact Information

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Section 2 – Solomon Islands' Civil Aviation

2.1 Civil Aviation Overview

Air Operators

Air Operators	ICAO	IATA	Type of Operations
Solomon Airlines	SOL	IE	International Schedule, Charter and Domestic

Airport Operators

The table below presents key data on airport operators in the Solomon Islands, providing an overview of aviation activities from the airport operations perspective.

Airport Operators	Airport Names and Cities	Domestic/International
SIACL	Honiara International, Honiara	International /Domestic
SIACL	Munda International Airport	International/Domestic
SIACL	Gizo Airport- Western Province	Domestic
SIACL	Lata Airport- Temotu province	Domestic
SIACL	Sege Airport- Western Province	Domestic
SIACL	Suavanao Airport- Isabel	Domestic
SIACL	Balalae Airport- Isabel	Domestic
MCA	Kirakira Airport	Domestic
MCA	Others, 17 Plus Small Airports	Domestic

Air Navigation Service Providers

Air navigation services in the Solomon Islands comprise Air Traffic Services (ATS), Communications, Navigation and Surveillance (CNS), Meteorological Services (MET), Search and Rescue (SAR), and Aeronautical Information Services (AIS).

Air Navigation Service Providers	Type of Service
SIACL- Solomon Islands Airport Corporations limited	Part 172 (ATS- AFIS & FIS) & Part 175 partly (NOTAMs)
Solomon Islands Meteorological Services	Part 174 (Meteorological Services)
Aero path New Zealand /SIACL	Part 175 (AIP Services), Part 173, Instruments Calibrations
AIRWAYS New Zealand / SIACL	Part 171 (CNS)
Air services Australia	Part 172 ATS (Upper Airspace, Oceanic Control

Numbers of passenger from 2022 until current year

It is estimated that the number of passengers (international) in 2022 are 104,832.

Section 3 – Baseline Scenario

3.1 Methodology and data gathering

The baseline scenario outlines both the historical evolution and the projected future trends of fuel consumption, CO_2 emissions, and traffic in the Solomon Islands, assuming no additional mitigation measures are implemented. Given the limited availability of national aviation data – specifically, annual revenue tonne-kilometres (RTK) and annual international fuel consumption from international flights—the Environmental Benefits Tool (EBT), version 2.9, has been applied to support the development of this scenario. The tool enables the establishment of a baseline, the estimation of quantifiable benefits from the implementation of selected mitigation measures, and the generation of projected outcomes.

Considering the data constraints and in line with the structure of the EBT, Method A was selected for this analysis, as the Solomon Islands' fleet size consists of ten aircraft or fewer. In addition to the use of this method, the following inputs were collected and incorporated into the baseline development process:

- Baseline year: 2022
- International RTK: 20,774,000 Tonne-Kilometres
- International fuel burn: 6185.99 Tonnes
- Number of aircraft used for international flights: 2 aircraft
- Annual RTK growth: 5.8 %

3.2 Baseline

The following table and chart present the estimated baseline of fuel consumption and CO_2 emissions from international flights in the Solomon Islands for the period 2022 to 2050. These projections serve as a reference case against which the impacts of proposed mitigation measures can be assessed.

For the purposes of this Action Plan, the definition of "international flight" follows the ICAO methodology, which encompasses all international flights operated by air carriers registered in the State. This ensures consistency with ICAO's global reporting framework and facilitates comparability with data from other Member States.

Baseline Scenario

Year	International RTK(000)	International Fuel Burn (Tonnes)	Efficiency (Fuel Burn RTK)
2022	20,774.00	6,186.00	0.298
2023	20,774.00	6,186.00	0.298
2024	20774.00	6,186.00	0.298
2025	24,236.33	7,217.00	0.298
2026	24,236.33	7,217.00	0.298
2027	24,236.33	7,217.00	0.298
2028	27,698.67	8,248.00	0.298
2029	27,698.67	8,248.00	0.298
2030	31,161.00	9,279.00	0.298

