

# AEM Plan Form

Help

This document is an example of the level of information that is expected when applying for a Phase 3 Annual Emissions Monitoring Plan (AEM plan) . This plan is an example of an application made by a operator that is NOT using the Simplified Approach. Please note the information contained in each section of this form is an example of the information expected from large operators using the complex approach. We expect that operators will need to modify and amend each section to reflect their operations and procedures accordingly.

EU  
and

report their emissions, and have the reports verified by an independent and accredited verifier.  
All **\*\*New\*\*** information to meet MRR Requirements is boxed in Blue. This is additional information that is required over and above that copied from the Phase 2 monitoring plan.

2. The Monitoring and Reporting Regulation (Commission Regulation (2012) 601/EU) (hereinafter the "MRR"), defines further requirements for monitoring and reporting. The MRR can be downloaded from: [http://ec.europa.eu/clima/news/articles/news\\_2011121401\\_en.htm](http://ec.europa.eu/clima/news/articles/news_2011121401_en.htm)

Article 12 of the MRR sets out specific requirements for the content and submission of the monitoring plan and its updates. Article 12 outlines the importance of the Monitoring plan as follows:

*The monitoring plan shall consist of a detailed, complete and transparent documentation of the monitoring methodology of a specific installation [or aircraft operator] and shall contain at least the elements laid down in Annex I.*

Furthermore, Article 74(1) states:

*Member States may require the operator and aircraft operator to use electronic templates or specific file formats for submission of monitoring plans and changes to the monitoring plan, as well as for submission of annual emissions reports, tonne-kilometre data reports, verification reports and improvement reports. Those templates or file format specifications established by the Member States shall, at least, contain the information contained in electronic templates or file format specifications published by the Commission.*

This form has been designed to incorporate the requirements for the minimum content of monitoring plans defined in Annex I of the MRR plus requirements to assist the operator in demonstrating compliance with the MRR.

3. All Commission guidance documents on the Monitoring and Reporting Regulation will be published at the link below as they become available:  
[http://ec.europa.eu/clima/policies/ets/monitoring/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/monitoring/index_en.htm)

## Information sources:

### EU Websites:

EU-Legislation: <http://eur-lex.europa.eu/en/index.htm>

EU ETS general: [http://ec.europa.eu/clima/policies/ets/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/index_en.htm)

Monitoring and Reporting in the EU ETS: [http://ec.europa.eu/clima/policies/ets/monitoring/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/monitoring/index_en.htm)

### Competent Authority Websites:

[www.environment-agency.gov.uk/emissionstrading](http://www.environment-agency.gov.uk/emissionstrading)

[http://www.sepa.org.uk/climate\\_change/solutions/eu\\_emissions\\_trading\\_system.aspx](http://www.sepa.org.uk/climate_change/solutions/eu_emissions_trading_system.aspx)

<http://www.doeni.gov.uk/niea/pollution-home/emissionstrading.htm>

### Competent Authority Contacts:

[euetsphase3help@environment-agency.gov.uk](mailto:euetsphase3help@environment-agency.gov.uk) (prior to 01/01/2013)

[ethelp@environment-agency.gov.uk](mailto:ethelp@environment-agency.gov.uk)

[emission.trading@sepa.org.uk](mailto:emission.trading@sepa.org.uk)

[emissions.trading@doeni.gov.uk](mailto:emissions.trading@doeni.gov.uk)

## Identification Of The Aircraft Operator And Description

### Identification

Aircraft Operator Name

Test Airways plc

Unique Identifier as it appears on the Commission list

98765

Operator Name as it appears on the Commission list

Test Airways plc

Do you specify an ICAO designator in the call sign used for Air Traffic Control purposes?

Yes

Please specify unique ICAO designators used as call signs for Air Traffic Control purposes

TST

Please state the name of the legal entity performing the aviation activity.

The CRCO code and the name of the operator as it appears on the Commission's List is automatically populated by the system and is read-only.

### Air Operating Certificate Details

Do you hold an Air Operating Certificate?

Yes

Please enter the AOC number

AOC123562

Please enter the name of the issuing authority

United Kingdom - Civil Aviation Authority

### Operating License Details

Do you hold an Operating License?

Yes

Please enter the Operator License reference number

OL562312

Please enter the name of the issuing authority

United Kingdom - Civil Aviation Authority

### Organisation Structure

Please select the the legal status of the organisation

Company / Limited Liability Partnership Details

## Company / Limited Liability Partnership Details

Please enter the Company name and address details. Click the Refresh button to update the company name to the name provided above

Company Name	<input type="text" value="Test Airways plc"/>
Address Line 1	<input type="text" value="75 Jet Avenue"/>
Address Line 2	<input type="text"/>
City	<input type="text" value="Jet City"/>
State/Province/Region	<input type="text"/>
Postcode/Zip	<input type="text" value="JC12 3TS"/>
Country	<input type="text" value="United Kingdom"/>
Email ID	<input type="text" value="test.airways@plc.com"/>
Telephone Number	<input type="text" value="01925 123 456"/>
Company Registration Number	<input type="text" value="CR123654"/>

Company or contact email address.

