



**Please provide details of the parent / holding company (if any):**

*Please provide the company name, registered address, telephone number and company registration number of any parent / holding company.*

Company name:	Fixed Wing Holdings Ltd
Address Line 1:	Aviation House
Address Line 2:	Aviation Lane
City:	London
State/Province/Region:	
Postcode/ZIP:	SW2 2AA
Country:	United Kingdom
Telephone Number:	020 2222 2222

Company registration number:

**Please provide details of any subsidiary companies (if applicable):**

*Please provide the company name, registered address, telephone number and company registration number of any subsidiaries.*

Company name:	Fixed Wing Freight
Address Line 1:	Freight House
Address Line 2:	Birmingham Airport Business Park
City:	Birmingham
State/Province/Region:	West Midlands
Postcode/ZIP:	B26 3QJ
Country:	United Kingdom
Telephone Number:	0121 111 2222

Co. registration number:

Company name:	
Address Line 1:	
Address Line 2:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	Please select
Telephone Number:	

Co. registration number:

Please continue on a separate sheet if required.

[<<<< Click here to proceed to section 2\(k\) >>>>](#)

**(i) Only complete this section if you chose "Partnership" in section 2(g).**

*Please complete the names, addresses and telephone numbers of up to four partners.*

**Partner (1)**

Title:	Please select
First Name:	
Surname:	
Address Line 1:	
Address Line 2:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	Please select
Telephone Number:	

**Partner (2)**

Title:	Please select
First Name:	
Surname:	
Address Line 1:	
Address Line 2:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	Please select
Telephone Number:	

**Partner (3)**

Title:	Please select
First Name:	
Surname:	
Address Line 1:	
Address Line 2:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	Please select
Telephone Number:	

**Partner (4)**

Title:	Please select
First Name:	
Surname:	
Address Line 1:	
Address Line 2:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	Please select
Telephone Number:	

**Please provide details of the partnership including the principal place of business:**

*Please provide the name of the partnership, together with the address and telephone number of the principal place of business.*

Name of partnership:	
Address Line 1:	
Address Line 2:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	Please select
Telephone Number:	

[<<< Click here to proceed to section 2\(k\) >>>](#)

**(j) Only complete this section if you chose "Individual / Sole Trader" in section 2(g).**

*Please complete the name, address and telephone number of the aircraft operator.*

Title:	Please select
First Name:	
Surname:	
Address Line 1:	
Address Line 2:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	Please select
Telephone Number:	

**Please provide the address of the Management Company (if any)**

*If the aircraft operator uses the services of a management company in conducting aviation activities, please also provide the name, address and telephone number for this company.*

Company Name:	
Address Line 1:	
Address Line 2:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	Please select
Telephone Number:	

**(k) Description of the Annex I activities of the aircraft operator**

*Please specify whether you are a commercial or non-commercial air transport operator, whether you operate scheduled, non scheduled flights or both and, whether the scope of your operations cover only the EU or also non EU countries.*

**Operator status**

Commercial

*Commercial air transport operators: Please attach a copy of Annex I of your AOC to this monitoring plan as evidence.*

**Scheduling of flights**

Scheduled and non-scheduled flights

**Scope of operations**

Flights inside and outside the EU

**(l) Please provide further description of your activities as necessary.**

Fixed Wing Jet Airways operate short, medium and long-haul flights to and from domestic and international airports. Our passenger flights are mostly scheduled, with approximately 70% taking place in the EU. Non-scheduled passenger flights are primarily charter, with the main destination being the United States. Fixed Wing lease in aircraft on a short and long term basis to meet market demands. Fixed Wing Freight is a subsidiary operation, which operators under its own unique ICAO designator (FWF) for all its flights. Fixed Wing Freight is captured by the scheme and is assigned to the UK as administering Member State so the flights of this operation are not captured by this plan.

### 3 Contact details and Address for Service

**(a) Who can we contact about your monitoring plan?**

*It will help us to have someone who we can contact directly with any questions about your monitoring plan. The person you name should have the authority to act on your behalf. This could be an agent acting on behalf of the aircraft operator.*

**Title**  
**First Name**  
**Surname**  
**Job title**  
**Organisation name (if acting on behalf of the aircraft operator)**  
**Telephone number**  
**Email address**

Captain
James
Kirk
DOC Commercial Manager
020 111 1112
jkirk@fwja.co.uk

**(b) Please provide an address for service.**

*You must provide an address for the service of notices or other documents under or in connection with the Aviation Greenhouse Gas Emissions Trading Scheme Regulations 2009. Please provide an electronic address or, if not available, a postal address within England and Wales for companies regulated by the Environment Agency, within Scotland for companies regulated by SEPA and within Northern Ireland for companies regulated by NIEA.*

