Template for States' Action Plans on CO_2 Emissions Reduction Activities

This template has been developed to assist States intending to prepare and submit an Action Plan outlining their policies and actions for addressing CO_2 emissions from international aviation, to ICAO.

An action plan is a tool that a State can use to showcase and communicate both at the national and international level, its efforts to address GHG emissions from international aviation. The development of an action plan involves activities such as assembling a team, planning, and implementing various tasks. The structure of the action plan is intentionally simple in order to facilitate a straightforward communication of the actions that a State intends to take and their expected results.

This template is generic and can be used for action plans, ranging from simple compilations of data, to elaborate reports. The level of information presented should be sufficient to clearly demonstrate the effectiveness of the actions implemented by a State and for ICAO to determine the anticipated global benefits from these actions.
This template is divided into 3 sections:

- Section 1 – Background information and contacts
- Section 2 – Baseline and expected results
- Section 3 – Mitigation measures

Please note that in the References Part of the Guidance Material for the Development of States' Action Plans, there is a list of all available documentation to help States develop their action plan.

Please note that ICAO has developed a web interface to simplify the action plan submission to ICAO, and can be accessed at https://portal.icao.int/APER (this is the preferred method for submitting an action plan). Alternatively, if you are unable to access the portal, you may fill out the template in hard copy.

Once you have completed the template, you can submit it to ICAO via email at actionplan@icao.int, or by mail, by sending the completed template to the following address:
Environment Branch Air Transport Bureau
International Civil Aviation Organization
999 University Street
Montréal, Québec
H3C 5H7
Canada

ICAO assistance is also available at actionplan@icao.int, or through the ICAO Regional Office to which your State is accredited.

Section 1 - Contact and background information
Please refer to **Part 1, Introduction to Action Plans,** of the guidance document.

1.1 **Contact Information**

Please provide below the contact information for the focal points within your State for your action plan. Please note that the first point of contact entered should be the individual responsible for submitting the action plan to ICAO.

Name of the Authority .....Department of Civil Aviation .....
Point of Contact .....Dr.Jaroon...Meesomboon.....
Street Address .....71...Soi...Ngarmduplee.....
Country .....Thailand .....
State/Province .....Bangkok.....
City .....
Telephone Number .....+662 287 0320 ext 2004.....
Fax Number .....+662 286 2327.....
E-mail address .....mjaroon@aviation.go.th,...av_emission@aviation.go.th.....

I Overview of Thailand's Aviation System

Aviation in Thailand began in B.E. 2453 from the need to have aircraft to use for defending the nation. After that the Ministry of Defence realized that aviation was not necessary an activity specific to military missions alone; therefore, it started the Postal Airline to assist the Post and Telegraph Department with its services. Further, The Ministry of Defence arranged to have aircraft transported medications, physicians, and nurses to deal with epidemic in rural areas. This led to the beginning of civil aviation in Thailand. As air transport was becoming more efficient and starting to play a more important role commercially, the Ministry of Defence then transferred this mission to be in the care of the Ministry of Transport up until today. At the international level, Thailand became a party to the Convention on International Civil Aviation or the Chicago Convention as of the 4th of April B.E. 2490 (A.D. 1947). Thailand has also been housing the International Civil Aviation Organization (ICAO) Asia and Pacific Office since B.E. 2498. Thailand and ICAO have been cooperating and supporting several academic projects such as the Cooperative Development of Operational Safety & Continuing Airworthiness Programme, which aims to upgrade air navigation safety in South East Asia, Macao, and Hong Kong.

1.1 Structure of Aviation Industry in Thailand

In a number of countries, institutional organizations in civil aviation are usually divided into the regulators, and the operators/service providers. In Thailand, the primary regulators for civil aviation are the Department of Civil Aviation, and the Ministry of Transport. In relation to the operators, they are divided into airlines, airport operators, air traffic services providers, and maintenance and repair stations.

There are both scheduled and non-scheduled airlines in Thailand. Major schedule airlines in Thailand include Thai Airways International, Bangkok Airways, Thai AirAsia, and Nok Air, and the non-scheduled ones include Business Air, Jet Asia and so on.

There are 522 registered aircraft in Thailand in which they mostly belong to major airlines. Others are private aircraft or the ones used for a company's business.

There are 58 approved airports used for civil aviation. However, only 36 of these are used for commercial purposes. There are several air navigation services in Thailand but the major one is Aeronautical Radio of Thailand, which provides air navigation services covering area, approach, and aerodrome control service. In the area of metrological services, the Meteorology Department is responsible for providing these services. There are 39 manufacturers and 12 maintenance repair stations, which have been approved by the Department of Civil Aviation in Thailand. For instance, Thai Airways, Thai Aviation Industry (TAI), Goodyears, Michelin, Triump, and Chromalloy. Lastly for the structure of aviation industry in Thailand, there are 13 flying schools.

Statistics and growth trends of aviation sector in Thailand

Air transport is a fast growing industry and it is often affected by global trends including the world economy, societal issues, and environmental problems. In the past, Thailand's aviation industry was affected by various factors such as the world economy and political instability. Although numbers of passengers and cargo dropped over some period, the aviation industry in Thailand has continued to grow afterwards.