This should be your unique company registration number that identifies the company. E.g. in the USA this might be the IRS Tax Number.

Are the registered company details different from the details provided above?

No

Does the aircraft operator belong to a parent / holding company?

No

Does the aircraft operator have any subsidiary companies

No

## Description of Annex I Activities undertaken by the aircraft operator

Are you a commercial or non-commercial operator?

Please provide a copy of your Air Operator Certificate (AOC) or our commercial status.

Please attach a copy of your AOC or equivalent indicating your "commercial" status.

Evidence of commercial status

Do you carry out scheduled flights, non-scheduled flights or both scheduled flights and non-scheduled flights?

Scheduled and non-scheduled flights

Does the scope of the aviation activities undertaken, include only EU countries, or EU and non-EU countries?

Flights inside and outside the EU

Please provide a succinct description of your aviation operations.

Please provide further description of your activities as necessary

Test Airways plc operates short, medium and long-haul flights to and from domestic and international airports. All flights are for taking individuals to destinations on a commercial basis. We also transport freight or mail. For the majority of flights we operate, the aircraft used are owned by Test Airways plc. An aircraft may be leased on a short-term basis when required.

**Service Contact**

**Service Contact**

Title Mr  
 First Name James  
 Surname T Kirk  
 E-mail Address James.Kirk@USS.com  
 Address Line 1  
 Address Line 2  
 City  
 State/Province/Region  
 Postcode/Zip  
 Country

Ideally the service contact should be the company/ corporate secretary or clerk.

The Service Contact information will be pre-populated with the details that you have stated on the 'Organisation Details' page in your account

Please select your aircraft types and sub-types using the drop-down selections in ETSWAP. Please update these lists to reflect your current fleet.

**Emission Sources And Fleet Characteristics**

**Aircraft Types**

Please provide a list of the aircraft types performing your aviation activities 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. You may use the second column to further specify sub-types of that aircraft type, if relevant for defining the monitoring methodology. This can be useful e.g. if there are different types of on-board measurement systems, different data transmission systems (e.g. ACARS) etc.

Generic Aircraft Type	Comments	Number of Aircraft	Jet Kerosene	Jet Gasoline	Aviation Gasoline	Alternative	Biofuel
B753 - BOEING 757-300		5	✓				
B738 - BOEING 737-800		5	✓				

Please provide an indicative list of additional aircraft types expected to be used. This list should not include any of the aircraft listed in the table above. Where available, please also provide an estimated number of aircraft per type, either as a number or an indicative range.

Generic Aircraft Type	Comments	Number of Aircraft	Jet Kerosene	Jet Gasoline	Aviation Gasoline	Alternative	Biofuel
B744 - BOEING 747-400 (international, winglets)	Will be delivered to fleet early 2013	2	✓				

**Procedures**

**List of emission sources (aircraft used)**

The three procedures below are examples of the text an operator could use to detail how they will monitor their emissions. The procedures cover the following areas.

- Procedures used to determine the completeness of the list of aircraft including additional aircraft types.
- Procedures used to determine the completeness of the list of flights.
- Procedures for determining whether flights are covered by Annex I of the EU ETS Directive.

Title of procedure

AE - Asset / Lease List

Reference for procedure

ETS - 001

Brief description of procedure

An asset list is kept within our financial records. This list identifies the aircraft owned over the monitoring period, identifying the type of aircraft and its registration marking. Any leased-in aircraft are recorded within our invoicing system, identifying the type and registration marking of the aircraft and lease periods (including start and end dates). The asset list is reviewed by the Fleet Co-ordinator periodically throughout the monitoring period to ensure that it is accurate and up to date.

Key risks: aircraft not completely recorded. Human error when transcribing data to the technical log.

Control Activity: Aircraft identified within the finance and invoicing systems are referenced against details contained in each flight's technical log and against records produced by Eurocontrol on flights undertaken over the monitoring period.

Post or department responsible for data maintenance

Fleet Co-ordinator

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Invoicing system, Asset records

Please ensure that relevant Key Risks and Control Activities are included in each section.

This title is an example, you can use this if you wish or create your own titles. Please note each procedure title should be different and relevant to that procedure.

This could be a database, spreadsheet or application.

Insert name of office location and address

## Completeness of the List of Flights

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.

Title of procedure

AE - Flight Recording

Reference for procedure

ETS - 002

Brief description of procedure

The procedure identifies that the Operations and Scheduling department uploads a forecasted flight schedule into the Test Airways database. If changes happen the department will then change the information in the system. The flight information that is stored in system are: date, flight number, type of flight, aerodrome of departure and arrival (by ICAO code), number of passengers onboard (by passenger type).

The completed flight data is transferred to the system either by ACARS where equipped, or from information supplied to the department in technical logs.

Key risks: Flights operated under Test Airways ICAO designator are not captured by the system. Loss of technical logs or manual input errors.

Control activities: The procedure outlines the method for checking the completeness of the list by cross-referencing information stored on Eurocontrols CRCO database and invoices. All discrepancies are investigated and the outcomes documented.

Post or department responsible for data maintenance

Operations Control/Scheduling

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Flightforce database

## Flights are Covered by Annex I

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 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.