2031	31,161.00	9,279.00	0.298
2032	34,623.33	10,310.00	0.298
2033	38,085.67	11,341.00	0.298
2034	38,085.67	11,341.00	0.298
2035	41,548.00	12,372.00	0.298
2036	45,010.33	13,403.00	0.298
2037	45,010.33	13,403.00	0.298
2038	48,472.67	14,434.00	0.298
2039	51,935.00	15,465.00	0.298
2040	55,397.33	16,496.00	0.298
2041	58,859.67	17,527.00	0.298
2042	62,784.33	18,558.00	0.298
2043	65,784.33	19,589.00	0.298
2044	69,246.67	20,620	0.298
2045	72,709.00	21,651.00	0.298
2046	76,171.33	22,682.00	0.298
2047	79,633.67	23,713.00	0.298
2048	83,096.00	24,744.00	0.298
2049	86,558.33	25,775.00	0.298
2050	90,020.67	26.806.00	0.298

Table 1. Baseline Scenario for International Flight

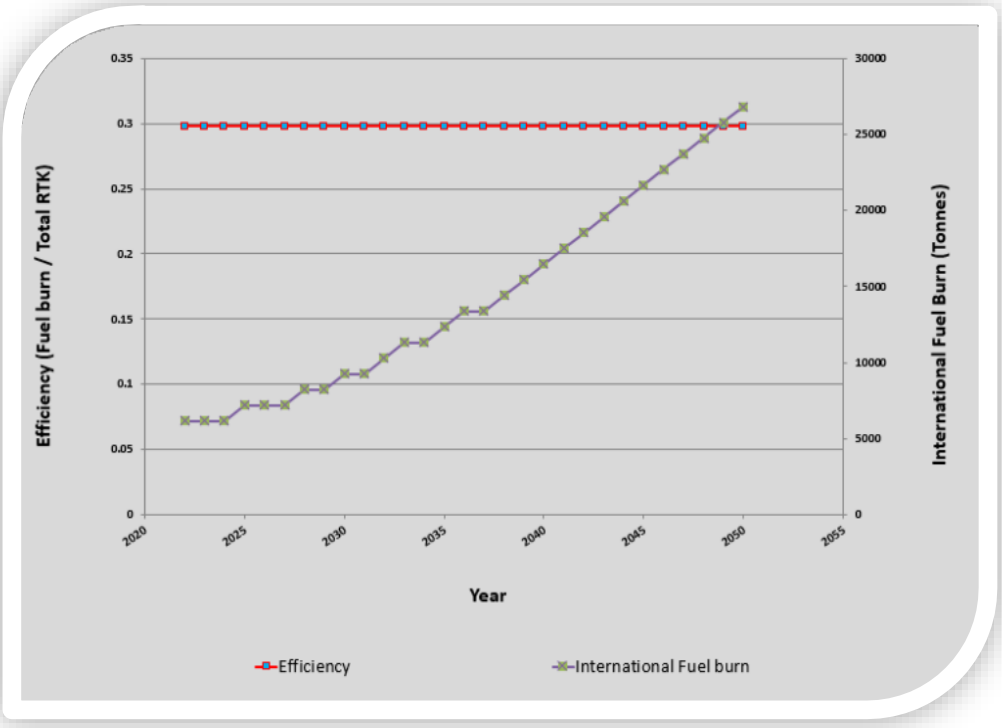


Figure 3. Graph of Baseline Scenario for International Flight

As shown above, it was identified that fuel consumption will be around 31,161.00 tonnes in 2030 and around 90,020.67 tonnes in 2050.

Section 4 – Selection of Mitigation Measures

The Solomon Islands aviation stakeholders have adopted a set of emission reduction measures consistent with the ICAO "basket of measures," which encompasses four (4) main categories. These measures provide a comprehensive framework to address CO_2 emissions across different components of the aviation sector. The categories include:

- Aircraft technology improvements – focusing on the modernization of aircraft fleets and the introduction of more fuel-efficient technologies.
- Operational improvements – targeting enhanced efficiency in flight operations, air traffic management, and related procedures.
- Airport improvements – addressing infrastructure and ground operations to reduce emissions and improve environmental performance.
- Sustainable aviation fuels (SAF) and market-based measures (CORSIA) – promoting the use of sustainable alternative fuels and applying economic instruments to complement technical and operational actions.

Together, these measures represent the Solomon Islands' integrated approach to reducing the environmental footprint of its aviation sector, in alignment with ICAO's global strategy.

4.1 Aircraft Technology Improvement

The introduction of new aircraft (A320 and DHC6 Twin Otter with Glass Cockpit) into the national fleet is expected to enhance operational efficiency and deliver significant reductions in fuel consumption. The associated environmental benefits of these fleet upgrades have already been accounted for in the "expected results" of this Action Plan, as estimated using the Environmental Benefits Tool (EBT).