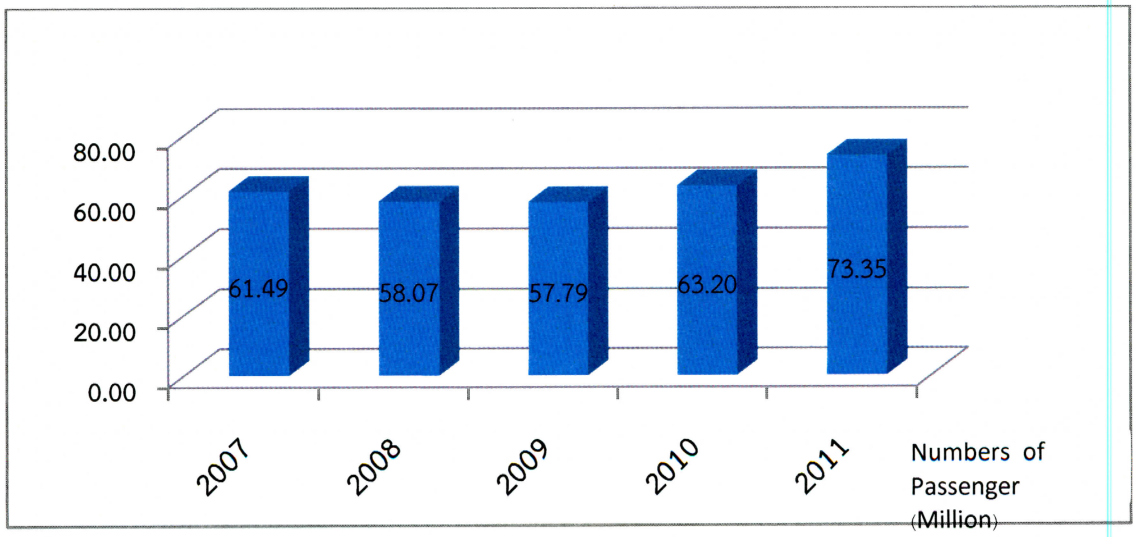


Figure 1: Numbers of passenger during 2007-2011

Figure 1 illustrates statistics of passengers from 2007 to 2011. In 2007, there were 61.49 million passengers. However, petrol crises caused fuel prices to increase resulting the decline of air passenger to 5.6 percent. During 2008-2009, the economic crisis in the US as well as the political instability in Thailand caused the number of air passengers travelling to Thailand to further decline.

However, the number of passengers rose back to 63.20 million in 2010. In 2011, the economic crisis in Europe occurred; however, this did not cause any decline in the number of passengers travelling to Thailand due to the word economy and Thailand's own economy were recovering. Although there were few European passengers coming, more passengers from China started to travel to Thailand. This resulted in an increase of the number of passengers to 73.35 million despite the flood disaster in Thailand.

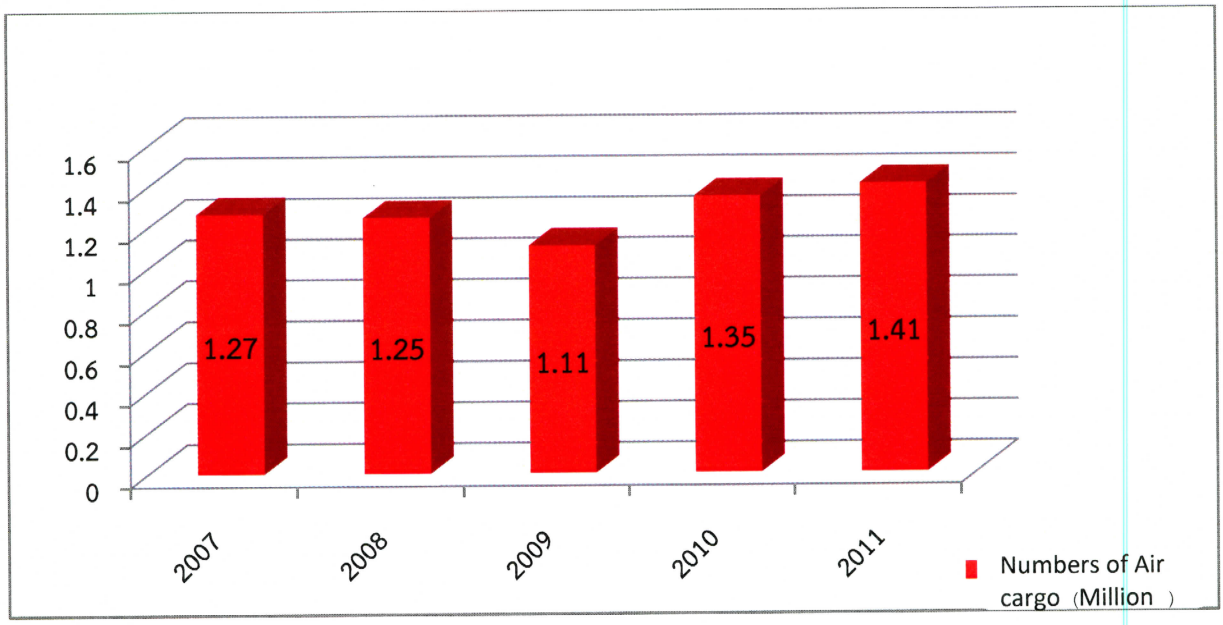


Figure 2 illustrates the numbers of air cargo during 2007-2011.

