EU Emissions Trading Scheme

Guidance to Operators on the requirements for installations to achieve the highest applicable monitoring tiers (as defined within Commission Regulation of 21 June 2012) on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC ("known as "MRR")

Guidance to Operators of Offshore Installations (Incorporating Frequently Asked Questions)

Issue 1

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CONTENTS

1 INTRODUCTION 3

2 Completing the spreadsheet 3

SECTION 2: ABOUT YOUR INSTALLATION 3

SECTION 3: DESCRIPTION OF THE INSTALLATION 4

SECTION 4: ABOUT YOUR EMISSIONS 4
(e) Activities excluded from EU ETS 4
(f) Provision of simple diagram 4
(g) Monitoring Approaches 4

SECTION 5: CALCULATION OF EMISSIONS 4
(b) Please describe the specification and location of the measurement systems 5
(c) Identify the tiers applied against the relevant input data for each source stream 5
(d) Evidence 5
(f) Default values 5
(g) Factors determined by analysis 5
(h-j) Procedures 5

SECTION 6: MEASUREMENT OF CO_2. 6

SECTION 7: FALLBACK 6

SECTIONS: 8, 9 and 10 6

SECTION 11:MANAGEMENT 6

SECTION 12: DATA FLOW ACTIVITIES 6

SECTION 13: CONTROL ACTIVITIES 6

SECTIONS 14, 15, 16 6

3 Tier System 7

4 FAQs 7

5 Monitoring Tiers 8

6 References 9

Appendix 1 10

Offshore Sector Combustion Activities: Tier Requirements for Combustion. 10

Offshore Sector Combustion Activities: Tier Requirements for Flaring. 15

1 INTRODUCTION

The purpose of this guidance is to assist Operators with interpretation of the requirements of Phase III of the EU Emissions Trading Scheme (EU ETS) with regard to achieving the highest standard of monitoring for carbon dioxide emissions, as prescribed in Commission Regulation No. 601/2012 (EU ETS 2012). This guidance addresses general combustion activities and flares.

The requirements of the Monitoring and Reporting Regulation (MRR) will apply for Phase III of the EU Emissions Trading Scheme starting 1st January 2013, and replaces the requirements of the MRG2. Details of the wider changes resulting from MRR are reported in the guidance document "The Monitoring and Reporting Regulation – General guidance for installations: MRR guidance document No. 1, July 2012" (MRRa 2012).

This Guidance Note:

- is for the purposes of Phase III M&R Plans and the template issued by the Environment Agency (EU ETS Phase III Annual Emissions Monitoring Plan) and the ETSWAP Guide sent to operators. It is the intent of the Department to migrate the information provided in the template by operators directly into ETSWAP.

- is organized in the same order as the offline version of the EU ETS Phase III Annual Emissions Monitoring Plan (Phase III EMP) template making reference, where relevant, to both the ETSWAP guidance and the MRR. DECC Guidance is provided only for those sections of the template where there are significant differences between Phase III and Phase II requirements.

- incorporates a revised draft of the "Frequently Asked Questions" prepared for Phase III Monitoring, Reporting and Verification for Offshore Facilities and based on questions submitted to DECC.

Operators should note that this is guidance only and does not constitute a legally binding opinion.

2 Completing the spreadsheet

PLEASE DO NOT AMEND ANY OF THE FIELDS IN THE SPREADSHEET

The ETSWAP offline template does not include full operator details, therefore, DECC require the following information to be clearly included in the accompanying e-mail:

- **Contact person(s) (Title, First name, Last name)**
- **Job Title**
- **Telephone number**
- **Email address**

Enable Options: this allows access to drop-down menus for some tables and enables the addition of rows where required in the document. No additional changes should be made to the Template.

Section 2: About your installation

Subsection (a): please complete with the installation's name in the first box and Block & Quad in the second box.

Subsection (b) requests information on the address / location of the site. Operators should include Northings and Eastings in line 1 and 2, respectively and UK under country. All other boxes can be ignored.