4.2 Operational Improvement

Operational improvements in aviation comprise a set of strategies and technologies designed to enhance efficiency, reduce fuel burn, and improve the overall effectiveness of air transport operations. For the Solomon Islands, the following measures have been identified as feasible options for implementation:

- Weight Reduction – Minimizing aircraft weight is a critical factor in reducing fuel consumption, as even small reductions in weight can result in substantial fuel savings over time. One practical measure for Solomon Islands operators is the digitalization of aircraft manuals, thereby eliminating the need for paper documentation and reducing operational weight.

- Delay Reduction – Reducing delays contributes significantly to improved fuel efficiency and lower emissions. Delays may arise from weather conditions, air traffic congestion, technical issues, or logistical challenges. Addressing this requires coordinated efforts among airlines, airports, and air navigation service providers (ANSPs). Key actions include strengthening coordination between stakeholders, ensuring efficient ground handling, upgrading air traffic management (ATM) systems, and utilizing predictive analytics to identify and mitigate potential disruptions in advance.

4.3 Airport Improvement

Infrastructure enhancements at airports can significantly improve operational efficiency, reduce delays, and contribute to emissions reduction. In the context of the Solomon Islands, the following measures are being implemented or considered:

- Runway Resurfacing and Construction of New Taxiways – Upgrading existing runways through resurfacing and developing new taxiways improve aircraft movement efficiency and facilitate quicker turnaround times. These improvements reduce ground delays, enhance safety, and optimize overall airport operations.

- Adoption of High-Power Light Emitting Diodes (LEDs) – Replacing conventional lighting systems with high-power LEDs at airports offers multiple benefits. LEDs are more energy-efficient, have a longer operational lifespan, and provide superior illumination compared to traditional systems. Their use results in significant cost savings and environmental benefits through reduced energy consumption and lower maintenance requirements. Furthermore, LEDs provide greater flexibility in lighting control and design, enabling airports to adjust brightness levels according to operational needs and thereby improving visibility and safety for both pilots and ground personnel.

4.4 Sustainable Aviation Fuels

The Solomon Islands is committed to supporting global efforts for the development and deployment of Sustainable Aviation Fuels (SAF) as a key measure to reduce CO_2 emissions from international aviation. Recognizing the transformative potential of SAF in achieving long-term emissions reductions, the State has expressed its intention to actively participate in this area.

However, given the current limitations in technical, financial, and institutional resources, the Solomon Islands will adopt a phased approach. As an initial step, the Solomon Islands already subscribed to the ICAO's Assistance, Capacity-building, and Training programme on SAF (ACT-SAF), which provides Member States with knowledge-sharing opportunities, technical guidance, and partnerships to support early-stage readiness and future deployment.

Looking ahead, the Solomon Islands also recognizes the importance of regional collaboration in advancing SAF initiatives. Exploring partnerships with neighboring States, regional organizations, and international stakeholders will be essential to leverage shared expertise, pool resources, and create a supportive environment for SAF production, certification, and deployment in the Pacific region.

Through these efforts, the Solomon Islands aims to build a solid foundation for future SAF initiatives, aligning with ICAO's global framework while contributing to the collective long-term goal of net-zero carbon emissions by 2050.

4.5 Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)

Climate change represents a global challenge that requires collective international action. In response, ICAO established the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) as a global market-based measure designed to address CO_2 emissions from

international aviation. The environmental effectiveness of the scheme increases with broader participation: the more States that voluntarily join CORSIA, the greater the share of international aviation emissions covered by offsetting requirements, thereby advancing ICAO's global aspirational goal of achieving carbon-neutral growth from 2020 onwards.

For States without air operators subject to CORSIA obligations, participation in the scheme remains meaningful. By joining, these States extend the coverage of CORSIA to include routes operated by foreign carriers between their territory and other participating States, thus enhancing the scheme's overall environmental impact. Moreover, for States such as the Solomon Islands, where eco-tourism is an important sector, participation in CORSIA offers the additional advantage of demonstrating environmental responsibility and making international air connectivity more sustainable and attractive to environmentally conscious travelers.

To support the effective implementation of CORSIA, the Solomon Islands has joined ICAO's ACT-CORSIA programme, which provides targeted capacity building, training, and technical assistance. Through this participation, the State strengthens its institutional readiness while contributing to the collective global effort to mitigate aviation's impact on climate change.

