



Greenhouse Gas Emissions Permit (with introductory note)

Greenhouse Gas Emissions Trading Scheme Regulations 2012

Operator name(s)

Heathrow Airport Ltd

Installation name

Heathrow Airport Boilers

Site name (if applicable)

Heathrow Airport

Installation address

Heathrow Airport Energy Centre
Sealand Road
Heathrow
Middlesex
TW6 3FD
United Kingdom

Permit number

UK-E-IN-11711

Issued by the Environment Agency

INTRODUCTORY NOTE

This introductory note does not form part of the permit.

This Greenhouse Gas Emissions Permit ("permit") is issued by the Environment Agency ("the regulator"). It authorises the holder to emit the greenhouse gases specified in the permit from the regulated activities listed and is subject to a number of conditions, including the monitoring and reporting of such emissions, the surrender of allowances and notification requirements.

As required by the Regulations, the permit sets out a description of the installation to which it applies. An "installation" includes one or more regulated activities, and any directly associated activities, as defined in the EU ETS Directive. However, the monitoring and reporting requirements of the permit apply only to emissions from the regulated activities. The installation covered by a permit may in fact be part of a larger installation (where different regulated activities in the overall installation, or parts thereof, are operated by different operators).

Allocations of free allowances to installations are set out in the UK's National Implementation Measures document and are issued to operator's registry accounts each year as appropriate. In certain circumstances, operators may also be eligible to apply for an allocation of allowances from the New Entrant Reserve. The permit includes a requirement on the operator to surrender allowances equal to the annual reportable emissions from the installation in a particular year (increased to account for non-surrenders or reporting errors in respect of earlier years), by 30 April in the following year. Allowances may be bought or sold to enable operators to meet their surrender requirements.

Talking to us

If you contact the regulator about this permit, please quote the permit reference number.

You can contact us by e-mail on ethelp@environment-agency.gov.uk.

Variations to the permit

This permit may be varied in the future, on application by the operator (in accordance with the permit conditions) or at the initiative of the regulator. The variation application requirements are set out in the permit conditions and the powers of the regulator to vary permits are set out in the Regulations.

Surrender of the permit

The operator must apply to surrender the permit where it has "ceased operation". The definition of "ceases operation", together with the procedure and requirements are set out in the Regulations.

Transfer of the permit or part of the permit

Before the permit can be wholly or partially transferred to another operator, a joint application to transfer the permit must be made by both the current and new operators. The procedure and requirements are set out in the Regulations.

Appeals

Operators may appeal against the provisions of this permit. The Regulations contain information about the appeals procedure.

Subsistence Charge

Following the issue of the permit, annual subsistence fees will be payable. Fees will also be payable in respect of permit variations (except where the variation relates to minor changes or changes of a purely administrative nature), transfers, surrenders or revocations.

Regulator's Address

Our contact address is as follows:

Email to: ethelp@environment-agency.gov.uk

Status Log

Permit

Permit number	Date application received	Date further information received*	Date Permit issued
UK-E-IN-11711	01 January 2013		01 January 2013

Changes to Permit

Notice number	Change Type	Date application received	Date further information received*	Date Notice issued	Comment
AEMV11 711-1	AEM Variation	22 December 2004		22 December 2004	
AEMV11 711-2	AEM Variation	11 August 2005		11 August 2005	
AEMV11 711-3	AEM Variation	17 February 2006		17 February 2006	
AEMV11 711-3	AEM Variation	17 February 2006		17 February 2006	
AEMV11 711-4	AEM Variation	07 December 2007		07 December 2007	
AEMV11 711-5	AEM Variation	04 August 2009		04 August 2009	
AEMV11 711-5	AEM Variation	04 August 2009		04 August 2009	
AEMV11 711-6	AEM Variation	09 July 2010		09 July 2010	
AEMV11 711-6	AEM Variation	09 July 2010		09 July 2010	

Notice number	Change Type	Date application received	Date further information received*	Date Notice issued	Comment
AEMV11 711-7	AEM Variation	10 January 2012		20 July 2012	<p>1. Remove S13-S15, S22, S27 and S34 from all sections of the permit</p> <p>2. Remove any reference to emission point A09</p> <p>3. Amend all emission point references numbers</p> <p>4. Add Fuel F3 (Wood Pellet)</p> <p>5. Add sources S47-S53 & S54</p> <p>6. Amend the installation and calculation description</p> <p>7. Remove F2 from S44-S45</p>
AEMV11 711-8	AEM Variation	30 August 2012		31 October 2012	<p>1. Amended the installation address.</p> <p>2. Added sources S34, S46, S55, S56 & S57 to the permit.</p> <p>3. Added fuel source F4 to the permit.</p>

* Further information received in response to notices under Schedule 3, paragraph 1(12) of the Regulations.

End of introductory note

PERMIT

Under the Greenhouse Gas Emissions Trading Scheme Regulations 2012

Permit number

UK-E-IN-11711

Consolidation number

11

The Environment Agency ("**the regulator**") in exercise of its powers under the Greenhouse Gas Emissions Trading Scheme Regulations 2012, hereby authorises:

Heathrow Airport Ltd ("**the operator**")

Company Registration Number

1991017

Registered Office Address

The Compass Centre
Nelson Road
Hounslow
Middlesex
TW6 2GW

to carry out regulated activities resulting in greenhouse gas emissions, as described and defined in and subject to the conditions set out in this permit, at:

Installation Name

Heathrow Airport Boilers

Site Name (if applicable)

Heathrow Airport

Installation Address

Heathrow Airport Energy Centre
Sealand Road
Heathrow
Middlesex
TW6 3FD
United Kingdom

National Grid Reference

TQ 07938 74566

PART 1

Scope of permit and of the installation

1. This permit authorises the operator to carry out in the installation the regulated activities listed in Table 1 below.

