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BRUNEI's State Action Plan on CO_2 Emissions Reduction Activities for International Aviation- Presentation and Validation Process

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Introduction

- Key information on the State Action Plan
- Existing context
- Baseline
- Selected mitigation measures
- What's next

State action plan- a few information for all

- **WHAT IS IT**? It is a voluntary planning and reporting tool for states to communicate information on their activities to address CO2 emissions from international aviation to ICAO.
- **OBJECTIVE**: To help ICAO establishing global progress towards meeting the goals fixed by the Assembly Resolution A37-19 and reaffirmed by A38-18 and 39-2
- **TIMING**: States are requested to submit their state action plan every three years
- **FINAL OUTCOME**: ICAO can continue to compile the quantified information submitted

BENEFITS TO WORK WITH SAP

- Better understanding of the projections of international aviation CO2 emissions
- To strengthen the cooperation between all national stakeholders working directly and indirectly with the reduction of emissions
- To select the mitigation measures through a cooperative and consultative approach, capable of committing all stakeholders in the implementation phase while promoting cross-sectoral modus operandi
- To streamline cross- sectoral policy decisions
- To reflect the real needs and buy-in of the State of Brunei as validated through different consultation and validation sessions

CONTENT OF THE STATE ACTION PLAN

1.CONTACT INFORMATION OF THE STATE ACTION PLAN FOCAL POINT;

2.THE BASELINE SCENARIO;

3. LIST OF SELECTED MEASURES to be used to mitigate the CO_2 emissions from international aviation;

4. EXPECTED RESULTS linked to the implementation of the selected mitigation measures on the baseline scenario;

5. IDENTIFICATION OF ANY ASSISTANCE NEEDS;

EXISTING CONTEXT IN BRUNEI

POINT 1: CONTACT INFORMATION

Name of Authority:	**Department of Civil Aviation** **Ministry of Transport and Infocommunications**
Address:	**Department of Civil Aviation** **Brunei International Airport** **Ministry of Transport and Infocommunications** **Bandar Seri Begawan** **BB 2513**
Country:	**Brunei Darussalam**
Telephone:	**+673 2330142**
Contact:	**info.dca@civil-aviation.gov.bn**

2 FOCAL POINTS FOR DCA BRUNEI

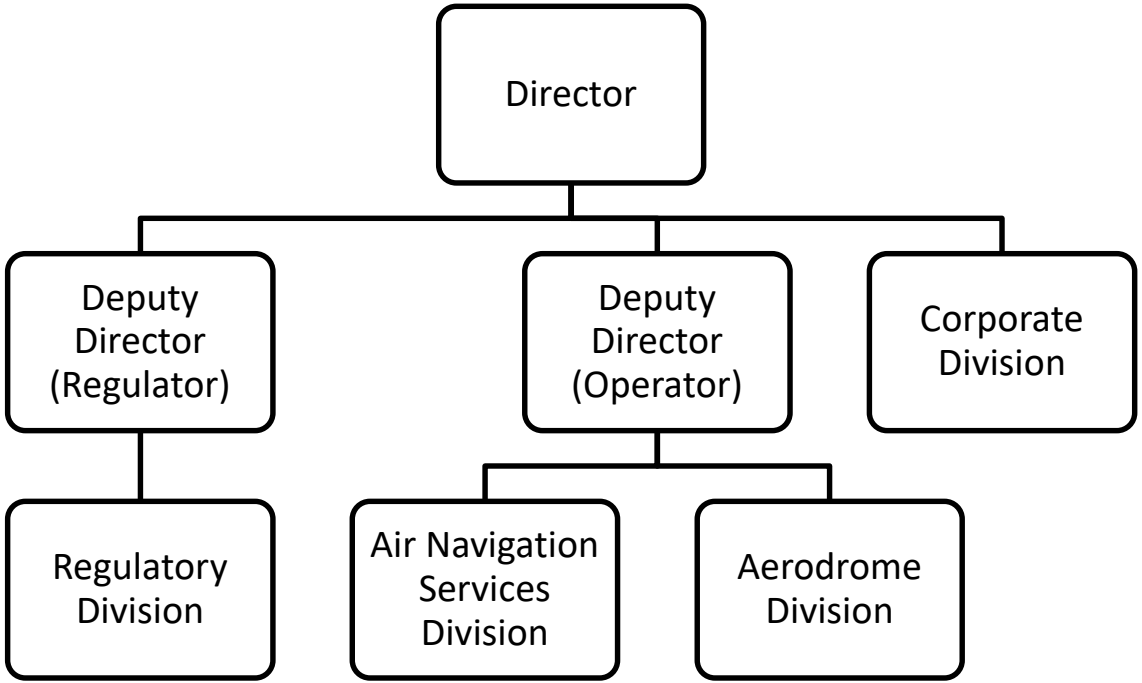
Focal Point:	**Mr. Mohamad Fauzi Mohamad Sidek** **Chief Operations Officer** **Department of Civil Aviation**
Telephone:	**+673 2330142 ext 1110**
Email:	**fauzi.sidek@civil-aviation.gov.bn**

