

Application of the EU Emissions Trading Directive

Analysis of national responses under Article 21
of the EU ETS Directive in 2014

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This report

Directive 2003/87/EC of the European Parliament and Council of the European Union (EU) established the EU Emissions Trading System (EU ETS), a key EU policy instrument to reduce greenhouse gas emissions.

Article 21 of the EU ETS Directive stipulates that each year Member States should report on the application of the directive. These reports are to be based on the 'Article 21 questionnaire' adopted by the European Commission in Implementing Decision 2014/166/EU.

Article 21 further stipulates that on the basis of the Member States' reports, the Commission should

publish a report on the application of this directive. This document serves as input in this regard.

This report considers where implementation is on track, where there is potential for improvement and where further information is required to determine the status of implementation. It also provides analysis of emission and fuel consumption reported by countries via the Article 21 questionnaire, and compares implied emission factors based on these data, for the purposes of comparison with emission factors used in national inventory compilation.

Executive summary

Synthesising Member State reporting on the ETS

The European Union (EU) emissions trading system (ETS) is one of the key climate policy instruments implemented in the EU to achieve its emission reductions objectives in a cost-effective manner. The EU Emissions Trading Directive (EU, 2003, referred to hereafter as the 'EU ETS Directive'), and in particular Article 21 of the Directive, requires EU Member States to report every year to the Commission on the application of the directive. The Commission Implementing Decision (EU 2014a) sets out a detailed questionnaire to be addressed by the Member States in their annual reports to the Commission under Article 21 of the Directive. This report provides a synthesis of the countries' annual reports concerning the implementation of the EU ETS in 2014. Data included are for the year 2013 unless indicated otherwise.

The EU ETS covers more than 12 000 energy-using installations, consisting of power stations and other combustion plants with ≥ 20 MW thermal (!) rated input (except hazardous or municipal waste installations). It also covers oil refineries; coke ovens; iron and steel production facilities; and installations involved in the production of cement clinker, glass, lime, bricks, ceramics, pulp, paper and board, aluminium, petrochemicals, ammonia, nitric acid, adipic acid and glyoxylic acid. In addition, the EU ETS covers facilities involved in CO₂ capture, CO₂ transport in pipelines, and geological storage of CO₂. The ETS also covers aviation,

but the coverage is limited to flights within the European Economic Area until 2016. In total, the EU ETS covers around 45% of EU greenhouse gas emissions (EEA, 2015). The EU ETS covers 28 EU Member States, as well as Norway, Iceland, and Liechtenstein (which are part of the broader European Economic Area).

Evaluating the implementation of the ETS

The Article 21 questionnaire covers topics concerned with the national (or regional) administrative implementation of the EU ETS Directive, and also includes data collated from detailed reports from installations and aircraft operators. This report evaluates the implementation of the ETS Directive, based on countries' replies to the questionnaire, and also presents some analysis of the fuel consumption and emissions data reported.

This report is the first to be released since a revised Article 21 questionnaire was published in 2014 (EU, 2014a). The deadline for national responses to this questionnaire was 30 June 2014, but not all countries were able to report by that date. This report is based on countries' replies to the Article 21 questionnaire submitted by 31 October 2014. The 2014 questionnaire related to 2013 data. Nineteen countries submitted their responses to the questionnaire (EU, 2014a) by 30 June. A further seven countries reported by the end of August. Three countries submitted after August (Greece, Norway and Spain), but could still be included

Box ES.1 European Environment Agency contributions on the EU ETS

The European Environment Agency (EEA) publishes data viewers and reports related to the implementation of the EU ETS Directive to enable a better understanding of the effects of the main EU instrument for reducing greenhouse gas emissions. This work includes the EU Emissions Trading System data viewer, which provides easy access to emission-trading data contained in the European Union Transaction Log (EUTL) public website. It also includes the EEA's report on 'Trends and projections in Europe', which is an annual assessment of both the EU ETS emission trends, and of supply and demand balances of allowances. The EEA also conducts a detailed analysis of the use of EU ETS data for the purposes of greenhouse gas inventories. This report continues an earlier series of EEA reports analysing the information provided by countries on the application of the EU ETS Directive.

(!) A megawatt thermal is a unit of thermal energy in the power industry.

in this report. France and Italy did not report in time for inclusion in this report. All figures and calculations in this report thus exclude Italy and France. Out of the 29 country responses considered, only 20 countries completed 100% of the mandatory questions. A further 7 countries completed more than 90% of mandatory questions, but less than 100%; while 2 countries completed between 80% and 90% of the mandatory questions.

The analysis of country responses provides a better understanding of the detailed implementation of the EU ETS Directive in areas where certain 'flexibilities' are included in the Directive (such as permitting a more simplified monitoring regime for small emitters, and excluding some installations). This report has identified areas of good application of the EU ETS Directive. In addition, this report has also identified areas where the application of the directive could be improved and areas where better data are required to enable a more complete understanding of implementation. It also includes a detailed presentation of the responsibilities of countries' authorities (termed 'competent authorities') for specific areas of implementation of the EU ETS (see Table A3.2 in Appendix 3 of this report). The competent authorities are the national authorities responsible for the implementation of the EU ETS Directive in their country.

Summary of reported emissions and fuel consumption data

Country information submitted in 2014 included total fuel consumption and greenhouse gas emission data aggregated from the 2013 emissions reports of installations. As this was the first reporting period based on a new questionnaire, some data issues were found. The quality of this information is expected to improve over the coming years, as more data become available, as the EEA performs more data quality checks, and as country submissions become more complete and coherent.

Figure ES.1 presents fuel consumption and emissions in the EU ETS split by fuel type (excluding France and Italy, neither of which reported in time for inclusion in this report, and also excluding Denmark ^(?)). The most significant fuel consumed by installations covered by the EU ETS in 2013 was natural gas ^(?) (5 898 710 TJ).

Hard coal was the fuel with the largest emissions (439 846 kilo tonnes (kt) CO₂) in the EU ETS in 2013.

Figure ES.2 presents reported fuel consumption and emissions in the EU ETS split by country (excluding France and Italy, neither of which reported in time, and excluding Denmark which did not respond to this question). Germany reported the highest fuel consumption (4 853 271 TJ), followed by the United Kingdom (2 576 483 TJ). The most significant emitters are Germany (422 703 kt CO₂), the United Kingdom (203 365 kt CO₂), and Poland (189 030 kt CO₂).

Twenty seven countries reported data on the quantity of CO₂ emissions from waste that is used as fuel or input material within installations. Figure ES.3 provides the aggregated emissions from waste for each country in 2013.

Implied emission factor analysis

Implied emission factors (fuel emissions divided by fuel consumption) were calculated as an additional analysis of the Article 21 questionnaire data. This was not an analysis of EU ETS implementation, but rather a supplementary EEA analysis of the data provided.

The range in implied emission factors among countries varies with fuel type. The analysis and comparison of implied emission factors for specific fuels can help identify potential issues with either the reported fuel consumption or emission data if implied emission factors are outside expected ranges (IPCC default emission factors ⁽⁴⁾) or if they diverge strongly from implied emission factors of other countries. It is to be welcomed that the implied emission factors for hard coal are all within the range of the IPCC default emissions factors, as this fuel is the largest single emissions source. For blast furnace gas and coke oven gas the implied emission factors were also within the expected range.

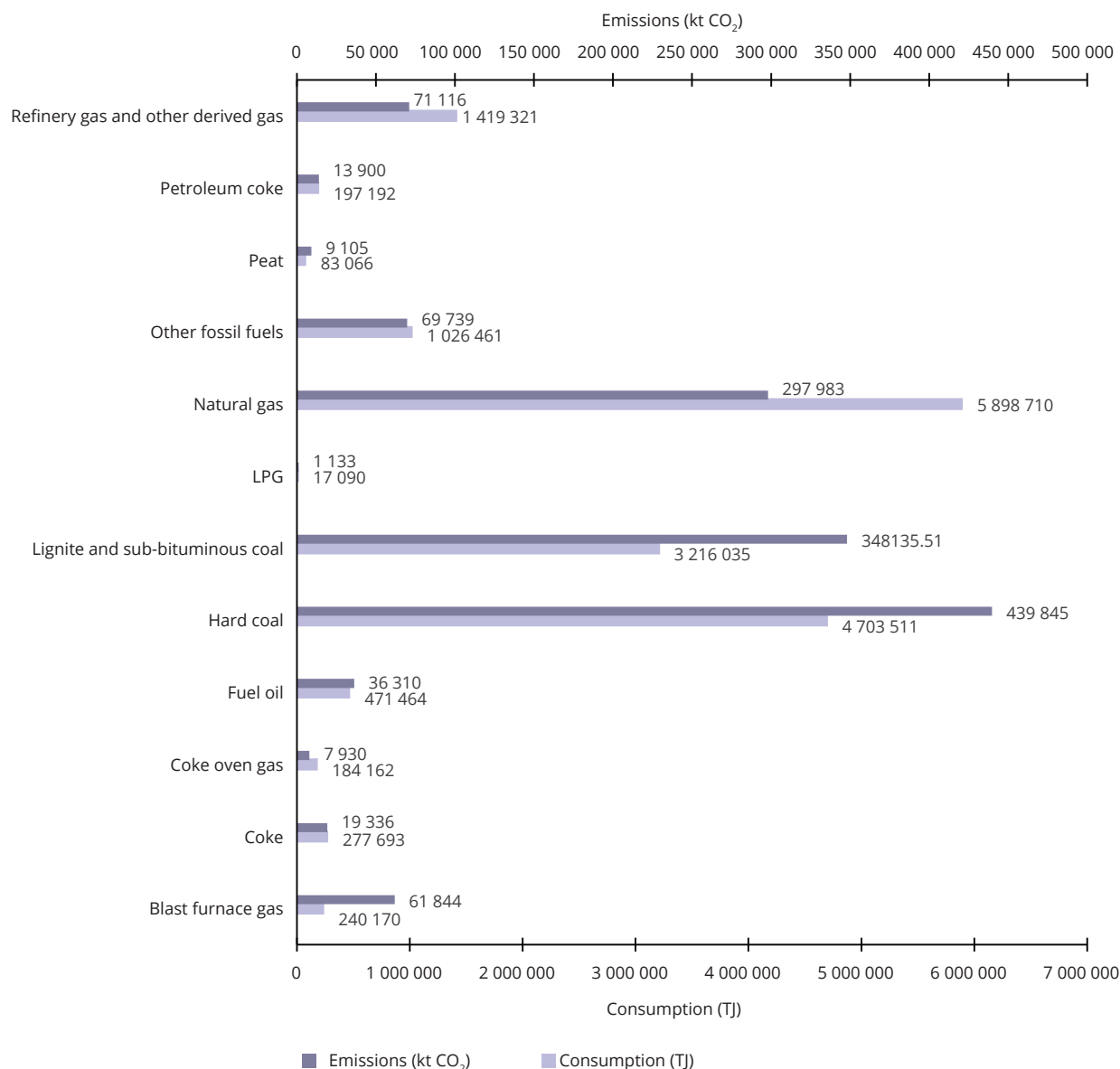
For coke, natural gas, peat, and lignite, a few countries reported significantly different implied emission factors, but most countries explained the origin of these differences. Fuel oil and liquefied petroleum gas (LPG) showed the largest number of outliers compared to the range of IPCC emission factors. However, the difference to the IPCC emission factors was mostly rather small.

^(?) Denmark did not report emissions or consumption of fuels in the EU ETS in 2013.

^(?) The calculation of implied emission factors based on the fuel consumption and based on emissions provided for natural gas and the comparison of natural gas consumption reported in energy balance data may indicate that the reported quantities of natural gas may be too high for some countries. This imbalance was particularly acute in the case of fuel consumption of natural gas reported by the Czech Republic.

⁽⁴⁾ Default emission factors from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, applicable across countries, using set assumptions. Available at <http://www.ipcc-nggip.iges.or.jp/public/2006gl>.

Figure ES.1 Consumption (TJ) and emissions (kt CO₂) in the EU ETS by fuel type, 2013



Note: Excludes Denmark, France, and Italy. France and Italy did not submit in time for inclusion in this EEA technical report. Denmark did not respond to this question.

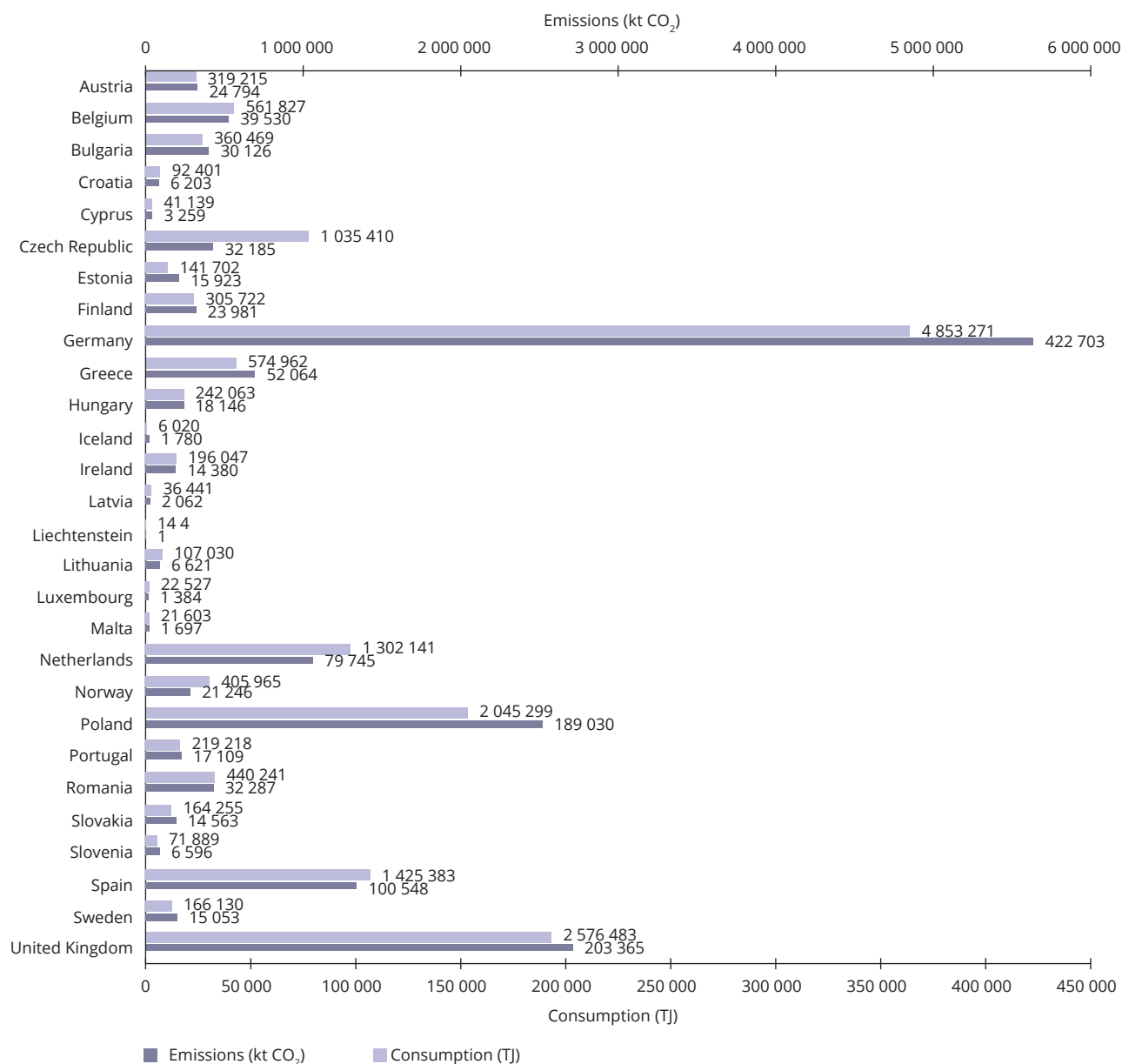
Further details of this analysis are included in Section 3.3.

Areas where the directive was well implemented

Based on the data and information submitted by countries on the application of the EU ETS Directive in 2013, the EEA's analysis found a number of areas where the Directive was well implemented.

The EU ETS Directive requires regular and accurate reporting by all installations and aircraft operators. However, countries can make use of 'flexibilities' to apply

exclusion criteria in some cases. These flexibilities can reduce the administrative burden for smaller emitters. For example, countries can exclude installations from the system according to certain size thresholds (according to Article 27 of the EU ETS Directive — see Section 2.2.2 of this report), or can allow installations/ aircraft operators flexibilities in certain obligations within the system (according to Article 47 of the Monitoring and Reporting Regulation, MRR). The 2014 country reporting showed that the option of excluding installations with low emissions from the EU ETS has been applied by only six countries. The total amount of emissions excluded in this way was 0.2% of total EU ETS emissions

Figure ES.2 Fuel consumption (TJ) and emissions (kt CO₂) in the EU ETS by country, 2013

Note: Excludes Denmark, France, and Italy. France and Italy did not submit in time for inclusion in this EEA technical report. Denmark did not respond to this question.

for the 29 countries that responded to the Article 21 questionnaire (3.3 kt of CO₂ equivalent).