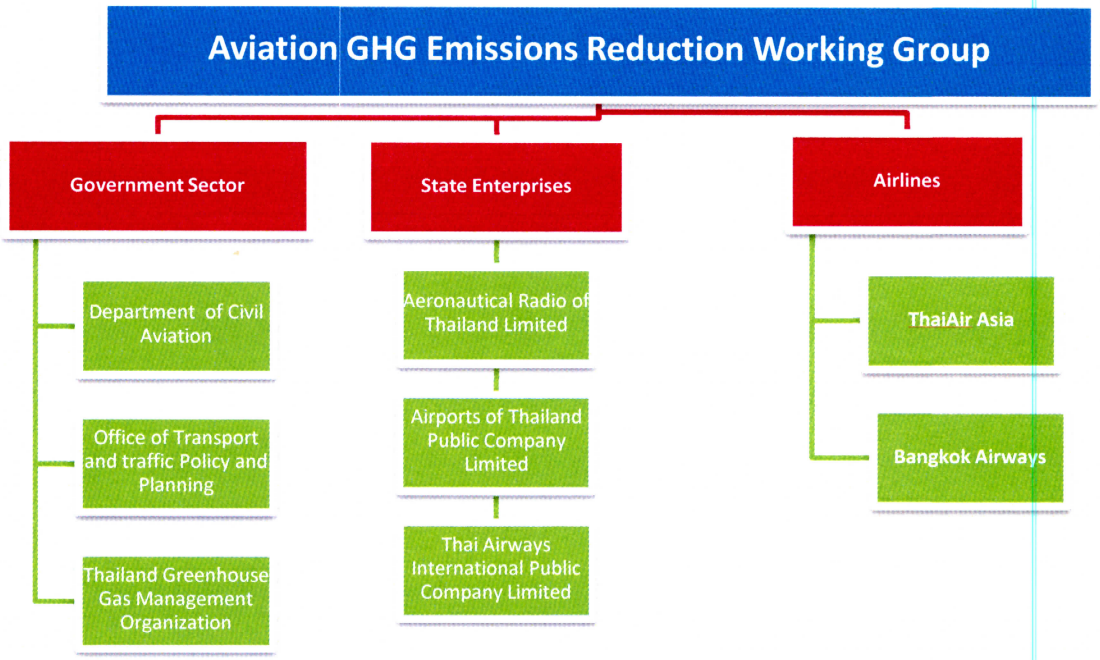
The growth trends of air cargo in Thailand were similar to the growth trends of air passengers. Thailand generally has a low rate of air cargo compared to other modes of transport, and air cargo is normally carried on a passenger aircraft. Therefore, during 2007-2009, the volume of air cargo decreased due to the downturn of the world economy. However, this decline picked up in 2011 as the world economy recovered and the number of passenger flights increased.

The growth trends of Thailand's aviation industry are in line with those in Asia. This means the numbers of passengers are increasing. It was predicted that in 2012 the numbers of passengers would likely climb up to another 12 percent from 2011, whereas the cargo was estimated to rise another 2.65 percent, which was slightly lower than the average growth of 2.8 for the 5 year period. However, this prediction might be higher due to the Airport of Thailand Public Company Limited's effort to better utilise cargo warehouses and customs free zones. Further, Thai customs formalities were to be improved to compete with other countries.

Emission Reduction in Thailand's Aviation Sector

In respect of emission reduction in the aviation sector, the roles and responsibilities of DCA have been distinguished when the Resolution A37-19 adopted by ICAO's 37th Assembly in 2010. This was an important step towards a sustainable air transport future and made international aviation the first sector with global aspirational goals of improving annual fuel efficiency by 2 per cent and stabilizing its global CO2 emissions at 2020 levels. The Assembly consequently encouraged action plans by States and other parties involved to limit or reduce international aviation emissions.

In order to support ICAO's ongoing efforts to address international aviation's contribution to climate change, Aviation GHG Emissions Reduction Working Group has been established in 2011 to develop Thailand's Action Plan on Emissions Reduction (APER). The Working Group is headed by DCA and comprises also the Office of Transport and Traffic Policy and Planning (OTTP), the Thailand Greenhouse Gas Management (TGO), the Aeronautical Radio of Thailand Limited (AEROTHAI), the Airports of Thailand Public Company Limited (AOT), Thai Airways International Public Company (TG), ThaiAir Asia Co.,Ltd. and Bangkok Airways Co., Ltd.



In line with the broad international consensus, the Working Group has set a target of average annual improvements in aviation fuel efficiency of at least 2 percent per year until 2020 from a 2005 baseline, measured in litres of fuel per Revenue Tonne Kilometre (RTK). The Working Group has also tracked statistics and developed a computer programme to calculate RTK and fuel consumption and forecasted RTK. Additionally, the Working Group has also adopted the basket of measures provided by ICAO to be the guideline for related stakeholders to consider in particular through voluntary measures such as aircraft-related technology development, improved air traffic management and infrastructure use ,more efficient operations, etc.

Moreover, the Working Group has strongly supported ICAO's vital role in developing a global market-based measure (MBM) scheme appropriate to international aviation, as well as its development of a policy Framework to guide the general application of any proposed MBM measures to international air transport activity which will be within reach at the ICAO Assembly in September 2013. However, the Working Group has agreed that the MBM should be in accordance with the principles of non-discrimination and equal and fair opportunities to develop international civil aviation set forth in the Chicago Convention, as well as the principles and provisions on common but differentiated responsibilities and respective capabilities under the UNFCCC and the Kyoto Protocol.