Regulated activities	Specified emissions
Combustion	Carbon Dioxide

Table 1 Regulated activities carried out in the installation.

2. For the purposes of this permit, the installation is as described in Table 2, as supplemented by any change notified to the regulator in accordance with the permit conditions.

The Installation is the Heathrow Airport site, owned and operated by Heathrow Airport Ltd. The boundary of the installation corresponds to the boundary of the HAL site; it is approximately bounded to the north by the A4 Bath Road, to the east by the settlement of Cranford, to the south by the A30 and the Southern Perimeter Road, and to the west by the A3044 Stanwell Moor Road) Heathrow Airport is a large site of approximately 1,200 hectares. HAL operates the majority of combustion equipment on site however there are also many third parties who operate their own equipment. The installation comprises five main boiler houses which supply heat and hot water throughout the installation, plus many other small combustion units throughout the site. All combustion sources operated by HAL are included within the scope of the installation, and those operated by third parties are excluded. The main fuel source is natural gas with limited quantities of gas oil provided as an alternative fuel. Gas oil is the main fuel for some sources in areas of the site where gas cannot readily be supplied. Biomass (woodchip) is the main fuel for the Heathrow Airport Energy Centre, and wood pellet fuels one smaller boiler on the north perimeter of the airport.

Historically, the Main Emissions sources have been located adjacent to large infrastructure where heat and hot water demand originates. Most recently new infrastructure has been located more remotely from the Terminals, linked by district heat mains.

Boiler House 448 (also referred to as the Central Boiler House) is located in the Central Terminal Area close to Terminal 3 and Terminal 1.

? Terminal 5 Energy Centre is located south of, and adjacent to, Terminal 5.

? Terminal 4 Boiler house is located adjacent to Terminal 4.

? Boiler House 523 is located on the Southern Perimeter Road, close to the Cargo area of the airport.

? The Heathrow Airport Energy Centre is located on the south side of the southern runway to the east of the World Cargo Centre and supplies heat and hot water to both Terminal 2 and Terminal 5 through 2.5 km of district heat main.

Table 2 Description of the installation

PART 2

Conditions

1. The operator must monitor the annual reportable emissions of the installation in accordance with the Monitoring and Reporting Regulation and the monitoring plan (including the written procedures supplementing that plan).
2. The operator must, by 31 March in every year, submit a verified report of its annual reportable emissions made in the previous year to the regulator, in accordance with the Monitoring and Reporting Regulation and the Verification Regulation.
3. The operator must satisfy the regulator, if an emission factor of zero has been reported in respect of the use of bioliquids, that the sustainability criteria set out in Article 17(2) to (5) of the Renewable Energy Directive have been fulfilled in accordance with Article 18(1) of that Directive.
4. The operator must, by 30 April in each year, surrender a number of allowances in the registry equal to the annual reportable emissions of the installation made in the previous year.
5. Where an operator proposes to make a significant modification to its monitoring plan under Article 15, the operator must apply to the regulator for a variation of its permit at least 14 days prior to making the change or, where this is not practicable, as soon as possible thereafter and such application must:
 - (a) include a description of the change; and
 - (b) set out how it affects the information contained in the monitoring plan.
6. Where an operator makes a change to its monitoring plan under Article 14 or 58(4) that is not a significant modification, the operator must notify the regulator by 31 December in the year in which the change occurred and such notification must:
 - (a) include a description of the change;
 - (b) set out how it affects the information contained in the monitoring plan; and
 - (c) explain how the change is in accordance with the Monitoring and Reporting Regulation.
7. Where the name of the operator changes, the operator must apply to the regulator for a variation of its permit in order to reflect the change as soon as practicable following the change.
8. Where the operator does not apply at least the tiers required or applies a fall-back methodology pursuant to the Monitoring and Reporting Regulation, the operator must submit a report to the regulator in accordance with the requirements specified in Article 69(1) by the following deadlines, starting in the case of a new operator with 30 June in the year following that in which the permit is granted and for any other operator, with 30 June 2013:
 - (a) for a category A installation, by 30 June every four years
 - (b) for a category B installation, by 30 June every two years
 - (c) for a category C installation, by 30 June every year
9. Where a verification report states outstanding non-conformities or recommendations for improvements as specified in Article 69(4), the operator must submit a report to the regulator in accordance with the requirements of that Article by 30 June of the year in which the verification report is issued.
10. The operator must notify the regulator in accordance with the Monitoring and Reporting Regulation at least 14 days prior to commencement of any of the circumstances in paragraphs (a) to (d) below or, where this is not practicable, as soon as possible thereafter:
 - (a) where there is a temporary change to its monitoring methodology as specified in Article 23;
 - (b) where tier thresholds are exceeded or equipment is found not to conform to requirements which require corrective action as specified in Article 28(1);
 - (c) where a piece of measurement equipment is out of operation as specified in Article 45; and
 - (d) where an installation with low emissions exceeds the relevant threshold as specified in Article 47(8).

11. Except in the case of installations not eligible for an allocation, where a sub-installation has had a qualifying significant capacity reduction, the operator must, by the later of (a) the end of the period of 7 months following the change of capacity, (b) 31 December in the year in which that change occurred or (c) 1 February 2013 ("the relevant date"), submit a notice to the regulator containing:
 - (a) a statement of the reduced capacity and the installed capacity of the sub-installation after taking into account the capacity reduction; and
 - (b) a statement that the data under paragraph (a) have been verifiedexcept that, where the relevant date is before 30 May 2013, the statement required in (b) above need only be submitted by 30 May 2013.
12. Except in the case of installations not eligible for an allocation, where a sub-installation has had a qualifying partial cessation, the operator must, by the later of (a) 31 December in the year in which the reduction occurred or (b) within one month after the date on which it occurred, notify the regulator that a reduction in activity level has occurred, stating the amount of that reduction and the sub-installation to which it applies.
13. Except in the case of installations not eligible for an allocation, where a sub-installation has had a qualifying partial cessation which occurred during 2012, the operator must, by 1 February 2013, notify the regulator that a reduction in activity level has occurred, stating the amount of that reduction and the sub-installation to which it applies.
14. Unless already notified in accordance with other requirements of this permit, the operator must notify the regulator of any planned or effective changes to the capacity, activity level or operation of the installation by 31 December in the year in which the change was planned or has occurred.
15. The operator must keep records of all relevant data and information in accordance with Article 66.