This voluntary participation also underscores the Solomon Islands' broader commitment to the environmental objectives of its National Action Plan and aligns with ICAO's Long-Term Global Aspirational Goal (LTAG) of achieving net-zero carbon emissions from international aviation by 2050.

Section 5 – Expected Results

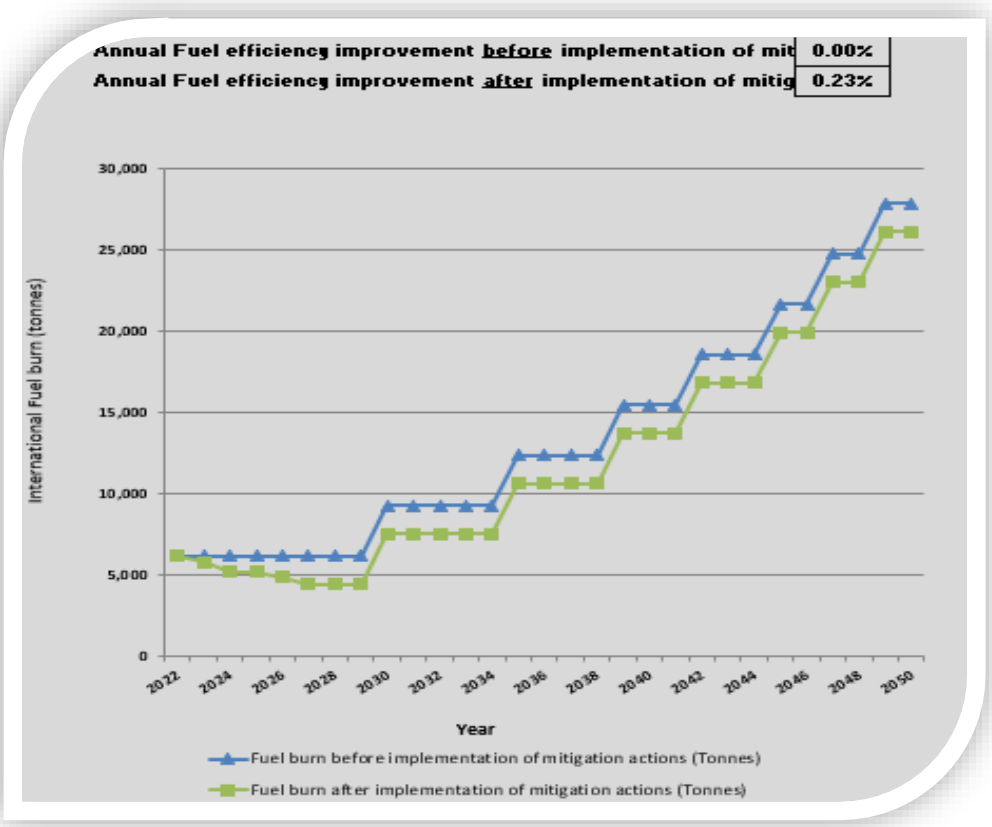
By implementing the mitigation measures outlined above – namely aircraft technology improvements, operational enhancements, airport infrastructure improvements, the introduction of sustainable aviation fuels, and participation in CORSIA – the estimated total fuel and CO_2 savings are as follows:

EXPECTED RESULTS: FUEL SAVINGS

Year	**Annual Fuel burn before implementation of mitigation actions** (Tonnes)	**Annual Fuel burn after implementation of mitigation actions** (Tonnes)	**Annual Fuel savings** (Tonnes)	**Change Fuel savings** (%)
2022	6,186.00	6,186.00	0.00	0.00
2023	6,186.00	5,799.75	386.25	-6.24
2024	6,186.00	5,229.38	956.63	-15.46
2025	6,186.00	5,229.38	956.63	-15.46
2026	6,186.00	4,899.38	1,286.63	-20.80
2027	6,186.00	4,462.34	1,723.66	-27.86
2028	6,186.00	4,462.34	1,723.66	-27.86
2029	6,186.00	4,462.34	1,723.66	-27.86
2030	9,279.00	7,555.34	1,723.66	-18.58
2031	9,279.00	7,555.34	1,723.66	-18.58
2032	9,279.00	7,555.34	1,723.66	-18.58
2033	9,279.00	7,555.34	1,723.66	-18.58
2034	9,279.00	7,555.34	1,723.66	-18.58
2035	12,372.00	10,648.34	1,723.66	-13.93
2036	12,372.00	10,648.34	1,723.66	-13.93
2037	12,372.00	10,648.34	1,723.66	-13.93
2038	12,372.00	10,648.34	1,723.66	-13.93
2039	15,465.00	13,741.34	1,723.66	-11.15
2040	15,465.00	13,741.34	1,723.66	-11.15
2041	15,465.00	13,741.34	1,723.66	-11.15
2042	18,558.00	16,834.34	1,723.66	-9.29
2043	18,558.00	16,834.34	1,723.66	-9.29
2044	18,558.00	16,834.34	1,723.66	-9.29
2045	21,651.00	19,927.34	1,723.66	-7.96
2046	21,651.00	19,927.34	1,723.66	-7.96
2047	24,744.00	23,020.34	1,723.66	-6.97