**Title:**  
**First Name:**  
**Surname:**  
**Email address; or**

Mr
Andrew
Johnston
ajohnston@fwja.co.uk

**Address Line 1:**  
**Address Line 2:**  
**City:**  
**State/Province/Region:**  
**Postcode/ZIP:**  
**Country:**

Airways House
Airways Lane
London
SW1 1AA
United Kingdom

[<<< Click here to proceed to section 4 "Emission sources" >>>](#)

# DESCRIPTION OF EMISSION SOURCES AND SOURCE STREAMS

## 4 Emission sources

**(a) Please provide a list of the aircraft types operated at the time of submission of this monitoring plan.**

The list should include all aircraft types (by ICAO aircraft type designator - DOC8643), which you operate at the time of submission of this monitoring plan and the number of aircraft per type, including owned aircraft, as well as leased-in aircraft. You are required to list only aircraft types used for carrying out activities falling under Annex I of the EU ETS Directive.

For each aircraft type you have to specify which fuels will be used (which "source streams" will be associated with the emission sources).

Date of submission of monitoring plan:

08/05/2009

Generic aircraft type (ICAO aircraft type designator)	Sub-type (optional input)	Number of aircraft operated at time of submission	Source stream(s) <i>Select all that apply.</i>	Remarks
A332 (Airbus 330-200)		14	<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	Will be slowly phased out
B737 (Boeing 737-700)		12	<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	Fixed Wing Jet Airways plans to further grow its B737-700 fleet to replace the B733-300
A321 (Airbus 321)		20	<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	Will be slowly phased out
B763 (Boeing 767-300)		12	<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	Will be slowly decreasing
B733 (Boeing 737-300)		7	<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	B733s will be phased out during the upcoming years
B735 (Boeing 737-500)		3	<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	Will be slowly phased out
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	

Please continue on a separate sheet if required.

**(b) Please provide details of an indicative list of additional aircraft types expected to be used.**

Please note that this list should not include any of the aircraft types listed in table 4(a) above. Where available, please also provide an estimated number of aircraft per type, either as a number or an indicative range, as well as the source streams (fuel types) to be used.

Generic aircraft type (ICAO aircraft type designator)	Sub-type (optional input)	Estimated number of aircraft to be operated	Source stream(s) <i>Select all that apply.</i>	Remarks
A388 (Airbus 380-800)		3	<input checked="" type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	First delivery was planned in mid- 2009, is now expected in Q4 of 2010
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input checked="" type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	
			<input type="checkbox"/> Jet kerosene <input type="checkbox"/> Jet gasoline <input type="checkbox"/> Aviation gasoline <input type="checkbox"/> Alternative <input type="checkbox"/> Biofuel	

Please continue on a separate sheet if required.

**(c) Please provide details about the procedure to be used for defining the monitoring methodology for these additional aircraft types.**

While this monitoring plan in general defines the monitoring methodology for the aircraft already in your fleet at the time of submission of the monitoring plan to the competent authority (see point 4(a)), a defined procedure is needed to ensure that any additional aircraft including those listed under 4(b) will be properly monitored as well. The items specified below should ensure that a monitoring methodology is defined for any aircraft type operated.

<u>Title of procedure</u>	AE - Monitoring Methods (Additional Aircraft)
<u>Reference for procedure</u>	ETS-AEMP - 001
<u>Brief description of procedure</u>	The procedure outlines the assessment process for the determination of fuel monitoring methodology used for current and any additional aircraft types. Aviation Planning notifies the DOC Commercial Manager of an impending new aircraft type. Fuel consumption will be determined by method B, using fuel uplift and density measured by supplier, unless upon review another methodology will generate more reliable and accurate data. The review is undertaken by the DOC Manager and takes into account the on-board measurement devices for fuel volume and density measurements and compare their accuracies with measurements made by the suppliers. The choice of methodology for any additional aircraft are recorded on the OPS Mainframe. The method for transmitting fuel data will be the manual process of data input from the technical logs to the OPS. The DOC Commercial Manager will inform the Regulator if a change to the plan is required.
<u>Post or department responsible for data maintenance</u>	DOC Commercial Manager
<u>Location where records are kept</u>	OPS - Mainframe - Bern
<u>Name of system used (where applicable).</u>	New Aircraft - Recording system stored on OPS mainframe

**(d) Please provide details about the systems, procedures and responsibilities used to track the completeness of the list of emission sources (aircraft used) over the monitoring year.**

*The items specified below should ensure the completeness of monitoring and reporting of the emissions of all aircraft used during the monitoring year, including owned aircraft, as well as leased-in aircraft.*