Title of procedure

AE- Annex 1 Flight Recording

Reference for procedure

ETS - 003

Brief description of procedure

Dispatch will cross-check whether the departure or the arrival of a flight is located in the EU. If they are captured the city-pair will be identified as part of ETS reporting. Annex 1 exemptions, as identified in the flight plan, these are also stored in Test Airways database. Reports can be generated that show included and excluded flights. The excluded flights are filtered out by the database by pre-programmed exemption codes.

Key risks: Type of flight is incorrectly marked in Test Airways database leading to an exclusion of a flight that does not fall under the annex 1 exemptions.

Control activities: There are specific guidelines for our pilots of when to apply a 'special' flight flag. Random checks are undertaken on the special flag inputs as well as cross-checks with data from Eurocontrols CRCO.

Post or department responsible for data maintenance

Operations Control/Scheduling

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Flightforce database

## Eligibility for simplified procedures for small emitters

Please confirm whether you operate fewer than 243 flights per period for three consecutive four-month periods; or operate flights with total annual fossil CO<sub>2</sub> emissions lower than 25 000 tonnes per year?

No

In Phase 3 of EU-ETS the threshold for eligibility to use a simplified approach has been increased from 10,000 to 25,000 tonnes CO<sub>2</sub> per year. As a result you may wish to reconsider your monitoring approach.

## Calculation Of CO2 Emissions

### Activity data

Please specify the methodology used to measure fuel consumption for each aircraft type.

**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)

In each case, the method chosen should provide for the most complete and timely data combined with the lowest uncertainty without incurring unreasonable costs. Note that aircraft types are automatically taken from the Operations section.

Generic aircraft type (ICAO aircraft type designator) and sub-type	Method (A/B)	Data source used to determine fuel uplift	Methods for transmitting, storing and retrieving data
B753 - BOEING 757-300	Method A	On-board measuring equipment	Transmitted electronically from aircraft to operator
B738 - BOEING 737-800	Method A	On-board measuring equipment	Transmitted electronically from aircraft to operator
B744 - BOEING 747-400 (international, winglets)	Method A	As measured by fuel supplier	Recorded in aircraft technical log

### Monitoring Methodology for Additional Aircraft types

Please provide details about the procedure to be used for defining the monitoring methodology for 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, a defined procedure is needed to ensure that any additional aircraft that are expected to be used (e.g. those listed in the indicative aircraft table in the Aircraft Types section) will be properly monitored as well. The items specified below should ensure that a monitoring methodology is defined for any aircraft type operated.



Title of procedure

AE - Monitoring Methodology

Reference for procedure

ETS - 004

Brief description of procedure

This procedure outlines the assessment process for the determination of fuel monitoring methodology to be used for existing and additional aircraft types. The fleet co-ordinator will notify the EU ETS Manager of an impending new aircraft type. Fuel consumption will be determined by method A, using fuel uplift and density measured by the supplier or on-board systems, unless upon review another methodology will generate more reliable and accurate data. The review is undertaken by the EU ETS 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 in the scheduling database. The method for transmitting fuel data will be a combination of manual process of data input from the technical logs or ACARs transmission depending on aircraft type . The EU ETS Manager will inform the Regulator if a change to the plan is required.

Post or department responsible for data maintenance

EU ETS Manager

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Operational database

## Monitor Fuel Consumption per flight

Complete the following fields 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

Fuel Consumption Recording

Reference for procedure

ETS - 005

Brief description of procedure

For the 747 the fuel supplier slips records initial tank quantities, uplift quantities from supplier and final tank quantities after uplift. This data is transferred to the technical log and is checked by the pilot using the on-board measuring systems before take-off. Uplift quantities are checked again pre- and post uplift tank quantities and any discrepancies are 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.

For 737 and 757's fuel uplifts are determined by the on-board systems. The systems measure mass directly in the tanks pre- and post fuel uplift. The uplift measured by the on-board system is checked with that provided on the fuel supplier slip. Any inconsistencies are observed, further steps are taken as described in the aircraft safety manual.

Both leased-in and owned aircraft are treated in exactly the same manner. We ensure leased-in aircraft follow our own monitoring procedures, with data flows linking in with our existing systems.

Transmission of data: Fuel readings from the Technical Logs are transferred to the Fuel Management Department. The Department then records the data from the technical logs into the database. For 737 and 757 aircraft the uplift and fuel in tank data is transferred the Flightforce database via ACARS.

Key risks: Fuel consumption data is not correct or incomplete/incorrect data in the Technical logs.

Control Activities: 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.

Post or department responsible for data maintenance

Fuel Management Department

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Operational database

## Fuel Density

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) and sub-type	Method to determine actual density values of fuel uplifts	Method to determine actual density values of fuel in tanks	Justification or other remarks
B753 - BOEING 757-300	Actual density in aircraft tanks	Actual density in aircraft tanks	
B738 - BOEING 737-800	Actual density in aircraft tanks	Actual density in aircraft tanks	
B744 - BOEING 747-400 (international, winglets)	Actual density of fuel uplift	Actual density in aircraft tanks	

Complete the following fields 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, applying the standard value.