Section 3: Description of the installation

Subsection (a) should include a short description of the installation, including its location followed by a summary of the main combustion equipment and the main energy users.

Subsection (b) should be based on the combustion equipment. The capacity should be entered in MW(thermal) based on maximum continuous rating for fuel and excludes gas to flare. The specified emission is carbon dioxide.

Subsection (c) Your response should not include emissions from flaring as these were specifically excluded in Phase II from the determination of an installation's category.

Subsection (d). DECC believe that no offshore installation will satisfy the criteria for low emitters. If you consider that your installation does qualify please be aware that following the low emitter route may increase the administrative burden.

Section 4 About your Emissions

This section relates to all combustion sources and emissions with the requested data to complete Sections (a) to (d) available from your Phase II ETS2.2 Monitoring Plan, Section A2. Please note that this table does not auto populate as stated in the guidance.

(e) Activities excluded from EU ETS

Information on temporary equipment should be listed in this table. Note that it may not be possible or cost effective to disaggregate diesel fuel use to temporary equipment from total fuel use.

(f) Provision of simple diagram

It will assist DECC if operators separately provide a **clear** process flow diagram (PFD) showing the metering arrangements against each emission source and emission point. These should be in sufficient detail to allow identification of where fuel to major emitters is measured.

(g) Monitoring Approaches

For most installations, the Calculation approach will be selected. If a fall back approach is requested please provide full justification in Section 7.

Section 5 Calculation of Emissions

The general guidance (Section 3.3, MRRa 2012) indicates that a monitoring plan is required and should include information on:

- Data collection;
- Sampling of materials and fuels;
- Laboratory analysis of fuels and materials;
- Maintenance and calibration of meters;
- Description of calculations and formulae;
- Control activities;
- Data archiving;
- Regular identification of improvements.

Additional guidance on sampling and analysis can be found in The Monitoring and Reporting Regulation – Draft Guidance on Sampling and Analysis MRR Guidance document No. 5, (MRR 2012c) http://og.decc.gov.uk/en/olgs/cms/environment/leg_guidance/eu_ets/eu_ets.aspx
.

The Phase III EMP template is the basis for the monitoring plan.

Much of the information to complete Section 5 is available in the existing Phase II ETS2.2.

(b) Please describe the specification and location of the measurement systems

As per Section A4.1 of the existing Phase II ETS2.2, however, please note the addition of a column requesting information on the range of the installed meters.

(c) identify the tiers applied against the relevant input data for each source stream

This section and the accompanying table is similar to that in the existing Phase II ETS2.2 however there are some differences that need attention. For instance there is a new column requesting information on the overall measurement uncertainty. Phase III allows a number of simplifying approaches to uncertainty: route CO-1 and CO-2a / 2b (**Article 28** of the MRR and MRR 2012b).

NEW

Simplification CO-1 is generally applicable to purchased fuels such as diesel delivered offshore provided the supplier includes a copy of the certificate of the official verification for the instrument.

Simplification CO-2a/2b is generally applicable to fuel and flare gas measurement offshore. This allows use of the manufacturer's uncertainty for an instrument provided the meter has been installed in an environment appropriate for its use. The guidance thus allows the operator to use the maximum permissible error *in service*.

Further details on approaches to uncertainty are available in MRR Draft Guidance document No. 4. (MRR 2012b)
http://og.decc.gov.uk/en/olgs/cms/environment/leg_guidance/eu_ets/eu_ets.aspx

Note that the comment under 'Estimated annual emissions' referring to Question 6(c) should be ignored. 2011 verified emissions should be entered.

(d) Evidence

Please provide documentary evidence that the appropriate tiers have been applied.

(f) Default values

DECC are currently recommending that operators move away from the use of the 3.2 EEMS CO_2 factor for diesel use and instead use the values published in DUKES. EEMS will be updated to reflect this change (Appendix 1)

(g) Factors determined by analysis

This section is required to demonstrate that laboratory testing meets at least the minimum standards set out in the guidance to **Article 44** of the MRR and the Laboratory meets the requirements under **Article 34**. Please provide full details.