<u>Title of procedure</u>	AE - Fleet List Update
<u>Reference for procedure</u>	ETS-AEMP - 002
<u>Brief description of procedure</u>	Aviation Planning keeps a list with all aircraft operated by Fixed Wing Airways. This information is stored on the server at Head Office. This information comprises of the type of aircraft and its unique identifier (registration marking). The list identifies whether the aircraft are owned or leased (with planned end of lease dates), start date and end date of lease periods for aircraft not belonging to the fleet for a full calendar year and includes the list of predicted additional aircraft types. The status (operational/non-operational due to repair) of each aircraft is also recorded. In case of changes the fleet information is updated on a daily basis.  <u>Key risks:</u> leased-in aircraft not (completely) recorded.  <u>Control Activity:</u> The list is checked on a monthly basis with flights invoiced by Eurocontrol. Inconsistencies are reviewed and the fleet list updated accordingly.
<u>Post or department responsible for data maintenance</u>	Fleet Management
<u>Location where records are kept</u>	Server at Head Office
<u>Name of system used (where applicable).</u>	Excel-based spreadsheet stored on the Head Office server

**(e) Please provide details about the procedures to monitor the completeness of the list of flights operated under the unique designator by aerodrome pair.**

*Please detail the procedures and systems in place to keep an updated detailed list of aerodrome pairs and flights operated during the monitoring period as well as the procedures in place to ensure completeness and non duplication of data.*

<u>Title of procedure</u>	AE - Flight Recording
<u>Reference for procedure</u>	ETS-AEMP-003
<u>Brief description of procedure</u>	The procedure identifies that Aviation Planning uploads a forecasted flight programme into OPS. Fixed Wing Operations team will then change the status of the flight from forecast to actual flight. If changes happen, Operations can change the information in OpsCon which links into OPS. The flight information that is stored on OPS that is relevant to ETS is: Date, flight No., type of flight, aerodrome of departure and arrival (by ICAO code), number of passengers onboard (by passenger type), freight and mail mass. Inputs into the system: Flight programme in OPS, Departure control System (DCS), flight technical logs. Extraction from the system: Flights by aerodrome pair & flight type (i.e. exempt flights).  <u>Key risks:</u> Flights operated under Fixed Wing's ICAO designator are not captured by the system. Loss of technical logs or manual input errors.  <u>Control Activities:</u> The procedure outlines the method for checking the completeness of the list by cross-referencing information stored on Eurocontrol's CRCO database. All discrepancies are investigated and the outcomes documented.
<u>Post or department responsible for data maintenance</u>	Aviation Planning
<u>Location where records are kept</u>	OPS mainframe - Bern. Paper records (technical logs and other flight related documents) stored at our operations department - Bern.
<u>Name of system used (where applicable).</u>	OPS - Operational Platform

**(f) Please provide details about the procedures for determining whether flights are covered by Annex I of the Directive, ensuring completeness and avoiding double counting.**

*Please detail the systems in place to keep an updated detailed list of flights used during the monitoring period which are included/excluded from EU ETS, as well as the procedures in place to ensure completeness and non-duplication of data.*

<u>Title of procedure</u>	AE - ETS cross check
<u>Reference for procedure</u>	AE-AEMP-004
<u>Brief description of procedure</u>	OPS will cross-check if either the departure or the arrival aerodrome of a flight are located in the EU. If yes, the city-pair will be part of the ETS reporting. Annex 1 exemptions, as identified in the flight plan, are also stored in OPS. Reports can be generated that lists included and excluded flights. The excluded flights are filtered out by the database as the routine is pre-programmed with the exemption codes.  <u>Key risks:</u> Type of flight is incorrectly marked in OPS leading to the exclusion of a flight that does not fall under the annex 1 exceptions.  <u>Control Activities:</u> There are specific guidelines for our pilots when to apply which "special" flight flag. Random checks are undertaken on the special flag inputs as well as cross-checks with data from Eurocontrol's CRCO.
<u>Post or department responsible for data maintenance</u>	Aviation Planning
<u>Location where records are kept</u>	OPS mainframe - Bern. Paper records (technical logs and other flight related documents) stored at our operations department - Bern.
<u>Name of system used (where applicable).</u>	OPS - Operational Platform

**(g) Please provide an estimate/prediction of the total annual fossil CO<sub>2</sub> emissions for Annex 1 activities.**

*The figure should only include those flights, which are covered by EU ETS.*

2441250	tonnes CO <sub>2</sub>
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## 5 Eligibility for simplified procedures for small emitters

- (a) Please confirm whether you operate fewer than 243 flights per period for three consecutive four-month periods; or operate flights with a total annual fossil CO<sub>2</sub> emissions lower than 10 000 tonnes per year?

