

SUSTAINABILITY IN AVIATION INDUSTRY: MALAYSIA'S PERSPECTIVE

The post-COVID era has witnessed a surge in frequent travel among individuals. The proliferation of flights has been swift as numerous countries have eased their border restrictions. However, it is crucial to highlight that this upsurge in air travel has led to a corresponding rise in carbon emissions, ultimately exacerbating the issue of climate change.

Climate change stands as the prevailing and urgent global concern necessitating immediate climate mitigation actions. Unrestrained emissions of greenhouse gases (GHG) have induced worldwide warming and climatic shifts. The concerns are proven where the Earth's temperature in 2022 has risen from the previous year and the rate of warming since 1981 is faster more than twice per decade.[1]

The repercussions of climate change are already impacting Malaysia, manifested in severe flooding events that have inflicted substantial financial and economic damages, as evidenced by the Department of Statistics Malaysia's report, citing losses amounting to RM622.4 million in 2022.[2]

The transportation sector emerges as the foremost contributor to carbon emissions on a global scale, with the aviation industry accounting for the highest emissions rate, primarily stemming from the combustion of fossil fuels.[3]

Remarkably, more than 94% of the fuel used for transportation worldwide relies on petroleum-based sources, predominantly gasoline and diesel. Therefore, this article will assess Malaysia's commitments from the aviation industry's perspective in tackling climate change to ensure long-term sustainability.

Malaysia's Strong Commitments

National Blueprint for Green Aviation

Malaysia's Minister of Transport, Anthony Loke Siew Fook, has announced his intention to convene a roundtable dialogue involving relevant authorities and airlines.[4]

The primary aim of this initiative is to establish comprehensive policies governing operational procedures within the aviation industry. These policies will encompass various aspects, such as enhancing the efficiency of air traffic management, reducing landing times, minimising fuel consumption, reducing operational costs and mitigating carbon emissions.

Presently, airlines employ divergent approaches in addressing these issues. In response, the Government intends to develop national action plans that will foster collaboration among all airlines, aligning their efforts toward sustainability objectives.

Voluntary Participation under Carbon Offsetting and Reduction Scheme for International Organisation (CORSA)

Malaysia recognises the importance of environmental sustainability and is actively contributing efforts to achieve the Sustainable Development Goals (SDG), particularly SDG 13 that is focusing on climate action.[5]

An exemplar of this commitment is Malaysia's voluntary participation in CORSA, a program that underscores the nation's unwavering dedication to green initiatives, particularly within the aviation industry.

CORSA is a global scheme targeting to offset the carbon emissions through the use of technological and operational improvements and sustainable aviation fuels with emission units from the carbon market.[6]

Malaysia's active participation in CORSA signifies its proactive role in addressing the critical issue of carbon emissions in aviation, aligning with its broader sustainability objectives.

Implementation of Voluntary Carbon Offset Program

Additionally, Malaysia's flagship carrier, Malaysia Airlines escalates its climate action by introducing a voluntary carbon offset program to be consistent with CORSA's aspiration.[7]

Malaysia Airlines has collaborated with CHOOOSE, a climate technology company based in Norway, to develop a software that offers the airlines' customers the ability to see and opportunity to offset the carbon emissions associated with their flights during flight reservation process. This program allows the carrier to monitor and reduce its carbon footprint with a view to achieving the ultimate goal of decarbonising the aviation industry.

Encouraging Fuel-Efficiency Concept in Malaysia

Development of Fuel-Efficient Aircraft

MAG has developed Airbus A350-900 (A350), equipped with specific technologies to mitigate its environmental footprint.[8] The utilisation of the A350 model has the potential to diminish the carbon footprint significantly due to the aircraft's innovative airframe and aerodynamic enhancements, which result in reduced weight and consequently, a diminished contribution to environmental pollution through lowered fuel consumption. Its avionics

systems will further reduce emissions of nitrogen oxides and other pollutants. Notably, A350 consumes 11% less fuel compared to the earlier generations of aircrafts of similar size.

Adaptation to Sustainable Aviation Fuel (SAF)

Apart from reducing the consumption of traditional petroleum in aircraft, Malaysia is actively exploring its adaptation to SAF into its long-term aviation strategies. SAF emerges as a pivotal global term in the contemporary aviation industry and offers alternatives to decouple GHG emissions from flights.

SAF comprised of renewable biomass and waste resources with potential to deliver the performance of petroleum-based jet fuel but with a fraction of its carbon footprint.[9] As compared to the traditional jet fuel, SAF is expected to reduce up to 65% of carbon emissions, per the estimation provided by the International Air Transport Association.[10]

However, SAF is not a novel terminology in Malaysia as Malaysia Airlines has already flew its flight from Kuala Lumpur to Singapore using blended traditional jet fuel with SAF last year, in conjunction with World Environment Day.[11] SAF are produced by Neste, the world's largest producer of SAF, while the product handling and refuelling are managed by Petronas Dagangan Berhad (PDB) at Kuala Lumpur International Airport (KLIA). PDB is currently a supplier of SAF and it is expected to become a producer of SAF in the fourth quarter of this year.[12]

In anticipation of CORSIA's mandatory phase in 2027, the Government has urged the airlines industry to reduce carbon emissions by utilising SAF.[13] In order to support the Government's ambition, MAG became the first aviation organisation in Malaysia to execute an SAF offtake agreement with PDB as part of collaborative efforts to make SAF production available in Malaysia at a commercial scale.[14] Per the first offtake agreement, (PDB) is set to provide Malaysia Aviation Group's (MAG) airlines with over 230,000 tonnes of SAF, with the inaugural delivery anticipated to take place at KLIA starting in 2027.

Despite the challenges to reduce emissions through SAF due to its costly production and limited feedstock availability, Malaysia possesses the capacity to support its own production ecosystem considering its abundant resources for large-scale production.[15] Moreover, the sustained investment in new technologies by the aviation industry and support via production incentives by the Government have the potential to accelerate SAF production and facilitate the transition toward cleaner aviation fuels.

Furthermore, Malaysia can draw inspiration from the sustainability initiatives undertaken by the global airline giant, Virgin Atlantic.[16] The airline has outlined plans to execute a transatlantic flight in the near future, completely powered by SAF. This strategic move is geared towards achieving substantial reductions in carbon emissions, aligning with the airline's overarching sustainability objectives. Virgin Atlantic's pioneering effort signifies a notable stride toward adopting greener and more environmentally conscious practices within the aviation industry.

Conclusion

Malaysia's resolute stance on tackling climate change within its aviation sector showcases a

steadfast commitment to a future that prioritises sustainability and environmental responsibility.

With strong backing from the Government and leveraging the nation's abundant natural resources, Malaysia is strategically positioned to execute a well-planned trajectory toward greener aviation industry. Although achieving environmental sustainability demands substantial efforts, Malaysia's potential to implement effective climate action strategies is evident. Collaborative efforts between the Government and private sectors further underscore the feasibility of this vision.

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