2048	24,744.00	23,020.34	1,723.66	-6.97
2049	27,837.00	26,113.34	1,723.66	-6.19
2050	27,837.00	26,113.34	1,723.66	-6.19

Table 2. Expected Results: Fuel Savings



Annual Fuel efficiency Improvement before implementation of mitigations action: 0.00%
Annual Fuel efficiency improvement after implementation of mitigation actions: 0.23%

Figure 4. Graph of Expected Result – Fuel Burn

The graphical representation above had shown an improvement of 0.23% of annual fuel efficiency after the implementations of mitigation actions.

EXPECTED RESULTS: CO2 SAVINGS

Year	Annual C02 emissions before implementations of mitigations actions (Tonnes)	Annual C02 emissions after implementation of mitigation actions (Tonnes)	Annual C02 Savings (Tonnes)	Change in C02 Saving %
2022	19,547.76	19,547.76	0.00	0.00
2023	19,547.76	18,227.21	1,320.55	-6.76
2024	19,547.76	16,424.83	3,122.94	-15.98
2025	19,547.76	15,382.03	3,122.94	15.98
2026	19,547.76	15,382.03	4,165.74	-21.31
2027	19,547.76	14,001.00	5,546.76	-28.38
2028	19,547.76	14,001.00	5,546.76	-28.38
2029	19,547.76	14,001.00	5,546.76	-28.38
2030	29,321.64	23,774.88	5,546.76	-18.92
2031	29,321.64	23,774.88	5,546.76	-18.92
2032	29,321.64	23,774.88	5,546.76	-18.92
2033	29,321.64	23,774.88	5,546.76	-18.92
2034	29,321.64	23,774.88	5,546.76	-18.92
2035	39,095.52	33,548.76	5,546.76	-14.19
2036	39,095.52	33,548.76	5,546.76	-14.19
2037	39,095.52	33,548.76	5,546.76	-14.19
2038	39,095.52	33,548.76	5,546.76	-14.19
2039	48,869.40	43,322.64	5,546.76	-11.35
2040	48,869.40	43,322.64	5,546.76	-11.35
2041	48,869.40	43,322.64	5,546.76	-11.35
2042	58,643.28	53,096.52	5,546.76	-9.46
2043	58,643.28	53,096.52	5,546.76	-9.46
2044	58,643.28	53,096.52	5,546.76	-9.46
2045	68,417.16	62,870.40	5,546.76	-8.11
2046	68,417.16	62,870.40	5,546.76	-8.11
2047	78,191.04	72,644.28	5,546.76	-7.09
2048	78,191.04	72,644.28	5,546.76	-7.09
2049	87,964.92	82,418.16	5,546.76	-6.31
2050	87,964.92	82,418.16	5,546.76	-6.31