Title of procedure

AE - Definition of density

Reference for procedure

ETS - 006

Brief description of procedure

Depending on the aircraft type, density of the fuel uplifted is measured either by the supplier or by the on-board systems

Where actual density is provided by the supplier, measurement is made by a hydrometer device. The density information is recorded on the fuel slips and in the technical logs as it is used by the pilot to calculate mass of uplift. As with fuel uplifts, the data is transmitted to the Flight Management Department. Where the actual fuel density is not available the standard density of 0.8kg/l will be used.

Where on-board systems are used to measure uplifts, the on-board equipment automatically makes the conversion from litres to kilograms. As mention previously, the fuel mass is sent to the flightforce database via ACARS.

For leased in aircraft the procedure is the same.

To improve on this procedure such that it will meet MRR requirements, we are currently negotiating with fuel suppliers in to ensure that an actual fuel density is supplied at all aerodromes.

Post or department responsible for data maintenance

Fuel Management Department

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Operational database

The MRR requires an operator to identify the method of determining density of fuel in the aircraft fuel tanks.

## Deviations

If applicable, 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
Use of Standard density	Fuel supplier cannot supply actual density. We are working with the suppliers to provide a measured density figure.	XYZZ AABB

## Uncertainty Assessment

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 other than an estimate of the uncertainty of the measurement of fuel remaining in the tank.

Where fuel uplifts are determined by on-board systems, uncertainty values should be taken from equipment manufacturer's specification. An estimate using the ranges in the drop-down list should be used only if more precise values are not available.

Generic aircraft type (ICAO aircraft type designator) and sub-type	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?	Measurement equipment uncertainty (+/-%)	Location of evidence of routine checks of fuel measurement systems
B753 - BOEING 757-300	2.30	No	2.30	On-board systems check during routine maintenance and with supplier uplift checks. Maintenance dept and operational database
B738 - BOEING 737-800	2.00	No	2.00	On-board systems check during routine maintenance and with supplier uplift checks. Maintenance dept and operational database
B744 - BOEING 747-400 (international, winglets)	3.00	Yes		

Do you intend to submit a detailed uncertainty assessment?

No

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 above may be based on conservative expert judgement.

Source of uncertainty	Level of Uncertainty (+/-%)	Comments on level of uncertainty
Fuel supplier measurements	0.50	Commercial fuel supplier accuracy standards for fuel mass in kg and for fuel volume in litres
On-board measurement of fuel consumption	2.50	According to manufacturer's specification for the determination of fuel in mass and judgement from aircraft maintenance
Density measurements	3.00	Estimation. We assume that the use of standard density will not result in higher uncertainty

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 CO<sub>2</sub> 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 provide details about the uncertainty threshold you intend to meet for each standard source stream (fuel type) you will be using.

Source Stream Category	Source stream (Fuel type)	Estimated annual fossil CO <sub>2</sub> emissions from fuel (in tonnes)	% of Total Estimated CO <sub>2</sub> Emissions	Source stream classification	Fuel Consumption Uncertainty	Tier Number
Standard fuels	Jet Kerosene (Jet A1 or Jet A)	55,000	100.00	Major	+/- 2.5%	2

Total for all fuel types

55000

Please provide evidence that each source stream meets the overall uncertainty threshold as stipulated in table above. Evidence may be in the form of manufacturer or fuel supplier specifications.

Please reference the file/document attached to your monitoring plan



Please complete the following fields with information about the procedure used 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 (if applicable), national laws, clauses in customer contracts or fuel suppliers' accuracy standards. If components of the measurement system cannot be calibrated, state in the procedure your alternative control activities.

In accordance with Article 12 of the MRR, an operator is required to submit evidence demonstrating compliance with the uncertainty thresholds for each source stream (in this example  $\pm 2.5\%$  for Jet Kerosene). This evidence could be in the form of an uncertainty assessment or instrument specifications and the results of checks performed on these instruments.

Title of procedure

AE - Uncertainty of fuel measurements

Reference for procedure

ETS - 007

Brief description of procedure

To ensure that the fuel uplift as measured by fuel suppliers meets the required uncertainty we have special clauses in fuel supply contracts. In addition we request fuel suppliers to provide metering check data for review.

Manufacturer's specifications are retained on record for on-board measurement devices. Manufacturers specifications for on-board fuel systems are also checked for leased aircraft types to ensure the minimum defined uncertainty is maintained. On-board measurement devices are checked regularly during maintenance cycles and as part of the checks made by the pilots at fuel uplifts.

Errors arising from crew input into Technical logs are cross referenced with fuel suppliers invoices.

Post or department responsible for data maintenance

EU ETS Manager

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Maintenance recording system/Operational database

Please complete the following fields 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 Article 63 of the MRR.

Title of procedure

AE - Fuel uplift cross-checks

Reference for procedure

ETS - 008

Brief description of procedure

Mandatory checks are made at every refuel to ensure the accuracy of as per Flight Operations Procedure. Where the uplift is determined by on-board systems, the mass of fuel uplift is checked against the suppliers volume and the fuel density. Where the uplift data used for determining flight consumption is taken from the supplier, the on-board systems are used as a means of verifying the supplier uplift. The difference between the two sources of uplift data is checked against allowable tolerances in the relevant type specific Crew Operations Manual. If the difference is outside the allowable tolerance then Engineering is required to perform an independent aircraft tank "dip check" to verify the fuel on-board.