Focal Point:	**Ms. Nurul Hani Mohd Tahir** **Special Duties Officer Grade II** **Department of Civil Aviation**
Telephone:	**+672 2330142 ext 1322**
Email:	**hani.tahir@civil-aviation.gov.bn**

INVOLVED STAKEHOLDERS IN THE DESIGN

	**Regulatory Division, DCA**
	Brunei International Airport (BIA), DCA
	Air Navigation Services Division
	**Royal Brunei Airlines Sdn Bhd (RB)**

ADMINISTRATIVE EXISTING CONTEXT IN DCA BRUNEI



TECHNICAL EXISTING CONTEXT IN BRUNEI

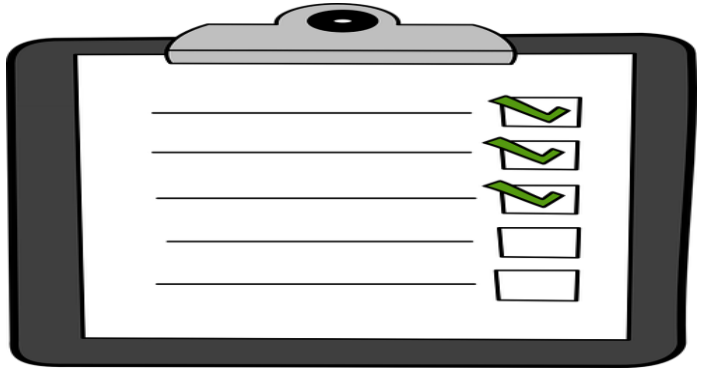
1. AIRPORT- Brunei International Airport (BIA)
2. AVERAGE ANNUAL AIRCRAFT MOVEMENTS: 24,900 flights
3. AIR PASSENGER TRAFFIC: 1.7 million annually

RATIO OF DATA: collected over 2013-2017

TECHNICAL EXISTING CONTEXT- 2nd PART

	Number of operator:	Managed By:
Airport Operator	1	Brunei International Airport Department of Civil Aviation
Air Navigation Services Provider	1	Air Navigation Services Division Department of Civil Aviation
Airline	1	Royal Brunei Airlines Sdn. Bhd.