Part 3

Definitions

- (1) In this permit:
- (a) “allowance” has the meaning given in Article 3a of the Directive but excludes aviation allowances;
 - (b) “annual reportable emissions” means the reportable emissions arising during any year;
 - (c) “aviation allowance” has the meaning given in Article 3a of the Directive but is limited to those allowances allocated in accordance with Article 3e or 3f of the Directive or auctioned in accordance with Article 3d of the Directive;
 - (d) “bioliquids” has the meaning given in Article 2(h) of the Renewable Energy Directive;
 - (e) “category A installation” has the meaning given in Article 19(2) of the Monitoring and Reporting Regulation;
 - (f) “category B installation” has the meaning given in Article 19(2) of the Monitoring and Reporting Regulation;
 - (g) “category C installation” has the meaning given in Article 19(2) of the Monitoring and Reporting Regulation;
 - (h) “the Directive” means Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emissions allowance trading within the Community and amending Council Directive 96/61/EC, as amended from time to time and as adapted by Annex 20 to the EEA agreement;
 - (i) “the Free Allocation Decision” means Commission Decision 2011/278/EU of 27 April 2011 determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC;
 - (j) “installation” means the installation operated by the operator and as described in Part 1 of this permit, as supplemented by any change notified to the regulator in accordance with the conditions of this permit;
 - (k) “installations not eligible for an allocation” means installations that, by virtue of Article 10a(3) of the Directive, are not eligible for an allocation;
 - (l) “the Monitoring and Reporting Regulation” means Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council, as amended from time to time;
 - (m) “monitoring plan” means the plan attached at Annex A, together with any modifications notified to the regulator under condition 6 and includes the written procedures supplementing that plan;
 - (n) “new operator” means the operator of an installation whose permit was granted after 1 January 2013;
 - (o) “operator” means the holder of this permit;
 - (p) “qualifying partial cessation” applies where one sub-installation of an installation which contributes to (a) at least 30% of the final annual amount of allowances allocated to the installation, or (b) the allocation of more than 50,000 allowances, reduces its activity level in a given year by at least 50% compared to the activity level originally used for calculating the sub-installation’s allocation;
 - (q) “qualifying significant capacity reduction” means a significant capacity reduction occurring:
 - i. after 30 June 2011; or
 - ii. on or before 30 June 2011, but the extent of the reduction could not be determined before 30 September 2011;
 - (r) “reduced capacity” has the meaning in Article 3(m) of the Free Allocation Decision;
 - (s) “the Registries Regulation 2011” means Commission Regulation (EU) No 1193/2011 of 18 November 2011 establishing a Union Registry for the trading period commencing on 1 January

2013, and subsequent trading periods, of the Union emissions trading scheme pursuant to Directive 2003/87/EC of the European Parliament and of the Council and Decision 280/2004/EC of the European Parliament and of the Council and amending Commission Regulations (EC) No 2216/2004 and (EU) No 920/2010, as amended from time to time;

- (t) “registry” means the Union Registry established by Article 4 of the Registries Regulation 2011 and which can be accessed at <https://ets-registry.webgate.ec.europa.eu/euregistry/GB/index.xhtml>;
 - (u) “regulated activity” means an activity that is listed in Annex 1 to the Directive;
 - (v) “the Regulations” means the Greenhouse Gas Emissions Trading Scheme Regulations 2012;
 - (w) “the regulator” means the Environment Agency;
 - (x) “the Renewable Energy Directive” means Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC, as amended from time to time;
 - (y) “reportable emissions” means the total emissions of gases specified in Table 1 in Part 1 of this permit (expressed in tonnes of carbon dioxide equivalent) which arise from the regulated activities carried out in the installation;
 - (z) “significant capacity reduction” has the same meaning as in Article 3(j) of the Free Allocation Decision;
 - (aa) “significant modification” has the same meaning as in Article 15 of the Monitoring and Reporting Regulation;
 - (bb) “start of normal operation” has the same meaning as in Article 3(n) of the Free Allocation Decision;
 - (cc) “sub-installation” has the same meaning as in the Free Allocation Decision;
 - (dd) “verified”, for the purposes of condition 11 only, means verified as satisfactory in accordance with Article 8 of the Free Allocation Decision (except that reference to Decision 2007/589/EC in Article 8(3) is to be read as a reference to the Verification Regulation);
 - (ee) “verification report”, for the purposes of condition 9 means a report submitted in accordance with condition 2 of this permit;
 - (ff) “the Verification Regulation” means Commission Regulation (EU) No 600/2012 of 21 June 2012 on the verification of greenhouse gas emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council, as amended from time to time;
 - (gg) “year” means a calendar year commencing on 1 January;
- (2) In this permit, a reference to a numbered Article is to that Article of the Monitoring and Reporting Regulation.
 - (3) When interpreting the provisions of the Monitoring and Reporting Regulation, references to competent authority are to be read as references to the Environment Agency (with the exception of Article 68(3)).
 - (4) Where this permit has been issued following a partial transfer of the permit under the Regulations, “final annual amount of allowances” in relation to the definition of qualifying partial cessation means the amount of allowances transferred to the transferred units authorised by this permit.
 - (5) Where this permit has been issued following a partial transfer of the permit under the Regulations, “initial activity level”, in relation to the definition of qualifying partial cessation, means the activity level used for calculating the sub-installation’s allocation following the partial transfer.
 - (6) For the purposes of condition 4 (surrender of allowances), the amount of annual reportable emissions in relation to a recovery year is deemed to be increased by an amount equal to the amount of annual reportable emissions, arising in a non-compliance year, in respect of which the operator failed to comply with the surrender requirements. For these purposes:
 - (a) a “non-compliance year” is a year in respect of which an operator fails to comply with the surrender requirements; and