(h-j) Procedures

MMR places additional requirements on operators to demonstrate that they have procedures in place to address sampling and analysis of fuels and to demonstrate that the samples analysed are representative of the fuel. Further details of the requirements are available in **Article 33** of the

MRR including the requirement for submission of a sampling plan in the form of a written procedure. The Sampling Plan needs to be approved by DECC as part of the permitting process.

Further details on approaches to sampling and analysis are available in MRR Draft Guidance document No. 5. (MRR 2012c)
http://og.decc.gov.uk/en/olgs/cms/environment/leg_guidance/eu_ets/eu_ets.aspx

Operators should be aware that there is a requirement on DECC to carry out inspections at installations based on information contained in the monitoring plan.

Section 6 Measurement of CO_2.

Not relevant to offshore.

Section 7 Fallback

DECC are not aware of any operators requesting fallback. However, operators who may be eligible should bear in mind that the current guidance requires that the minimum tier be achieved unless this is technically not feasible or incurs unreasonable cost.

Sections 8, 9 and 10

These sections are not relevant to the offshore sector.

Section 11 Management

This section may be completed using data in ETS7 for 2011

Section 12: Data Flow Activities

This section may be completed using data in ETS7 for 2011

Section 13: Control Activities

Section 5.5 of the General Guidance (MRR 2012a) states that “Risk” is a parameter which takes into account both the probability of an incident and its impact. In terms of emission monitoring, the risk refers to the probability of a misstatement (omission, misrepresentation or error) being made, and its impact in terms of annual emissions figure.

Usually this risk is expressed by qualitative parameters (low, medium, high) rather than by trying to assign exact figures. Furthermore the operator assesses potential reasons for misstatements and identifies which measures might reduce the found risks, It is thus a qualitative approach to demonstrate that systems are in place to minimise the potential for misstatement.
http://og.decc.gov.uk/en/olgs/cms/environment/leg_guidance/eu_ets/eu_ets.aspx

Sections 14,15 and 16

These sections should be completed if relevant.

3 Tier System

The tier system has changed little from Phase II with MRR guidance document No. 1 providing information on selecting the correct tier (MRR 2012a). This requires that the operator should apply the highest tier defined for each parameter. For most offshore installations this is mandatory. Only if it is shown to the satisfaction of the Competent Authority that the highest tier approach is technically not feasible, or will lead to unreasonable costs, may the next lower tier be used for that variable. As a minimum the tiers set out in Table 1 of Annex V (EU ETS 2012) must be achieved unless this is technically not feasible. In this case there is a transitional period of three years during which operators must provide DECC with a plan to implement the necessary improvements to meet the minimum standards.

Activity specific guidelines are set out in Annexes II to X of the MRR, and include specific methodologies for determining the variables - activity data, emission factors, oxidation or conversion factors. These are little changed from MRG2 and most, if not all, operators should be in a position to meet the standards set out in Phase III, below.

Derogation from the requirement to meet the lowest tier is acceptable only in the case of "*de minimis*" sources, for which an operator might estimate emissions using a no-tier approach. However, it must be demonstrated to DECC that higher tiers cannot be achieved "without additional effort" defined as significant or unreasonable costs. As an example, DECC would expect that diesel use offshore can meet the minimum standards set out in Table 1 of Annex V as purchasing records are available.

4. FAQs

1. **Q. How should flare gas be described?**
   Flare gas should be added as an additional source stream. Note where acid gas is sent to a flare it too should be recorded as a separate entry even if the installation has a single flare for the safe disposal of all waste gases.

2. **Reporting to standard or normal conditions?**
   As was the case in Phase I and II, offshore reporting should be to standard conditions as historic emissions data has been reported this way.