2. POINT OF SAP: ESTABLISHMENT OF THE BASELINE



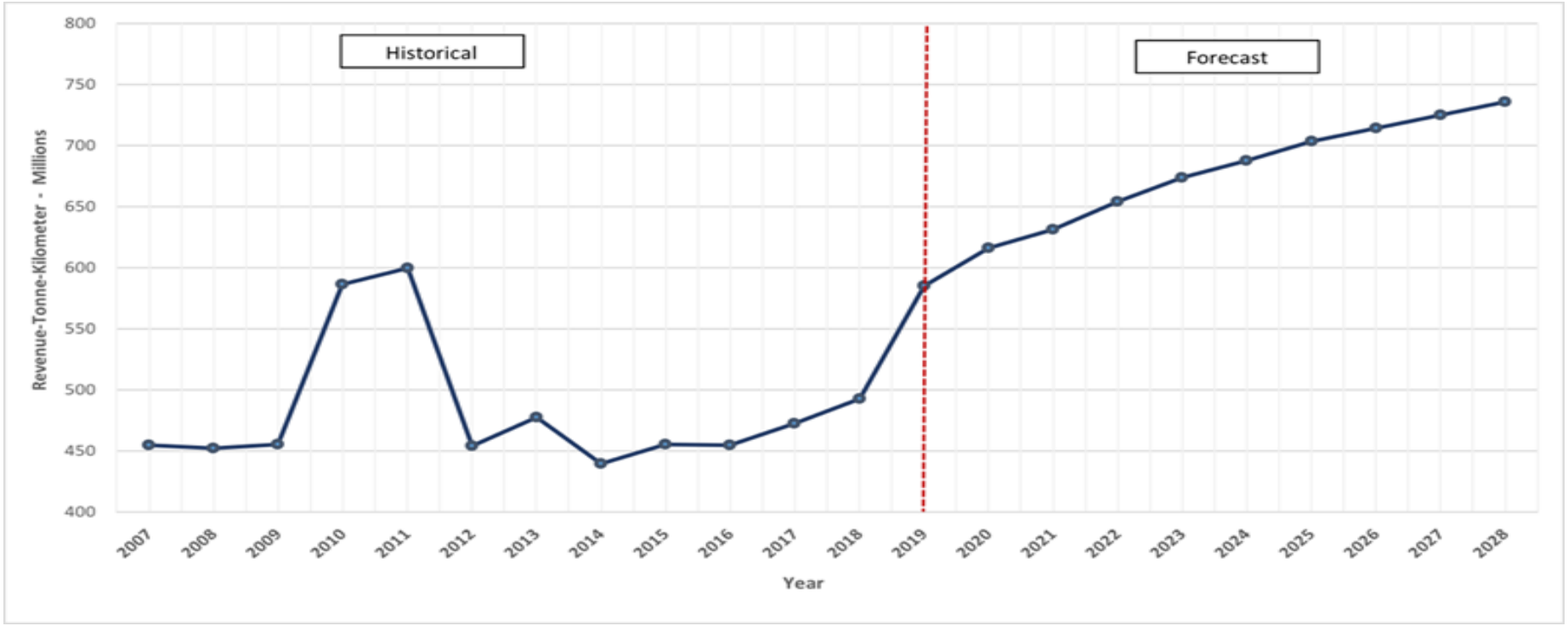
- **METHOD USED**: Method B

(Section 3.4 of Doc 9988)