*Operators who are considered to be small emitters may choose to use simplified procedures to estimate fuel consumption using tools implemented by Eurocontrol or another relevant organisation. In this case, complete the worksheet "simplified calculation" instead of the*

Yes  No

**If you have ticked "No", please continue directly to section 6.**

- (b) If you have ticked "Yes" in response to 5(a), do you intend to use simplified procedures to estimate fuel consumption?

Yes  No

- (c) If you have ticked "Yes", please provide information to support your eligibility for the simplified calculation procedures and then proceed directly to the tab "Simplified Calculation" (Section 10).

*Provide information to support the fact that you operate fewer than 243 flights per period for three consecutive four-month periods or that your annual emissions are lower than 10 000 tonnes of CO<sub>2</sub> per year.*

# CALCULATION OF CO<sub>2</sub> EMISSIONS

[go to Section 10 if eligible for simplified calculation]

## 6 Activity data

**(a) Please specify the methodology used to measure fuel consumption for each aircraft type.**

*In each case, the method chosen should provide for the most complete and timely data combined with the lowest uncertainty without incurring unreasonable costs.*

Method A Actual fuel consumption for each flight (tonnes) = Amount of fuel contained in aircraft tanks once fuel uplift for the flight is complete (tonnes) - Amount of fuel contained in aircraft tanks once fuel uplift for subsequent flight is complete (tonnes) + Fuel uplift for that subsequent flight (tonnes)

Method B Actual fuel consumption for each flight (tonnes) = Amount of fuel remaining in aircraft tanks at block-on at the end of the previous flight (tonnes) + Fuel uplift for the flight (tonnes) - Amount of fuel contained in tanks at block-on at the end of the flight (tonnes)

Generic aircraft type (ICAO aircraft type designator)	Method (A/B)	Data source used to determine fuel uplift	Methods for transmitting, storing and retrieving data
A332 (Airbus 330-200)	Method B	As measured by fuel supplier	Recorded in aircraft technical log
B737 (Boeing 737-700)	Method B	As measured by fuel supplier	Recorded in aircraft technical log
A321 (Airbus 321)	Method B	As measured by fuel supplier	Recorded in aircraft technical log
B763 (Boeing 767-300)	Method B	As measured by fuel supplier	Recorded in aircraft technical log
B733 (Boeing 737-300)	Method B	As measured by fuel supplier	Recorded in aircraft technical log
B735 (Boeing 737-500)	Method B	As measured by fuel supplier	Recorded in aircraft technical log
A388 (Airbus 380-800)	Method B	On-board measuring equipment	Recorded in aircraft technical log
	Please select	Please select	Please select
	Please select	Please select	Please select
	Please select	Please select	Please select

Please continue on a separate sheet as required.

**(b) If the chosen methodology (Method A/Method B) is not applied for all aircraft types, please provide a justification for this approach in the box below.**

N/a

**(c) Complete the following table with information about the systems and procedures to monitor fuel consumption per flight in both owned and leased-in aircraft.**

*The procedure must include the selected tiers, a description of the measurement equipment, and the procedures for recording, retrieving, transmitting and storing information.*

Title of procedure	AE - Fuel Uplift/Fuel On-board
Reference for procedure	ETS-AEMP-005
Brief description of procedure	<p>The fuel supplier slips records fuel in tanks prior to uplift, uplift quantities from supplier and final tank quantities after uplift. This data is checked by the pilot using the aircraft on-board systems before take-off. Uplift quantities are checked against pre-and post uplift tank quantities and any discrepancies investigated. If discrepancies exceed a predefined threshold, then the pilot checks the fuel slips for any inconsistencies and takes further steps as described in the aircraft safety manual. If fuel slips do not contain mass values, then a standard density of 0.8kg/l is used.</p> <p>The Airbus 380s use on-board equipment for measuring fuel uplift and fuel left in tanks. For each flight the fuel level (at block-on and block-off) and fuel uplift is measured with on-board measurement devices. The conversion from litres to kilograms happens automatically as the systems measure the fuel temperature at the same time as fuel levels. Checks are undertaken by the pilot, where uplifts determined by the on-board devices are check against uplifts recorded by the fuel supplier.</p> <p>Transmission of data: Fuel readings on from the Technical Logs are transferred manually to OPS by the Finance Dept. Fuel invoices is a secondary data stream. 65% of our fuel invoices get automatically fed into Airpas (financial recording system). The rest will be manually inserted. The invoices are a secondary source of fuel data which is used to cross-check the Technical Log data. For leased in aircraft the fuel data is provided by the lessor on the basis of our requirements and manually transferred to OPS.</p> <p><u>Key Risks:</u> Fuel consumption data is not correct or incomplete/incorrect data in the Technical logs.</p> <p><u>Control Activities:</u> The pilot compares fuel supplier uplifts against on-board measurement devices. Technical logs are cross-checked against fuel invoices. If technical logs are missing, the data from fuel invoices is used. In the absence of both forms of data the "Data Gap" methodology is used.</p>
Post or department responsible for	Finance
Location where records are kept	OPS - mainframe - Bern, Fuel invoices archived within the Finance Dept - Bern
Name of system used (where applicable).	Fuel Supplier Slips, Fuel invoices, Technical Log and OPS

