

## **Small Group Exercise 2: CO<sub>2</sub> Emissions Reporting and Verification**

### **Introduction**

According to the proposed first edition of Annex 16, Volume IV, the aeroplane operator shall submit to the State to which it is attributed a copy of the verified Emissions Report and a copy of the associated Verification Report (provided by the verification body) on an annual basis. For example, such reports for 2019 emissions shall be submitted to the State by 31 May 2020.

The State shall check and approve the operator's Emissions Report and submit a State's Emissions Report to ICAO, containing aggregated CO<sub>2</sub> emissions information from all aeroplane operators attributed to that State. For example, an aggregated report for 2019 emissions shall be submitted to ICAO by 31 August 2020.

### **Instructions for Small Group Exercise 2:**

Appendix 1 of this exercise provides illustrative examples of Emissions Reports by operators A1 Airline and A2 Airline for year 2019 emissions, together with related Verification Reports from the verification bodies V1 and V2, respectively.

Based on the information presented in the Appendix 1:

- Assess and confirm that the Emissions Reports for operators A1 Airline and A2 Airline are sufficient and in compliance with the reporting requirements. Information contained in the respective Verification Reports should be taken into account when performing the assessment.

Appendix 2 provides an illustrative template for an Emissions Report from State A to ICAO. Based on the information presented in Appendix 1:

- Fill in the template in Appendix 2 and create State A's Emissions Report to ICAO (*please note – some fields in Appendix 2 have already been completed for reference*).

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## 2018 ICAO REGIONAL SEMINARS ON CORSIA

<b>APPENDIX 1: A1 AIRLINE: 2019 EMISSIONS REPORT</b>						
Name of aeroplane operator		A1 Airline				
Aircraft Identification of the aeroplane operator for international flights (Item 7 of the flight plan)		Select one of the three options below for reporting flight attribution under the CORSIA in Item 7 of the flight plan. a) ICAO Designator b) Registration Marks c) Emissions Monitoring Plan Code				
ICAO designator		ABC				
Verification body		V1 Verifier				
Reporting year		2019				
Emissions Monitoring Plan		Approved on 30 Nov 2018				
Fuel Use Monitoring Method or the ICAO CORSIA CO <sub>2</sub> Estimation and Reporting Tool (CERT)		ICAO CORSIA CO <sub>2</sub> Estimation and Reporting Tool (CERT) has been used				
<b>Summary of reported international flights and CO<sub>2</sub> emissions</b>						
Total CO <sub>2</sub> emissions from international flights (in tonnes):		345 957				
Total number of international flights during reporting period:		15 948				
Total emissions reductions from the use of sustainable aviation fuel claimed:		N/A				
Summary of fuel quantities (Jet-A, in tonnes):		109 480				
Total CO <sub>2</sub> emissions from flights subject to offsetting requirements (in tonnes):		N/A				
Total number of international flights subject to offsetting requirements:		N/A				
<b>Sustainable aviation fuels (SAF) claimed</b>						
Type of Fuel	Feedstock	Conversion Process	Total mass of SAF	Life Cycle Emissions value	Emission reductions claimed	
N/A	N/A	N/A	N/A	N/A	N/A	
<b>Table of all State pairs</b>						
State of Departure	State of Arrival	Total No. of flights	Type of fuel	Total Mass of Fuel (in tonnes)	Fuel conversion factor	Total CO <sub>2</sub> emissions (in tonnes)
A	B	1 460	Jet-A	4 380	3.16	13 841
A	C	1 095	Jet-A	6 570	3.16	20 761
A	D	365	Jet-A	6 580	3.16	20 793
A	E	1 460	Jet-A	4 255	3.16	13 446
A	F	730	Jet-A	8 760	3.16	27 682
A	G	1 460	Jet-A	13 150	3.16	41 554
A	H	726	Jet-A	5 640	3.16	17 822
A	I	313	Jet-A	1 995	3.16	6 304
A	J	365	Jet-A	3 380	3.16	10 681
B	A	1 460	Jet-A	4 250	3.16	13 430
C	A	1 095	Jet-A	6 340	3.16	20 034
D	A	365	Jet-A	6 490	3.16	20 508
E	A	1 460	Jet-A	4 410	3.16	13 936
F	A	730	Jet-A	8 710	3.16	27 524
G	A	1 460	Jet-A	13 450	3.16	42 502
H	A	726	Jet-A	5 830	3.16	18 423
I	A	313	Jet-A	1 950	3.16	6 162
J	A	365	Jet-A	3 340	3.16	10 554