Report on aircraft fuel consumption and greenhouse gas emission by airline operators in Thailand

Section 1: Revenue Tonne Kilometres (RTK) calculation and RTK prediction during 2005-2025

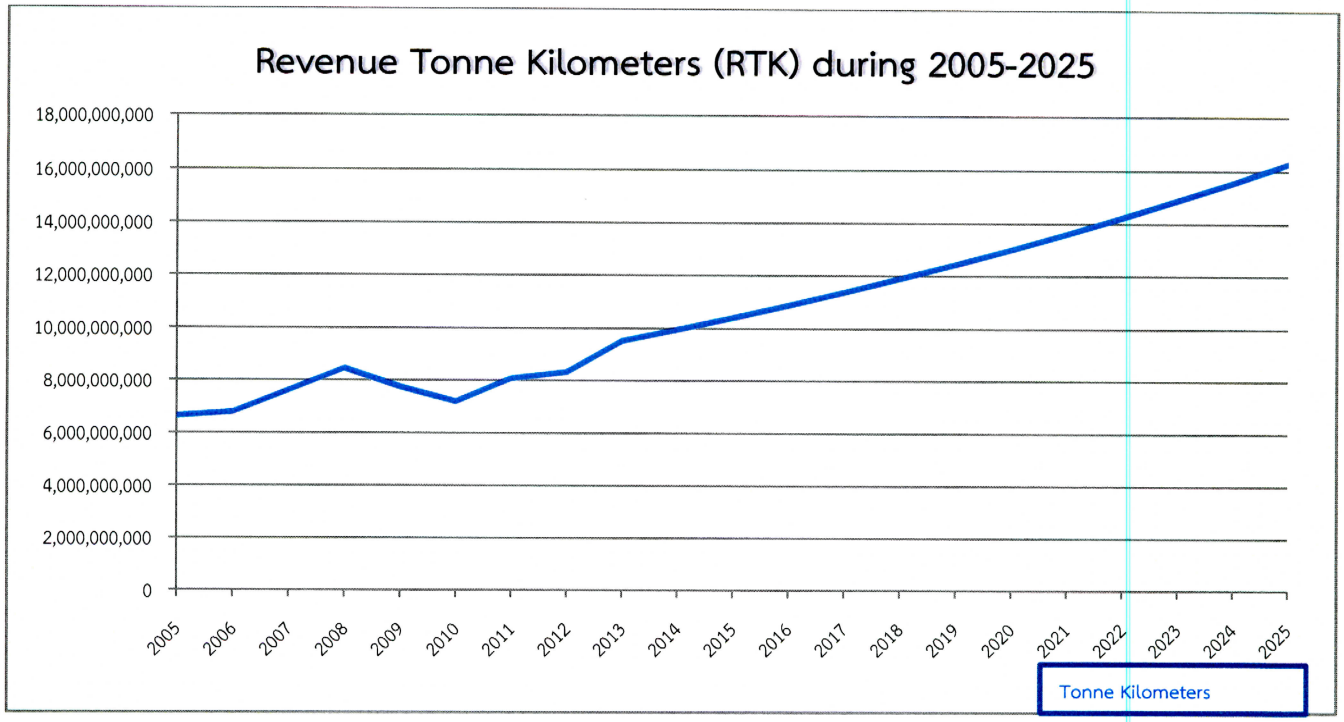
RTK calculation

- (Passengers carried x Flight Distance x 100kg)/1000 = Passenger tonne/km**(A)**
- Freight tones carried x Flight Distance = Freight tonne/km**(B)**
- Mail Tonnes carried x Flight Distance = Mail tonne/km**(C)**

Revenue Tonne Kilometers = PTKM+FTKM+MTKM (A+B+C)

:Tonne/Km

Year	RTK
2005	6,607,857,035
2006	6,753,203,161
2007	7,582,189,435
2008	8,436,719,836
2009	7,727,556,409
2010	7,166,425,817
2011	8,052,947,456
2012	8,294,027,270
2015	10,388,713,808
2020	13,008,087,069
2024	15,571,654,440
2025	16,287,899,765



Section 2: Calculation and prediction of aircraft fuel consumption and greenhouse gas emission by airline operators in Thailand

- Based on annual fuel consumptions by Thai airline operators that report to Department of Civil Aviation.

Calculation of greenhouse gas emission

- **CO_2 emissions= Amount of Fuel Burnt x Emissions factor**

Year	Fuel consumption (Tonne)	Carbon (Tonne)
2009	2,419,773	7,639,225
2010	2,571,792	8,119,147
2011	2,677,209	8,451,948
2012	2,672,356	8,783,562