**(d) Please specify the method used to determine the density used for fuel uplifts and fuel in tanks, for each aircraft type.**

*Actual density values should be used unless it is shown to the satisfaction of the Competent Authority that actual values are not available and a standard density factor of 0.8 kg/l shall be applied.*

Generic aircraft type (ICAO aircraft type designator)	Density Measurement Method	Justification for using standard value if measurement is not feasible
A332 (Airbus 330-200)	Actual density of uplift	
B737 (Boeing 737-700)	Actual density of uplift	
A321 (Airbus 321)	Actual density of uplift	
B763 (Boeing 767-300)	Actual density of uplift	
B733 (Boeing 737-300)	Actual density of uplift	
B735 (Boeing 737-500)	Actual density of uplift	

A388 (Airbus 380-800)	Actual density in aircraft tanks	
	Please select	
	Please select	
	Please select	

Please continue on a separate sheet if required.

(e) Please specify the source of temperature-density correlation tables, where applicable.

Only complete this section if you have selected "Temperature of uplift" in table 6(d) above.

--

(f) Complete the following table with information about the procedures for measurement of the density used for fuel uplifts and fuel in tanks, in both owned and leased-in aircraft.

The procedure must include a description of the measurement instruments involved, or if measurement is not feasible, justification for applying the standard value.

Title of procedure	AE - Density
Reference for procedure	ETS-AEMP-006
Brief description of procedure	In most cases (except for the Airbus A380s) density of fuel is measured and recorded by the fuel supplier. A hydrometer device is used by the supplies to measure fuel density. The information is recorded on the Fuel slips and technical logs. As with fuel uplifts, the data is transmitted to OPS. For the A380 density is measured by the on-board systems, which automatically makes the conversion of litres to kg. In situations where the density is not recorded, a standard value of 0.8kg/l is used to determine the mass of fuel uplift. The crew check that density has been recorded at aerodromes where it is measured.
Post or department responsible for data maintenance	Fuel Management Department
Location where records are kept	OPS - mainframe - Bern
Name of system used (where applicable).	Fuel Supplier Slips, Technical Log and OPS

(g) Please provide a list of deviations from the general methodologies for determining fuel uplifts/fuel contained in the tank and density for specific aerodromes.

Where necessary due to special circumstances, such as fuel suppliers who cannot provide all of the required data for a certain methodology, a list of deviations from the general methodologies should be given for specific aerodromes. For example, if a fuel supplier at a specific aerodrome cannot provide the actual density data, specify the alternative approach proposed. Please list aerodromes using their ICAO designator, separated by semicolons.

Type of deviation	Justification of special circumstances	Aerodromes for which deviation applies
The use of the standard density value (0.8kg/l)	At certain destinations the actual density will neither be available on the invoice nor on the delivery note. In these situation the standard density will be used.	Mumbai (VABB); Kalkutta (VECC)

Please continue on a separate sheet if required.

## 7 Uncertainty Assessment

(a) Where on-board systems are used for measuring fuel uplifts and the quantity remaining in the tank, please provide uncertainty associated with the on-board measurement equipment.

Where fuel uplifts are determined solely on the invoiced quantity of fuel or other appropriate information provided by the supplier, no further proof of uncertainty level is required.

Uncertainty values should be taken from the calibration certificate, where applicable, or otherwise from equipment manufacturer's specification. Only if unknown, an estimate using the ranges in the drop-down list should be used.

Generic aircraft type (ICAO aircraft type designator)	Uncertainty of measurement of fuel remaining in the tank	Are fuel uplifts determined solely by the invoiced quantity of fuel or other appropriate information provided by the supplier?	If no:		
			Are on-board measurement devices supported by calibration certificates?	Measurement equipment uncertainty (+/-%)	Location of evidence of routine checks (if no calibration certificate)
A332 (Airbus 330-200)	<2.5%	Yes	Please select		
B737 (Boeing 737-700)	<2.5%	Yes	Please select		
A321 (Airbus 321)	<2.5%	Yes	Please select		
B763 (Boeing 767-300)	<2.5%	Yes	Please select		
B733 (Boeing 737-300)	<5.0%	Yes	Please select		
B735 (Boeing 737-500)	<5.0%	Yes	Please select		
A388 (Airbus 380-800)	<2.0%	No	No	<2.0%	Fuel Mgt Dept - Bern. Device maintenance reports
		Please select	Please select		
		Please select	Please select		
		Please select	Please select		

Please continue on a separate sheet if required.