## 2018 ICAO REGIONAL SEMINARS ON CORSIA

<b>APPENDIX 1: A2 AIRLINE: 2019 EMISSIONS REPORT</b>						
Name of aeroplane operator		A2 Airline				
Aircraft Identification of the aeroplane operator for international flights (Item 7 of the flight plan)		Select one of the three options below for reporting flight attribution under the CORSIA in Item 7 of the flight plan. a) ICAO Designator b) Registration Marks c) Emissions Monitoring Plan Code				
ICAO designator		ACZ				
Verification body		V2 Verifier				
Reporting year		2019				
Emissions Monitoring Plan		Approved on 30 April 2019				
Fuel Use Monitoring Method and / or the ICAO CORSIA CO <sub>2</sub> Estimation and Reporting Tool (CERT)		Fuel Use Monitoring Method: Method A				
<b>Summary of reported international flights and CO<sub>2</sub> emissions</b>						
Total CO <sub>2</sub> emissions from international flights (in tonnes):		1 891 134				
Total number of international flights during reporting period:		24 772				
Total emissions reductions from the use of sustainable aviation fuel claimed (in tonnes):		N/A				
Summary of fuel quantities (Jet-A, in tonnes):		598 460				
Total CO <sub>2</sub> emissions from flights subject to offsetting requirements (in tonnes):		N/A				
Total number of international flights subject to offsetting requirements:		N/A				
<b>Sustainable aviation fuels claimed</b>						
Type of Fuel	Feedstock	Conversion Process	Total mass of SAF	Life Cycle Emissions value	Emission reductions claimed	
N/A	N/A	N/A	N/A	N/A	N/A	
<b>Table of all State pairs</b>						
State of Departure	State of Arrival	Total No. of flights	Type of fuel	Total Mass of Fuel (in tonnes)	Fuel conversion factor	Total CO <sub>2</sub> emissions (in tonnes)
A	D	1 460	Jet-A	26 250	3.16	82 950
A	F	2 920	Jet-A	44 200	3.16	139 672
A	G	2 888	Jet-A	25 990	3.16	82 129
A	I	2 190	Jet-A	16 600	3.16	52 456
A	J	365	Jet-A	3 400	3.16	10 744
A	K	365	Jet-A	54 750	3.16	173 010
A	L	738	Jet-A	101 200	3.16	319 792
A	M	1 460	Jet-A	24 600	3.16	77 736
D	A	1 460	Jet-A	26 380	3.16	83 361
F	A	2 920	Jet-A	43 200	3.16	136 512
G	A	2 888	Jet-A	27 200	3.16	85 952
I	A	2 190	Jet-A	17 500	3.16	55 300
J	A	365	Jet-A	3 220	3.16	10 175
K	A	365	Jet-A	55 850	3.16	176 486
L	A	738	Jet-A	104 900	3.16	331 484
M	A	1 460	Jet-A	23 220	3.16	73 375

## 2018 ICAO REGIONAL SEMINARS ON CORSIA

<b>APPENDIX 1: VERIFICATION REPORT FOR A1 AIRLINE'S 2019 EMISSIONS REPORT</b>	
Name of the verification body	V1 Verifier
Scope of the verification	CO <sub>2</sub> emissions
Aeroplane operator information	A1 Airline
Description of verification activities undertaken, including: <ul style="list-style-type: none"> <li>• Where the verification was conducted (on-site vs off-site);</li> <li>• Criteria against which the Annual Emissions Report was verified; data used by the verification body to cross-check data.</li> </ul>	<p>V1 Verifier (the verifier) has conducted the verification of A1 Airline's Annual Emissions Report in accordance with CORSIA-related SARPs and guidance.</p> <p>The verifier has conducted an off-site check to A1 Airline's Fleet Management System.</p> <p>The verifier has cross-checked the data in the Annual Emissions Report against A1 Airline's flight schedules, air traffic control information, as well as the verifier's CO<sub>2</sub> emissions model.</p>
Compliance with the Emissions Monitoring Plan	The verifier confirms that the A1 Airline's Annual Emissions Report is in compliance with the Emissions Monitoring Plan, approved on 30 Nov 2018.
Concluding verification statement	<p>According to the verification activities described in the Verification Report, V1 Verifier concludes that A1 Airline's Annual Emissions Report is:</p> <p style="text-align: center;"><b>Verified as satisfactory.</b></p>
<b>APPENDIX 1: VERIFICATION REPORT FOR A2 AIRLINE'S 2019 EMISSIONS REPORT</b>	
Name of the verification body	V2 Verifier
Scope of the verification	CO <sub>2</sub> emissions
Aeroplane operator information	A2 Airline
Description of verification activities undertaken, including: <ul style="list-style-type: none"> <li>• Where the verification was conducted (on-site vs off-site);</li> <li>• Criteria against which the Annual Emissions Report was verified; data used by the verification body to cross-check data.</li> </ul>	<p>V2 Verifier (the verifier) has conducted the verification of A2 Airline's Annual Emissions Report in accordance with CORSIA-related SARPs and guidance.</p> <p>The verifier has conducted an on-site visit to A2 Airline's headquarters on 15 May 2020, during which a check was performed to A2 Airline's flight records software, and discussions with A2's Airline's CORSIA-responsible staff were held.</p> <p>The verifier has cross-checked the data in the Annual Emissions Report against A2 Airline's flight schedules, air traffic control information, as well as against the verifier's CO<sub>2</sub> emissions model.</p>
Compliance with the Emissions Monitoring Plan	The verifier confirms that the A2 Airline's Annual Emissions Report is in compliance with the Emissions Monitoring Plan, approved on 30 April 2019.
Concluding verification statement	<p>According to the verification activities described in the Verification Report, V2 Verifier concludes that A2 Airline's Annual Emissions Report is:</p> <p style="text-align: center;"><b>Verified as satisfactory.</b></p>

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**2018 ICAO REGIONAL SEMINARS ON CORSIA**

<b>APPENDIX 2: State A: 2019 Emissions Report to ICAO</b>		
Reporting State	State A	
Reporting year	2019	
<b>Total annual CO<sub>2</sub> emissions per State pair aggregated for all operators attributed to State A (in tonnes)</b>		
State of Departure	State of Arrival	Total annual CO <sub>2</sub> emissions per State pair
A	B	13 841
A	C	
A	D	
A	E	
A	F	
A	G	123 683
A	H	17 822
A	I	
A	J	
A	K	
A	L	
A	M	
B	A	
C	A	
D	A	103 869
E	A	
F	A	164 036
G	A	
H	A	
I	A	
J	A	
K	A	
L	A	331 484
M	A	

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