3. **What should be included in the monitoring plan?**
   The proposed content of the monitoring plan is provided in the general guidance (MRR 2012a) with additional guidance provided in specific guidance such as that for Uncertainty (MRR 2012b) and sampling and analysis (MRR 2012c).

http://og.decc.gov.uk/en/olgs/cms/environment/leg_guidance/eu_ets/eu_ets.aspx

5 Monitoring Tiers

The highest tier approach shall be used by all operators to determine variables for all source streams for all category B or C installations, i.e. if an operator uses a metering device to meet the highest tiers identified for a major source, then the Competent Authority would normally also expect this to be applied for minor and *de minimis* sources.

The guidance provided within the table is without prejudice to an operator's justification that to apply the highest tiers identified would not be technically feasible or would lead to unreasonably high costs. Some guidance on how an operator might assess whether the cost of a potential improvement is either reasonable or unreasonable, by evaluating the costs and benefits of an improvement, is provided in Section 6.1 of MRR Guidance document No. 1..

For cases where it is technically not feasible or would lead to unreasonable costs to apply at least Tier 1 requirements for all (except the *de minimis*) source streams, the operator can request a "fall back approach". The fall back approach exempts the operator from the application of Section 5.2 of MRR guidance document No. 1 general guidance (Selecting the correct tier) replacing it with a fully customized monitoring methodology suggested by the operator provided it can be demonstrated, to the satisfaction of DECC, that by applying this alternative monitoring methodology for the whole installation, the overall uncertainty thresholds set out in Table 1 of Annex V for the annual level of greenhouse gas emissions for the whole installation are met. Additional guidance on uncertainty is provided in Section 5 MRR Draft No.4 guidance on uncertainty (MRR 2012b).

Table 1 Fall-Back Overall Uncertainty Thresholds

Installation Category	Uncertainty threshold to be met for total annual emission value
A	± 7.5%
B	± 5.0%
C	± 2.5%

The overall uncertainty takes account of all variables and parameters used for the calculation of the annual emission level.

Installations applying the fall-back approach are to be notified by Member States to the Commission.

An operator may also determine carbon dioxide emissions using continuous emission measurement systems (CEMS) for each source, using standardised or accepted methods approved by the Competent Authority, providing that using CEMS achieves lower uncertainty than the calculation of emissions using the highest tiers identified. Details of the requirements for CEMS can be found in Annex I, Sections 4 and 5 and in Annex VIII of the MRR).

Monitoring of emissions using CEMS is not discussed further within this guidance.

6 References

EU ETS 2012 Commission Regulation No. 601/2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council.(MRR)

MRR 2012a The Monitoring and Reporting Regulation – General Guidance for Installations MRR guidance document No. 1, July 2012

MRR 2012b The Monitoring and Reporting Regulation – Draft Guidance on Uncertainty. MRR guidance document No.4, July 2012

MRR 2012c The Monitoring and Reporting Regulation – Draft Guidance on Sampling and Analysis MRR Guidance document No. 5, July 2012.

Phase III EMP. EU ETS Phase III Annual Emissions Monitoring Plan

The documents listed above can all be accessed at:-

http://og.decc.gov.uk/en/olgs/cms/environment/leg_guidance/eu_ets/eu_ets.aspx

Appendix 1

Offshore Sector Combustion Activities: Tier Requirements for Combustion.

See also Annex II of MRR

Combustion Activities			
Variable	**Highest tier**	**Requirement**	**Expectations**
Activity data	Tier 4 or 3 ***NEW***	**<u>Liquid fuels</u>** Generally, Tier 4 applies to the use of most liquid fuels in combustion activities. **For the offshore sector**: The operator can simplify the uncertainty assessment, if • The measuring instrument is subject to legal metrological control (**Route CO-1**). In this case the maximum permissible error in service laid down in the relevant national legal metrological text can be used as the overall uncertainty. • The measuring instrument is not subject to national legal metrological control but is installed in an environment appropriate for its use specifications. Then the operator may assume that the uncertainty over the whole reporting period as required by the tier definitions for activity data in Annex II of the MRR equals: ▪ the maximum permissible error specified for that instrument in service(**Route CO-2a),** or ▪ where available and lower, the uncertainty obtained by calibration, multiplied by a conservative adjustment factor for taking into account the effect of uncertainty in service (**Route CO-2b**). Where those simplifications are not applicable, or do not show that the required tier is met, a specific uncertainty assessment in accordance with **Route CO-3** and Annex III needs to be carried out. An operator is not obliged to use any of the simplified approaches and can always use Route CO-3. Compliance can be achieved through the use of appropriate metering equipment on the supplying vessel and the maintenance of accurate supply and stock records and the determination and recording of all non-fuel use (e.g. temporary equipment). As the metering equipment on the supplying vessel is used for fiscal and costing purposes, it can be assumed that the maximum permissible uncertainty is less than ± 1.5% for the metering process.	**<u>Liquid fuels</u>** ❑ Full implementation of requirements for offshore installations.