Further cross-checks are performed between invoices and fuel uplift as stored in Operational database (from on-board measurements). Such cross-checks are done regularly through random samples, covering all suppliers and aircraft.

Post or department responsible for data maintenance

Pilots, Fuel Management Department

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Technical logs, Operational database

## Emission Factors

Please confirm that you will use the following standard emission factors for commercial standard aviation fuels

Jet Kerosene (Jet A1 or Jet A) at 3.15 tCO<sub>2</sub>/t fuel

Confirm

Jet Gasoline (Jet B) at 3.10 tCO<sub>2</sub>/t fuel

Confirm

Aviation Gasoline (AvGas) at 3.10 tCO<sub>2</sub>/t fuel

Confirm

If you have identified the use of alternative fuels and/or biofuels, additional sections are presented requiring information on your procedures used to determine the biogenic content, Net Calorific Value (NCV) and Emission Factor of the fuel stream.

## Data Gaps

Where data relevant for the determination of an aircraft operator's emissions are missing, the aircraft operator shall use surrogate data calculated in accordance with an alternative method approved by the competent authority. The reasons why the data gap methodology has been applied and the quantity of emissions for which such approach is used shall be specified in the annual emissions report.

Please provide a brief description of the method to be used to estimate fuel consumption when data is missing according to the conditions as outlined above.

Where post-flight data is missing or inconsistent, a conservative estimate of fuel will be determined. This estimate will be based on historical data for flights undertaken by the same aircraft type between the same routes, aerodrome pairs and with a similar payload.

Where surrogate data cannot be determined by the method described above, the emissions may be estimated from fuel consumption determined using a tool as specified in Article 54(2) of the MRR. Please specify the Commission approval tool used in this instance:

Small Emitters Tool - Eurocontrol's fuel consumption estimation tool

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

N/a

When data used in the alternative method is not available, the operator may estimate fuel consumption using a Commission Approved Tool.

Article 65 of the MRR requires an operator to use an appropriate estimation method to determine emissions where data for a parameter is missing. This method must lead to a conservative estimate of emissions and must NOT be the Commission approved Small Emitter Tool.

## Description Of Procedures For Data Management And Control Activities

Please identify the responsibilities for monitoring

Please identify the relevant job titles/posts and responsibilities for monitoring and reporting. Only those with overall (i.e. do not include delegated responsibilities)

As a minimum please identify the main personnel responsible for collating and reporting EU-ETS data for the Annual Emissions Report. This must include a brief description of responsibilities. This is to be expanded upon in "Assessment of Responsibilities of Procedure".

Job Title / Post	Responsibilities
Manager EU ETS Reporting	Review completeness of Annual Emissions report and submission of report to competent authority. Review of monitoring plan and request updates when necessary.
Fuel Management Department	Transferring data from technical log into the database. Fuel invoice checking and communication with fuel suppliers
Fleet Management Coordinator	Maintenance of aircraft fleet list
Operations Control/Scheduling Development	Manage flight scheduling and recording
Finance Department	Manage cross-checking and payment of Eurocontrol Flight Charges

If you wish, you may attach a tree diagram or organisational chart outlining these roles.



**\*\*New\*\*** This example outlines the type and level of information required to demonstrate to the Regulator that you have adequate data management and control procedures to meet the MRR requirements.

Please provide details about the procedure for managing the assignment of responsibilities and competences of personnel responsible for monitoring and reporting, in accordance with Article 58(3)(c) of the MRR. This procedure should identify how the monitoring and reporting responsibilities for the roles identified above are assigned, how training and reviews are undertaken and how duties are segregated such that all relevant data is confirmed by a person not involved with the recording and collection of the data.

Title of procedure

Assignment of staff to EU-ETS

Reference for procedure

DMCA - 001

These sections must include a relevant title and procedure. The references should be sequential and different to those used in the "Emissions Sources & Fleet Characteristics"

Brief description of procedure

This procedure identifies the assignment of monitoring and reporting responsibilities for EU-ETS based on existing roles within our organisation. The assignment of roles is allocated such that the Manager for EU ETS Reporting confirms all monitoring information recorded is by different individuals and departments ensure there is no conflict in responsibilities. This allows for the checking of data to be undertaken by a person not involved in collating the data.

Training of all personnel involved with obtaining and collating of data relating to monitoring and reporting of emissions is recorded. The ability of personnel to perform the required tasks together with internal performance reviews are recorded in personnel files. Job descriptions document the responsibilities for each person involved with monitoring and reporting.

Post or department responsible for data maintenance

Manager EU ETS Reporting

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Quality Management System

**Monitoring Plan Appropriateness Procedure**

Please provide details about the procedure for regular evaluation of the monitoring plan's appropriateness, covering in particular any potential measures for the improvement of the monitoring methodology. This procedure must identify the process of regularly checking to ensure that the monitoring plan reflects the nature of the operation and that it conforms with the Monitoring and Reporting Regulation. The brief description should identify how regular the plan is evaluated, dependent on the nature of the operation and how changes identified from internal reviews and verification visits are communicated to the Competent Authority.