Results of fuel consumption and greenhouse gas emission calculations

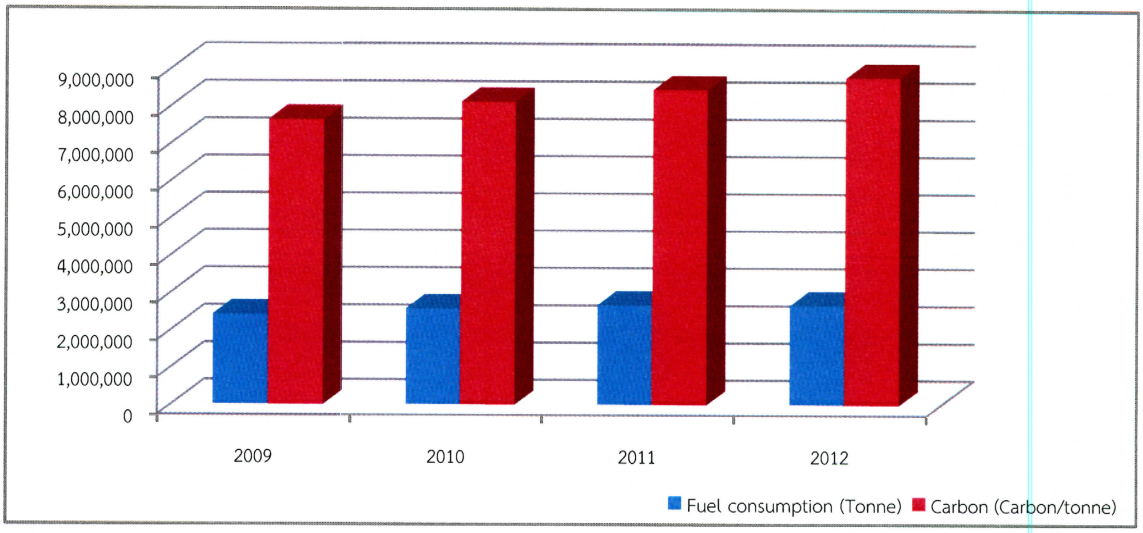


Figure 2: Aircraft fuel consumption and greenhouse gas emission by Thai airline operators during 2009-2012

Results of fuel consumption and greenhouse gas emission calculations

Year	Fuel consumption (Tonne)	Carbon (Tonne)
2012	2,672,356	8,783,562
2013	2,717,134	9,128,188
2014	2,762,663	9,486,335
2015	2,808,955	9,858,535
2016	2,856,022	10,245,337
2017	2,903,877	10,647,316
2018	2,952,535	11,065,067
2019	3,002,008	11,499,208
2020	3,052,310	11,950,383
2021	3,103,455	12,419,260
2022	3,155,457	12,906,533
2023	3,208,330	13,412,925
2024	3,262,089	13,939,185
2025	3,316,749	14,486,093

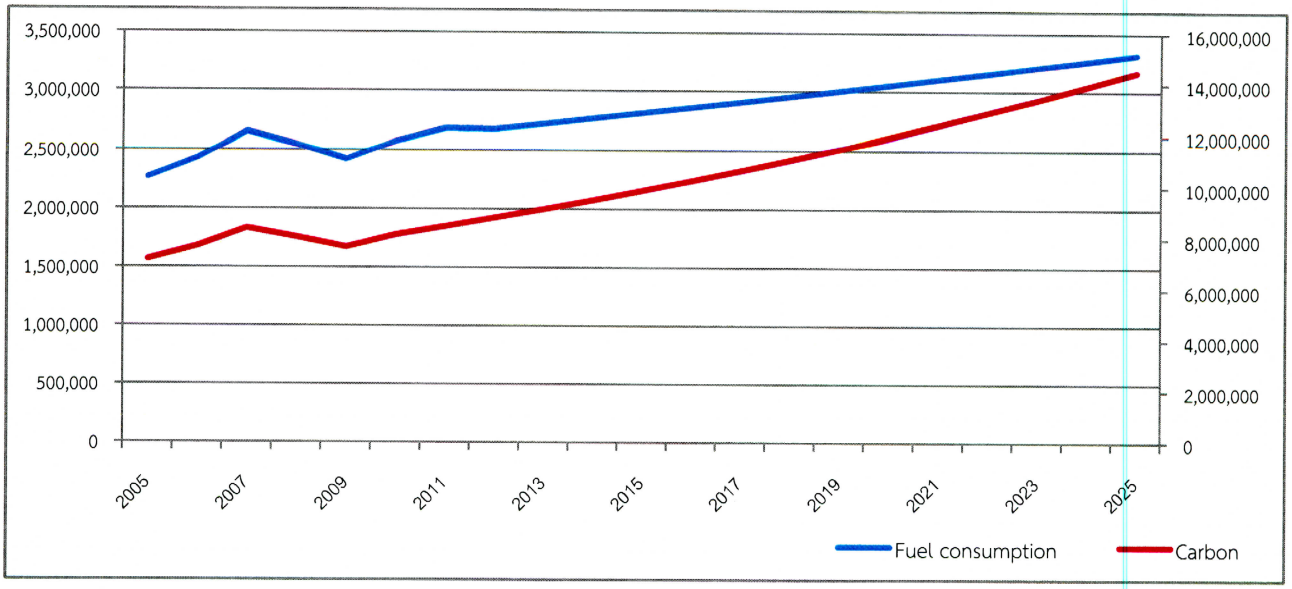


Figure 3: Aircraft fuel consumption and greenhouse gas emission by Thai airline operators during 2005-2025

Section 3: Calculation and estimation of fuel consumption efficiency (FB/RTK (litres))

This section is the RTK calculation obtained from section 1 and the fuel burn from section 2. The results reveal fuel consumption efficiency of Thai airline operators. The results of the calculation are as follows:

Year	FB (litres)	RTK	FB/RTK (litres)
2005	2,865,977,216	6,607,857,035	**0.43**
2006	3,073,014,101	6,753,203,161	**0.46**
2007	3,350,618,397	7,582,189,435	**0.44**
2008	3,216,728,493	8,436,719,836	**0.38**
2009	3,063,004,264	7,727,556,409	**0.40**
2010	3,255,432,680	7,166,425,817	**0.45**
2011	3,388,871,695	8,052,947,456	**0.42**
2012	3,382,729,391	8,294,027,270	**0.41**
2015	3,555,638,678	10,388,713,808	**0.34**
2020	3,863,683,678	13,008,087,069	**0.30**
2025	4,198,416,352	16,287,899,765	**0.26**