**(b) Please identify the main sources of uncertainty and their associated levels of uncertainty for your fuel consumption measurements.**

*You are not required to carry out a detailed uncertainty assessment, provided that you identify the sources of uncertainties and their associated levels of uncertainty. Uncertainties for other components than those listed in 7(a) may be based on conservative expert judgement.*

Source of uncertainty	Level of uncertainty	Comments on level of uncertainty
Fuel uplift metering	<0.1%	Fuel supplier accuracy standards, with metering devices checked on a 6-monthly basis.
On-board fuel gauges	<2.0%-<5.0%	Typical on-board metering uncertainty, from the review of manufacturer's specifications. For the Boeing 737-330 & 737-500, the uncertainty of <5.0% relates only to the measurement of fuel left in the tanks. For determining the overall uncertainty of fuel usage over a reporting period the uncertainty of the fuel uplift is the dominant factor.
Density measurement	<2.5%	Assessed by the supplier from the tolerance of the hydrometer.

Please continue on a separate sheet if required.

**(c) Please provide details about the uncertainty threshold you intend to meet for each source stream (fuel type).**

*For each source stream (fuel type), specify the estimated annual CO2 emission from the source stream, whether the source stream is considered to be a major, minor or de minimis source and the corresponding measurement uncertainty threshold (representing the maximum measurement uncertainty during the monitoring year) you will meet.*

*Please use the blank fields in column C to name any alternative and/or biofuels which you will use. State the estimated fossil CO2 emissions arising from each listed fuel type, in order to provide evidence for the correct tier choice. Please ensure that the total emissions are consistent with the answer given in section 4(g)*

	Source stream (Fuel type)	Estimated annual fossil CO2 emission	% CO2 emission	Source stream classification	Fuel consumption uncertainty threshold	Tier
Std Fuels	Jet kerosene (Jet A1 or Jet A)	2396000	98.1%	Major	<2.5%	Tier 2
	Jet gasoline (Jet B)	34050	1.4%	Minor	<5.0%	Tier 1
	Aviation gasoline (AvGas)		0.0%	Please select	Please select	
Alternative	Alternative X	11200	0.5%	De minimis	n/a	No tier
			0.0%	Please select	Please select	
			0.0%	Please select	Please select	
			0.0%	Please select	Please select	
Biofuels			0.0%	Please select	Please select	
			0.0%	Please select	Please select	
			0.0%	Please select	Please select	
			0.0%	Please select	Please select	

Total for all fuel types: **2441250 100%**  
 Estimate given under section 4(g): **2441250**  
 Difference: **0 0%**

**(d) Complete the following table with information about the procedure to ensure that the total uncertainty of fuel measurements will comply with the requirements of the selected tier.**

*The procedure must demonstrate that the uncertainty of fuel measurements will comply with the requirements of the selected tier, referring to calibration certificates of measurement systems, national laws, clauses in customer contracts or fuel suppliers' accuracy standards.*

Title of procedure	AE- Uncertainty Check
Reference for procedure	ETS-AEMP-007
Brief description of procedure	The procedure outlines our request to fuel suppliers to provide metering check data for review. For on-board measurement devices manufacturer's specifications are retained on record. Manufacturer's specifications for on-board fuel systems are also checked for 'additional' aircraft types to ensure minimum defined uncertainty is maintained. On-board measurement devices are checked regularly during maintenance cycles and as part of the checks made by the pilot at fuel uplifts.  Errors arising from crew input in to Technical logs (typical errors are missing a zero, etc.) are cross referenced with suppliers invoices uploaded into Fuel-OPS.
Post or department responsible for	Fuel Management Department
Location where records are kept	Server at Head Office
Name of system used (where applicable).	Fuel systems technical data, Technical logs, Fuel-OPS

**(e) Complete the following table with information about the procedure used to ensure regular cross-checks between uplift quantity as provided by invoices and uplift quantity indicated by on-board measurement.**

*Where deviations are observed, corrective actions must be taken in accordance with section 10.3.5 of the Monitoring and Reporting Guidelines.*

Title of procedure	AE- Uplift Cross Checks
Reference for procedure	ETS-AEMP-008
Brief description of procedure	Before each re-fuel the mass of fuel in the tanks are recorded by the on-board devices. The mass fuel uplift is determined by the density and the volume. The mass of fuel after uplift is recorded from the on-board devices. The mass after uplift is checked against (uplift mass from supplier plus + initial on-board fuel reading) and a difference of x% is acceptable. Fuel invoices are used to check fuel slips produced at the time of uplift. If the difference is outside x% then tank dips are taken to determine the fuel on-board.
Post or department responsible for	Fuel Management Department
Location where records are kept	Server at Head Office
Name of system used (where applicable).	Fuel slips, Invoices, Fuel-OPS