Combustion Activities			
Variable	**Highest tier**	**Requirement**	**Expectations**
Activity Data	Tier 4 or 3 ***NEW***	**<u>Gaseous fuels</u>** Generally, Tier 4 or 3 applies to the use of most gaseous fuels in combustion activities. **For the offshore sector**: The operator can simplify the uncertainty assessment, if • The measuring instrument is subject to legal metrological control (**Route CO-1**). In this case the maximum permissible error in service laid down in the relevant national legal metrological text can be used as the overall uncertainty. • The measuring instrument is not subject to national legal metrological control but is installed in an environment appropriate for its use specifications. Then the operator may assume that the uncertainty over the whole reporting period as required by the tier definitions for activity data in Annex II of the MRR equals: ▪ the maximum permissible error specified for that instrument in service(**Route CO-2a),** or ▪ where available and lower, the uncertainty obtained by calibration, multiplied by a conservative adjustment factor for taking into account the effect of uncertainty in service (**Route CO-2b**). Where those simplifications are not applicable, or do not show that the required tier is met, a specific uncertainty assessment in accordance with **Route CO-3** and Annex III needs to be carried out. An operator is not obliged to use any of the simplified approaches and can always use Route CO-3. Simplification route CO-2a or 2b is relevant to fuel gas used offshore. The steps involved in this are set out in MRR Draft Guidance document on uncertainty No. 4 Notwithstanding this approach, DECC anticipates that operators will be in a position to meet Tier 3 (a maximum permissible uncertainty of less than ± 2.5%) as was required in Phase II.	**<u>Gaseous fuels</u>** ❑ As similar requirements were in place for Phase II, full implementation of requirements for offshore installations was achieved in 2007, unless otherwise agreed with DECC.

Combustion Activities			
Variable	**Highest tier**	**Requirement**	**Expectations**
Emission Factor and Net Calorific Value (NCV)	Tier 3 ***NEW***	**<u>Liquid fuels</u>** Tier 3 applies to the use of liquid fuels in combustion activities. **For the offshore sector**: Tier 2a is considered to be appropriate for Emission factor and NCV and this can be achieved by using the values published in DUKES recorded as detailed in DUKES.	**<u>Liquid fuels</u>** ❑ Operators should use the data provided in DUKES (3.164t/t for the emission factor, and the NCV of 42.7GJ/t Aug 2012) detailed in DUKES.