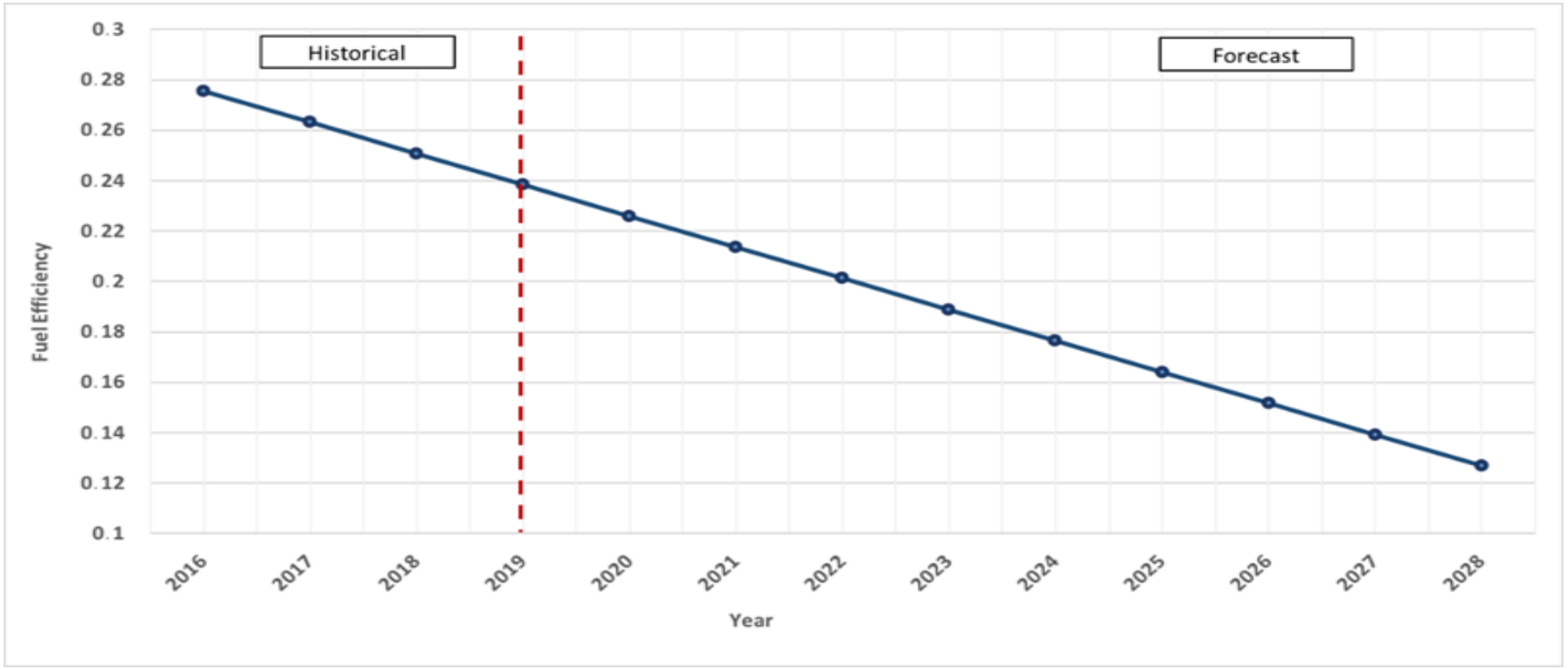
was applied to generate the baseline

- **FORMULA USED TO CALCULATE FUEL EFFICIENCY FOR THE PAST:** $Fuel\ efficiency = \frac{Fuel\ consumed\ (Tonnes)}{Revenue\ Tonne\ Kilometer\ (RTK)}$
- **SOURCE OF DATA**: Historical and forecast traffic data (RTK) provided by Commercial and Planning, Network Planning Section, Royal Brunei Airline