Title of procedure

Improvement Process for EU-ETS

Reference for procedure

DMCA - 002

Brief description of procedure

In accordance with our audit schedule we review our data and processes on a quarterly basis. Where a review highlights a need to amend our procedures or monitoring methodology, we notify the Regulator of the need to amend our plan or identify a temporary change, via ETSWAP. As part of the report verification process our third party verifier also audits our systems. If improvements are identified, these are acted upon by the regulatory process of the submission of an improvement report to the Regulator and addressing the improvements.

Post or department responsible for data maintenance

EU ETS Manager

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Quality Management System



## Data flow activities

Where a number of procedures are used, please provide details of an overarching procedure which covers the main steps of data flow activities along with a diagram showing how the data management procedures link together (please reference this diagram below and include when submitting your monitoring plan). Alternatively please provide details of additional relevant procedures on a separate sheet.

Under "Description of the relevant processing steps", please identify each step in the data flow from primary data to annual emissions which reflect the sequence and interaction between data flow activities and include the formulas and data used to determine emissions from the primary data. Include details of any relevant electronic data processing and storage systems and other inputs (including manual inputs) and confirm how outputs of data flow activities are recorded.

Title of procedure

Data Flow Process for EU-ETS

Reference for procedure

DMCA - 003

Diagram reference

Test Airways Data Flow Diagram

Brief description of procedure. The description should cover the essential parameters and operations performed

We have number of primary data sources used for the calculation of emissions. These are: fuel data from on-board systems, supplier uplift data (at uplift and in the form of fuel invoices); the number of EU ETS flights performed during the monitoring period primary data sources and the Commissions Approved Small Emitter Tool, the latter being used for data gaps, where applicable.

The fuel data is stored in the operational database, which is populated either manually or automatically depending on the source of fuel data. "Flightforce" database stores flight schedules and completed flights. This database runs reports for the purpose of emissions reporting, matching fuel data from the operational database with completed EU ETS flights. The companies fleet list are stored separately, with the aircraft type and registration performing flights also being recorded in "Flightforce".

Post or department responsible for the procedure and for any data generated

EU ETS Manager

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of IT system used

Flightforce and Operational databases

List of EN or other standards applied

N/a

List of primary data sources

Technical Logs, Fuel invoices, ACARS data transfer, Flight schedules, Asset Lists

Description of the relevant processing steps for each specific data flow activity

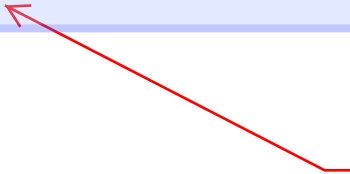
Fuel in the tanks and fuel uplifts are recorded at the appropriate points for each flight in accordance with Method A. Depending on the aircraft the data is transferred to the operational database either by automatic ACARS transfer or manually inputted by the fuel department team via data from technical logs. The technical logs are produced by the pilots. The Fuel Department reconcile the data against supplier receipts and invoices.

Completed flight data is transferred to "Flightforce" in the same way, either by ACARS or manual input from technical logs. A report in this system interrogates the fuel data in the operational data in order to match fuel to flights. This report is run on a quarterly basis, allowing regular review of emissions data for ETS flights. The reports are stored on the shared network in dedicated ETS folders.

The aircraft identified in the report are manually checked against the fleet list held with Fleet Management. Flights are also checked against Eurocontrol CRCO billing data to ensure the data is comparable.

The quarterly report from "Flightforce" is used to compile the emissions report in the Commission template format. Emissions are calculated for each flight as the product of fuel consumption and standard emissions factor. The data is checked for completeness and sense checks are performed. Where fuel data is missing, we flag the emissions as being calculated using our data gaps approach.

Please attach a representation of the data flow for the calculation of emissions, 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.



If there is no change to your data flows please attach the same document that was submitted with your current approved plan.

## Control Activities

Please provide details about the procedures used to assess inherent risks and control risks. The brief description should identify how the assessments of inherent risks ("errors") and control risks ("slips") are undertaken when establishing an effective control system.

Title of procedure

Risk and Control for EU-ETS

Reference for procedure

DMCA - 004

Brief description of procedure

This procedure outlines the areas of risk within data flow activities and the controls in place to mitigate them. The areas identified as the main areas of risk are: human error when maintaining asset lists in our financial records, human error in the manual transfer of flight information and fuel data from the technical flight logs to applicable databases, the loss of ACARS transmission and the incorrect designation of Annex 1 exemptions.

The procedure identifies responsibilities for performing the control activities, which resides with the respective document/database teams, what checks are required and the frequency of the checks. For example when the ETS team run the quarterly report from the 'Flightforce' database, they randomly check a number of entries to ensure that the correct fuel data from the operational database has been assigned to the correct flight. If ACARS data is missing, the procedure identifies what surrogate data is input by the fuel department for the flight the request for IT to investigate the data loss.

The procedure also sets out how the control activities are recorded, which form part of the quarterly review of the data and process.

Over and above checks made by teams, our internal QA department carry out 6-monthly checks on our data flow activities and that we adhere to control activities put in place.