Combustion Activities			
Variable	**Highest tier**	**Requirement**	**Expectations**
Emission Factor and Net Calorific Value (NCV)	Tier 3 ***NEW***	**<u>Gaseous fuels</u>** Tiers for calculation factors are not based on uncertainty thresholds being met, but instead determinations involving default values or values derived from laboratory analyses. However, determinations involving laboratory analyses are linked to required frequencies for analyses, and one option allowed for determining the required frequency is expressed in terms of the "uncertainty" related to the frequency of analyses. Article 35(2) states: "The competent authority may allow the operator to use a different frequency than those referred to in paragraph 1, where minimum frequencies are not available or where the operator demonstrates one of the following: a) *based on historical data, including analytical values for the respective fuels or materials in the reporting period immediately preceding the current reporting period, any variation in the analytical values for the respective fuel or material does* ***not exceed 1/3 of the uncertainty value*** *to which the operator has to adhere with regard to the activity data determination of the relevant fuel or material…"* It should be noted that the uncertainty assessment required in this case is different from that in Phase II and the detail is covered more specifically by Draft Guidance document No. 5: "Guidance on Sampling & Analysis". **For the offshore sector**: The MRR imposes relatively strict rules for analyses, in order to ensure a high quality level of the results. In particular, the following points need consideration: • The laboratory must demonstrate its competence. This is achieved by one of the following approaches: ▪ An accreditation in accordance with EN ISO/IEC 17025, where the analysis method required is within the accreditation scope; or ▪ Demonstrating that the criteria listed in Article 34(3) are satisfied. This is considered reasonably equivalent to the requirements of EN ISO/IEC 17025. Note that this approach is allowed only where use of an accredited lab is shown to be technically not feasible or involving unreasonable costs. • The way samples are taken from the material or fuel to be analysed is considered crucial for receiving representative results. Therefore the MRR puts considerably more emphasis on this topic than the MRG 2007. Operators have to develop sampling plans in the form of written procedures which are approved by the competent authority. Note that this applies also where the operator does not carry out the sampling himself, but treats it as an outsourced process. • Analyses methods usually have to follow international or national standards Tier 3 should be achieved unless it would not be technically feasible or would lead to unreasonably high costs. For the offshore sector to achieve Tier 3, it is recommended that the minimum sampling frequency for installations with a homogeneous gas supply (i.e. there is documented evidence of stable composition) should be once per quarter, and that the minimum sampling frequency for installations with a heterogeneous gas supply (for example if the installation serves a number of fields and the composition varies with production from each field) should be once per month. The sampling plan should include details of the procedures in place to ensure the results are representative. Non-accredited in-house analyses are considered to be acceptable for the routine analyses, but wherever possible they should be backed-up by less frequent calibration analyses undertaken by an ISO17025 accredited laboratory.	**<u>Gaseous fuels</u>** ❑ Full implementation of requirements for offshore installations.

Combustion Activities			
Variable	**Highest tier**	**Requirement**	**Expectations**
Oxidation factors	1	**Liquid and gaseous fuels** Tier 1 is the only applicable tier for liquid and gaseous fuels **For the offshore sector**: Offshore operators should use an oxidation factor of 1, as required by the EU ETS MRR. This is consistent with the calculation of emissions within the EEMS system.	**Liquid and gaseous fuels** ❑ Operators should use an oxidation factor of 1.

Appendix 2

Offshore Sector Combustion Activities: Tier Requirements for Flaring.

Combustion Activities			
Variable	**Highest tier**	**Requirement**	**Expectations**
Activity data	Tier 3 ***NEW***	Emissions from flares shall include routine flaring and operational flaring (trips, start-up and shut-down as well as emergency reliefs. Generally Tier 2 or 3 shall apply. Inherent CO_2 in acid gas streams to flare must be included in the reporting of total CO_2 from the installation. Further guidance will be provided following clarification from DG Clima. **For the offshore sector**: Most, if not all, installations have met the Tier 3 uncertainty requirements of ± 7.5% though some operators may still be reporting to Tier 2 requirements (± 12.5).	❑ Full implementation ❑ In addition to metering, operators can use a combination of flare valve position monitoring and process modelling to quantify gas to flare. This technique is seen to offer a benefit to operators in monitoring trends in flaring and may also be useful in supporting requests for less stringent metering based on turn down ratios.
Emission Factor	Tier 2b or 3	Generally, Tier 2b or 3 applies. For the offshore sector, it is anticipated that Tier 2b is achievable. This requires the use of installation specific emission factors derived from an estimate of the molecular weight of the flare stream, using process modelling based on industry-standard models.	**Gaseous fuels** ❑ Full implementation.
Oxidation Factor	Tier 2	For the offshore sector, it is anticipated that Tier 2 should be used for reporting (0.98).	**Gaseous fuels** **Full implementation**