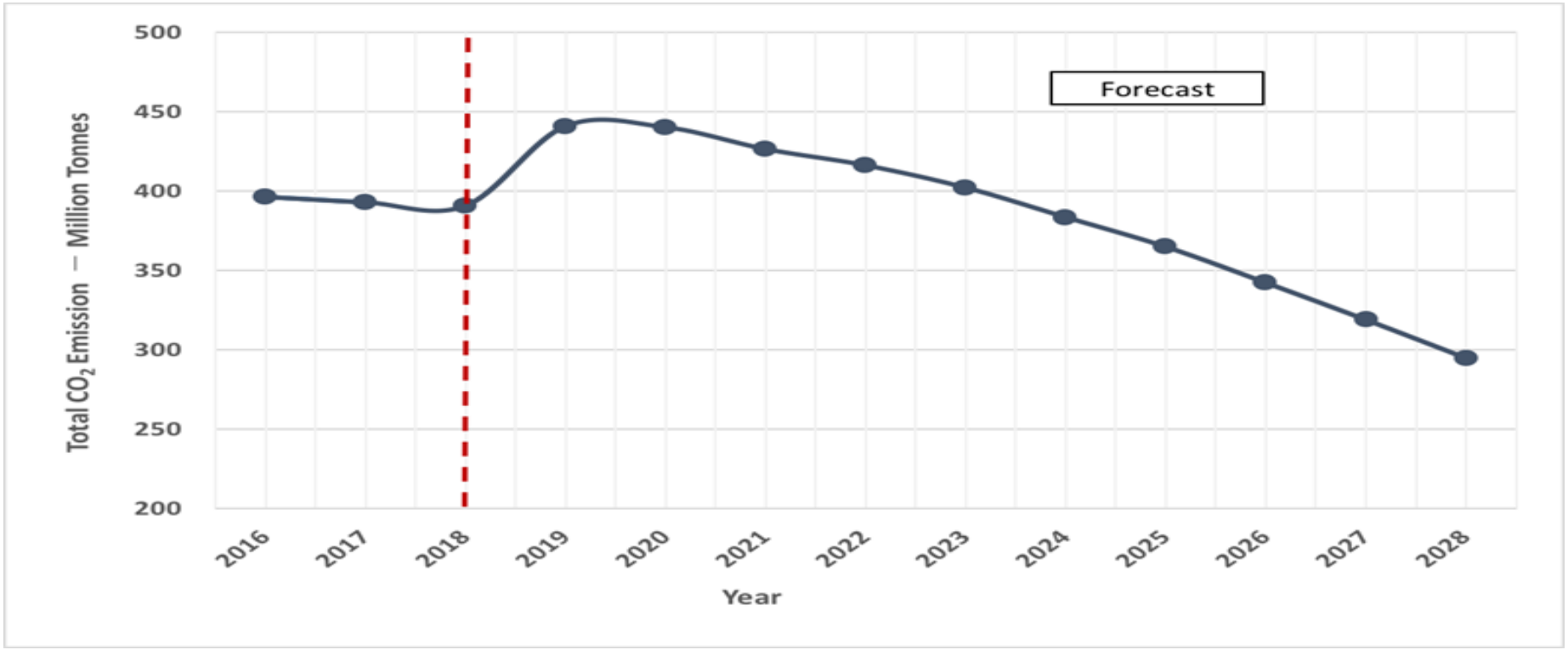
PAST and TRENDS until 2028



FUEL EFFICIENCY- PAST and TRENDS until 2028



TOTAL CO2 EMISSIONS: PAST and trends UNTIL 2028



3. POINT OF SAP: MITIGATION MEASURES-1st part

PRELIMINARY INFO:

- That is only the first SAP for DCA Brunei, therefore some indicators are still difficult to Identify, e.g. fuel and CO2 savings
- A number of measures could not be considered due to unavailability of data.
- Mitigation measures presented in the SAP are divided as following:

i) 3.1 AIRPORT'S MITIGATION MEASURES;

ii) 3.2 AIRLINE'S MITIGATION MEASURES;

iii) 4.FUTURE INITIATIVES

- After three years, the level of ambitions as well as the data accuracy will be scaled up

3. POINT OF SAP: MITIGATION MEASURES-2 part

- CLASSIFICATION OF ICAO's eligible MBMs:

i)Aircraft related technology development

ii)Alternative fuel

iii)Improved air traffic management and infrastructure use

iv)More efficient operations

v)Economic measures

vi)Regulatory measures and others

vii)Airport improvements (BUT….)

SELECTED AIRPORT MITIGATION MEASURES-1st part

MITIGATION MEASURE N. 1: INSTALLATION OF LED LIGHTS

Title	Upgrading of Airfield Lighting to LEDs
Category	Airport Improvement
Measure	Airfield Improvement
Action	Installation of LED light instead of classic light
Start Date:	April 2016
Date of full implementation:	December 2021
Estimated annual CO_2 savings:	1,086 tonnes

SELECTED AIRPORT MITIGATION MEASURES- 2 PART

MITIGATION MEASURE N. 2: ENERGY SAVING INITIATIVE AT AIRPORT TERMINAL BUILDING

Title	Energy Saving Initiative at Airport Terminal Finding
Category	Airport improvement
Measure	Reduced energy demand
Action	i. Replacing the flourescent lighting to energy saving bulbs ii. Temperature control of the air-conditioner from 18 ^{0}C to 22 ^{O}C
Start Date:	2017
Date of full implementation:	December 2018
Estimated annual CO_2 savings:	1,530 tonnes