- (b) the “recovery year” is (i) the year following that non-compliance year; or (ii) where the non-compliance results from an error in the verified emissions report submitted by the operator under condition 2, the scheme year in which the error is discovered.

Appendix 1 to Greenhouse Gas Emissions Permit Number UK-E-IN-11711

Monitoring Plan

List of environmental licenses related to this installation

Permit number	Type of permit	Permit holder	Competent body
EPR/BQ3789IK	Environmental Permit (PPC) for combustion	Heathrow Airport Ltd	Environment Agency

Estimated Annual Emissions (tonnes CO_{2(e)})

37500

Emission Sources

Summary of emission sources which relate to the regulated activities at the installation.

Emission Source Reference	Emission Source Description
S01	Boiler House 448 boiler 3
S02	Boiler House 448 boiler 4
S03	Boiler House 448 boiler 5
S04	Boiler House 448 boiler 6
S05	T4 Boiler House boiler 1
S06	T4 Boiler House boiler 2
S07	T4 Boiler House boiler 3
S08	T4 Boiler House boiler 4
S09	T4 Boiler House boiler 5
S10	T5 Energy Centre Boiler 1
S11	T5 Energy Centre boiler 2
S12	T5 Energy Centre boiler 3
S30	BMI Hanger boilers
S48	T2B Phase 1 Temporary Energy Centre boilers
S44	Boiler House 523 Main boiler
S45	Boiler House 523 Standby boiler
S16	Heathrow Point West boiler
S18	Boiler House 706 boiler
S21	Heathrow Academy boiler
S24/S25/S26/S28	MT1 Facility boilers
S29	B495 Customs House boiler
S31	B679 Epsom Square boiler
S50	Boiler House 760 biomass boiler
S32	Boiler House 760 boiler
S33	Central Airside Firestation boiler
S35	Aviation House boiler
S36	Airside Safety Department boiler
S37	Heathrow Air Traffic Control Tower boiler
S38	B895 Main Store boiler

Emission Source Reference	Emission Source Description
S39	Airside Emergency Standby Generators
S40	Compass Centre West boilers
S42	Compass Centre Meridian boilers
S51	T4 Coaching Gate boilers
S52	Airside Fire Station East boiler
S54	Landside Emergency Standby generators
S55	Heathrow Airport Energy Centre Biomass boiler
S56	Heathrow Airport Energy Centre boiler 2
S57	Heathrow Airport Energy Centre boiler 3
S58	Compass Centre East boiler
S59	Early baggage store radiant heater
S60	Engineering equipment
S61	Fire Training ground equipment
S53	T4 CIP lounge boilers
S34	Viscount Way boilers

Emission Points

Summary of the emission points which relate to the regulated activities at the installation.

Emission Point Reference	Emission Point Description
A02.1	B448 stack 1
A02.2	B448 stack 2
A02.3	B448 stack 3
A01.1	T4 Boiler House stack 1
A01.2	T4 Boiler House stack 2
A01.3	T4 Boiler House stack 3
A05.1	T5 Energy Centre stack 1
A05.2	T5 Energy Centre stack 2
A05.3	T5 Energy Centre stack 3
A10	Heathrow Point West boiler vent
A11	Boiler House 706 boiler vent
A12	Heathrow Academy boiler vent
A14/A15/A16/A18	MT1 boiler vents
A19	B495 Customs House boiler vent
A04	BMI Hanger boiler vents
A20	B679 Epsom Square boiler vent
A21	Boiler House 760 boilers stack
A22	Central Airside Firestation boiler vent
A23	Aviation House boiler vent
A24	Airside Safety Department boiler vent
A25	Heathrow Air Traffic Control Tower boiler vent
A26	B895 Main Store boiler vent
A33	Airside Emergency Standby Generator exhausts
A27	Compass Centre West boiler vents

Emission Point Reference	Emission Point Description
A28	Compass Centre Meridian boiler vents
A08.1	Boiler house 523 Main Boiler stack
A08.2	B523 Standby boiler stack
A06.1/A06.2	T2B Phase 1 Temporary Energy Centre stacks
A30	Terminal 4 Coaching gate boiler vents
A31	Airside Firestation East boiler vent
A32	Terminal 4 CIP Lounge boiler vents
A34	Landside Emergency Standby Generator exhausts
A09.1	Heathrow Airport Energy Centre Biomass boiler stack 1
A09.1a	Heathrow Airport Energy Centre Biomass boiler emergency vent
A29	Compass Centre East boiler vent
A35	Early baggage store radiant heater emission point
A36	Engineering Equipment emission points
A37	Fire Training Ground emissions
A09.2	Heathrow Airport Energy Centre boiler 2 stack
A09.3	Heathrow Airport Energy Centre boiler 3 stack
A03	Viscount Way boiler vents

Source Streams (fuels and/or materials)

Summary of the source streams used in the regulated activities at the installation.