Table 3. Expected Results: CO2 Savings

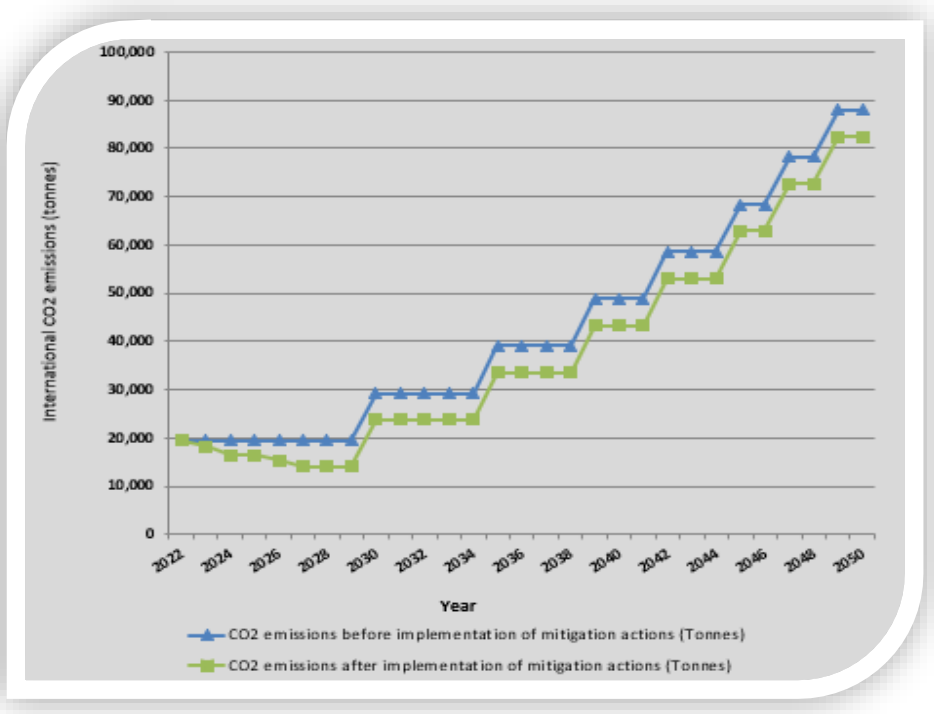


Figure 5. Graph of Expected Result – CO2 Emissions

The table and figure above provide a graphical representation of the Annual CO2 emission after implementation of the Mitigation actions (Tonnes)

Section 6 – Assistance Needs

For the Solomon Islands, aviation is more than just a mode of transport – it is a lifeline. It connects our scattered islands, sustains our economy through trade and tourism, and ensures our people's access to essential services. Yet, this vital sector also contributes to global CO_2 emissions, and like many Small Island Developing States (SIDS), we face the difficult challenge of reducing emissions without undermining our connectivity or economic survival.

The Solomon Islands are committed to contributing to global climate action. However, our national circumstances – limited financial resources, lack of technical capacity, and reliance on imported technologies – mean that we cannot achieve this goal on our own. Without targeted assistance, our ability to implement mitigation measures will remain constrained, and the opportunities for our aviation sector to transition to a low-carbon pathway will be missed.

To bridge this gap, we call for international cooperation and support in the following key areas:

- Eco-friendly aviation technology: The aircraft currently serving our islands are older, less efficient models, and we lack the resources to invest in newer, cleaner technologies. With support, we can access modern, fuel-efficient aircraft and operational innovations that will reduce emissions while maintaining connectivity.

- Capacity building for Sustainable Aviation Fuels (SAF): The Solomon Islands hold potential for SAF development, but without technical expertise and knowledge exchange, this potential will remain untapped. Support in capacity building and lessons learned from other regions will help us explore feasible pathways and eventually develop local SAF supply chains.

- Air navigation and airport management improvements: Our airports and air navigation systems operate under serious limitations, creating inefficiencies that drive up emissions. Assistance in modernizing these systems would not only cut emissions but also improve safety and operational reliability.

- Financial support for SAF development: The transition to SAF will require significant upfront investment – far beyond the capacity of our domestic budget. International financial assistance is essential to kick-start feasibility studies, pilot projects, and infrastructure development that will lay the foundation for SAF adoption.

- Green airport initiatives: Our airports can become models of sustainability. Projects such as mini-solar farms, energy-efficient facilities, and waste-to-energy solutions are ready opportunities to reduce emissions and build resilience. However, without financial support, these projects remain aspirations rather than reality.

The Solomon Islands cannot and should not face this transition alone. As a SIDS on the frontlines of climate change, we contribute the least to global emissions yet bear the greatest risks. Supporting us in implementing aviation mitigation measures is not only a matter of environmental responsibility but also of climate justice and solidarity.

With the right partnerships – through capacity building, financial support, and knowledge sharing – the

Solomon Islands can demonstrate leadership in sustainable aviation. We are ready to act, but we urgently need the global community to stand with us, to ensure that aviation in our islands remains both a lifeline and a pathway toward a greener future.

Figure 6. Solomon Airlines