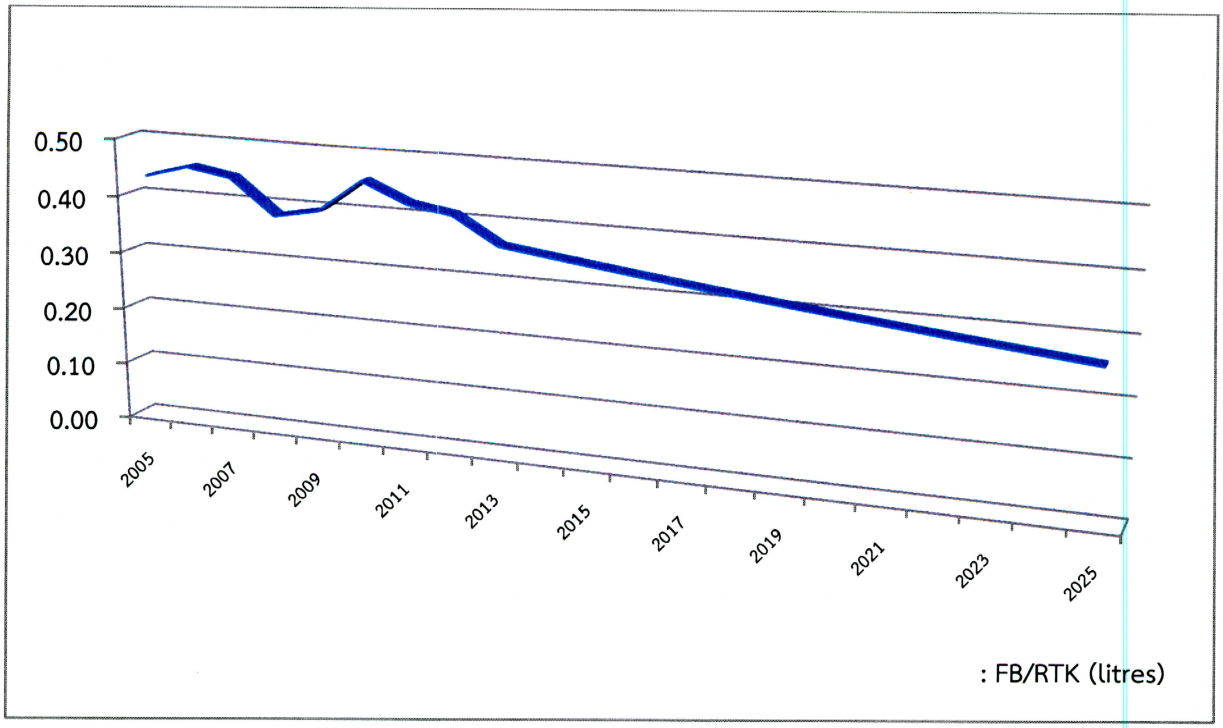


Figure 4 : Estimation of fuel consumption efficiency of Thai airline operators during 2005-2025

1 **Description**

Basket of measures to limit or reduce CO_2 emissions from international civil aviation

1) Aircraft-related Technology Development

a. Aircraft minimum fuel efficiency standards
b. Aggressive aircraft fuel efficiency standards, setting standards for the future
c. Purchase of new aircraft
d. Retrofitting and upgrade improvements on existing aircraft
e. Optimizing improvements in aircraft produced in the near to mid-term
f. Avionics
g. Adoption of revolutionary new designs in aircraft/engines

2) Alternative Fuels

a. Development of biofuels
b. Development of other fuels with lower lifecycle CO_2 emissions
c. Standards/requirements for alternative fuel use

3) Improved Air Traffic Management and Infrastructure Use

a. More efficient ATM planning, ground operations, terminal operations (departure, approach and arrivals), en-route operations, airspace design and usage, aircraft capabilities
b. More efficient use and planning of airport capacities
c. Installation of airport infrastructure such as Fixed Electrical Ground Power and Pre-Conditioned Air to allow aircraft APU (Auxiliary Power Unit) switch-off
d. Construction of additional runways and taxiways if used solely to relieve traffic congestion
e. Collaborative research endeavours

4) More efficient operations

a. Best practices in operations
b. Optimized aircraft maintenance (including jet engine cleaning/washing)
c. Selecting aircraft best suited to mission

1. Aircraft-related Technology Development

Category:-	**Aircraft-related technology development**
Measure:-	**d. Retrofitting and upgrade improvements on existing aircraft**
	B777 Performance Improvement Program
Action:-	Modification of B777 aircrafts
Start Date	January 2010
End Date	December 2012
Title	B777 Performance Improvement Program
Description	Boeing777 Performance Improvement Program (PIP) is to retrofit B777 airplanes by modify 1)Wing Vortex Generator 2) High Speed Aileron and 3) Ram Air Exit /Inlet Door
Category	Aircraft-related technology development
Measure	d. Retrofitting and upgrade improvements on existing aircraft
	B777 Performance Improvement Program
Action	Modification of B777 aircrafts
Start Date	January 2010
Date of full implementation	January 2013
Economic cost	200,000,000
Currency	THB
Reference to existing legislation	none
Legislation is proposed	no
Compliance	
Assistance needed	
Assistance needed (check one or more)	Financial
Other assistance	No
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Thai International Airways Public Company Limited Boeing company