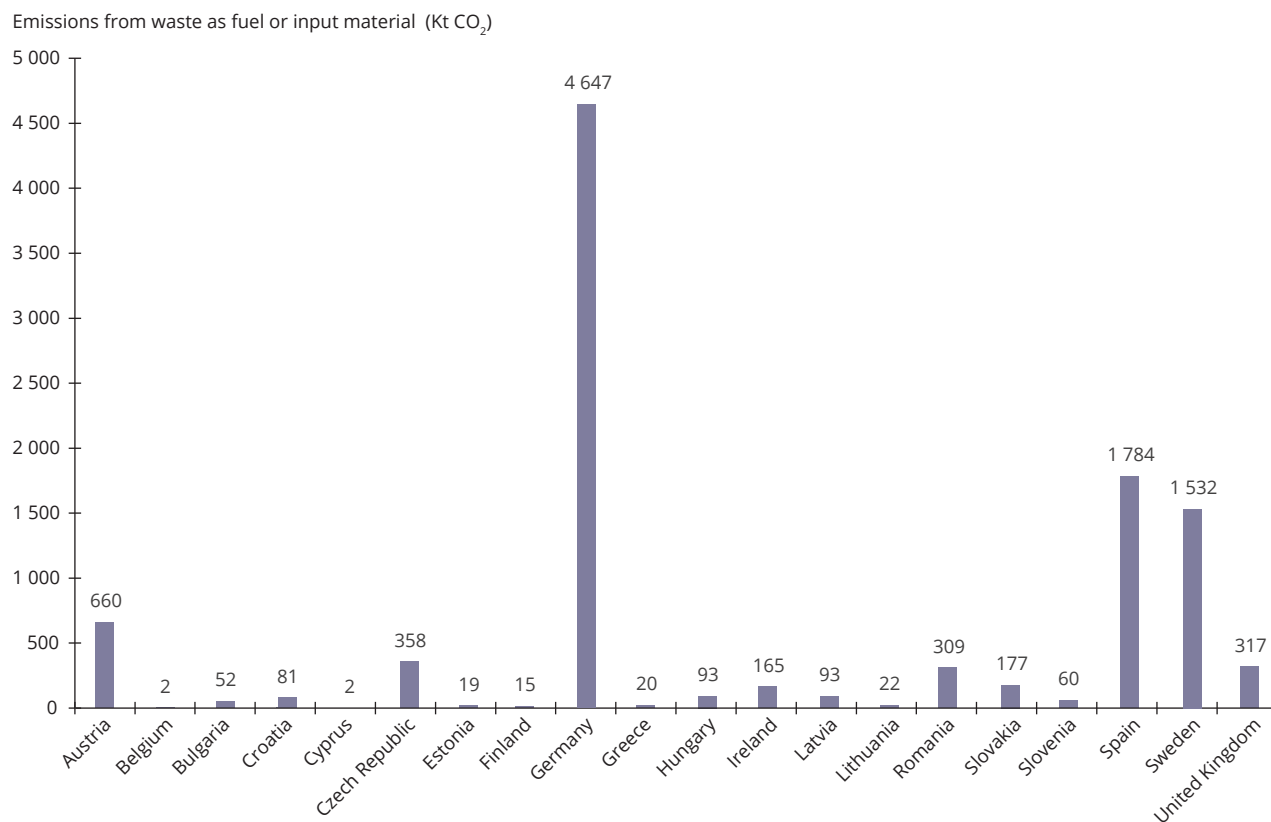
All six countries that excluded installations from the EU ETS under Article 27 reported some method of verification. In all cases this verification was simplified.

Other flexibilities are available in the MRR to simplify monitoring and reporting requirements. These

flexibilities include simplified monitoring plans for low emitters, and permitting low emitters to use less than highest tier⁽⁵⁾ methods where highest tier has been deemed not technically feasible or would induce unreasonable cost. These flexibilities appear to have been applied appropriately and not overused. The flexibilities to allow simplified monitoring plans for low emitters have only been used by 9 out of 29 countries.

⁽⁵⁾ 'Tiers' are sets of requirements for determining calculation factors, activity data and emissions. Higher tiers have more stringent requirements and produce more accurate data.

Figure ES.3 Emissions (kt CO₂) from waste as a fuel or input material in the EU ETS, 2013



Note: Iceland, Liechtenstein, Luxembourg, Malta, the Netherlands, Norway, and Portugal reported zero emissions from waste as a fuel or material input. Denmark and Poland failed to report. France and Italy did not submit in time for inclusion.

If installations fail to report emissions as required, the competent authorities must make a conservative estimate of the installation's emissions. Ten countries did this for at least one installation, but no country made conservative estimations for more than 2% of its installations, or for more than 2% of its total emissions in the EU ETS. This suggests that conservative estimation is being applied appropriately, and only as a last resort.

Each year, reported emissions must be checked by accredited verifiers to ensure that emissions data have been monitored in accordance with the MRR.

Overall, the verification system seems to be working well. The number of accredited verifiers appears to be sufficient. The number of accredited verifiers available to verify emission reports in different sectors is generally in proportion to the numbers of installations in each country. In 2012, the Commission adopted the Accreditation and Verification Regulation (AVR) (EU, 2012a), including a provision concerning mutual recognition of verifiers (Article 66 of the AVR). This provision appears to be generally working as

intended (it is being applied in most countries) and is contributing to the availability of sufficient verifier capacity. Only five countries reported complaints made about verifiers accredited in their country not conforming to the requirements in the AVR. In each case, there were a small number of complaints.

Competent authorities (CAs) may carry out checks on emission and verification reports as an additional quality-control measure. Only 18 verified emission reports were rejected by CAs because of non-compliance with the MRR. This is a notably low figure, and whilst it seems to indicate good compliance, it may also indicate that some verified emission reports are not being identified as non-compliant with the MRR. Of the 29 countries that reported, only the Czech Republic responded that there were no checks by the CA. Seventeen countries cross-checked all reports with allocation data.

Formal information exchange between the competent authority and the National Accreditation Body (NAB) is a requirement of the AVR. These information

exchanges concern the quality and thoroughness of the verification process and identify where problems may be occurring. The Article 21 questionnaire requests that countries also report on additional types of data exchange. Twenty four countries reported at least one **additional method of exchange of information between competent authorities (CAs) and National Accreditation Bodies**, such as through regular or ad-hoc meetings. However, it is important to mention that the existence of information exchange does not allow any conclusions to be drawn about the effectiveness of such exchanges.

Countries have also reported on the penalties that can be imposed on operators for infringements of national provisions adopted pursuant to the EU ETS Directive. These penalties can be in the form of fines and/or prison terms, but **overall few infringement penalties have been imposed**. Only seven countries (Greece, Poland, Romania, Slovakia, Spain, Sweden, and the United Kingdom) imposed fines on installation operators during the reporting period. No prison sentences have been imposed on an operator by any country. Six countries (Belgium, Czech Republic, the Netherlands, Norway, Slovakia and the United Kingdom) reported that an investigation of fraud was occurring in their country. However, only the competent authorities of Denmark and the Netherlands were systematically informed by the fraud investigation services in each case of fraud.

Areas for improvement

The EEA's analysis also found areas where improvement in the applications of the EU ETS Directive is possible.

There are also some areas where current **provisions of the EU ETS Directive could be better used by countries to lessen the administrative requirements they face without affecting environmental protection**. One provision that can reduce the burden faced by installation operators is the provision that allows different permitting procedures covering different pieces of legislation to be integrated into a single permitting procedure. In spite of this potential, only eight countries reported that EU ETS permits have been formally integrated with Industrial Emissions Directive (IED) permits. Moreover, of the six countries that excluded installations under Article 27 of the EU ETS Directive, only half reported simplified monitoring, reporting, and verification (MRV) requirements for excluded installations with emissions below 5 kt of carbon dioxide equivalent (CO₂e) per year (a flexibility permitted under Article 27). This suggests that more could be done to reduce the administrative burden on small emitters.

However, in many instances, integration of reporting requirements was widespread. For example, 22 countries reported using EU ETS data to support greenhouse gas inventory reporting or to support the integration of data submissions. However, such integration is less frequent for the European Pollutant Release and Transfer Register where only 13 countries have integrated EU ETS reporting requirements. Moreover, some countries reported no integration of EU ETS reporting with other reporting mechanisms (Czech Republic, Liechtenstein, the Netherlands). The integration of different data sources for country reporting **could be further improved**.

The responses to the questionnaire made it possible to identify a number of areas where **cooperation between national administrations could be enhanced**. The MRR requires Member States with more than one EU ETS competent authority (CA) to identify a focal CA for the coordination of cooperation with National Accreditation Bodies. Of the 25 countries with multiple CAs, only 19 countries have established a focal CA, and 18 countries reported at least one method of cooperation between CAs. Some countries reported a focal CA but no cooperation methods, and vice versa.

Another area for improvement is information exchange. There are instances where the **exchange of information on compliance issues between installations and competent authorities could be improved**. For example, 13 out of 28 countries (there was no response from Bulgaria) reported that there were some planned or effective changes to the capacity, activity levels, or operation of an installation, of which the CA became aware even though the CA had not been officially notified of these changes. Article 24 of the Commission Decision on rules for harmonised free allocation of emission allowances (EU, 2011) requires installation operators to notify the CA of such changes. Generally, however, most of the countries have measures in place to organise a regular exchange with industry on compliance issues. Examples of good practice include Spain (which set up a hotline for the purpose of resolving queries from operators and verifiers with the aim of preventing non-compliance) and Romania (which conducted comparisons of operators' data with data from integrated environmental permits). These examples of good practice could be followed by other countries.

In some instances, there were problems with the approval process of sampling plans. There were also some occasions where there were problems with frequencies of sampling and analysis. For example, some installation operators failed to submit information on sampling and analysis, arguing

that their fuel suppliers had refused to make such information available. Three countries (Croatia, Cyprus and the United Kingdom) reported rather extensive use of low sampling frequencies. Germany reported a rather high number of instances where literature and default values were used (4 492 times ⁽⁶⁾).

A high use of literature and default values rather than actual sampling of fuels or emissions in facilities could lead to inaccuracies of emissions reported. Countries should be prepared to justify their decision to use literature and default values and not use sampling. Most countries have provided this justification.

Areas where there was insufficient information to reach a conclusion

The EEA's analysis found some areas where it was impossible to tell whether the EU ETS Directive was being well implemented or poorly implemented. This is because there was not enough information available to make such an assessment.

One area where the EEA was unable to make an assessment about the implementation of the EU ETS Directive was in continuous emission measurement (CEM). CEM is an optional method for monitoring emissions. It is a method that requires advanced equipment to be installed at a location, which can give real-time data on emissions. The majority of countries used CEM infrequently and for 5% or less of their total EU ETS emissions reported in 2013. There is therefore not enough information available to make an assessment of the 5% CEM figure. The infrequent use of CEM is possibly due to the costs of this technology or because it is not the appropriate technology in certain instances (due to the specifications of the installation type, industry, and fuels used). Nineteen countries reported that they applied CEM for CO₂ or N₂O for at least one installation. Only the Czech Republic and Slovakia applied CEM for more than 5% of their emissions, at 39% and 7% respectively.

Another information-related factor that prevented the EEA's assessment of the EU ETS Directive was data quality. There was a range of issues with the data submitted in 2014, such as incompleteness, the use by countries of formats that prevented comparisons from being made, and different interpretations of certain questions.

Data quality limited analysis in the following three instances:

- *Installations by emission-size class.* In some instances, a comparison of the reported data with the EUTL public website led to the identification of discrepancies between the total numbers of installations indicated in the registry and the data reported in the questionnaire on the application of the EU ETS Directive. For the United Kingdom and Germany the total number of installations showed considerable differences (both for total number of installations as well as for installations in different emission-size categories). It is unclear whether this individual question on the numbers of installations is the only question which led to incomplete information, or whether more answers are based on incomplete datasets. In general, installations and operators need to improve the completeness of data on which their answers are based.
- *Sustainability of biofuels and bioliquids.* Information on the use of sustainability criteria for biofuels and bioliquids was often incomplete.
- *Data on fuel consumption; data on emissions from fuels; and data on the transfer of inherent CO₂(⁷) from or to an installation in the EU ETS.* Further adherence to the guidance in the explanatory note for the EU ETS Article 21 Questionnaire (EC 2014a) on fuel definitions could improve future reporting.

In general, the EU ETS Directive appears to be being implemented as intended. There are some areas where countries could make better use of the rules in place to reduce the administrative burden for low emitters and for permit applications. Answers to a few questions show that countries make varying use of some monitoring flexibilities provided within the MRR. It is worth considering whether the use of flexibilities by individual countries is proportionate. However, any such consideration should not be based on a comparison of absolute numbers of flexibility provisions across countries, because there are of course large differences in the number of installations that fall under the EU ETS Directive in different countries. Coordination between different authorities has the potential to be improved, but it is not yet possible to conclude whether a lack of coordination has impacted the efficiency of monitoring and verification.

⁽⁶⁾ According to Germany, the majority of these instances involve installations with low emissions or de-minimis source streams, and the majority of the literature values are from Germany's national inventory.

⁽⁷⁾ Inherent CO₂ is carbon dioxide which results from an Annex I activity (i.e. activities covered in Annex I of the EU ETS Directive) and is part of a gas that is considered a fuel. This could be natural gas, a waste gas including blast furnace gas, or coke oven gas.

1 Introduction

1.1 What is greenhouse gas emissions trading?

The EU Emissions Trading System (EU ETS) is a cap and trade scheme for greenhouse gas (GHG) emissions from EU Member States and Iceland, Liechtenstein and Norway. It aims at promoting 'reductions of GHG emissions in a cost-effective and economically efficient manner' (EU, 2003). The EU ETS sets a cap on the total amount of carbon dioxide (CO₂) and other GHGs ⁽⁸⁾ that can be emitted by power plants, manufacturing installations and aircraft operators in the system. The cap is reduced over time so that total annual GHG emissions covered by the system fall.

Within the cap, companies receive or buy emission allowances that they can trade. They can also buy limited amounts of international credits from GHG emission-saving projects. Each allowance gives the holder the right to emit 1 tonne of CO₂ or the equivalent amount of nitrous oxide (N₂O) or perfluorocarbons (PFCs).

After each year, a company must surrender enough allowances to cover all its verified emissions subject to the EU ETS, otherwise fines are imposed. If a company reduces its emissions, it can keep the spare allowances to cover its future needs for surrendering allowances or else sell these allowances to another company that is short of allowances.

1.2 The EU Emissions Trading Directive and related legislation

The EU ETS was established by the Emissions Trading Directive (EC, 2003). Emissions trading under the EU ETS has taken place in three 'trading periods' so far (2005–2007, also referred to as Phase I; 2008–2012, or Phase II; and 2013–2020, or Phase III). The EU ETS Directive was amended in 2009 (EU, 2009a) to improve and extend the EU ETS.

The main changes in the third trading period compared to previous trading periods are as follows.

- A single, EU-wide cap on emissions applies in place of the previous system of national caps.
- Auctioning, not free allocation, is the default method for allocating allowances. In 2013, more than 40% of allowances were auctioned (EC, 2014b), and this share will rise progressively.
- For allowances allocated for free, harmonised allocation rules apply that are based on EU-wide benchmarks of emissions performance.
- Inclusion of additional activities and gases (including N₂O from production of nitric, adipic, glyoxal and glyoxylic acids; PFCs from primary aluminium production; capture, transport and geological storage of GHG emissions; CO₂ emissions from petrochemicals, ammonia and aluminium production; and CO₂ emissions from non-ferrous metal production/processing).
- The aviation sector has been included in the EU ETS since 1 January 2012 (EU, 2008). The aviation sector, in the EU ETS context covering flights internal to the European Economic Area, has a separate cap to power stations and other fixed installations that is reduced at a slower rate. Surrender of emission allowances and reporting for 2013 is not required until 2015, and the inclusion of flights to and from countries outside the European Economic Area has been postponed until after 31 December 2016 (EU, 2014b).
- Regulations for accreditation and verification (EU, 2012a) and for monitoring and reporting were adopted (EU, 2012b).
- Croatia joined the EU ETS for installations at the start of Phase III, 6 months ahead of its accession to the EU.

In October 2014, the European Council concluded that 'a well-functioning, reformed ETS' will be the main instrument to achieve the EU target of at least 40%

⁽⁸⁾ Nitrous oxide (N₂O) and perfluorocarbons (PFCs).

reduction in GHG emissions by 2030 compared to 1990 (European Council, 2014). The EU ETS covers around 45% of total EU GHG emissions (EEA, 2015).

1.3 Article 21 reporting on the application of the EU Emissions Trading Directive

There are two main requirements for reporting on the application of the EU Emissions Trading Directive. The first, defined by Article 21(1) of the EU ETS Directive, requires EU Member States to submit annual reports to the European Commission on how this Directive is being applied in their country. The reports are to be based on the questionnaire that is set out in Commission Implementing Decision (EU, 2014a). The questionnaire pays particular attention to the coordination between competent authorities (CAs), arrangements for the allocation of allowances, registries, the application of implementing measures on monitoring and reporting, verification and accreditation, issues relating to compliance with the EU ETS Directive and to the fiscal treatment of allowances.

In addition to the 28 EU Member States, this report also covers submissions by 3 more European Environment Agency (EEA) member countries (Iceland, Liechtenstein and Norway) that are part of the European Economic Area and participate in the EU ETS.

The second main requirement, defined by Article 21(2), requires the European Commission to publish a report on the application of the EU ETS on the basis of the completed questionnaires submitted by EU Member States. This document serves as input in this regard.