Source Stream Reference	Source Stream Type	Source Stream Description
F1	Combustion: Other gaseous & liquid fuels	Natural Gas
F2	Combustion: Commercial standard fuels	Gas/Diesel Oil
F3	Combustion: Commercial standard fuels	Liquefied Petroleum Gases
F4	Combustion: Other gaseous & liquid fuels	Acetylene
B1	Combustion: Solid fuels	Biomass - wood pellet
B2	Combustion: Solid fuels	Biomass - wood chip

Technical details of the regulated activities

Source streams (Fuel / Material)	Emission Source Refs.	Emission Point Refs.	Regulated Activity
F1	S01,S02	A02.1,A02.2	Combustion
F2	S01,S02	A02.1,A02.2	Combustion
F3	S60,S61	A36,A37	Combustion
F4	S60	A36	Combustion
B2	S55	A09.1,A09.1a	Combustion
B1	S50	A21	Combustion
F1	S03,S04	A02.3	Combustion
F2	S03,S04	A02.3	Combustion
F1	S05,S06	A01.1,A01.2	Combustion
F1	S07,S08,S09	A01.3	Combustion
F1	S51,S53	A30,A32	Combustion
F1	S10,S11,S12	A05.1,A05.2,A05.3	Combustion

Source streams (Fuel / Material)	Emission Source Refs.	Emission Point Refs.	Regulated Activity
F2	S10,S11,S12	A05.1,A05.2,A05.3	Combustion
F1	S44,S45	A08.1,A08.2	Combustion
F1	S55	A09.1,A09.1a	Combustion
F1	S56,S57	A09.2,A09.3	Combustion
F2	S56,S57	A09.2,A09.3	Combustion
F1	S16,S18,S21,S29	A10,A11,A12,A19	Combustion
F1	S24/S25/S26/S28	A14/A15/A16/A18	Combustion
F1	S40,S42,S58	A27,A28,A29	Combustion
F1	S34	A03	Combustion
F1	S30	A04	Combustion
F1	S59	A35	Combustion
F2	S48	A06.1/A06.2	Combustion
F2	S31,S32,S33,S35,S36,S37,S38	A20,A21,A22,A23,A24,A25,A26	Combustion
F2	S52	A31	Combustion
F2	S39	A33	Combustion
F2	S54	A34	Combustion

Calculation

Approach Description

Natural gas usage/activity data is based on supplier invoices, with a pro rata adjustment to account for invoice dates that do not coincide with the start and/or end of the reporting year. Each supplier invoice is cross checked to actual meter reads by a billing validation company so there is no difference between the meter and invoice reads.

Gas oil usage for the Airside and Landside Emergency Generators is determined from hours run meters, converted to litres based upon an estimated litres per hour usage rate. (Run Hours Closing Read - Run Hours Opening Read)*Unit kVA*(conservative usage rate per kVA per hour).

Other gas oil, and propane usage is based upon purchasing records and an assessment of stock changes. Assessment of propane stock in the tank is an approximation.

Activity data = (Stock levels at start of year - stock levels at end of year) + deliveries.

Wood pellet and Wood chip usage is based upon purchasing records. Both source streams are 100% biomass.

Acetylene usage is based upon purchasing records.

NCV, EF and OxF for all fuels except biomass and acetylene are from the UK Greenhouse Gas inventory. Emissions are calculated as usage x ncv x EF x OxF.

Emissions from acetylene are calculated as usage x stoichiometric fraction carbon x 3.664.

The EF for biomass is zero, as specified in annex VI of the MRR. The ncv is as specified in annex VI of the MRR. The OxF is taken as 1 The energy from biomass is calculated as usage x ncv.

Data are collated into a single spreadsheet from discrete data sources and fuel inventories. Natural gas data is provided monthly, generator run hours data is six monthly, and other reads are open and close for stock levels plus deliveries as they occur.

Measurement Devices

Source Stream Refs.	Emission Source Refs.	Measurement Device Ref.	Type of Measurement Device	Measurement Range	Metering Range Units	Specified Uncertainty (+/- %)	Location
F1	S01,S02,S03,S04	GM01	Rotary meter	unknown	tm3	1.5	Boiler house 448 compound
F1	S01,S02,S03,S04	GM02	Rotary meter	unknown	m3	1.5	Boiler House 448 compound
F1	S05,S06,S07,S08,S09,S51,S53	GM03	Rotary meter	unknown	HCF	2.5	T4 Boiler House
F1	S10,S11,S12	GM04	Rotary meter	unknown	m3	1.5	T5 Energy Centre
F1	S16	GM06	Rotary meter	unknown	HCF	2.5	Heathrow point West
F1	S18	GM08	Bellows meter	unknown	HCF	6	Boiler House 706
F1	S21	GM11	Bellows meter	unknown	HCF	6	Heathrow Academy
F1	S29	GM19	Rotary meter	unknown	m3	2.5	B495 Customs House
F1	S24/S25/S26/S28	GM14	Bellows meter	unknown	HCF	2.5	MT1 Bay 4
F1	S24/S25/S26/S28	GM15	Bellows meter	unknown	HCF	2.5	MT1 Bay 2
F1	S24/S25/S26/S28	GM16	Bellows meter	unknown	HCF	2.5	MT1 Bay 1
F1	S24/S25/S26/S28	GM18	Bellows meter	unknown	HCF	2.5	MT1 Bay 3
F1	S40	GM20	Rotary	unknown	HCF	1.5	Compass Centre West