AIRLINE SELECTED MITIGATION MEASURES-1st part

MITIGATION MEASURE N.3: PURCHASE OF NEW AIRCRAFTS

Title	Purchase of new, more efficient aircrafts
Category	Aircraft-related technology development
Measure	Purchase of new aircrafts
Action	Purchase of B787 aircrafts and A320 NEO aircrafts
Start date	2013 & 2018
Date of full implementation:	2013 & 2018
Estimated annual fuel savings:	26,079 tonnes (low end) 30,425 tonnes (high end)
Estimated annual CO_2 savings:	82,410 tonnes (low end) 96,144 tonnes (high end)

AIRLINE SELECTED MITIGATION MEASURES-2nd part

MITIGATION MEASURE N. 4: MORE EFFICIENT OPERATIONS

Title	A320 Engine Core Wash for fuel efficient and efficient Exhaust Gas Temperature (EGT) improvements
Category	More efficient operations
Measure	Optimised aircraft maintenance
Action	Engine wash on all A320 aircrafts
Estimated annual fuel savings:	687 tonnes
Estimated annual CO_2 savings:	2,171 tonnes

AIRLINE SELECTED MITIGATION MEASURES-3rd part

MITIGATION MEASURE N. 5: MORE EFFICIENT OPERATIONS

Title	Reduction in aircraft electrical power utilisation / fuel requirement through the installation of zonal dryers
Category	More efficient operations
Measure	Optimised aircraft maintenance
Action	Installation of zonal dryer on B787 aircrafts
Estimated annual fuel savings:	4,143 tonnes
Estimated annual CO_2 savings:	13,091 tonnes

AIRLINE SELECTED MITIGATION MEASURES-4th part

MITIGATION MEASURE N. 6: BEST PRACTICES IN OPERATIONS

Title	Reduction in fuel requirement by applying best practices in operations
Category	More efficient operations
Measure	Best practices in operations
Action(s)	i. Single engine taxi – A320 aircrafts ii. Portable water management iii. Reducing the size of in-flight magazines
Estimated annual fuel savings:	N/A
Estimated annual CO_2 savings:	N/A

AIRLINE SELECTED MITIGATION MEASURES-5th part

MITIGATION MEASURE N. 7: BEST PRACTICES IN OPERATIONS

Title	European Union Emission Trading Scheme (EU ETS)
Category	Economic/market-based measure
Measure	Inclusion of the aviation sector in market-based measure
Action	Requiring aeroplane operators to submit annual CO_2 emissions
Start Date	1st January 2010
Date of full implemetation:	1st January 2012

FUTURE INITIATIVES

MITIGATION MEASURE N. 8: INSTALLATION OF GROUND POWER UNITS (GPU)

Title	Installation of Ground Power Units (GPUs)
Category	Airport Improvement
Measure	Airfield Improvement
Action	Installation of fixed electrical Ground Power Units (GPUs)

4. SAP: FUTURE INITIATIVES-2 nd part

MITIGATION MEASURE N. 9: MRV

Title	Monitoring, Reporting and Verification (MRV) of aeroplane operator anual CO_2 emissions.
Category	Regulatory Measure
Measure	Requiring reporting of CO_2 emission
Action	Requiring aeroplane operators to submit annual CO_2 emissions report under CORSIA scheme
Start Date	January 2019

WHAT'S NEXT?

- DCA Brunei shall progressively monitor the implementation of the mitigation measures on a yearly basis to arrive ready by the end of the third year with updated indicators as per each mitigation measure.
- DCA Brunei shall scale up the level of accuracy of data especially in terms of estimated annual CO2 savings and in terms of best practices in operations (i.e. mitigation measure n. 6-no data on fuel and CO2 savings).

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