1.4 Purpose and structure of this report

The purpose of this report is to summarise the responses of countries to the questionnaire on implementation of the EU ETS in 2013. This national reporting allows the evaluation of implementation of the EU ETS, which has been identified by the European Council as the main EU instrument for reducing GHG emissions (European Council, 2014). The evaluation has enabled a consideration of the implementation of the administrative requirements of the EU ETS Directive, and the Monitoring and Reporting Regulation (MRR) (EU, 2012b) to a certain extent. National answers can provide insight into how the

EU ETS could be further improved or whether there are areas in which further guidance or support to Member States for improved application of the EU ETS Directive would be useful.

The report also presents an initial analysis of the emissions and fuel data collected via the questionnaire. The latter has been used to compare implied emission factors (IEFs; fuel emissions divided by fuel consumption) for specific fuels with default ranges of emission factors (EFs) provided by the Intergovernmental Panel on Climate Change (IPCC)⁽⁹⁾ as a tool to evaluate the quality of the data provided and assess which reported data should be checked with the reporting countries. This acts as part of an emission inventory review (rather than assessment of the implementation of the EU ETS Directive).

It is important to note that the information in this report is time limited to the point at which countries submitted their reports (see Appendix 1 for details), and by the quality of the information provided by the reporting countries.

The chapters of this report cover the following:

- Chapter 2: Findings related to implementation of the EU ETS Directive covering coordination between authorities; the coverage of activities and installation in the EU ETS; monitoring, reporting and verification (MRV); compliance; and the legal and fiscal nature of allowances.
- Chapter 3: Reported emissions and analysis of implied emission factors.
- Chapter 4: Outlook.

The appendices present additional information collected in the questionnaire, additional analysis and resources to aid the interpretation of this report. In particular, some countries did not answer all questions, therefore incomplete responses to questions and questions with data quality too low to warrant full analysis (in particular, fees and charges, and fraud) can be found in Appendix 3. Tables of other data submitted (administrative arrangements, reported activity and emissions, arrangements for verification) can also be found in Appendix 3.

Aviation is not covered in this report for the year 2013. This is because there is the possibility to defer reporting of 2013 emissions to 31 March 2015 (EU, 2014b). Where

⁽⁹⁾ Default emission factors from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, applicable across countries, using set assumptions. See <http://www.ipcc-nggip.iges.or.jp/public/2006gl>.

countries have provided information regarding aircraft operators, this is also covered in Appendix 3.

1.5 National responses in 2014

The deadline for national responses in 2014 was 30 June 2014. Nineteen countries submitted by this time.

A further seven countries reported by the end of August.

Three countries submitted later (Greece, Norway and Spain), but have been included in this report. France and Italy did not report in time for inclusion in this report.

Table 1.1 gives a completeness percentage per country based on the questions set as mandatory in the questionnaire (sub-questions not included). The full summary of national responses to mandatory questions is shown in Table A1.2 in Appendix 1.

Table 1.1 Completeness of national responses, 2014

Country	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IS
% complete	93	100	95	100	100	100	81	100	100	100	0	98	100	100	100	100
Country	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK	
% complete	0	100	100	98	100	100	100	98	93	86	100	100	98	100	100	

Note: Red corresponds to non-inclusion in the report. Green corresponds to a country completing all mandatory questions. Shades of yellow correspond to differing levels of completeness; the darker the yellow, the less complete the report. Italy submitted the country's report on 10 December 2014. France released the country's report on 27 March 2015. A list of country abbreviations can be found at the end of this report.

For country codes please see Abbreviations, units and acronyms page 51.

2 Implementation of the EU ETS Directive in 2013

2.1 Coordination between authorities in the implementation of the EU ETS

Coordination — summary

Coordination of activities between the CAs of a number of countries could be improved. Only 18 out of the 25 countries with multiple CAs report at least one method of coordinating the administrative work of the CAs. Cooperation between CAs and national accreditation bodies (NABs) is satisfactory for most countries, with only five countries reporting no additional methods of information exchange than required. However, not all countries with multiple CAs reported a focal CA for this information exchange, which is required by the Accreditation and Verification Regulation (AVR). There is good integration of EU ETS permits and Industrial Emissions Directive (IED) permits, with almost all countries reporting either formal integration or informal coordinated processes.

The success of EU ETS implementation is affected by how well CAs can coordinate within a country's administrative system. For efficient EU ETS implementation, this coordination can be both formal and informal in arrangement.

Tables A3.2 and A3.3 in Appendix 3 show the roles of different CAs for installations and aircraft operators respectively, and a list of CAs is provided in Table A3.1 of the same appendix.

Number of competent authorities

Twenty-nine countries reported on the number of CAs involved in the EU ETS. Of the 25 that have more than 1 CA, 19 reported that there was a focal CA for the coordination of information exchange between CAs and the NAB, as required by Article 69 of the AVR (EU, 2012a). The countries with only one CA are smaller countries in terms of population (Denmark, Estonia, Iceland and Liechtenstein).

Formal information exchange

Formal information exchange between the CA and the NAB ⁽¹⁰⁾ is a requirement of the AVR (Article 69). These information exchanges concern the quality and thoroughness of the verification process and identify

where problems may be occurring. The Article 21 questionnaire requests that countries report on additional types of data exchange. Only Bulgaria, Cyprus, Liechtenstein, Luxembourg and Poland reported that no additional methods of information exchange are occurring ⁽¹¹⁾. The additional avenues of information exchange are summarised in Table 2.1.

Coordination of administrative work of competent authorities

The MRR (EU, 2012b) requires countries with multiple CAs to coordinate the administrative work of the CAs for the EU ETS (Article 10). Of the 25 countries with multiple CAs, 18 countries reported at least one measure to coordinate the administrative work of CAs. The most popular coordination measure was to establish regular working groups with the CAs (11 countries). Ad hoc arrangements were also reported. For example, Romania reported meetings to be organised every time CAs and stakeholders were having difficulties in applying EU ETS provisions. Latvia added that regular meetings occur within the framework of the IED, where EU ETS activities are also discussed. The latter is a good example of integrating the application of the two Directives in order to reduce burden where an overlap occurs.

⁽¹⁰⁾ Or the national authority entrusted with the certification of verifiers.

⁽¹¹⁾ Poland noted that a representative of the Institute of Environmental Protection (KOBiZE) is a member of the Technical Committee of the Specialist Committee for the Environment (KTS) at the Polish Centre for Accreditation.

Table 2.1 Additional information exchange between the NAB and the CA, 2013

	Regular meetings between the NAB and the CA responsible for the coordination	Working group where the NAB and the CA discuss accreditation and verification issues	The CA can accompany the NAB in accreditation activities as an observer	Ad hoc meetings as necessary between the NAB and the CA
AT	No	No	Yes	
BE	Yes	No	Yes	Yes
BG	No	No	No	
CY	No	No	No	
CZ	No	Yes	Yes	Yes
DE	Yes	Yes	Yes	
DK	Yes	No	Yes	Yes
EE	No	No	Yes	Yes
ES	Yes	Yes	Yes	
FI	Yes	No	Yes	
GR	Yes	No	Yes	
HR	Yes	Yes	Yes	
HU	No	No	Yes	
IE	Yes	No	Yes	
IS	Yes	No	No	
LI	No	No	No	
LT	No	No	Yes	
LU	No	No	No	
LV	No	No	Yes	
MT	Yes	No	Yes	
NL	Yes	No	No	
NO	Yes	No	Yes	Yes
PL	No	No	No	
PT	No	Yes	Yes	
RO	Yes	Yes	Yes	
SE	Yes	No	Yes	Yes
SI	Yes	No	Yes	
SK	Yes	Yes	Yes	
UK	Yes	Yes	Yes	Yes

Note: Blank cells indicate an absence of reply rather than a reported 'No' as a number of countries reported ad hoc meetings in addition to the options offered in the questionnaire. France and Italy did not submit in time for inclusion.

For country codes please see Abbreviations, units and acronyms page 51.

For activities implementing the MRR, seven countries reported that a central CA gives binding instructions and guidance to local/regional CAs. Croatia and the Czech Republic commented that local/regional CAs are not involved in EU ETS implementation, in contrast to Belgium which reports that the EU ETS is implemented separately by CAs with no overarching national authority. Romania represents a third approach, with local environmental protection authorities obliged to report installations under the EU ETS to the

national CA. These authorities are also responsible for notifying the national CA regarding changes to these installations.

To ensure a coordinated approach, Article 8 of the EU ETS Directive requires coordination of the procedures for EU ETS permits and IED (EU, 2010a) permits where installations are subject to both pieces of legislation. This can also reduce the administrative burden on installation operators for obtaining and

managing permits where both Directives apply. Eight countries (Austria⁽¹²⁾, Belgium, Germany, Iceland, Latvia, Lithuania, Portugal and Slovakia) report formal integration of the IED and EU ETS regulations. Of the 21 countries without formal integration of these procedures, all except the Czech Republic and Finland⁽¹³⁾ reported at least one method of coordination between the EU ETS and IED permits, as displayed in Table 2.2. The most common method of coordination (16 countries) reported was that the legislation that transposes the IED does not include emission or concentration limits for CO₂. This is

a mandatory requirement under the EU ETS legislation. Latvia, Norway and Spain also reported that the same competent body oversees IED and EU ETS permits.

The question of integration is of interest because the majority of EU ETS installations are too small to be covered by the IED (although national legislation may go beyond in some instances). This is mainly because the threshold for a combustion activity in IED is 50 megawatts thermal⁽¹⁴⁾ (MWth) (large combustion plants) compared to only 20 MWth for the EU ETS.

Table 2.2 Informal coordination of the EU ETS and IED permits, 2013

	The legislation that transposes the IED does not include emission or concentration limits for CO ₂	IED regulators (*) give advice on a voluntary and non-binding basis to the CA responsible for emissions trading during the permitting procedure	IED regulators check whether an ETS permit is applicable and necessary	IED regulators give binding instructions to the CA responsible for emissions trading during the permitting procedure
AT	Yes	Yes	No	No
BG	Yes	Yes	No	No
CY	Yes	No	Yes	No
CZ	No	No	No	No
DK	Yes	Yes	No	No
EE	Yes	Yes	Yes	Yes
ES	Yes	Yes	Yes	No
FI	No	No	No	No
GR	No	Yes	No	No
HR	No	Yes	No	No
HU	Yes	Yes	No	No
IE	Yes	Yes	Yes	No
LI	No	Yes	Yes	No
LU	No	Yes	No	No
MT	Yes	No	No	No
NL	Yes	No	No	No
NO	Yes	Yes	Yes	No
PL	Yes	Yes	No	No
RO	Yes	No	Yes	No
SE	Yes	No	No	No
SI	Yes	Yes	Yes	No
UK	Yes	Yes	No	No

Note: France and Italy did not submit in time for inclusion.

* Regulating bodies that enforce the Industrial Emissions Directive.

For country codes please see Abbreviations, units and acronyms page 51.

⁽¹²⁾ The integration of IED and EU ETS permits in Austria is not obligatory, but possible.

⁽¹³⁾ Where the IED regulation is in the process of being transposed into national law.

⁽¹⁴⁾ A megawatt thermal is a unit of thermal energy in the power industry.

2.2 Coverage of activities and installations

Coverage — summary

This section presents data on the numbers and types of installations covered by the EU ETS.

There are some inconsistencies in reporting numbers of installations between the Article 21 reports and the data in the European Union Transaction Log (EUTL) public website (*). Further guidance on definitions of the types of installations could be provided for countries reporting to help align installation reporting with EUTL public website data. There are also inconsistencies between the Article 21 reports and EUTL data for Annex I activity permits and emissions for Annex I activities. Two countries reported under Article 21 that they did not have permits for certain Annex I activities but report emissions for these activities in the EUTL public website.

The total amount of emissions excluded under Article 27 (***) is 0.2% of total emissions reported by the 29 countries covered in the EU ETS that responded to the Article 21 questionnaire. The application of Article 27 therefore does not affect the environmental integrity of the EU ETS.

There is inconsistency in the reporting on allocation changes. Further adherence to the guidance (EC, 2014a) on the time-frames of reporting in question 8.1 in the Article 21 questionnaire would help to ensure consistency of reporting of allowance changes.

Not enough data was collected to make an assessment on the transitional free allocation of allowances for the modernisation of electricity generation.

Note: * The European Union Transaction Log (EUTL) automatically records transactions in the Union registry. To participate in the EU ETS, a company or a physical person must have an account in the Union registry.

*** Article 27 of the EU ETS Directive allows small emitters to be excluded from the EU ETS, to reduce the administrative burden on these installations (see Section 2.2.2).

This section considers the number and nature of the installations covered by the EU ETS and how this has changed during the reporting year. Flexibilities allowing installations to be excluded from the EU ETS are not found to affect the environmental integrity of the EU ETS, representing 0.2% of emissions. For this reporting period, which is the first year in the third trading period, the size (in emission allowances) of the EU ETS decreased by approximately 1 million emission allowances (see Section 2.2.3 for discussion). There is the potential for improved data exchange between operators and CAs with regard to planned changes in capacity.

2.2.1 Reported installations

Countries reported the number of installations that are in each category under Articles 19 and 47 of the MRR:

- **Category A** installations with medium emissions ($\leq 50\,000$ tonnes CO₂e) and installations with low emissions ($< 25\,000$ tonnes CO₂e). Installations with low emissions are a subset of category A.

- **Category B** installations with high emissions ($> 50\,000$ tonnes CO₂e and $\leq 500\,000$ tonnes CO₂e);
- **Category C** with very high annual emissions ($> 500\,000$ tonnes CO₂e⁽¹⁵⁾).

In addition, countries provided information on the Annex I activities (i.e. activities covered in Annex I of the EU ETS Directive) for which permits have been issued according to the EU ETS Directive.

A total of 9 307 installations were reported by 29 countries (Table A4.1 in Appendix 4). Category A installations make up 72% of these. Category B installations are 20% of the total and category C makes up 8%. The subset of installations with low emissions was 56% of the total. This excludes France and Italy, who did not submit in time for inclusion.

While installations with low emissions are a subset of category A installations and most likely also due to an erroneous automated data check on the reporting platform, many countries misinterpreted the question and presented the total number of installations and

⁽¹⁵⁾ This refers to the amount of carbon dioxide that would have the same level of radiative forcing (global warming potential) as a given mixture of greenhouse gases.

emissions for this question as the sum of installations with low emissions and category A installations. Therefore, the data provided were corrected so that the data presented are consistent ⁽¹⁶⁾. Figure 2.1 presents the responses provided, with re-calculated category A numbers where necessary.

The percentages of the distribution of the size classes of installations is different for the small countries with fewer than 20 installations, such as Cyprus, Iceland, Liechtenstein, Luxembourg and Malta, compared to larger countries. If these small countries are not considered, the installations in the largest emissions category C (> 500 000 tonnes CO₂e) comprise between 1 and 18% of a country's total installations, 4–44% of the installations belong to category B installations (> 50 000 tonnes CO₂e and ≤ 500 000 tonnes CO₂e), and between 43 and 92% of installations are part of category A installations (≤ 50 000 tonnes CO₂e). The share of installations with low emissions (< 25 000 tonnes CO₂e) relative to total emissions varies considerably across countries from 0% (Estonia, Iceland and Malta) to 80–87% of total installations (Denmark, Finland, Lithuania, and Sweden). This is presented in Figure 2.1 and Table A4.1 in Appendix 4.

The EEA compared the installation numbers reported by countries with EUTL public website data for 2013 ⁽¹⁷⁾ (see Table A4.2 and Appendix 4). Only data for Liechtenstein and Malta were completely consistent between the two data sets. For most countries, the differences concerned fewer than 10 installations. Larger countries with more installations had greater discrepancies between the two data sets, but minor differences in absolute numbers in smaller countries result in greater percentage differences. These differences are explained in more detail in Appendix 4. The main result is that countries interpreted questions in different ways, but also that a direct correspondence between the EUTL public website data and Article 21 reporting on the number of installations and categorisation is not possible.

Considering the number of installations, it has to be kept in mind that there is a major difference between the number of installations in category A and their share on total EU ETS emissions. Regardless of their

high percentage in the total number of installations, they do not account for more than 10% of verified emissions (EU ETS data viewer ⁽¹⁸⁾).

Countries indicated for which industrial sectors they have issued permits under the EU ETS Directive. These sectors are termed 'Annex I activities', referring to activities covered in Annex I of the EU ETS Directive. This information was compared with the activities for which emissions are reported in the Union registry. Countries frequently indicated that they have issued permits for activities for which no emissions were reported (only Cyprus, Liechtenstein, Luxembourg, Malta and Spain had emissions for all permitted activities). In certain instances this could be explained by the fact that the issuance of a permit does not necessarily lead to the use of such a permit. The opposite case was also observed. In one case, emissions are reported in the Union registry for an activity for which the country did not indicate that they issued permits (Lithuania for coke production). Explanations for the latter case should be sought regarding this inconsistency in the data.

2.2.2 Excluded installations

Article 27 of the EU ETS Directive (EU, 2003) allows countries to exclude installations from the EU ETS if they have reported emissions of less than 25 000 tonnes CO₂e, and have a rated thermal input ⁽¹⁹⁾ below 35 MW if they carry out combustion activities. For excluded installations, the country must continue to perform sufficient monitoring of emissions. This can be simplified if the annual emissions are below 5 000 tonnes CO₂e.

The option for exclusion under Article 27 has not been used very often. The total amount of emissions excluded is 0.2% of total emissions reported by the 29 countries covered in the EU ETS that responded to the Article 21 questionnaire ⁽²⁰⁾. Only six countries reported that they had excluded installations under Article 27 (Croatia, Germany, Iceland, Slovenia, Spain and the United Kingdom). The sum of corresponding emissions excluded ranged from 17 kilotonnes (kt)

⁽¹⁶⁾ If a country's category A installations was reported as less than the number of low emission installations, the data was corrected so that category A installations equalled total installations, less category B and C installations.