Source Stream Refs.	Emission Source Refs.	Measurement Device Ref.	Type of Measurement Device	Measurement Range	Metering Range Units	Specified Uncertainty (+/- %)	Location
			meter	n			
F1	S42	GM21	Rotary meter	unknown	m3	1.5	Compass Centre Meridian
F1	S58	GM26	Rotary meter	unknown	HCF	6	Compass Centre East
F1	S30	GM24	Bellows meter	unknown	m3	2.5	BMI Hanger
F1	S44,S45	GM22	Rotary meter	unknown	HCF	1.5	BH523 Gas reception area
F1	S55,S56,S57	GM25	Turbine meter	unknown	m3	1.5	Heathrow Airport Energy Centre
F2	S39	AG1	Hours run	unknown	Hours	n/a	On generator
F2	S54	AG2	Hours run	unknown	Hours	n/a	On generator
F2	S01,S02,S03,S04,S10,S11,S12,S48,S31,S32,S33,S35,S36,S37,S38,S52,S56,S57	Purchase records (DELREF_1/2/3/4/8/9/10/11/13/14/15/16)	Purchase records	N/A	N/A	N/A	BAA Ltd's Business Support Centre, Glasgow
F1	S34	GM23	Bellows meter	Unknown	Unknown	2	Viscount Way
F1	S59	GM27	Bellows meter	Unknown	Unknown	2	Early baggage store
F3	S60,S61	Purchase records (DELREF_LP G1 / DELREF_LPG 2)	Purchase records	N/A	N/A	N/A	BAA Ltd's Business Support Centre, Glasgow
F4	S60	Purchase records (DELREF_AC E1)	Purchase records	N/A	N/A	N/A	BAA Ltd's Business Support Centre, Glasgow
B1	S50	Purchase records (DELREF_BIO 1)	Purchase records	N/A	N/A	N/A	BAA Ltd's Business Support Centre, Glasgow
B2	S55	Purchase records (DELREF_BIO 2)	Purchase records	N/A	N/A	N/A	BAA Ltd's Business Support Centre, Glasgow
F1	S01,S02,S03,S04,S05,S06,S07,S08,S09,S10,S11,S12,S16,S18,S21,S24/S25/S26/S28,S29,S30,S34,S40,S42,S44,S45,S51,S53,S55,S56,S57,S5	Supplier invoices	Supplier invoices	N/A	N/A	N/A	BAA Ltd's Business Support Centre, Glasgow

Source Stream Refs.	Emission Source Refs.	Measurement Device Ref.	Type of Measurement Device	Measurement Range	Metering Range Units	Specified Uncertainty (+/- %)	Location
	8,S59						

Applied tiers

Source Stream Ref.	Emission Source Refs.	Measurement Device Refs.	Activity Data Tier	NCV Tier	Emission Factor Tier	Oxidation Factor Tier	Carbon Content Tier	Conversion Factor Tier	Biomass Fraction Tier
F1	S01,S02,S03,S04,S05,S06,S07,S08,S09,S10,S11,S12,S30,S44,S45,S16,S18,S21,S24/S25/S26/S28,S29,S40,S42,S51,S55,S56,S57,S58,S59,S53,S34	GM01,GM02,GM03,GM04,GM06,GM08,GM11,GM14,GM15,GM16,GM18,GM19,GM20,GM21,GM22,GM23,GM24,GM25,GM26,GM27	4	2a	2a	2	N/A	N/A	N/A
F2	S01,S02,S03,S04,S10,S11,S12,S48,S31,S32,S33,S35,S36,S37,S38,S39,S52,S54,S56,S57	AG1,AG2,Purchase records (DELREF_1/2/3/4/8/9/10/11/13/14/15/16)	No tier	2a	2a	2	N/A	N/A	N/A
F3	S60,S61	Purchase records (DELREF_1/2/3/4/8/9/10/11/13/14/15/16)	No tier	2a	2a	2	N/A	N/A	N/A
F4	S60	Purchase records (DELREF_1/2/3/4/8/9/10/11/13/14/15/16)	No tier	No tier	1	1	N/A	N/A	N/A
B1	S50	Purchase records (DELREF_1/2/3/4/8/9/10/11/13/14/15/16)	2	1	1	1	N/A	N/A	1
B2	S55	Purchase records (DELREF_1/2/3/4/8/9/10/11/13/14/15/16)	2	1	1	1	N/A	N/A	1

Uncertainty Assessment

The table below lists evidence attached that demonstrates compliance with the applied tiers in accordance with Article 12 of the MRR.

Attachment	Description
Uncertainty analysis HAL.xlsx	Uncertainty analysis

Reference sources applied

The table below lists, for each parameter, the reference sources to be used for calculation factors.

Source Stream Refs.	Emission Source Refs.	Parameter	Reference Source	Default Value applied (where appropriate)
F1,F2,F3	S01,S02,S03,S04,S05,S06,S07,S08,S09,S10,S11,S12,S30,S48,S44,S45,S16,S18,S21,S24/S25/S26/S28,S29,S31,S32,S33,S35,S36,S37,S38,S39,S40,S42,S51,S52,S54,S56,S57,S58,S59,S61,S53,S34	NCV, EF, OxF	Data to be taken from the latest UK National Greenhouse Gas Inventory as submitted to the UNFCCC	n/a
F4	S60	Carbon Content	stoichiometry	0.923
B1,B2	S50,S55	NCV	MRR Annex VI, Table 1	n/a
B1,B2	S50,S55	EF	MRR Annex VI, Table 1	0
B1,B2	S50,S55	OxF	MRR Annex II, section 2.3	1
B1,B2	S50,S55	Biomass Fraction	MRR	100%

Management Procedures

Monitoring and Reporting Responsibilities

Responsibilities for monitoring and reporting emissions from the installation are listed below:

Job Title / Post	Responsibilities
Head of Environmental Management	Submission of variations, procedures and assurance of compliance
Environmental Operations Manager	Environment Agency submissions, notifications, communications re EU-ETS
Utility Performance Manager	Overview of combustion assets covered by permit, data, monitoring and reporting, notification of changes

Assignment of Responsibilities

Details of the procedure used for managing the assignment of responsibilities for monitoring and reporting within the installation and for managing the competencies of responsible personnel in accordance with Article 58(3)(c) of the MRR:

This procedure identifies how the monitoring and reporting responsibilities for the roles identified above are assigned and how training and reviews are undertaken.