Category:-	**Aircraft-related technology development**
Measure:-	**Purchase of new aircraft**
Action:-	**Buy new Airbus A320-200 NEO**
Start Date	**Mid of 2016**
End Date	**Onward to replace A320-200 in the feet**
Category:-	
Title	Purchase of new aircraft
Description	Start to buy Airbus Airbus A320-200 NEO to replace the old aircraft A320-200 in the feet. The new NEO will replace the oldest aircraft and onward.
Category	Aircraft-related technology development
Measure	Purchase of new aircraft
Action	
Start Date	Mid of 2016
Date of full implementation	Onward until replace all aircraft feet
Economic cost	
Currency	USD
Reference to existing legislation	None
Legislation is proposed	No
Compliance	
Assistance needed	None
Assistance needed (check one or more)	
Other assistance	None
Amount of assistance needed	
Currency for financial assistance	USD
List of stakeholders involved	Thai AirAsia Company Limited

3. Improved Air Traffic Management and Infrastructure Use

Category:-	**Improved air traffic management and infrastructure use**
Measure:-	**More efficient ATM planning, ground operations, terminal operations (departure and arrivals),**
	en-route operations, airspace design and usage, aircraft air navigation capabilities
Action:-	**Measures to improve ground operations**
Start Date	**Operational Trial on 24 Oct 2011. Full implementation expected on 8 Aug 2012.**
End Date	**Permanent**
Title	Gate Hold Procedure
Description	Gate Hold Procedure is developed to reduce taxi-out time and fuel consumption of departing aircrafts at Suvarnabhumi Airport due to delay at holding points. The procedure is expected to reduce carbon-emission in the taxi-out phase of flight. During peak periods or when it is anticipated that there are more than four departure aircrafts at holding points, Ground Controller will assign a proper expected push-back time when an outbound aircraft is ready for pushback. In calculation of the expected pushback time, parking stand and variable taxi-out time is taken into account. Additionally, the optimization of airport traffic flow by dynamically allocating appropriate ratio of arriving and departing aircrafts to traffic patterns is supported by Gate Hold Procedure.
Category	2. Improved air traffic management and infrastructure use
Measure	a. More efficient ATM planning, ground operations, terminal operations (departure and arrivals), en-route operations, airspace design and usage, aircraft air navigation capabilities
Action	ii. Measures to improve ground operations
Start Date	Operational Trial started on 24/10/2011.
Date of full implementation	Full implementation expected on 08/08/2012.
Economic cost	
Currency	
Reference to existing legislation	None
Legislation is proposed	None
Compliance	
Assistance needed	None
Assitance needed (check one or more)	None
Other assistance	None
Amount of assistance needed	None
Currency for financial assistance	N/A
List of stakeholders involved	Aeronautical Radio of Thailand Company Limited, Airlines operating at Suvarnabhumi Airport

Category:-	**Improved air traffic management and infrastructure use**
Measure:-	**More efficient ATM planning, ground operations, terminal operations (departure and arrivals),**
	en-route operations, airspace design and usage, aircraft air navigation capabilities
Action:-	**Measures to improve flexible use of civil-military airspace**
	Measures to improve the use of optimum routings
Start Date	**1 Jul 2011**
End Date	**18 Oct 2012**
Title	Parallel Route (Bangkok-Chiang Mai, Bangkok-Phuket)
Description	Parallel Route project includes design and implementation of unidirectional parallel routes between major airports, increasing flight efficiency and enhancing safety. The project aims to reduce complexity of busy crossings points and relieve congestion on major trunk routes, specifically serving two major traffic flows: Bangkok-Chiang Mai and Bangkok-Phuket. Due to routing through major military Specical Use Airspace, these routes will be implemented as Conditional Routes (CDR), available during the weekends.
Category	2. Improved air traffic management and infrastructure use
Measure	a. More efficient ATM planning, ground operations, terminal operations (departure and arrivals), en-route operations, airspace design and usage, aircraft air navigation capabilities
Action	v. Measures to improve flexible use of civil-military airspace
	vi. Measures to improve the use of optimum routings
Start Date	1 Jul 2011
Date of full implementation	18 Oct 2012
Economic cost	
Currency	
Reference to existing legislation	N/A
Legislation is proposed	N/A
Compliance	
Assistance needed	N/A
Assitance needed (check one or more)	N/A
Other assistance	N/A
Amount of assistance needed	N/A
Currency for financial assistance	N/A
List of stakeholders involved	AEROTHAI, Airlines operating within the Bangkok FIR especially through Bangkok - Chiang Mai and Bangkok - Phuket city pair

4. More efficient operations

Category:-	**More efficient operations**
Measure:-	**i) Minimising weight**
	Retune (NEW)flight planning system
Action:-	**Retune Flight planning system**
Start Date	August 2011
End Date	March 2013
Title	Retune Flight Planning to reduce fuel uplift before flight
Description	New Thai Automatic Flight Planning System (New TAFS) can give more accurate and efficiency in flight planning which lead to proper fuel uplift for the flight
Economic cost	29,000,000
Currency	EUR
Reference to existing legislation	None
Legislation is proposed	No
Compliance	
Assistance needed	
Assitance needed (check one or more)	N/A
Other assistance	
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Thai International Airways Public Company Limited
GroupName	

Category:-	**Reduce Aircraft weight**
Measure:-	1.Reduce Portable Water Quantity in Aircraft
Action:-	Designed to reduce Portable water as follow by the Water Loading Matrix table
Start Date	20-Aug-12
End Date	Present
Title	**Reduce Portable Water**
Description	Reduce Portable Water as follow by the Water Loading Matrix table :
	1. Double load water every flight except DAC, BOM, MLE or flight hours over 4 hr.
	2. Water uplift as follow by passenger number on board.
	3. Quantity of Portable water variation direct with flight hours.
Category	Reduce Aircraft weight
Measure	1. Reduce Portable Water Quantity in Aircraft
Action	Designed to reduce Portable water as follow by the Water Loading Matrix table
Start Date	1-Aug-12
Date of full implementation	20-Aug-12
Economic cost	
Currency	
Reference to existing legislation	None
Legislation is proposed	No
Compliance	
Assistance needed	
Assitance needed (check one or more)	Record and statistic
Other assistance	
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Bangkok Airways Public Company Limited