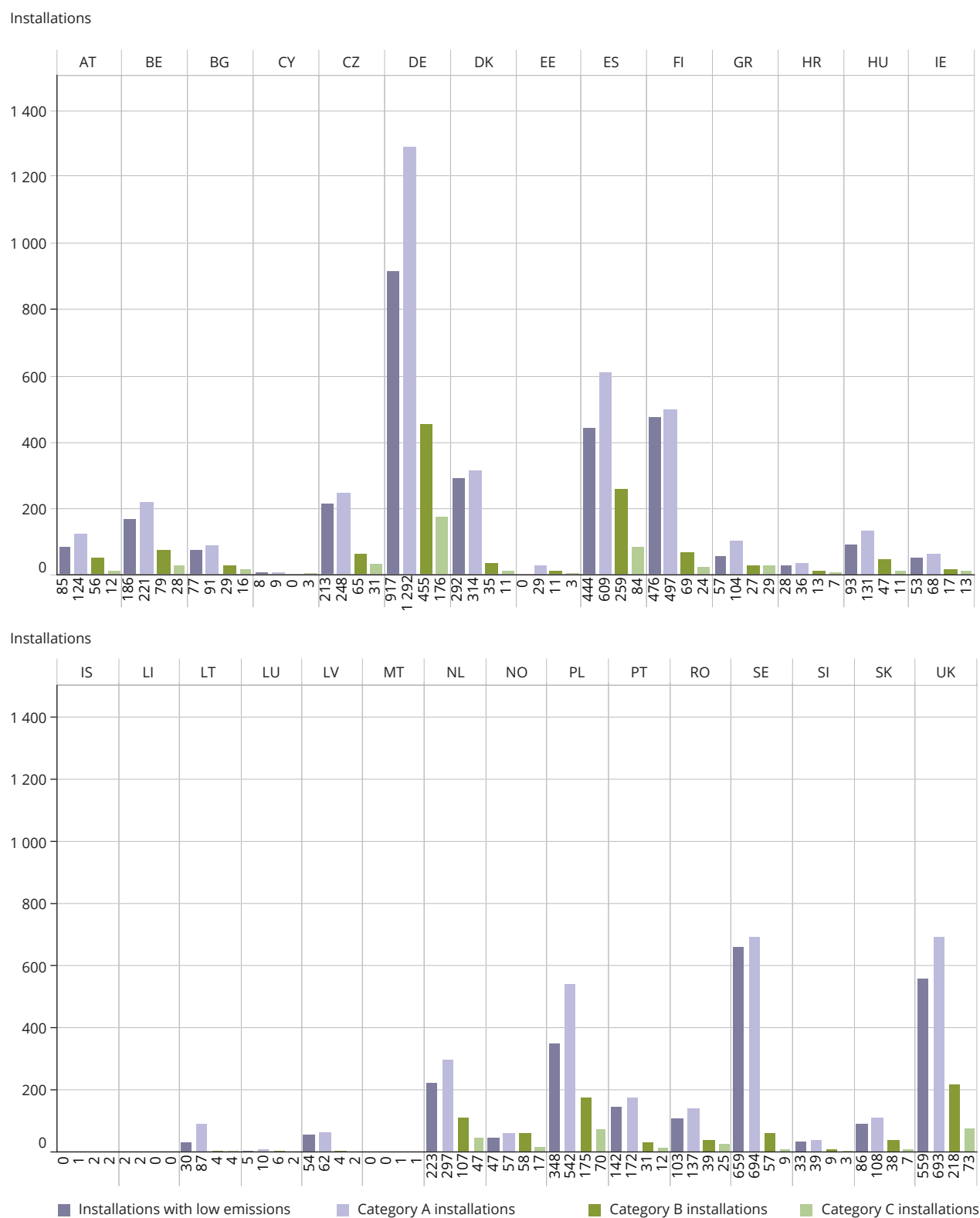
⁽¹⁷⁾ The Union registry holds accounts for installations, aircraft operators and voluntary participants in the EU ETS, and tracks all transfers between accounts as well as verified emissions for all installations and aircraft operators subject to obligations under the EU ETS. The EUTL public website makes publicly available data from this registry. The comparison was made against the number of installations with open accounts as of 19 August 2014.

⁽¹⁸⁾ See <http://www.eea.europa.eu/data-and-maps/data/data-viewers/emissions-trading-viewer>.

⁽¹⁹⁾ Rated thermal input refers to the rate at which fuel can be burned at the maximum continuous rating (maximum output a generator is capable of producing continuously, under normal conditions, for a year) of the appliance, multiplied by the gross calorific value of the fuel. Rated thermal input is expressed as megawatts thermal, and can usually be taken from the manufacturer's rated input for that appliance or design.

⁽²⁰⁾ France and Italy did not submit in time for inclusion.

Figure 2.1 Number of installations by type, 2013



Note: France and Italy did not submit in time for inclusion.
 For country codes please see Abbreviations, units and acronyms page 51.

CO₂ for Iceland ⁽²¹⁾, to 2 061 kt CO₂ for the United Kingdom ⁽²²⁾. Germany reported that four installations had been excluded but only one had reported emissions by the deadline, as the German Greenhouse Gas Emission Allowance Trading Act (TEHG, 2011) allows submission of an emissions report every two years. The total amount of excluded emissions reported by the six countries was 3 310 kt CO₂e. This is considered an appropriate application of Article 27.

All six countries that excluded installations from the EU ETS under Article 27 reported some method of verification. The United Kingdom allows the operators to submit a self-verified report that, in turn, may be verified externally based on a risk assessment, so as to avoid verifying every installation. Slovenia also reported additional periodic verification based on a risk assessment for installations with emissions above 15 000 tonnes CO₂, and annual verification for installations with emissions above 20 000 tonnes CO₂. Spain implemented measures recommended by a technical group of the Coordination Commission of Climate Change Policies in a 2013 report (CCPCC, 2013), with validation similar to non-excluded installations, as well as occasional site visits.

If countries exclude installations from the EU ETS under Article 27, monitoring must take place to assess whether the installations exceed the threshold of 25 000 tonnes CO₂e per year. These MRV requirements can be simplified for installations with emissions below 5 000 tonnes CO₂e per year. Three of the countries that had excluded installations under Article 27 reported simplified MRV for excluded installations with emissions below 5 000 tonnes CO₂e per year (Croatia ⁽²³⁾, Germany, and Spain), as well as two countries (Hungary and Liechtenstein) who did not report excluding any installations under Article 27.

2.2.3 Changes in allocations

Twenty-eight countries reported on the number of changes in installations affecting the allocation and quantity of emission allowances. Liechtenstein did not

report. As this was the first reporting year in the third trading period, in theory there should be no difference between a country's data for changes since the start of the third trading period and changes during the reporting period. Not every country interpreted the question in this manner however, as Belgium, Bulgaria, Finland, Hungary, Latvia, the Netherlands, Portugal, Slovakia, Slovenia, and Spain, either only answered one question or reported a different number of changes in each question. There are also issues with the data when comparing the number of changes with associated quantity of emission allowances ⁽²⁴⁾.

The reported data representing the third trading period show that the EU ETS saw 1 148 changes to installations, corresponding to a net decrease of 1 111 458 emission allowances. However, the reported data for just 2013 show 1 199 changes to installations, corresponding to a net decrease of 1 075 105 emission allowances. This excludes France and Italy, who did not submit in time for consideration in this report. The inconsistencies in reporting across countries limit the validity of deeper analysis. Regardless of which data set is used, partial cessation ⁽²⁵⁾ accounts for the largest number of changes to installations and the largest change in quantity of emission allowances.

Thirteen out of 28 countries reported that there were some planned or effective changes to the capacity, activity levels or operation of an installation that the CA was not notified about. Bulgaria did not report. This lack of data exchange has the potential to be improved by further development of automatic electronic data exchange between operators and CAs. The United Kingdom commented that it is doing just that; the sites are regulated by an authority that is yet to use its online reporting software, which would require a confirmation from operators whether changes had occurred.

Eight (Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Lithuania, Poland and Romania) out of 29 countries reported that they had applied Article 10c of the EU ETS Directive, which concerns the transitional free allocation of allowances for the modernisation of electricity generation ⁽²⁶⁾. Countries applying Article 10c

⁽²¹⁾ Germany reported 10.4 kt CO₂, but did not yet have data for 3 more excluded installations, for which it is assumed that the total sum of emissions excluded will be greater than 17 kt CO₂.

⁽²²⁾ This does not include information from four more emission reports that had not yet been submitted.

⁽²³⁾ Croatia also reported using simplified MRV for excluded installations with emissions up to 25 000 tonnes CO₂e per year.

⁽²⁴⁾ For example, Germany reports 250 partial cessations under Article 23 of Decision 2011/278/EU, but no change in the quantity of emission allowances under partial cessations.

⁽²⁵⁾ Under Article 23 of the Commission Decision on rules for harmonised free allocation of emission allowances (EC, 2011). Partial cessation refers to installations having a sub-installation (contributing at least 30% of free emission allowances or more than 50 000 allowances) that reduces its activity level in a calendar year by at least 50%.

⁽²⁶⁾ Free allocation to installations is allowed if in 2007 the national electricity network was not connected to the network interconnected system operated by the Union for the Coordination of Transmission of Electricity (UCTE) or was connected through a single line with less than 400 MW of capacity, or if in 2006 more than 30% of electricity was produced from a single fossil fuel and the gross domestic product per capita was below 50% of the EU average. Therefore, this option was available to 10 countries.

must submit a national plan outlining diversification of the energy mix, investments in retrofitting, upgrading of infrastructure and clean technologies. Poland allocated the most allowances under this Article, at 65 992 703 emission allowances. Lithuania commented that they have not yet allocated allowances under this Article, but applied for 2 853 628 emission allowances for the third reporting period and are awaiting the final decision from the European Commission's Directorate-General for Competition. Poland reported the highest value of investment under Article 10c, EUR 3 407 084 845, and Estonia reported the lowest (EUR 76 688 021). Hungary reported that the total cost of two projects under this Article will be approximately EUR 26.6 million, but no money was paid in 2013. Bulgaria, Lithuania and Romania did not report on the value of investment.

2.3 Application of the Monitoring and Reporting Regulation (MRR)

The MRR (EU, 2012b) establishes the monitoring methodologies and reporting requirements for the installations and aircraft operators covered by the EU ETS. As for other Commission regulations, the MRR is binding. In some areas, the MRR provides room for Member States to complement the regulation with additional legislation. Additional national guidance may also be made available.

The following subsections assess country answers on complementary aspects of national rules and the use of provisions for simplification of processes where the MRR allows.

2.3.1 General implementation of the monitoring and reporting processes

The responses by countries on further guidance and legislation to assist in the application and understanding of the MRR is presented in Table 2.3.

Monitoring and reporting — summary

The majority of countries adopted additional national guidance or legislation, and this practice is more common in countries with high emissions. Complementary legislation typically either elaborates the general implementation procedures of the MRR or addresses country-specific issues.

Integration of reporting requirements for the EU ETS, E-PRTR (*), and/or GHG inventory reporting is widespread. Integrating reporting requirements where possible is recommended to reduce the administrative burden on installation operators and regulation bodies. Data quality checks can be improved by comparing the available data sets for the EU ETS, E-PRTR and GHG inventories.

Approximately half of the countries developed country-specific electronic file formats or templates for operator or verifier reporting, and have typically customised their reporting through the development of web-based reporting systems.

Automated data exchanges between suppliers, operators and CAs are not widespread, but are recommended to aid communication and reduce data gaps.

Sampling plans required under Article 33 of the MRR were not completed in all countries, which should be improved.

Flexibilities within the MRR for the simplification of monitoring and reporting processes, where applicable, are generally used as intended.

The majority of countries used the optional method of CEM in only a few installations and for 5% or less of their total EU ETS emissions reported in 2013. There is not enough information to judge whether this percentage is appropriate or not.

Note: * European Pollutant Release and Transfer Registry.

Table 2.3 Provision of additional national legislation and guidance for the MRR, 2013

	Additional national legislation	Additional national guidance
AT	No	Yes
BE	Yes	Yes
BG	Yes	No
CY	No	No
CZ	Yes	Yes
DE	Yes	Yes
DK	Yes	Yes
EE	No	No
ES	No	Yes
FI	Yes	Yes
GR	No	No
HR	No	No
HU	Yes	No
IE	Yes	No
IS	Yes	No
LI	No	No
LT	Yes	No
LU	No	No
LV	Yes	Yes
MT	No	No
NL	Yes	Yes
NO	No	Yes
PL	No	Yes
PT	No	Yes
RO	No	Yes
SE	No	No
SI	No	No
SK	No	No
UK	Yes	Yes

Note: France and Italy did not submit in time for inclusion.

For country codes please see Abbreviations, units and acronyms page 51.

Many countries prepared complementary guidance documents for installation operators in their respective languages. Moreover, national monitoring and reporting guidance documents provide additional examples and explanations on methodological issues such as uncertainty assessments, risk assessments, default EFs, how to prepare monitoring plans, emission

reports and sampling plans. Several countries have elaborated frequently asked questions related to the monitoring and reporting procedure.

The type of complementary national legislation adopted falls into two categories. Some countries report on the implementation of general legislation related to the overall procedural implementation of the MRR (e.g. from the issuance of permits to the designation of the national CA) (Germany, Ireland, Latvia, Lithuania and the United Kingdom). Other countries report additional legislation on very specific issues, such as documentation for sustainability of biofuels, control of measurement devices, country-specific parameters, sanctions or the specification of timescales for 'without undue delay' (Czech Republic, Denmark, Finland, Germany, Hungary, the Netherlands, and the United Kingdom).

Integration of reporting requirements

Integration of reporting requirements was widespread among countries, although the degree of integration varies. Twenty-nine countries reported on measures to integrate the EU ETS requirements with other existing reporting mechanisms, such as GHG inventory reporting and the E-PRTR⁽²⁷⁾. Twenty-six countries reported that EU ETS data was used in at least one approach to support GHG reporting or E-PRTR reporting. There is no reported integration of EU ETS and other reporting mechanisms in the Czech Republic, Liechtenstein and the Netherlands. Iceland reported cooperation between regulators of the different reporting requirements. The reported approaches are summarised in Table 2.4.

Integrating reporting requirements where possible is strongly recommended to reduce the administrative burden on installation operators and regulation bodies. Data quality checks can be improved by comparing the available data sets for the EU ETS, E-PRTR and GHG inventories.

Customisation of national reporting

Article 74 of the MRR states that countries may require operators to use electronic templates or specific file formats for the submission of monitoring plans, changes to the monitoring plan, submission of annual emissions reports, verification reports and improvement reports. If countries choose to produce their own templates or formats they must still contain the information contained in electronic templates or file format specifications published by the Commission.

⁽²⁷⁾ Europe-wide register containing environmental data from industrial facilities in EU Member States and Iceland, Liechtenstein, Norway, Serbia and Switzerland.

Table 2.4 Integration of reporting requirements, 2013

	EU ETS data are used for GHG inventory reporting	EU ETS data are used for verification or reporting of E-PRTR data	Shared data submission and administration of EU ETS and E-PRTR data	Common Reporting Format (CRF) codes (*) or E-PRTR codes (**) are included in the reports that EU ETS installations submit	EU ETS data is used to improve national energy statistics
AT	Yes	Yes	Yes		Yes
BE			Yes		
BG				Yes	
CY	Yes	Yes			Yes
CZ	No	No	No	No	No
DE	Yes			Yes	
DK	Yes				
EE	Yes		Yes		
ES	Yes	Yes			
FI	Yes	Yes		Yes	Yes
GR	Yes				
HR	Yes				
HU	Yes	Yes	Yes		
IE	Yes				
IS					
LI	No	No	No	No	No
LT	Yes				
LU			Yes		
LV	Yes	Yes		Yes	
MT	Yes		Yes		
NL					
NO	Yes	No	No		
PL				Yes	
PT	Yes	Yes	Yes		
RO	Yes	Yes			
SE	Yes	Yes			Yes
SI	Yes	Yes	Yes		Yes
SK	Yes	Yes	Yes	Yes	Yes
UK		Yes		Yes	

Note: Blank cells indicate no confirmation of a 'Yes' or a 'No'. France and Italy did not submit in time for inclusion.

* Common Reporting Format (CRF) is a standardised approach for reporting national inventory emissions under the United Nations Framework Convention on Climate Change (UNFCCC). CRF codes are assigned for different sectors of the inventory.

** Data in the European Pollutant Release and Transfer Registry (E-PRTR) is grouped by codes for different sectors of industrial activity.

For country codes please see Abbreviations, units and acronyms page 51.

Fifteen countries developed customised electronic templates or specific file formats for monitoring plans, emissions reports, verification reports and/or improvement reports. Countries have typically customised their reporting through the development of web-based reporting systems. Some of these systems are common across multiple countries. Countries differ

in whether they classify these systems as a template or a file format.

Other customisation has been undertaken to give additional guidance, to reduce duplication of data entry by operators, to provide standardised code lists for some data entry (installation IDs, calculation

factors from national inventories) or to ask additional questions. In all cases, countries state that all customisations comply with the requirements of Article 74 and that all requirements from the Commission templates are replicated.