Title of procedure	Heathrow Airport Ltd Local Operating Procedure EU-Emissions Trading System Phase III
Reference for procedure	HSSE-ENV-CLC-L02
Diagram reference	N/A
Brief description of procedure.	Details of the assignment of responsibilities and the delegation of such responsibilities is detailed within the procedure. New incumbents to roles with EU ETS responsibility are trained in their duties under the procedure as part of their job training.
Post or department responsible for the procedure and for any data generated	Head of Environmental Management
Location where records are kept	Heathrow Document Library
Name of IT system used	Sharepoint
List of EN or other standards applied	N/A

Monitoring Plan Appropriateness

Details of the procedure used for regular evaluation of the monitoring plan's appropriateness covering in particular any potential measures for the improvement of the monitoring methodology:

Title of procedure	Heathrow Airport Ltd Local Operating Procedure EU-Emissions Trading System Phase III
Reference for procedure	HSSE-ENV-CLC-L02
Diagram reference	N/A
Brief description of procedure.	The appropriateness of the Monitoring Plan is reviewed each December as part of the routine auditing and review processes that are in place. The review includes checking the list of sources and source streams, all relevant changes in the nature and functioning of the installation, uncertainty level compliance with the tiers achieved, and any potential improvements.
Post or department responsible for the procedure and for any data generated	Head of Environmental Management
Location where records are kept	Heathrow Document Library
Name of IT system used	Sharepoint
List of EN or other standards applied	N/A

Data Flow Activities

Details of the procedures used to manage data flow activities in accordance with Article 57 of the MRR:

Title of procedure	Heathrow Airport Ltd Local Operating Procedure EU-Emissions Trading System Phase III
Reference for procedure	HSSE-ENV-CLC-L02
Diagram reference	N/A
Brief description of procedure.	<p>Natural gas usage is based on invoice reads, adjusted as necessary with the invoice correction factor.</p> <p>Gas oil usage for the Airside and Landside Emergency Generators is determined from hours run meters, converted to litres based upon an estimated litres per hour usage rate. Other gas oil, and propane usage is based upon purchasing records and an assessment of stock changes</p> <p>Wood pellet and Wood chip usage is based upon purchasing records. Both source streams are 100% biomass.</p> <p>Acetylene usage is based upon purchasing records.</p> <p>NCV, EF and OxF for all fuels except biomass and acetylene are from the UK Greenhouse Gas inventory. Emissions are calculated as usage x ncv x EF x OxF.</p> <p>Emissions from acetylene are calculated as usage x stoichiometric fraction carbon x 3.664.</p> <p>The EF for biomass is zero, as specified in annex VI of the MRR. The ncv is as specified in annex VI of the MRR. The OxF is taken as 1 The energy from biomass is calculated as usage x ncv.</p>
Post or department responsible for the procedure and for any data generated	Head of Environmental Management
Location where records are kept	Heathrow Document Library
Name of IT system used	Sharepoint
List of EN or other standards applied	N/A
List of primary data sources	<p>Natural Gas invoices</p> <p>Purchasing records for other fuels</p> <p>Hours run meter readings</p>
<p>Description of the relevant processing steps for each specific data flow activity.</p> <p>Identify each step in the data flow 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</p>	<p>Natural gas usage and any correction factors from invoices are input manually to the calculation spreadsheet. The spreadsheet determines usage in m3 and then multiplies by ncv x ef x of to give tonnes CO2</p> <p>Gas oil usage for the Airside and Landside Emergency Generators is input manually from hours run meter readings. This is converted to volume using an estimated litres per hour usage rate, as hours x hourly usage = volume. This is converted to density by multiplying by the density factor from DUKES, and then converted to tonnes CO2 by multiplying by ncv x ef x of .</p> <p>Other gas oil, and propane bought is input manually from purchasing records and opening and closing stocks estimated where storages are a significant proportion of throughput. Volume is determined as opening stock + purchases - closing stock. This is converted to</p>

	<p>density by multiplying by the density factor from DUKES, and then converted to tonnes CO2 by multiplying by ncv x ef x of .</p> <p>Wood pellet and Wood chip usage is input manually from purchasing records. Energy from biomass is calculated as tonnes x ncv. Emissions are zero.</p> <p>Acetylene usage is input manually from purchasing records and multiplied by the carbon content x 3.663 to give tonnes CO2.</p>
--	---

Documents relevant to the recording of data flow activities

Attachment	Description
Data flow activities.pdf	Data flow activities
Biomass_and_Woodchip_Dataflow.pdf	Biomass and woodchip dataflow

Assessing and Controlling Risks

Details of the procedures used to assess inherent risks and control risks in accordance with Article 58 of the MRR:

Title of procedure	Heathrow Airport Ltd Local Operating Procedure EU-Emissions Trading System Phase III
Reference for procedure	HSSE-ENV-CLC-L02
Diagram reference	Environmental Manager
Brief description of procedure.	A risk assessment is contained within the EU ETS procedure. This risk assessment covers data and control risks, and is reviewed annually. Results of the risk assessment form the basis for control measures within the procedure.
Post or department responsible for the procedure and for any data generated	Head of Environmental Management
Location where records are kept	Heathrow Document Library
Name of IT system used	Sharepoint
List of EN or other standards applied	N/A

Quality Assurance of Metering / Measuring Equipment

Details of the procedures used to ensure quality assurance of measuring equipment in accordance with Article 58 and 59 of the MRR.