Post or department responsible for data maintenance

EU ETS Manager

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Quality Management System

Please provide details about the procedures used to ensure quality assurance of measuring equipment and information technology used for data flow activities.

The brief description should identify how all relevant measurement equipment is calibrated or checked at regular intervals, if applicable, and how information technology is tested and controlled, including access control, back-up, recovery and security.

Title of procedure

Quality Assurance for EU ETS

Reference for procedure

DMCA - 005

Brief description of procedure

Our procedure identifies that all aircraft on-board systems are checked during routine maintenance to ensure their accuracy is within the manufacturer's specification. Where there is a known fault, for example, as a result of an out of tolerance cross-check with supplier uplift, the aircraft is taken out of service at the earliest opportunity and the fault rectified. Where aircraft are leased, confirmation of on-board system checks and accuracy are requested from the lessee.

Our IT department conduct regular reviews of our IT equipment and Software used for recording and storing primary data and for the programme used to generate emissions report data. The IT department is also responsible for the continuous update of IT security systems. We store Asset lists, Technical Flight Logs and fuel data in a number of databases. These systems are automatically backed up and stored on our Server which is maintained by our IT department. Data Recovery is available through our IT Support

Department.

The emissions report run from the Flightforce database can only be accessed by one of the EU ETS reporting team. The generated report is stored on the server within a secure (password protected) folder. Hard copies of Eurocontrol Billing Data is stored with Finance in a secure office location.

If the Small Emitters Tool is used, the data from the tool is stored in the ETS folder. The tool itself is not stored. We access the the latest version of the tool directly from Eurocontrol's website when required.

Post or department responsible for data maintenance

EU ETS Manager

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Quality Management System

Please provide details about the procedures used to ensure regular internal reviews and validation of data.

The brief description should identify that the review and validation process includes a check on whether data is complete, comparisons with data over previous years, comparison of fuel consumption reported with purchase records and factors obtained for fuel suppliers with international reference factors , if applicable, and criteria for rejecting data.

Title of procedure

Process and Data Reviews and Validation for EU ETS

Reference for procedure

DMCA - 006

Brief description of procedure

Internal reviews of the processes and data are undertaken on a quarterly basis. Reviews are undertaken by all departments involved in the report data collection. During reviews we check that the main sources of data are complete and validated.

The EU ETS aircraft asset list is maintained from two separate sources. Completed flights as recorded in 'Flightforce' are checked against the aircraft contained in the fleet list;

Fuel uplifts are checked at the point of delivery, either by the supplier or the on-board systems, depending on the aircraft type. Post-flight, fuel deliveries whether they were transmitted by ACARS or inputted from technical logs are checked against relevant fuel invoices. Fuel used for same aircraft on same routes are checked for comparability.

Flight records held in 'Flightforce' are reconciled against CRCO invoices and technical logs

Where fuel data is missing and consumption cannot be calculated using our standard method, or there is an error with the stored data and the error cannot be reconciled, consumption for the flight is determined using our data gaps methodology. Where data in the 'Flightforce' does not match with CRCO invoicing, the aircraft lease list is initially reviewed. If internal checks cannot resolve the discrepancy, further information is requested from Eurocontrol.

Decisions reached on discrepancies are highlighted in the quarterly report so that they are auditable by our verifier.

Post or department responsible for data maintenance

EU ETS Manager

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Quality Management System

Please provide details about the procedures used to handle corrections and corrective actions.

The brief description should outline what appropriate actions are undertaken if data flow activities and control activities are found not to function effectively. The procedure should outline how the validity of the outputs are assessed, the process of determining the addressing the cause of the error.

Title of procedure

Corrective Action Procedure for EU ETS

Reference for procedure

DMCA - 007

Brief description of procedure

Where Test Airways identifies errors in data arising from control activity failure with regards to Asset Lists, Flight Recording Data and fuel data, we re-assess our control measures for data collection and adjust them as necessary as part of the quarterly data collection.

The updated control measures effectiveness will be assessed during the successive quarterly review. In the unlikely event of complete data loss, we will contact Eurocontrol to request a copy of the flight data for our CRCO account number providing an updated fleet list for the relevant reporting year to conservatively estimate emissions for all aircraft operating an Annex 1 flight using our data gaps methodology.

Post or department responsible for data maintenance

EU ETS Manager

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

If applicable, please provide details about the procedures used to control outsourced activities. The brief description should identify how data flow activities and control activities of outsourced processes are checked and what checks are undertaken on the quality of the resulting data.

Title of procedure

Outsourced Activities for EU ETS

Reference for procedure

DMCA - 008

Brief description of procedure

This procedure identifies the outsourced activities within the data flow and the control measures in place to ensure that data is captured and that it meets the requirements of the MRR. The only current outsourced process is that of fuel uplifts by our suppliers. We ensure that fuel uplift data is supplied to the crew after uplift for reconciling with on-board systems. This reconciliation is used as a mean of checking the accuracy of the suppliers measured uplifts as well as requesting contractually that supplier measurement systems meet the uncertainty requirements.