Automated data exchange

Nine EU Member States and one EEA country (Norway) have developed an automated system for electronic data exchange. The Walloon Region in Belgium, Ireland and the United Kingdom use the same application, which the United Kingdom notes is 'semi-automatic'; operators manually complete web-based forms, but then the workflows are automatic, with validation checks for completeness and correctness, reminders and notifications of progress. The Flemish Region in Belgium, Denmark, Finland, Germany and Norway use their own form for Internet reporting, with electronic signatures, encryption, verification, and automated notifications and workflows. Spain also uses online submission of reports, but the automated systems have been developed in different ways in different areas of the country.

Workflow systems to aid communication and task management are good practice, and can be recommended to reduce data gaps.

Continuous emission measurement (CEM)

Countries were asked if continuous emission measurement⁽²⁸⁾ (CEM) is applied. Where CEM is applied, countries were asked for the sum of emissions covered and the percentage of emissions measured continuously at the installations. Nineteen countries reported that CEM had been applied in their country (Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, Germany, Hungary, Lithuania, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden and the United Kingdom) across 127 installations, emitting CO₂ or N₂O (Table A4.3

in Appendix 4). The majority of countries used CEM for only a few installations and for 5% or less of their total EU ETS emissions reported in 2013. There is not enough information to judge whether this percentage is appropriate or not. Further analysis is presented in Appendix 4.

2.3.2 Application of simplifications allowed within the monitoring and reporting rules

The MRR allows simplifications or variations on default methods within general monitoring and reporting rules in particular circumstances. Examples are:

- simplification of monitoring plans for low emitters;
- use of lower than highest tier⁽²⁹⁾ methods for some activities by large emitters;
- the option to use fall-back approaches⁽³⁰⁾ instead of the tiers provided in the MRR;
- use of literature values/Type 1 default values⁽³¹⁾ instead of sampled data.

These provisions are foreseen in order to avoid high burdens in specific circumstances including relatively small emitters of GHGs. It is important to monitor whether such flexibilities are in practice applied only for exceptional cases and do not replace general rules. This subsection assesses to which extent these special provisions are currently used by countries.

Sampling plans

Article 33 of the MRR requires operators to prepare a sampling plan for each fuel or material where the calculation factor⁽³²⁾ is determined by analyses⁽³³⁾. The sampling plan should include information on responsibilities, locations, frequencies and quantities, and methodologies for the storage and transport

⁽²⁸⁾ A set of operations having the objective of determining the value of a quantity by means of periodic measurements, applying either measurements in the stack or extractive procedures with a measuring instrument located close to the stack, whilst excluding measurement methodologies based on the collection of individual samples from the stack.

⁽²⁹⁾ 'Tiers' are sets of requirements for determining calculation factors, activity data and emissions. Higher tiers have more stringent requirements and produce more accurate data.

⁽³⁰⁾ Operators can apply the 'fall-back approach' for estimating emissions for selected source streams or emissions sources where applying at least a Tier 1 approach is technically not feasible or would incur unreasonable costs, provided certain conditions regarding uncertainties are met. See details of Article 22 of the MRR in Annex V, page 87.

⁽³¹⁾ Type 1 default values concern either standard values listed in Annex VI of the MRR or other constant values in accordance with Article 31(1)(d) and (e) of the MRR; i.e. values guaranteed by the supplier concerning a carbon content and 95% confidence interval of less than or equal to 1%, or on the basis of analysis carried out in the past but which are still valid.

⁽³²⁾ 'Calculation factor' is an overarching term for parameters such as carbon content, conversion factor, biomass fraction, emission factor, net calorific value and oxidation factor.

⁽³³⁾ Calculation factors have to be determined either as default values or determined by (chemical) laboratory analyses. Laboratory analysis provides more accurate data but is more demanding than using default values. Where determined by analyses, the laboratory must demonstrate competence and the operator must develop sampling plans to be approved by the CA to ensure the way samples are taken from the material/fuel for analysis achieves representative results.

of samples. Countries were asked to indicate cases in which, although they were required under Article 33, such a plan has not been drawn up and to provide the reasons why and the circumstances in which this occurred. From 28 countries that reported on sampling plans (no response from Poland), 18 EU Member States, Iceland and Norway indicated that sampling plans were always prepared and approved. Seven countries (Belgium, Croatia, Germany, Liechtenstein, Luxembourg, Spain and Sweden) have installations with calculation factor analyses where sampling plans were not prepared for all fuels and materials. Germany provided information on specific cases where sampling plans are not required in Germany ⁽³⁴⁾. Belgium, Croatia and Luxembourg are planning to follow this up with operators. Austria answered that it needs to contact local authorities to get this information. Sweden answered that they have no means of automatically extracting the necessary data from the monitoring plans to answer the question whether in all required cases sampling plans have been drawn up. They considered the administrative burden of manually performing this work before the 2014 reporting deadline to be unreasonable.

Countries were also requested to indicate any problems and issues identified relating to sampling plans or general problems encountered during the approval process of sampling plans. Seven countries (Croatia, Germany, Iceland, the Netherlands, Norway, Spain and Sweden) reported at least one type of issue:

- operators failed to submit information on sampling and analysis where fuel supplier data were used due to lack of information from suppliers (Germany);
- sampling plans were brief, incomplete or missing (Germany, Iceland, the Netherlands, Norway and Sweden);
- frequency of analyses were not met 'due to unreasonably high costs' (Croatia);
- dates of samples to be analysed had not been specified (Spain).

In these instances, requirements of the MRR appear to have not been met.

Simplified monitoring requirements for low emitters

Only 9 (Belgium, Croatia, Hungary, Liechtenstein, Lithuania, Luxembourg, the Netherlands, Spain and the United Kingdom) out of 29 countries reported simplified monitoring requirements for installations with emissions below 25 000 tonnes CO₂e per year, as allowed by Articles 13 and 47 of the MRR. This suggests more could be done to reduce the administration burden on small emitters.

Frequency of analysis

Annex VII of the MRR provides minimum frequencies for the analysis of listed fuels and materials. Under Article 35(2a) of the MRR, CAs can allow operators to analyse fuels and materials at a different frequency if the variation in analytical values does not exceed one third of the uncertainty value for relevant activity data. Article 35(2b) of the MRR permits CAs to allow a different frequency of analysis if the frequency in Annex VII would 'incur unreasonable costs'. The Article 21 questionnaire asked for the number of installations per fuel or material that were allowed to use a different frequency of analysis due to the unreasonably high costs of the frequency in Annex VII. Fourteen countries reported at least one installation had been permitted this flexibility (Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, Germany, the Netherlands, Norway, Romania, Slovakia, Spain and the United Kingdom). For 10 out of these 14 countries, only a few installations have been permitted this flexibility (less than 10% of installations). In the other 4 countries (Croatia, Cyprus, Romania and the United Kingdom), it could be questioned whether the flexibility is being used appropriately; i.e. only in cases where the frequency of analysis would indeed incur unreasonably high costs. The United Kingdom allowed this flexibility in the highest number of instances (287 instances across at least 109 installations, or 11% of the United Kingdom installations), and Cyprus (8 out of 12 installations or 67%) allowed the flexibility to the highest relative share of installations. Process gas ⁽³⁵⁾ was the most common fuel where a different frequency of analysis was allowed for cost reasons (10 countries). This could be because it has the highest demands: the minimum frequency of analyses is 'at least daily' (Annex VII of the MRR).

⁽³⁴⁾ Natural gas from the public supply grid (if using one of three approved highest tier methods), pure feedstock substances (stoichiometrically determined values are accepted instead), an installation receiving a transfer of waste gases (if the substances were sampled and analysed by the transferring installation that is also included in the EU ETS), and if online gas chromatographs are used.

⁽³⁵⁾ This covers blast furnace gas, coke oven gas, converter gas and refinery mixed gas.

Fall-back approach

Article 22 of the MRR allows operators to use a monitoring methodology that is not based on tiers, known as the fall-back approach, under certain conditions. Eleven out of the 29 countries use the fall-back approach for estimating emissions for selected source streams or emissions sources. The United Kingdom and the Netherlands estimated the most emissions using the fall-back approach, estimating 1 738 kt CO₂ and 1 712 kt CO₂, respectively. The United Kingdom applied the methodology to the most installations (8). Finland applied the fall-back approach to the highest share of their total EU ETS emissions (4%). The reported application of the fall-back approach is an appropriate use of the MRR flexibility.

Default and literature values

Article 31 of the MRR permits operators to use Type 1 default values or literature values for calculation factors instead of sampled data. Under the provisions of Article 31(1)(c), (d) and (e) ⁽³⁶⁾, Germany reported the most instances of literature values and default values (4 492 instances ⁽³⁷⁾), with the second highest number of occurrences reported by Croatia (325). Ten of the 18 countries reported less than 50 occurrences. Bulgaria, Denmark, Estonia, Greece, Hungary, Liechtenstein, Lithuania, Luxembourg, Malta, Poland and Slovenia did not report any Type 1 default values or literature values covered in Article 31(1)(c), (d) and (e) of the MRR. Twenty countries reported using Type 1 default values as referred to in Article 31(1)(a) of the MRR ⁽³⁸⁾. Denmark and Poland did not report. Croatia reported the most occurrences (317) of Type 1 default values as referred to in Article 31(1)(a) of the MRR. Fifteen of these 20 countries reported less than 50 occurrences.

Considering the vast number of different fuels and calculation factors, the application of Type 1 default value and literature values can generally be considered appropriate. Countries should be prepared to justify their use of literature and default values rather than sampling, which most have done.

2.3.3 Submission of monitoring methodology improvement reports

Article 69 of the MRR requires operators to regularly ⁽³⁹⁾ check whether their monitoring methodology can be improved and submit reports describing how they plan to implement recommended improvements to the CA. Countries reported on the number of installations that were required to submit and actually submitted methodology reports. The data presented here, as with all data in this report, reflects the situation at the time of the Article 21 reporting (see Appendix 1). Five countries (Bulgaria, Croatia, Iceland, Ireland and Lithuania) answered that some installations have been required to report on improvements to the monitoring methodology. Only Ireland reported that all reports required were actually submitted. Some but not all reports had been submitted in Bulgaria and Iceland. No reports had been submitted where required in Croatia and Lithuania. Croatia reported the highest number of required methodology improvement reports (59 in total), which is likely due to installations entering the EU ETS with the country's accession to the EU in 2013.

2.3.4 Simplified compliance for installations with low emissions

All 29 countries reported on the methods used to simplify compliance for installations with low emissions ⁽⁴⁰⁾. Seven countries stated that they had used one or more innovative ways to do this, among which were customised guidance (4 countries), simplified templates (5) and workshops (1). Additional measures have been implemented in the United Kingdom in the form of a submission of applications and reports via an Internet-based system. This system generated email reminders, counting down to key regulatory deadlines. The same system is used in the Walloon Region in Belgium and in Ireland. Belgium applied additional measures that varied across the regions (no simplification in the Brussels-Capital Region), and included: workshops, simplified templates and requirements for a risk assessment.

⁽³⁶⁾ These refer to literature values agreed with the competent authority, values guaranteed by the supplier of a material, and values based on past analyses where it can be demonstrated that those values are representative for future batches of the same material.

⁽³⁷⁾ According to Germany, the majority of these instances involve installations with low emissions or de minimis source streams, and the majority of the literature values are from the German inventory.

⁽³⁸⁾ These refer to standard factors and stoichiometric factors listed in Annex VI of the MRR.

⁽³⁹⁾ By 30 June every year for category C installations, every 2 years for category B installations and every 4 years for category A installations. Competent authorities may set an alternative date for submission of the report.

⁽⁴⁰⁾ As referred to in Article 47(2) of the MRR.

2.3.5 Application of sustainability criteria for biofuels and bioliquids

Sustainability criteria for biofuels and bioliquids — summary

Sustainability criteria apply to biofuels and bioliquids. In all countries with complete reporting, the emissions from sustainability-compliant biofuels and bioliquids are significantly higher than emissions in instances where sustainability criteria were not satisfied. Belgium, Finland, and Ireland reported negligible quantities of biofuel and bioliquid emissions where sustainability criteria were not satisfied. Six per cent of the United Kingdom's bioliquids and biofuels did not satisfy the sustainability criteria. Calculated as a percentage of the emissions from fossil fuels from installations, Finland is the only country to report more emissions from bioliquids and biofuels than from fossil fuels in the EU ETS (118%), with most countries reporting emissions from sustainability-compliant biofuels and bioliquids to less than 10% of fossil fuels.

The MRR contains specific requirements related to the treatment of biomass⁽⁴¹⁾ for the accounting of emissions under the EU ETS. If no sustainability criteria⁽⁴²⁾ apply, the EF of biomass is considered to be zero under the EU ETS, assuming that the same amount of CO₂ was sequestered during the sustainable growth of the biomass as will be released when the biomass fuels are combusted. In that case, they are 'zero-rated'. If sustainability criteria apply, these must be complied with to account for zero-rated biomass. Sustainability criteria apply to biofuels⁽⁴³⁾ and bioliquids⁽⁴⁴⁾. If these criteria are not met, then biofuels and bioliquids are treated like a fossil fuel source. The burden of proof concerning biofuels and bioliquids meeting sustainability criteria lies with the EU ETS operator⁽⁴⁵⁾. Where the status cannot be confirmed to the satisfaction of the relevant CA, the biofuels and bioliquids must be treated as a fossil fuel source stream and all released CO₂ emissions from combustion are accounted for.

Emissions data related to the burning of biomass were reported by 25 countries. A further three countries (Latvia, Lithuania and Slovenia) reported energy data, but no emissions. Denmark, Malta, Norway and Sweden reported neither biomass combustion nor emissions. For complete reporting, countries should answer all aspects of the questions, or provide explanations as to why this was not possible.

Various countries provided reasons for data gaps:

- data collection was incomplete or not yet collated (Czech Republic, Denmark, Germany and Iceland);
- emissions data is not collected for source streams that are 100% biomass and where the sustainability criteria do not apply (Norway);
- automated data extraction from an electronic database had not yet been implemented (Denmark and Sweden).

In order to improve analysis and comparability of data on the application of sustainability criteria for biofuels and bioliquids, complete data would be required. More automated dataflow systems may assist the completeness of reporting in several countries.

Twenty-one countries reported having emissions of biomass. Six countries reported emissions from biofuels and bioliquids where sustainability criteria are applied and satisfied, or from biomass where sustainability criteria do not apply, as representing less than 1% of the respective country's fossil fuel emissions from installations of emissions (Croatia, Cyprus, Greece, Ireland, Portugal and Romania). Eight countries report between 1 and 10% (Bulgaria, Germany, Iceland, the Netherlands, Poland, Slovakia, Spain and the United Kingdom), and 7 countries report more than 10% (Austria, Belgium, Czech Republic, Estonia, Finland, Hungary, and Luxembourg). Finland is the only country to report more emissions from biomass than from fossil fuels in the EU ETS (118%).

⁽⁴¹⁾ The definition of biomass under the MRR has been aligned with the Renewable Energy Sources (RES) Directive (EU, 2009b) as 'the biodegradable fraction of products, waste and residues from biological origin from agriculture, forestry and related industries, industrial and municipal waste'. It includes bioliquids and biofuels.

⁽⁴²⁾ As set out in Article 17 of the RES Directive.

⁽⁴³⁾ Biofuels are liquid or gaseous fuels for transport produced from biomass.

⁽⁴⁴⁾ Bioliquids are liquid fuel for energy purposes other than transport, including electricity, heating and cooling, produced from biomass.

⁽⁴⁵⁾ The most common method for demonstrating compliance with sustainability criteria is for the operator to comply with national regulations and specific forms to be approved by the verifier, or with specific documents to be made available to the regulator (Croatia, Cyprus, Czech Republic, Finland, Germany, Greece, Iceland, Poland and Sweden). Four countries (Denmark, Finland, Ireland, and the United Kingdom) reported using voluntary schemes that the European Commission has recognised. Latvia reports using Tier 2 methods, Liechtenstein uses ISO 26000 guidance on social responsibility, and Slovakia follows the guidance in MRR Guidance Document 3 on biomass issues. Other countries said that this issue was not relevant (because they use solid biomass) or sustainability criteria have not been applied. Data completeness issues such as this need to be improved to gain a full understanding of the state of environmental criteria across Europe.

In all countries with complete reporting, except Ireland, the emissions from sustainability-compliant biofuels and bioliquids are significantly higher than emissions in instances where sustainability criteria were not satisfied. Ireland reported negligible quantities of emissions from biofuels and bioliquids (less than 1 kt CO₂), but all of these biofuels and bioliquids were non-compliant with the sustainability criteria. The lowest proportion of sustainability-compliant biofuels and bioliquids emissions, amongst countries with more than 1 kt CO₂ emissions from biofuels and bioliquids, was reported by the United Kingdom (94%). Belgium and Finland reported negligible quantities of biofuels and bioliquids emissions where sustainability criteria were not satisfied.

The combustion sector comprises 56% of the sustainability-compliant emissions across all countries reporting. A few countries are dominated by other sectors: pulp, paper & cardboard accounts for 5% of all countries' emissions, but more than 66% in Bulgaria and Finland; and cement clinker accounts for 6% of all countries' emissions, but 99–100% in Cyprus, Greece, Portugal and Romania. There is no pattern in the splits between installation sizes, which are very different across countries.

2.4 Arrangements for verification

Verification — summary

Overall, the verification system seems to be working well. The number of accredited verifiers appears to be sufficient. The number of accredited verifiers available to verify emission reports in different sectors is generally in proportion to the number of installations in each country.

There is widespread use of verifiers from other countries. This indicates that the requirement for the mutual recognition of verifiers is in all likelihood being implemented correctly and this is helping to provide sufficient verifier capacity.