Title of procedure	Heathrow Airport Ltd Local Operating Procedure EU-Emissions Trading System Phase III
Reference for procedure	HSSE-ENV-CLC-L02
Diagram reference	Environmental Manager
Brief description of procedure.	<p>All natural gas meters are fiscal meters owned by the supplier and subject to National metrological control.</p> <p>Other meters are for de minimis source streams and calibration is not carried out.</p>
Post or department responsible for the procedure and for any data generated	Head of Environmental Management
Location where records are kept	Heathrow Document Library
Name of IT system used	Sharepoint
List of EN or other standards applied	N/A

Quality Assurance of Information Technology used for Data Flow Activities

Details of the procedures used to ensure quality assurance of information technology used for data flow activities in accordance with Article 58 and 60 of the MRR:

Title of procedure	Evaluation and review of control objectives
Reference for procedure	IT-00023
Diagram reference	N/A
Brief description of procedure.	This procedure outlines the activities to review the controls in place to manage and govern IT. The reviews take place periodically and involve reviewing and verifying evidence for each of the control objectives, the specific control objectives that relate to data are: CO10 ITSC, CO11 Information assets protection, CO12 Perimeter security.
Post or department responsible for the procedure and for any data generated	IT
Location where records are kept	Heathrow IT
Name of IT system used	Sharepoint
List of EN or other standards applied	N/A

Review and Validation of Data

Details of the procedures used to ensure regular internal reviews and validation of data in accordance with Articles 58 and 62 of the MRR.

Title of procedure	Heathrow Airport Ltd Local Operating Procedure EU-Emissions Trading System Phase III
Reference for procedure	HSSE-ENV-CLC-L02
Diagram reference	N/A
Brief description of procedure.	The EU ETS data is reviewed by the Utility Performance Manager regularly as a routine part of operations. This review is carried out at least quarterly but is often more frequent. The data is cross checked formally by the Environmental Operations Manager at the end of the reporting year. These checks include checking back to source data, checking for completeness, and sanity-checking vs previous years. Erroneous data is likely to be clearly noticeable and will be corrected.
Post or department responsible for the procedure and for any data generated	Head of Environmental Management
Location where records are kept	Heathrow Document Library
Name of IT system used	N/A
List of EN or other standards applied	N/A

Corrections and Corrective Actions

Details of the procedures used to handle corrections and corrective actions in accordance with Articles 58 and 63 of the MRR:

Title of procedure	Heathrow Airport Ltd Local Operating Procedure EU-Emissions Trading System Phase III
Reference for procedure	HSSE-ENV-CLC-L02
Diagram reference	N/A
Brief description of procedure.	Corrective action in the event of any data flow failure is led by the Utility Performance Manager. In the event of any problem with the control systems corrective action is led by the Environmental Operations Manager. They ensure that the immediate problem is addressed and any appropriate action to prevent a repetition is taken.
Post or department responsible for the procedure and for any data generated	Head of Environmental Management
Location where records are kept	Heathrow Document Library
Name of IT system used	Sharepoint
List of EN or other standards applied	N/A

Control of Outsourced Activities

Details of the procedures used to control outsourced processes in accordance with Articles 59 and 64 of the MRR.

Title of procedure	Heathrow Airport Ltd Local Operating Procedure EU-Emissions Trading System Phase III
Reference for procedure	HSSE-ENV-CLC-L02
Diagram reference	N/A
Brief description of procedure.	Meter reading for the gas supplier is outsourced. Routine checks are carried out on the

	resulting invoices so that any errors would be detected and resolved quickly.
Post or department responsible for the procedure and for any data generated	Head of Environmental Management
Location where records are kept	Heathrow Document Library
Name of IT system used	Sharepoint
List of EN or other standards applied	N/A

Record Keeping and Documentation

Details of the procedures used to manage record keeping and documentation:

Title of procedure	Heathrow Airport Ltd Local Operating Procedure EU-Emissions Trading System Phase III
Reference for procedure	HSSE-ENV-CLC-L02
Diagram reference	N/A
Brief description of procedure.	Records are stored on a secure server for not less than 10 years. All records used to support the verification are included.
Post or department responsible for the procedure and for any data generated	Head of Environmental Management
Location where records are kept	Heathrow Document Library
Name of IT system used	Sharepoint
List of EN or other standards applied	N/A

Risk Assessment

The results of a risk assessment that demonstrates that the control activities and procedures are commensurate with the risks identified:

Attachment	Description
N/A	N/A

Changes in Operation

Your permit conditions require you to notify the regulator of any planned or effective changes to the capacity, activity level or operation of the installation by 31 December in the year in which the change was planned or has occurred (or by different dates where significant capacity reductions or partial cessations have occurred).

The Regulations require you to provide a summary of the procedure ensuring that the operator regularly checks whether information regarding any planned or effective changes to the capacity, activity level and operation at the installation impacts on the free allocation of allowances and that the information is submitted to the regulator at the appropriate time.

Details of the procedure ensuring the above:

Title of procedure	Heathrow Airport Ltd Local Operating Procedure EU-Emissions Trading System Phase III
Reference for procedure	HSSE-ENV-CLC-L02
Diagram reference	N/A
Brief description of procedure.	Any planned or unplanned temporary or permanent changes are identified and reported as appropriate by the Environmental Operations Manager during the year. In addition a review is carried out late in the year which identifies any other minor changes required to the Monitoring Plan such that they can be notified by 31December. In the event of the Environmental Operations Manager being unavailable, his reporting duties are delegated as specified in the procedure.
Post or department responsible for the procedure and for any data generated	Head of Environmental Management
Location where records are kept	Heathrow Document Library
Name of IT system used	Sharepoint
List of EN or other standards applied	N/A

END

Abbreviations

Abbreviations, acronyms or definitions referred to in the monitoring plan

Abbreviation	Definition
HAL	Heathrow Airport Limited