Post or department responsible for data maintenance

EU ETS Manager

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Quality Management System

Please provide details about the procedures used to manage record keeping and documentation. The brief description should identify the process of document retention, specifically in relation to the data and information stipulated in Annex IX of the MRR and to how the data is stored such that information is made readily available upon request of the competent authority or verifier.

Title of procedure

EU ETS Documentation and Record Keeping

Reference for procedure

DMCA - 009

Brief description of procedure

Controlled copies of monitoring plan versions, verified reports and where applicable verifier improvement reports are store on our account within the Regulator's online reporting system ETSWAP. This system contains a complete audit trail of plan and report updates. Any copies stored outside of this system are uncontrolled copies.

The procedures and any associated attachments identified in the plan are stored within our quality control management system (QMS). Current and previous versions of these procedures are stored on our shared server within a dedicated ETS folder. This folder is only accessable to persons involved with ETS monitoring and reporting. Results from internal reviews and audits on the data and processes are stored in the same folder.

A sample of supplier fuel receipts and technical logs are retained to demonstrate that fuel data is accurately inputted in to the fuel operational database for audit purposes. The fuel reports can be generated from the system for the purpose of completing the monitoring reports and demonstrating the data held in the system to our verifier.

The fleet list is compiled from our asset list (aircraft owned) and our invoicing system (leased aircraft). These systems are updated on movement of aircraft into and out of our fleet. Changes are date stamped, identifying when changes to our fleet occurred. These two systems are independent. The combined fleet list for ETS purposes is store on a shared server and updated on information provided via our Fleet Management department.

The Aviation Flights Department is the custodian of the "Flightforce" database, which stores scheduled and completed flights. Each flight has a flag which is common to that held in the fuel database. A report can be generated on this system at any time, which imports fuel data from the operational database for completed flights. The report generated from this system is the main source of information used to compile the emissions report. This report can be made available to the Verifier or Regulator.

Electronic data on these systems is retailed for a minimum of 10 years. Paper documents (i.e. fuel slips, technical logs) are retained for 3-months for the purpose of audits and validation.

Post or department responsible for data maintenance

EU ETS Manager

Location where records are kept

Test Airways plc, Operations Department, Jet City

Name of system used

Quality Management System

Please provide the results of a risk assessment that demonstrates that the control activities and procedures are commensurate with the risks identified. Reference the file/document attached to your monitoring plan.



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

Certified environmental management system in place

Is the Environmental Management System certified by an accredited organisation?

Yes

In accordance with Article 12 of the MRR an operator is required to submit results of a risk assessment as evidence that they have identified the risks in data flows and have implemented adequate control measures. The evidence could be a documented risk assessment stored with quality control systems/documents.

If the Environmental Management System is certified by an accredited organisation and the system incorporates procedures relevant to EU ETS monitoring and reporting, please specify to which standard e.g. ISO14001, EMAS, etc.

ISO 14001

### List of Definitions And Abbreviations Used

Please list any abbreviations, acronyms or definitions that you have used in completing this monitoring plan.

Abbreviation	Definition
ICAO	International Civil Aviation Organisation
CRCO	Eurocontrol Central Route Charges Office
ACARS	Aircraft Communications Addressing and Reporting System
QMS	Quality Management System
MRR	Monitoring and Reporting Regulation

### Additional Information

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 and Excel (Office version 2003 or earlier), or Adobe Acrobat portable document format. Please attach the document by clicking the button below and add a description along with the filename to the table.

You are advised to avoid supplying non-relevant information as it can slow down the verification process.

File Name	Document Description
OL-3457-TA	Commercial operating licence

This information is not copied in from your Phase 2 plan. Please attach/re-attach supporting additional information where applicable.

### Confidentiality

## Confidentiality Statement

### **If you are an Operator regulated by the Environment Agency or the Northern Ireland Environment Agency:**

The information submitted in respect of this application will be subject to public access to information requirements, including the Freedom of Information Act 2000 and the Environmental Information Regulations 2004.

If you consider that any information you provide in connection with your application should be treated as commercially confidential, please let us know. Under the Environmental Information Regulations the test is whether there would be an adverse effect on the confidentiality of commercial or industrial information where that confidentiality is protected by law to protect a legitimate economic interest. We are also required to consider whether, taking into consideration the presumption in favour of release of information, the public interest in maintaining the exception outweighs the public interest in disclosing the information. To the extent that the information to be disclosed relates to information on emissions, it cannot be withheld on the grounds of commercial confidentiality.

You should be aware that under the provisions of the Freedom of Information Act 2000 and regulations made under it, the Environment Agency may be obliged to disclose information even where the applicant requests that it is kept confidential.

### **If you are an Operator regulated by the Scottish Environment Protection Agency:**

The information submitted in this form will be subject to public access to information requirements including the Freedom of Information (Scotland) Act 2002 ("the Act") and the Environmental Information (Scotland) Regulations 2004 ("the Regulations"). If you consider that any information you provide in connection with your application should be kept confidential because it is a trade secret or is confidential commercial or industrial information or because its public disclosure would substantially prejudice your commercial interests please let us know. You should be aware however that SEPA may be legally obliged to disclose such information under the Act or the Regulations even when you have requested that it is kept confidential.

Please tick this box if you consider that any part of your form should be treated as commercially confidential/sensitive