Category:-	**More Efficient operations**
Measure:-	**b.) Optimised aircraft maintenance (including jet engine cleaning/washing)**
Action:-	**Aircraft and Engine wash**
Start Date	**1 January 2011**
End Date	
Title	
Description	Aircraft wash can reduce friction and improve fuel efficiency which result in 0.4% fuel consumption reduction
Category	More Efficient operations
Measure	Optimized aircraft maintenance
Action	Aircraft wash
Start Date	1 January 2011
Date of full implementation	1 June 2011
Economic cost	95,000,000
Currency	THB
Reference to existing legislation	None
Legislation is proposed	No
Compliance	
Assistance needed	
Assistance needed (check one or more)	
Other assistance	
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Thai International Airways Public Company Limited

Category:-	**Reduce Fuel Used**
Measure:-	1.One Engine Taxi in for Airbus
Action:-	One Engine Taxi in Campaign
Start Date	
End Date	
Title	Airbus One Engine Taxi
Description	Keep record of the Airbus Pilot for one engine taxi in.
	1. Add the "One Engine Taxi in" record form in Flight Log.
	2. Pilot check in record form.
	3. Keep record and summary and calculate the reduced fuel from one engine taxi in.
	4. Report to Flight Operations Control Director.
	5. Monitor and Evaluate.
Category	Reduce Fuel used
Measure	1. Reduce, Monitor and Evaluation
Action	Add the record form in Flight Log for the pilot to check one engine taxi in.
Start Date	
Date of full implementation	
Economic cost	
Currency	
Reference to existing legislation	None
Legislation is proposed	No
Compliance	
Assistance needed	
Assitance needed (check one or more)	Record and statistic
Other assistance	
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	Bangkok Airways Public Company Limited

Category:-	**More efficient operations**
Measure:-	**Best practices in operations – ICAO Circular 303**
	Optimised aircraft maintenance (including jet engine cleaning/washing)
Action:-	Improved Infrastructure Use and Efficient Operation
Start Date	1 JAN 13
End Date	1 JAN 18
Title	More efficient operations and Improved Infrastructure Use
Description	1. Coordinate with GE Aviation Company(USA) to create GE Fuel & Carbon Technology Solution for Thai Airasia, Jet engine cleaning and washing and Aircraft washing (Best practices in operations – ICAO Circular 303)
	2. Use of GPU during light maintenance and overnight maintenance (Improved Ground Operation,)
	3.Full use of RNAV and RNP APP to cut tracks and Use of ETOP operation, Pre-departure Planning for short taxi route and reduce ground time operate (Improved Air Traffic Management)
Category	More efficient operations and Improved Infrastructure and ATM Use
Measure	Best practices in operations – ICAO Circular 303
	Optimised aircraft maintenance (including jet engine cleaning/washing)
Action	Improved Infrastructure Use and Efficient Operation
Start Date	1 JAN 13
Date of full implementation	1 JAN 18
Economic cost	
Currency	USD
Reference to existing legislation	None
Legislation is proposed	No
Compliance	
Assistance needed	YES
Assitance needed (check one or more)	Technology
Other assistance	None
Amount of assistance needed	
Currency for financial assistance	USD
List of stakeholders involved	Thai AirAsia Company Limited
	GE Aviation Company
	Airbus Company
	Airports of Thailand Public Company Limited (AOT)
	Department of Civil Aviation
	Aeronautical Radio of Thailand Company Limited

Category:-	**More efficient operations**
Measure:-	**i) Energy conservation** **(Measure of the cold water temperature)**
Action:-	**The air temperature is set at 25°C**
Start Date	**August 2011**
End Date	**March 2013**
Title	Retune Flight Planning to reduce fuel uplift before flight
Description	- On the 1st floor of the Terminal building - Baggage Claim area on the 2nd floor of the Domestic and Intern terminal building during the night - Walkway and corridor in Concourse A, B, C, E, F, G during the night
Category	More efficient operations
Measure	i) Energy conservation
Action	The air temperature is set at 25°C
Start Date	Sept 2012
Date of full implementation	
Economic cost	
Currency	
Reference to existing legislation	None
Legislation is proposed	No
Compliance	
Assistance needed	
Assistance needed (check one or more)	
Other assistance	
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	**Airport of Thailand Public Company Limited**

Category:-	**More efficient operations**
Measure:-	**i) Energy conservation (Measure of Electricity)**
Action:-	**Lighting system control** **- Baggage Claim area on the 2nd floor of the Domestic terminal building** **- Corridor in Concourse A, B, C, E, F, G** **- Airside Center East and Airside Center West area**
Start Date	**Sept 2012**
End Date	**Dec 2012**
Title	
Description	All lamps in Concourse A-G are still turn on after midnight.
Category	More efficient operations
Measure	i) Energy conservation
Action	Lighting system control
Start Date	Sept 2012
Date of full implementation	
Economic cost	
Currency	
Reference to existing legislation	None
Legislation is proposed	No
Compliance	
Assistance needed	
Assistance needed (check one or more)	Technical Support
	Education
Other assistance	
Amount of assistance needed	
Currency for financial assistance	
List of stakeholders involved	**Airport of Thailand Public Company Limited**