The number of complaints about verifiers is low, and few sanctions were imposed on verifiers as a result of NAB surveillance. Checks of verification reports by CAs are generally widespread and recommended. A very small number of verification reports were rejected. Conservative estimation of emissions in the place of a verified emissions report is not required in the majority of cases.

Approximately half of reporting countries noted that there were changes to the capacity or operation of an installation that the CAs were aware of but not officially notified as required.

The AVR (EU, 2012a) sets out the process by which operators' annual emissions reports are to be verified every year. The verifiers performing this task must be suitably accredited. Twenty-nine countries have reported information on the number of verifiers accredited or certified within their country. Of all countries that reported information, 24 have at least one accredited verifier, whilst 5 do not have any (Cyprus, Iceland, Lithuania, Luxembourg and Malta). As verifiers are likely to be accredited in multiple scopes, it is not possible to compare the total number of verifiers between countries. Table A3.6 in Appendix 3 presents an overview of the scope of accredited verifiers across all countries that reported.

Information exchange

Countries also provided information on the application of the information exchange requirements of the AVR⁽⁴⁶⁾. Twenty-three out of the 29 responding countries reported that they used accredited verifiers to carry out verifications in their country, who were

⁽⁴⁶⁾ Chapter VI of the AVR.

accredited by a foreign NAB. It is a requirement under the AVR (Article 66) to recognise verifiers accredited by other NABs, and this finding suggests that the mutual recognition requirements of the AVR are generally being well implemented. The high use of verifiers from other countries also helps to provide sufficient verifier capacity.

The NAB must undertake annual surveillance⁽⁴⁷⁾ of each accredited verifier to ensure they are meeting the requirements of the AVR. Where they are not, sanctions may be imposed. Overall, few sanctions were reported as being imposed on verifiers; one verifier was suspended (Czech Republic) and one verifier had the scope of their accreditation reduced (Sweden). Cyprus, Iceland, Liechtenstein, Luxembourg and Romania did not report on surveillance or administrative measures. Belgium, the Netherlands and Sweden made use of the provision in the AVR⁽⁴⁸⁾ to request another country to carry out the surveillance on their behalf where their verifiers carry out verification in the other country.

Six countries reported complaints made about verifiers accredited in their country not conforming to the requirements in the AVR, which are shown in Figure 2.2. The number of complaints is low enough to avoid particular concern. Finland resolved their single non-conformity, whereas the other four had

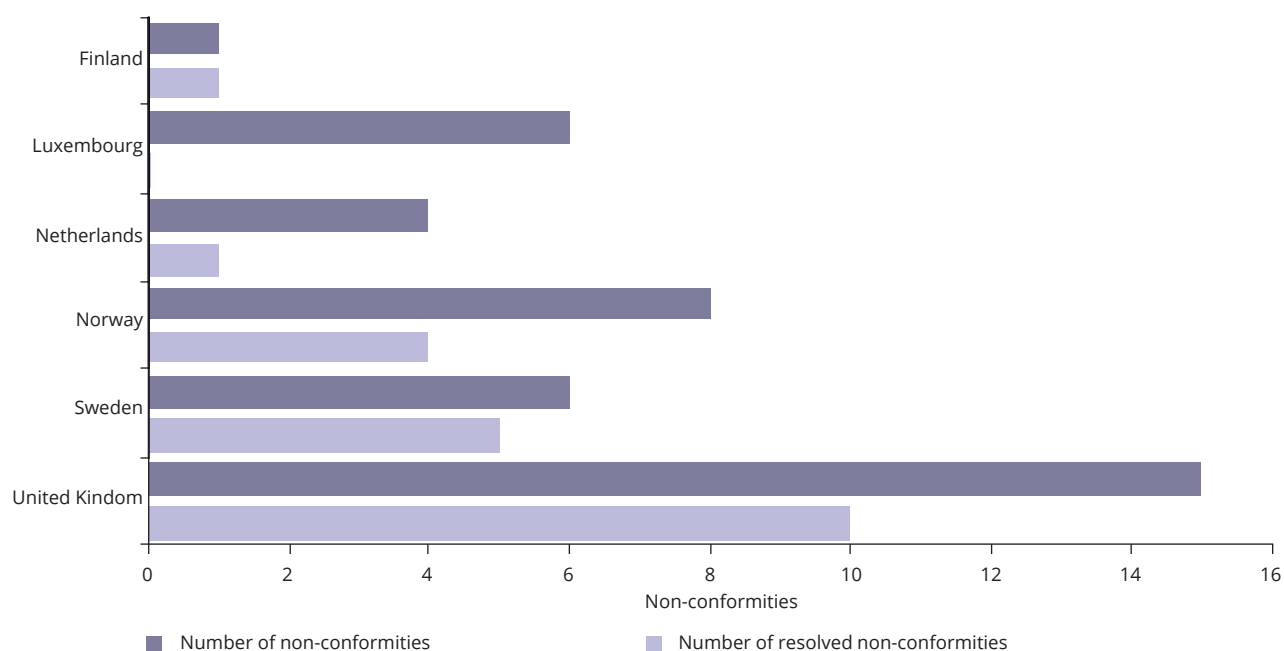
out-standing issues; Luxembourg had not resolved any. No further information regarding these non-conformities was reported.

Verification reports identifying issues

Verifiers must report any identified and outstanding non-material misstatements, non-conformities, non-compliance issues and recommendations for improvement in the verification report (Article 27 of the AVR). Only outstanding and unresolved issues needed to be reported. Nineteen out of 29 countries found at least one of these types of issue.

The most common issue was recommendations for improvement (18 countries, 1 843 instances), followed by non-conformities that had not led to a negative verification opinion statement (16 countries, 1 373 instances). The reasons given for these issues vary greatly, and cover almost every possible reason for a suggested improvement or for an installation to be in non-conformity. The more installations a country has, the more issues were reported. If no outstanding issues were identified, it is likely no improvements were suggested. However, suggesting improvements is an important part of the verification process. Figure 2.3 provides a breakdown of these information types by country.

Figure 2.2 Number of non-conformities for verifiers and the number resolved, 2013

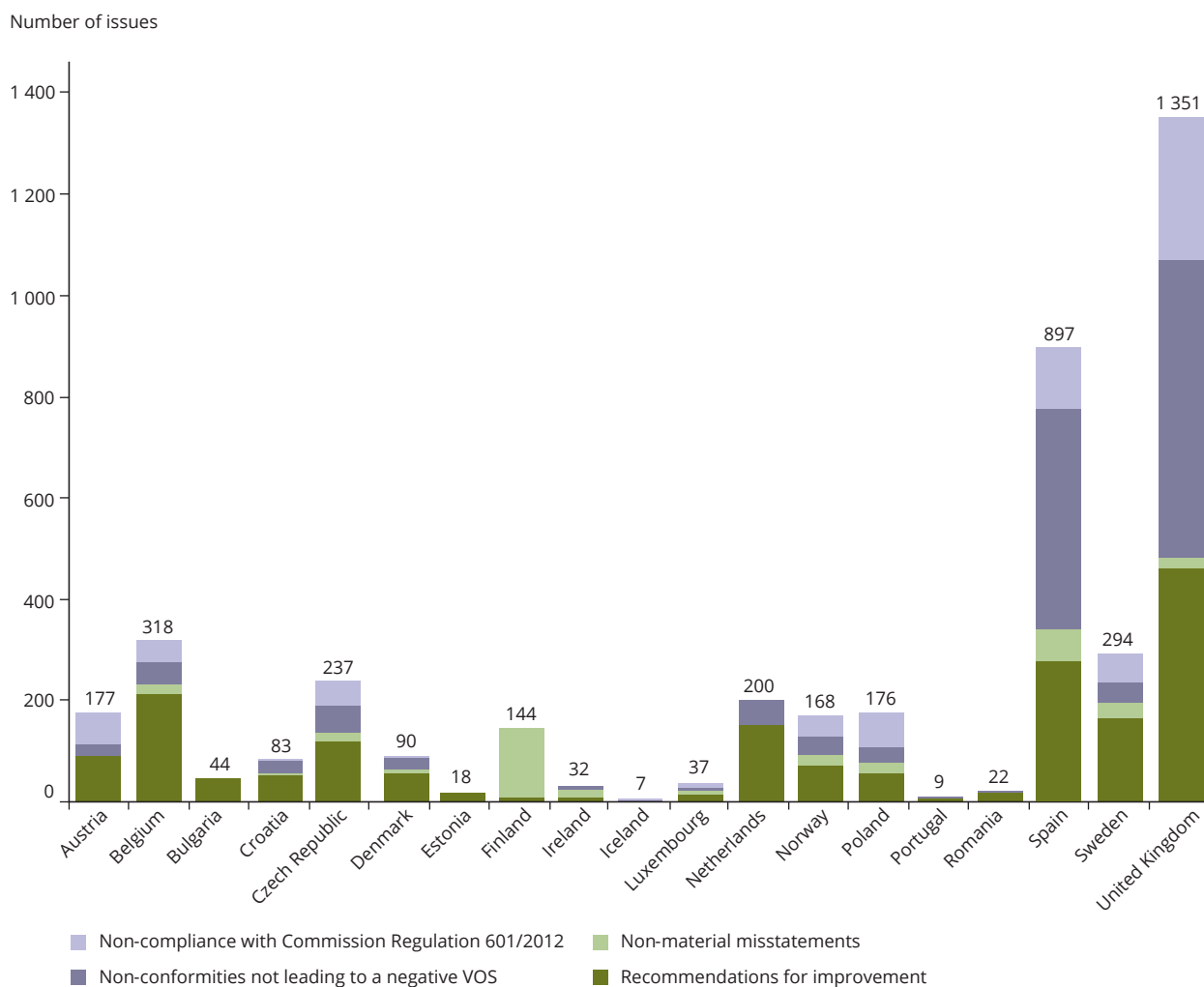


Note: France and Italy did not submit in time for inclusion.

⁽⁴⁷⁾ This must include a visit to the verifier's premises to review internal verification documentation and the quality management system, and to observe the competence and performance of a representative sample of the verifier's staff.

⁽⁴⁸⁾ Article 49(5) of the AVR.

Figure 2.3 Number of issues identified in verification reports by type, 2013



Note: VOS = verification opinion statement.

Checks of verified emission reports by competent authorities

CAs may carry out checks on emission and verification reports as an additional quality control measure to improve the overall quality of the emissions and verification reports. In addition, these checks provide to the CA an indication of the quality of specific verifiers. Of the 29 countries that reported, only the Czech Republic responded that there were no checks by the CA. Germany had not completed verification upon reporting, but reported expected results for CA checks as requested by the questionnaire. Twenty-six countries checked the completeness of all verified emissions reports, Spain almost all (95%).

Eighteen countries cross-checked 100% of the reports with allocation data, whilst Spain and the United Kingdom checked 73% and 38%, respectively. Of those not cross-checking with allocation data, 3 countries

reported that they cross-checked 100% of the reports with other data (GHG reports and verification reports). Other countries cross-checked reports with E-PRTR data, analysing historical data trends, and IED permits. Nineteen countries checked that 100% of the reports were consistent with the monitoring plan, with another 8 countries checking between 10 and 91% of reports in this way. Eleven countries applied a detailed analysis to 100% of reports, whilst a further 9 countries analysed between 10 and 70%. Hungary, Liechtenstein, Luxemburg, the Netherlands and Romania conducted all of these tests on all of their verified emissions reports.

As a result of the checks conducted by the CAs, very few (18) verified emission reports were rejected because of non-compliance with the MRR. Whilst this seems to indicate good compliance, it may also indicate that some verified emission reports are not being identified as non-compliant with the MRR. Sweden rejected 7, Norway rejected 4, Spain rejected 3, the Netherlands rejected 2,

and Austria and Croatia both rejected 1. Croatia, Ireland and Norway each rejected one verified emissions report for technical constraints, missing signatures, errors in reporting units and other reasons. The resulting actions following on from these rejections included the initiation of an estimation of the annual emissions for each installation, in cooperation with the operator if possible.

Twelve countries carried out inspections of installations through site visits by the CA, with 4 countries visiting over 30% of installations. The remaining 8 countries visited an average of 9% of installations.

Conservative estimations

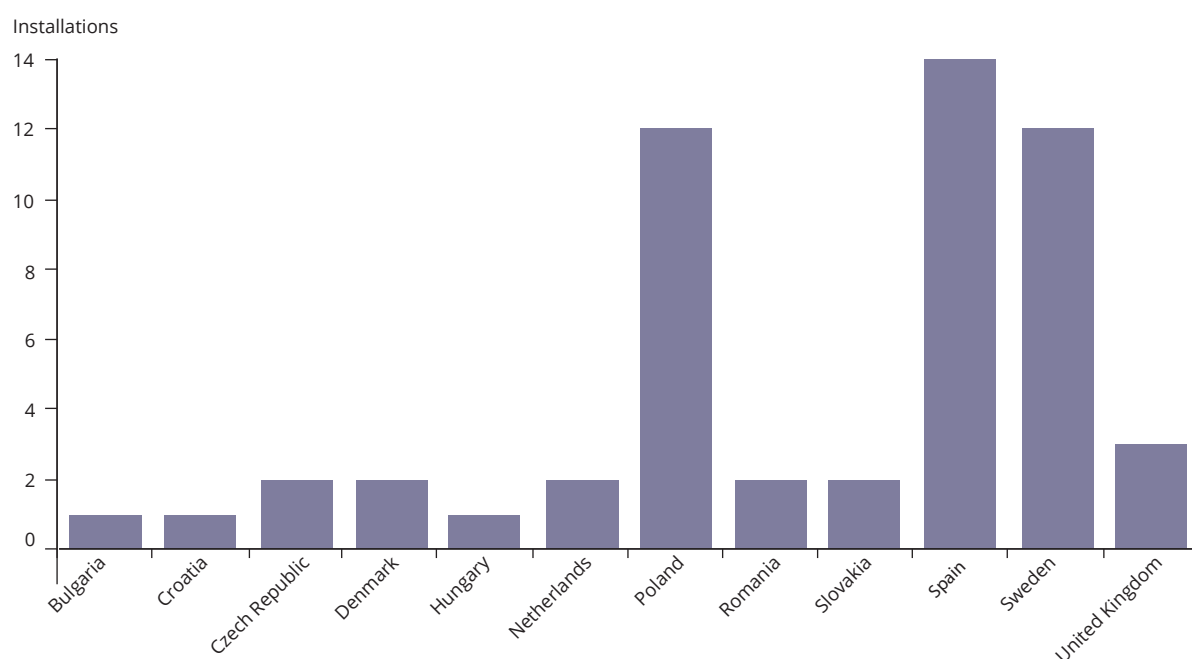
In accordance with Article 70(1) of the MRR, CAs can make a conservative ⁽⁴⁹⁾ estimate of the emissions from installations that do not submit a verified annual emissions report or submit a report that is not compliant, or when the emissions report has not been

verified. Twelve countries reported that CAs made a conservative estimation of emissions (Figure 2.4) for at least one installation, but no country made conservative estimations for more than 2% of their installations ⁽⁵⁰⁾. Poland reported that conservative estimation of emissions for 12 installations is planned. This suggests that conservative estimation in the place of a verified emissions report is not being required in the majority of cases.

Site visits waived

Under Article 31 of the AVR, operators can ask for CAs to waive a verifier's site visit during the verification process under certain circumstances ⁽⁵¹⁾. The Netherlands and the United Kingdom reported that site visits had been waived for installations emitting more than 25 000 tonnes CO₂e per year ⁽⁵²⁾. The low numbers of installation visits waived in just a few countries would suggest that site visits are being waived

Figure 2.4 Number of installations with conservative estimates of emissions, 2013



Note: France and Italy did not submit in time for inclusion.

⁽⁴⁹⁾ 'Conservative' means assumptions are defined in order to ensure that there is no underestimation of emissions.

⁽⁵⁰⁾ Bulgaria, Czech Republic, Romania and Slovakia made conservative estimates all of zero emissions. The others' ranged from 0.35 kt CO₂ by the Netherlands, to 1 386 kt CO₂ by the United Kingdom. The Flemish Region of Belgium reported that whilst no CAs made conservative estimates, operators and verifiers were recommended to make a conservative adjustment prior to their reporting where a required tier was not met, and 14 installations made these conservative adjustments. Germany did not have data available on conservative estimates, and Sweden noted that there may be two additional installations that they need to make conservative estimates for.

⁽⁵¹⁾ The verifier's risk assessment must allow a waiver, and one of four conditions fulfilled. Of the two countries that reported waived site visits, they had all been approved under one of these conditions — condition IV. Condition IV covers remote or inaccessible sites that transmit data directly to a centralised location.

⁽⁵²⁾ The Netherlands' 21 and the United Kingdom's 61 waived site visits were for condition IV. Condition IV covers remote or inaccessible sites that transmit data directly to a centralised location. The United Kingdom waived all visits to offshore oil and gas sites as much of their helicopter fleet was grounded for 2013, due to fatal helicopter accidents leading to safety investigations. All installations had previously been inspected and no relevant changes were reported since then, and emissions data was accessible via onshore offices.

appropriately and the waiver not over-used. However, under Article 31(3)(c) of the AVR, verifiers should carry out site visits in any case where there have been significant modifications of the monitoring plan, which would be at all installations in this reporting period.

Seven countries waived site visits for installations with low emissions⁽⁵³⁾ (Austria⁽⁵⁴⁾, Belgium, Denmark, the Netherlands, Poland, Slovakia, and Spain). Denmark waived the most visits at 53 (18% of installations with low emissions), whereas the others waived between 1 and 4 visits (all less than 3% of installations with low emissions). The waiving of site visits for installations with low emissions are not subject to the CA's approval, so less data is required to be reported.