## 8 Emission factors

- (a) Please confirm that you will use the following standard emission factors for commercial standard aviation fuels

Type of aviation fuel	Default IPCC value (tonnes CO <sub>2</sub> /tonne fuel)	Confirm
Jet Kerosene	3.15	<input checked="" type="checkbox"/> Yes
Jet Gasoline	3.10	<input checked="" type="checkbox"/> yes
Aviation Gasoline	3.10	<input type="checkbox"/> Yes

- (b) If applicable, please provide a description of the procedure used to determine the emission factors, net calorific values and biomass content of alternative fuels (source streams).

<u>Title of procedure</u>	AE - Fuel Analysis
<u>Reference for procedure</u>	ETS-AEMP-009
<u>Brief description of procedure</u>	The alternative fuel X is tested in accordance with the requirements of Ministry of Defence Standard 91-91 (Turbine Fuel, Aviation Kerosene Type, Jet A1) by the fuel processor. The fuels meet the specifications required for Jet Kerosene and hence the emission factor (EF) and net calorific value (NCV) of Jet Kerosene are applied to Alternative fuel X (i.e. EF 71.5 tCO <sub>2</sub> /TJ; NCV 44.1 (TJ/Gg)). This is an estimation method as the fuel is a deminimis source stream. Fuel specification data sheets are issued by the aerodrome fuel management company for each batch supply.
<u>Post or department responsible for</u>	Fuel Management Department
<u>Location where records are kept</u>	Fuel Management Office
<u>Name of system used (where applicable).</u>	Fuel specification data file

- (c) Please describe the approaches used for sampling batches of alternative fuels, where not using a no-tier estimation.

*For each source, succinctly describe the approach to be used for sampling fuels and materials for the determination of net calorific value for each fuel or material batch*

Source stream (fuel type)	Parameter	Description	conform with Standard (ISO, CEN,...)	Frequency
n/a	Please select			Please select
	Please select			Please select

- (d) Please describe the approaches used to analyse alternative fuels (including biofuels) for the determination of net calorific value, emission factors and biogenic content (as relevant), where not using a no-tier estimation.

*For each source, succinctly describe the approach to be used for analysing fuels and materials for the determination of net calorific value for each fuel or material batch (if applicable to the selected tier).*

Source stream (fuel type)	Parameter	Description	conform with Standard (ISO, CEN,...)	Frequency
n/a	Please select			Please select
	Please select			Please select

- (e) Please provide a list of laboratories used to undertake the analysis and confirm whether the analysis is accredited to ISO17025 or otherwise the quality assurance measures in place, where not using a no-tier estimation.

Name of laboratory	Analytical procedures	Is analysis ISO17025 accredited?	If no, specify quality assurance measures
n/a		Please select	
		Please select	
		Please select	
		Please select	

[<<< Click here to proceed to section 11 "Management Systems" >>>](#)

# SIMPLIFIED CALCULATION OF CO<sub>2</sub> EMISSIONS

## 9 Simplified calculation

You may apply the simplified procedure for the calculation of activity data described in Annex XIV of the MRG if you are a non commercial air transport operator operating either:

- fewer than 243 flights per period of three consecutive four-month periods; or
- flights with total annual emissions lower than 10,000 tonnes per year

(a) Please specify the name and a brief description of the tool used to estimate fuel consumption.

(b) Please confirm that the tool named in 9(a) has been approved by the Commission

*Small emitters may estimate the fuel consumption using tools implemented by Eurocontrol or another relevant organisation, which process all relevant air traffic information such as that available to Eurocontrol. The applicable tools shall only be used if they are approved by the Commission.*

Yes

(c) Please confirm that the following standard emission factors for commercial standard aviation fuels will be used to calculate emissions

Type of aviation fuel	Default IPCC value (tCO <sub>2</sub> /t)	Confirm
Jet Kerosene	3.15	<input type="checkbox"/>
Jet Gasoline	3.10	<input type="checkbox"/>
Aviation Gasoline	3.10	<input type="checkbox"/>

(d) If using an alternative fuel (including biofuel), please outline the proposed emission factor and net calorific value to be used and justify the methodology used.

## 10 Data Gaps

If a Competent Authority, aircraft operator or verifier detects that part of the data used to determine emissions are missing as a result of circumstances beyond the control of the aircraft operator and cannot be determined by an alternative method defined in the monitoring plan, emissions for that flight may be estimated by the operator using tools mentioned in Section 4 of Annex XIV of the Monitoring and Reporting Guidelines. The quantity of emissions for which such approach is used shall be specified in the annual emissions report.

(a) Please specify the name and a brief description of the tool used to estimate fuel consumption when data is missing according to the conditions as outlined above.

Eurocontrol's PAGODA system is used to determine fuel consumption for a flight where fuel data is missing. The system records the aircraft type and flight distance. The system knows of the approximate fuel burn rate per distance flown for the aircraft type and hence can calculate the fuel consumption for each flight. A flight with missing fuel data is flagged on the OPS database as the emissions from these flights has to be specified in the annual report.

(b) Please confirm that the tool named in 10(a) has been approved by the Commission

Yes

(c) Please provide a short description of the methodology to treat data gaps regarding other parameters than fuel consumption, if applicable.

Data gaps can only arise from fuel consumption as standard emission factors are used for the commercial fuels as well as the alternative fuel.

[<<< Click here to proceed to section 11 "Management Systems" >>>](#)

# DESCRIPTION OF PROCEDURES FOR DATA ACQUISITION, HANDLING ACTIVITIES AND CONTROL ACTIVITIES

## 11 Management

**(a) Please identify the responsibilities for monitoring and reporting (MRG Section 10.3)**

Please identify the relevant job titles/posts and provide a succinct summary of their role relevant to monitoring and reporting. Only those with overall responsibility and other key roles should be listed below (i.e. do not include delegated responsibilities)

Job title/post	Responsibilities
Financial Director	Quarterly review on the emissions data. Authorisation of submission of annual emissions report.
DOC Commercial Manager	Quarterly collation of data emissions data from operational departments. Production of annual emissions report. Audit and update of procedures covered by the monitoring plan.
Fleet Management Department	Maintenance of aircraft list
Fuel Management Department	Communications with suppliers and measurement device quality control
Aviation Planning	Flight recording
Finance Department	Fuel recording & checking

**(b) Please provide titles and references for the mandatory quality assurance and control procedures for data gathering, data handling, including maintenance and calibration of measurement equipment. (MRG Section 10.3)**

Please refer to specific management and control procedures and documents where relevant. For example, specific quality or environmental management procedures (MRG 2007 Section 10.2)

Item	Procedure Title and Reference	Is this procedure part of a certified Management System?
The sequence and interaction of data acquisition and handling activities, including methods of calculations and measurements	Handling, calculations and measurements procedures for EUETS (FWJA - EUETS – 001)	No
Risk assessment of the definition and evaluations of the control system	Risk assessment and Control Systems for EUETS (FWJA-EUETS-002)	No
Management of competences for the responsibilities assigned	Personnel Review Procedure (FWJA - HR)	No
Quality assurance of measuring equipment and information technology used	QA of Systems under EUETS (FWJA-EUETS-003)	No
Internal reviews of reported data	Quarterly Review of EUETS Data (FWJA-EUETS-004)	No
Outsourced processes	Supplier Systems and Data for EUETS (FWJA-EUETS-005)	No
Corrections and corrective action	Corrective actions systems for EUETS (FWJA-EUETS-006)	No
Records and documentation	Recording Systems for EUETS (FWJA-EUETS-007)	No

**(c) Does your organisation have a documented environmental management system? Please choose the most relevant response.**

Documented environmental management system in place, but not certified

**(d) If the Environmental Management System is certified by an accredited organisation, please specify to which standard e.g. ISO 14001, EMAS, etc.**

n/a

**(e) Please attach a representation of the data flow for the calculation of annual emissions data, including responsibility for retrieving and storing each type of data. If necessary, please refer to additional information, submitted with your completed plan.**

Please reference the file/document attached to your monitoring plan in the box below.

Data Flow Charts.ppt

## 12 List of definitions and abbreviations used

**(a) Please list any abbreviations, acronyms or definitions that you have used in completing this monitoring plan**

Abbreviation	Definition
DOC	Direct Operating Costs
OPS	Operational Platform & Database
CRCO	Eurocontrol Central Route Charges Office
Fuel-OPS	Financial System used for fuel invoice storage
Technical log	Technical log produced by the crew fro each flight

## 13 Additional information

- (a) **If you are providing any other information that you wish us to take into account in considering your plan, tell us here. Please provide this information in an electronic format wherever possible. You can provide information as Microsoft Word, Excel, or Adobe Acrobat formats.**

*You are advised to avoid supplying non-relevant information as it can slow down the approval. Additional documentation provided should be clearly referenced, and the file name / reference number provided below. If needed, check with your competent authority if other file formats than the ones mentioned above are acceptable.*

*Please provide file name(s) (if in an electronic format) or document reference number(s) (if hard copy) below:*

<b>File name/Reference</b>	<b>Document description</b>
Data Flow Charts	Representation of the data flow for the calculation of annual emissions