Thirteen out of 27 countries reported that there were some planned or effective changes to the capacity, activity levels or operation of an installation that the CA was not notified about. Clarifying the reasons for the lack of notification to CAs may be appropriate. This information was not requested in the Article 21 questionnaire.

2.5 National reporting on issues related to compliance⁽⁵⁵⁾ with the EU ETS Directive

Compliance — summary

Measures to ensure installation operator compliance appear to be appropriate, and in most cases sufficient. Seven countries imposed fines on operators, and eight countries imposed excess emission penalties.

Adequate compliance and enforcement systems in countries are required for full implementation of the EU ETS Directive. Article 16 covers penalties for failing to comply with the requirements under the EU ETS Directive. Article 16(1) stipulates that penalties set by countries for infringements of national provisions related to the EU ETS Directive should be 'effective, proportionate and dissuasive', but the exact measures countries use for enforcement are left to their discretion and as such vary between countries. Article 16(3) sets an excess emission penalty of EUR 100 per tonne of CO₂e emitted for which the operator or aircraft operator does not surrender allowances.

Compliance measures

The most common measures reported to ensure installation operator compliance were regular meetings with industry and/or verifiers (25 countries), spot checks and inspection of compliance by installations using monitoring plans (23 countries), and prohibiting selling of emission allowances where irregularities occur (23 countries). Sixteen countries reported that they publish the names of non-compliant operators. Bulgaria, Croatia, Cyprus, Denmark, Finland, Germany, Hungary, Liechtenstein, Lithuania, the Netherlands and Slovenia use all four measures. Every country reported using at least one of these measures.

A few countries reported additional measures for avoiding non-compliance. Spain reported that there is a free hotline and email contact for the purpose of resolving queries from operators and verifiers, with the aim of avoiding non-compliance. Romania noted that they verified the accuracy of data from operators through comparisons with data from integrated environmental permits. Both of these measures can be seen as examples of good practice.

Penalties

Penalties are an important aspect for implementing the EU ETS Directive. National responses include information on fines and imprisonment covered by Article 16(1). Most of the countries that responded had maximum fines for non-compliance, and slightly fewer had minimum fines. Maximum and minimum prison sentences were less common, with only Ireland having minimum prison sentences for both installation and aircraft operators. The amount set for fines and the time set for prison sentences vary significantly between countries, and for some countries they vary substantially depending on the type of offence.

In 2013, five countries (Spain, Romania, Slovakia, Sweden and the United Kingdom) imposed fines on installation operators during the reporting period. Slovakia imposed the highest number of fines (7). Romania imposed the largest fine (EUR 36 363 for failure to submit a verified emissions report in due time). Greece and Poland reported penalty procedures were ongoing. The most common reason for fines being imposed was the failure to submit a verified emissions report in due time. No prison sentences have been imposed on an operator by any country.

⁽⁵³⁾ As referred to in Article 47(2) of the MRR.

⁽⁵⁴⁾ Only in an instance where the installation had been closed.

⁽⁵⁵⁾ 'Compliance' is the wording used in the questionnaire as set out by Commission Implementing Decision (EU, 2014a) and in Article 16 of the EU ETS Directive.

Eight countries imposed excess emission penalties (covered in Article 16(3)) on installation operators (no more than 4 per country) for failing to surrender sufficient allowances.

2.6 The legal nature of emission allowances and fiscal treatment

Legal and fiscal treatment — summary

The legal and fiscal treatment of emission allowances varies between countries, since the legal nature and fiscal treatment are not defined in the EU ETS Directive. A low number of countries reported that value added tax (VAT) applies to the issuance of emission allowances. The reverse-charge mechanism was reported as being applied on domestic transactions involving emission allowances in the majority of countries.

Approximately half of reporting countries reported that emission allowances for corporations are taxed.

Twenty-five countries reported on and described the legal nature of an emission allowance within their legal system. Four of these countries have reported that they are treated as financial instruments, with Sweden only recently applying this definition. Germany reported that national legislation will be amended to treat emission allowances as financial instruments in the future. Five countries define them as property rights, with Hungary considering them as state property.

EU Member States are required to adopt a VAT on consumption goods and services that is in line with the EU VAT Directive (EU, 2006). Emission allowances are subject to VAT as they are a taxable supply of services. Only 4 of the 28 countries that responded (Croatia,

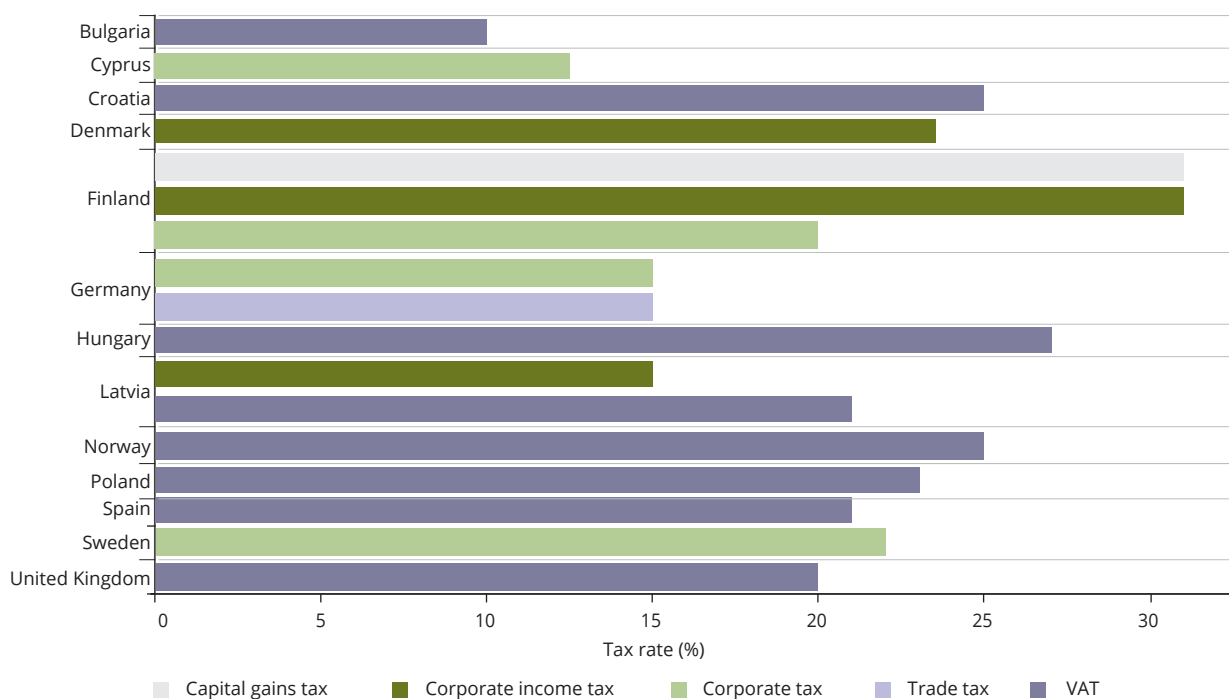
Denmark, Latvia and the United Kingdom) reported that VAT applies to the issuance of allowances. In contrast, VAT is due on transaction of emission allowances on the secondary market in 24 countries (not in Cyprus, Estonia, Iceland and Liechtenstein). Portugal did not report any information on the legal or fiscal treatment of emission allowances.

A later EU directive (EU, 2010b) amended the EU VAT Directive to include the reverse-charge mechanism for the transfer of emission allowances in the ETS. The reverse charge moves the responsibility for the payment of the VAT transaction from the seller to the buyer of a good or service and constitutes an effective safeguard against VAT fraud. Nineteen of the 28 countries that reported on the reverse-charge mechanism under the Article 21 questionnaire are applying the reverse-charge mechanism on domestic transactions involved in emission allowances. One of the responses of the countries not applying the mechanism indicates that awareness about the mechanism needs to be raised.

Emission allowances for corporations can additionally be taxed. Thirteen out of the 28 countries that reported data on taxation of corporate emission allowances do tax emission allowances for corporations in some manner (which can include VAT). Figure 2.5 provides information on the type and rate of these tax mechanisms. Eight of these 13 countries apply VAT for corporate emission allowances, including 6 who responded that VAT is not due on the issue of emission allowances. Twelve out of 17 tax mechanisms use a rate of between 15 and 25%. Germany reported a corporate income tax, but did not specify a number because the rate depends on the income level.

Three countries reported that there was no taxation on emission allowances or corporate emission allowances (one EU Member State, Estonia, and Iceland and Liechtenstein).

Figure 2.5 Tax rates (%) and tax types on emission allowances for corporations, 2013



Notes: Corporate tax in Germany adds a solidarity surcharge not shown here. Finland reported a range of 30–32% for corporate income tax and capital gains tax so the central value is shown here. France and Italy did not submit in time for inclusion.

3 Reported emissions data and analysis

This section summarises the information provided in the Article 21 data related to the fuel consumption and related emissions in the EU ETS. Due to the fact that at an aggregated level only verified emissions are available that show the effects of the EU ETS Directive, the Article 21 data reveal additional information on the fuel consumption by EU ETS installations that may offer additional information for the explanation of emission trends. This section also includes an analysis of IEFs for fuels calculated based on the emission and fuel consumption data. This provides a tool to check the quality of the fuel consumption and emission data provided and highlight areas where data provided may need further checks.

3.1 Reported fuel consumption and emissions data

Activity and emissions — summary

Natural gas was the most significant fuel consumed, whilst hard coal was the most significant fuel for emissions. Over half of emissions in the EU ETS are from coal type fuels.

Where countries reported emissions split into combustion and process emissions, the majority of EU ETS emissions were combustion emissions.

As part of responses to the Article 21 questionnaire, countries reported total aggregate fuel consumption (reported in terajoules (TJ)) from EU ETS installations in their countries and the related total emissions (kilotonnes (kt) CO₂) for these fuels.

Emissions and consumption

Figure 3.1 presents fuel consumption and emissions by EU ETS installations disaggregated by fuel (excluding Denmark, and France and Italy who did not submit in time for inclusion). In 2013, natural gas⁽⁵⁶⁾ was the most significant fuel consumed (5 898 710 TJ). Hard coal was the fuel with the largest emissions (439 846 kt CO₂) in the EU ETS in 2013. Figure 3.2 presents fuel consumption and emissions in the EU ETS split by country (excluding Denmark, and France and Italy who did not submit in time for inclusion). Germany reported the highest fuel consumption (4 853 271 TJ), followed by the United Kingdom (2 576 483 TJ). The most significant emitters are Germany (422 703 kt CO₂), the United Kingdom (203 365 kt CO₂) and Poland (189 030 kt CO₂).

There were a number of issues associated with the fuel consumption data submitted by countries, mainly due to incomplete data reported by operators to the CAs. It is recommended that issues related to incomplete data reporting are addressed to avoid non-compliance with the EU ETS Directive. Better adherence to the questionnaire guidance on the definitions of fuel types could improve future reporting. Increased data requirements from operators would help, but the administrative burden of reporting was raised as an issue for several countries. However, it falls to Member States to make sure that operators report the required data in order to fulfil their legal requirements.

The fuel consumption data from Belgium, Germany and Poland are incomplete because some operators did not report the net calorific values⁽⁵⁷⁾ required for unit conversion of fuel mass to TJ⁽⁵⁸⁾. Several countries experienced limitations in validating the classification of all reported source streams. The

⁽⁵⁶⁾ The calculation of IEFs based on the fuel consumption and emissions provided for natural gas and the comparison of natural gas consumption reported in energy balance data may indicate that the reported quantities of natural gas may be too high for some countries. In particular, the Czech Republic may check the reported fuel consumption of natural gas.

⁽⁵⁷⁾ The net calorific value of a fuel is the heat generated from the fuel from complete combustion, less the latent heat of water vapour produced during combustion.

⁽⁵⁸⁾ Germany estimates that 3% of the source streams are affected by this.

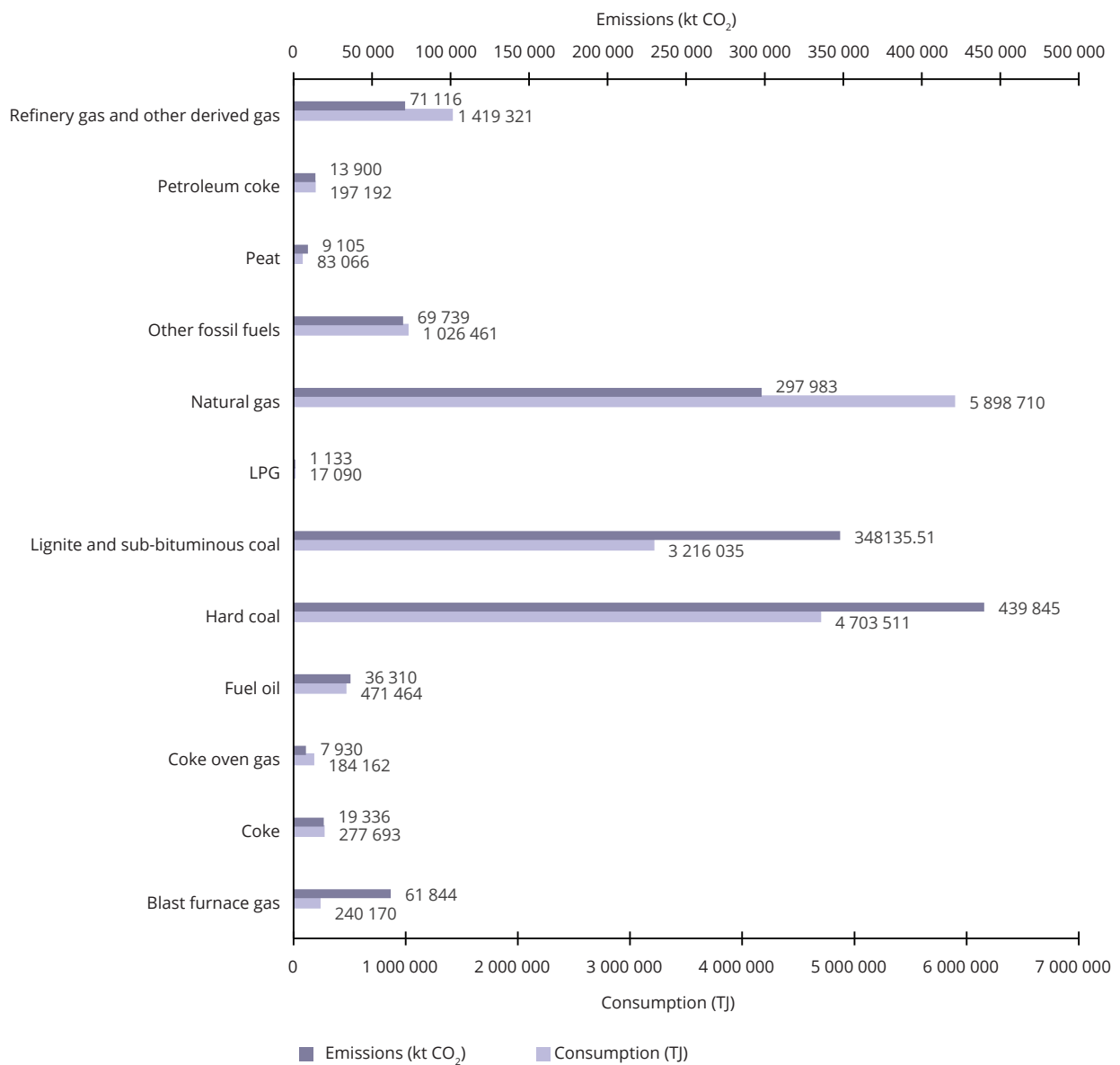
data from the Czech Republic, Finland and Germany are reported as incomplete because fuel-specific fuel consumption and emissions from continuous emissions monitoring systems were not included in reporting ⁽⁵⁹⁾. Whilst these were the only countries to report such incompleteness, it is likely that this applies to other countries. Sweden provided incomplete data because some reports gave no indication of fuel used. Denmark was unable to provide data for this question because of ongoing development of a new online reporting system, which was not ready in time

for reporting. It is important to address these issues in the future to allow for a meaningful comparison and analysis across countries.

Combustion and process emissions

Article 73 of the MRR requires operators to report emissions from Annex I activities in their installations in accordance with, among other things, codes from the Common Reporting Format (CRF) ⁽⁶⁰⁾ for national GHG inventory systems (as approved by the

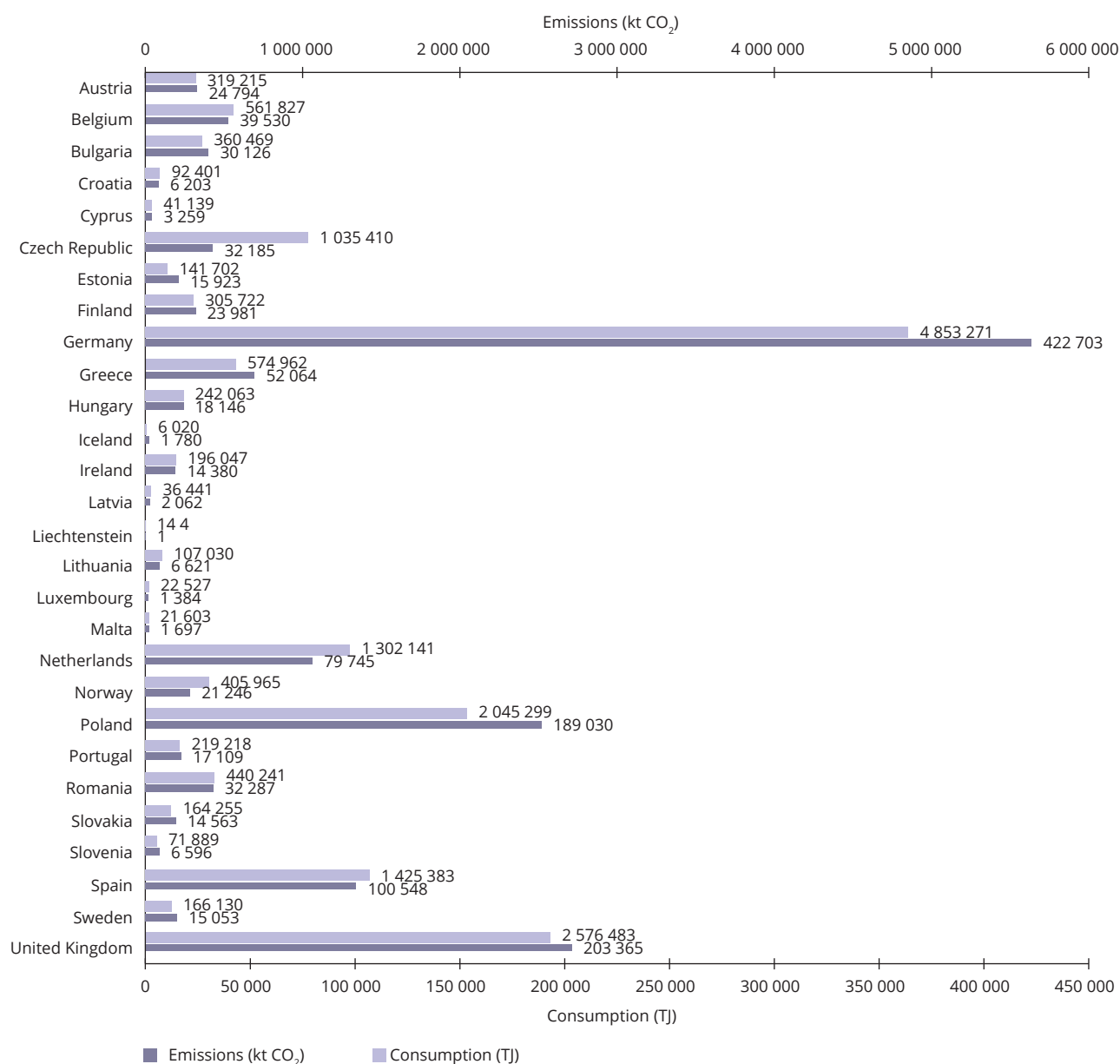
Figure 3.1 Consumption (TJ) and emissions (kt CO₂) in the EU ETS by fuel type, 2013



Note: Excludes Denmark, France and Italy. France and Italy did not submit in time for inclusion. Denmark did not respond to this question.

⁽⁵⁹⁾ Finland reports that fuel consumption and fuel-specific emissions from CEM will be added to the emissions report template for 2015 reporting.

⁽⁶⁰⁾ National GHG inventories are split by sectors that are assigned a CRF category for easy identification. For example, Public Electricity and Heat Production has the CRF category 1A1a.

Figure 3.2 Fuel consumption (TJ) and emissions (kt CO₂) in the EU ETS by country, 2013


Note: Excludes Denmark, France and Italy. France and Italy did not submit in time for inclusion. Denmark did not respond to this question.

respective bodies of the United Nations Framework Convention on Climate Change (UNFCCC). The Article 21 questionnaire asked countries to report this data, splitting emissions by CRF category and whether the emissions are for a process CRF category or a combustion CRF category⁽⁶¹⁾, along with total emissions for the joint process and combustion emissions for each sector. Twenty-one countries reported this data (Figure 3.3⁽⁶²⁾). Cyprus, Czech

Republic, Denmark, the Netherlands, Norway, Poland, Portugal and Sweden did not provide data. Where countries reported a higher sector total than explained by the sum of combustion and process emissions, a third category of 'undefined' emissions is shown.

Some countries did not have the data available at the time of questionnaire submission as this data aligns

⁽⁶¹⁾ Combustion emissions arise from the combustion of fuel to generate energy. Process emissions covers all emissions from industry except for fuel combustion, which includes chemical and metal production, and mineral products such as lime and cement.

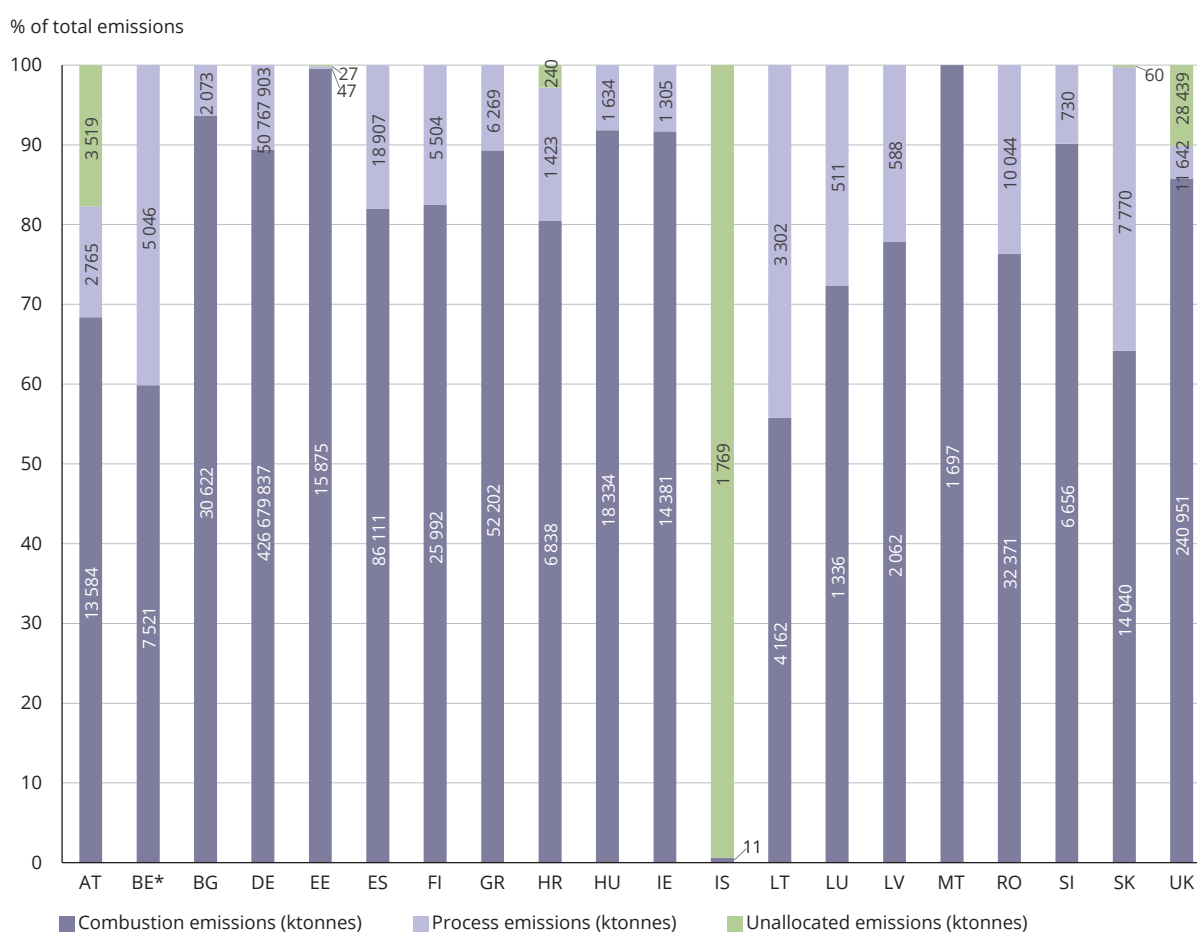
⁽⁶²⁾ Twenty countries are shown in the graph. Liechtenstein reported 0.943 kt CO₂ for process, combustion and total emissions.

with Member States' responsibility to report proxy inventory data by 31 July (Article 8(1) of the MMR), after the deadline for this questionnaire (Belgium (Flemish Region), Cyprus, and Denmark). Some operators did not distinguish between process and combustion emissions.

The objective of including CRF codes in the Article 21 questionnaire is to assist countries and the EU as a whole to improve the data quality in national inventories and to assess the data consistency between EU ETS data and national inventories reported to the UNFCCC. A breakdown of emissions by CRF category

in the Article 21 questionnaire proved problematic and so cannot be reported this year ⁽⁶³⁾. It is evident that countries interpreted this request differently. The reporting of CRF categories by operators was reported in the Article 21 questionnaire responses as not mandatory in three countries (Czech Republic, Poland and Portugal), so unless countries change their data reporting process it is not likely that a disaggregation of emissions by CRF categories will be possible in future years. Amongst the countries that did report emissions by CRF codes, the approach used was too varied for a meaningful analysis ⁽⁶⁴⁾.

Figure 3.3 Percentage share of combustion and process emissions per country, 2013



Note: * Belgium's data does not include the Flemish Region.

Undefined emissions cover emissions where the total is greater than the sum of combustion and process emissions reported. France and Italy did not submit in time for inclusion. Liechtenstein reported 0.943 kt CO₂ for process, combustion and total emissions.

For country codes please see Abbreviations, units and acronyms page 51.

⁽⁶³⁾ For example, countries indicated a combustion CRF code, but then only entered process emissions, and vice versa. Totals for a CRF code did not always equal the sum of combustion and process emissions.

⁽⁶⁴⁾ Belgium's operators reported using the 2006 IPCC GHG Guidelines CRF codes. This creates new codes not available for responding to the questionnaire on the application of the EU ETS Directive, so Belgium had to aggregate certain emissions (55.9 kt). Germany noted that many operators only reported a process-related CRF code without distinguishing between combustion and process emissions, so process emissions may be overestimated. Operators also often indicated more than one CRF code for aggregate emissions that could not be split for the questionnaire.

3.2 Emissions from waste used as fuel or input material

Emissions from waste — summary

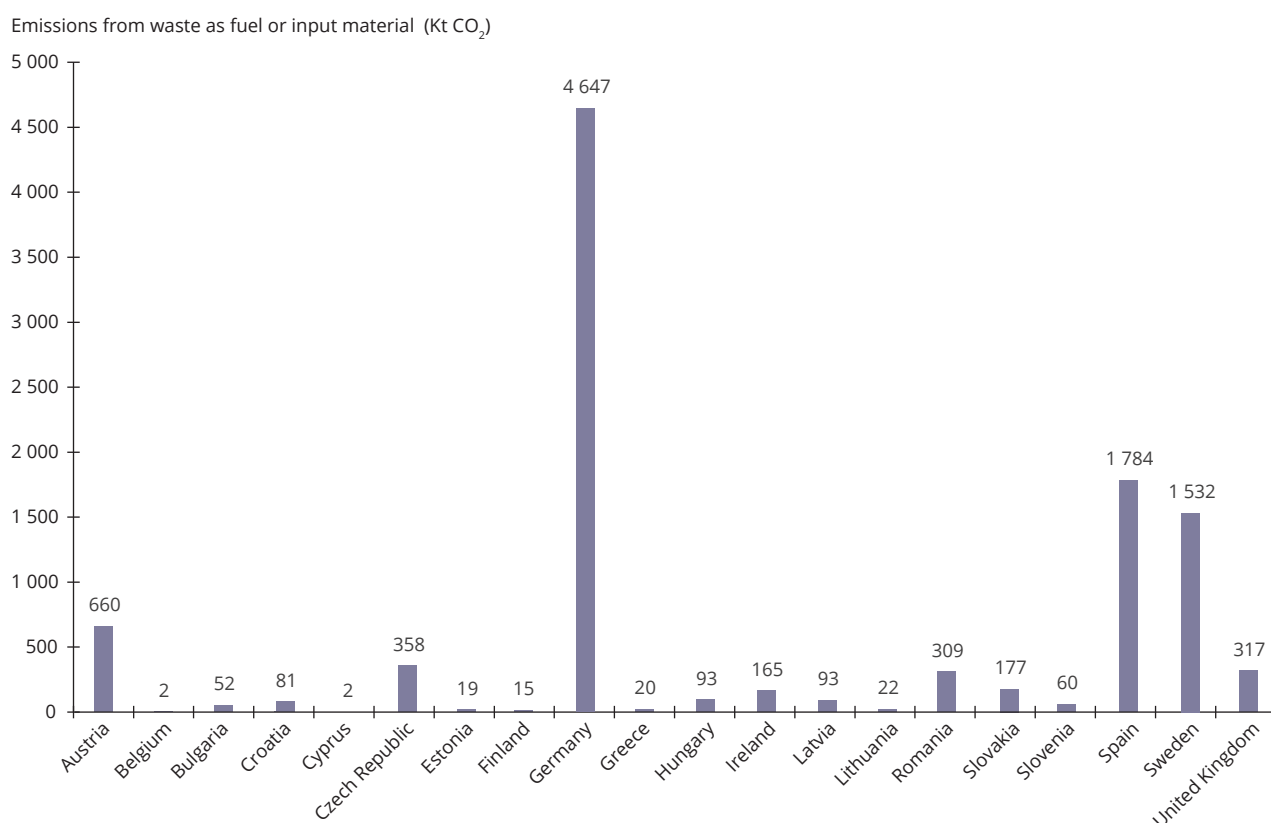
The emissions from waste as fuel or input material vary across countries. Germany reported the most emissions, and Sweden reported the most as a percentage of their total EU ETS emissions. More consistent data reporting would allow future analysis of trends in waste fuels.

Twenty-seven countries reported data on the quantity of CO₂ emissions from waste that is used as fuel or input material. These data are reported by operators in their verified emissions reports. Denmark, Norway and Poland did not report emissions and explained the underlying reasons: Denmark did not have an online reporting system ready for this

year, Norway's reporting system did not work as intended, and reporting waste codes is optional in Poland. Waste code reporting is also optional in the Czech Republic and Sweden, but these two countries reported aggregate emissions nevertheless, which is encouraged. Belgium and Germany noted a potential methodological incompleteness of data. Belgium also did not have information from the Flemish Region.

Figure 3.4 provides the aggregated emissions for each country in 2013. Germany reported the most emissions. Sweden was the only country to report emissions from waste fuels or input material as more than 10% of their total EU ETS emissions. Austria and Latvia reported emissions between 2 and 5% of their EU ETS totals, and the other 17 countries had emissions from waste as less than 2%. More complete data reporting in the data systems would allow an improved aggregation at EU level and future analysis of trends in waste fuels.

Figure 3.4 Emissions (kt CO₂) from waste as a fuel or material input in the EU ETS, 2013



Note: Iceland, Liechtenstein, Luxembourg, Malta, the Netherlands, Norway and Portugal reported 0 emissions from waste as a fuel or material input. Denmark and Poland failed to report. France and Italy did not submit in time for inclusion.

3.3 Implied emission factors

Implied emission factor — summary

As an additional analysis of data reported to the Article 21 questionnaire, IEFs were calculated. This is not an analysis of EU ETS implementation, but a further analysis of the data provided. The range in IEFs among countries varies with the fuel type. The IEFs for blast furnace gas, coke oven gas and hard coal are broadly similar for reporting countries and in line with the IPCC range. This is particularly important for hard coal as this fuel is the largest single emissions source. For coke, natural gas, peat and lignite, a few countries reported significantly different IEFs, but most explained the origin of the differences. The IEFs for fuel oil and liquefied petroleum gas (LPG) showed a larger variation than can be explained by different attributions of specific fuels to fuel oil, the roles of non-energy fuel use and the reporting of process emissions as part of the CO₂ emissions.

The data reported on fuel consumption and related CO₂ emissions allow the calculation of IEFs for the reported fuels for each country, dividing the CO₂ emissions by the reported fuel consumption. These are calculated by dividing emissions (kt CO₂) by consumption (TJ) to obtain the implied rate at which CO₂ is emitted per unit of fuel consumed. These IEFs for specific fuels can highlight potential issues with either the reported fuel consumption or emission data if they are outside expected ranges or if they diverge strongly from IEFs of other countries. Therefore, the calculation of IEFs can be used as an indicator to highlight areas in which reported data should be checked. However, the IEFs derived from Article 21 questionnaires represent aggregated data and not original data reported by the operators under the EU ETS. Any inconsistencies identified in this analysis may therefore not necessarily represent real data inconsistencies but inconsistencies arising from the aggregation process for this specific reporting purpose.

From the emissions data reported by countries under the Article 21 questionnaire, IEFs for each country were calculated for 11 fuels as an additional analysis. These were compared with IPCC default EFs⁽⁶⁵⁾ for the same fuels, and IPCC upper and lower ranges of EFs⁽⁶⁶⁾. Where a country reported fuel consumption

and emission data resulting in an IEF that is outside of these upper and lower IPCC ranges, it was classified as an outlier⁽⁶⁷⁾. A summary of each country's IEF by fuel type is presented in Figure 3.5. It shows, for example, that only one country (blue cross) was an outlier for petroleum coke; the other countries are within the orange boundary lines representing the upper and lower ranges of the IPCC EFs.

For blast furnace gas and hard coal, no outliers were found. It is encouraging that the IEFs for hard coal are in line with the IPCC range as this fuel is the largest single emissions source. For coke oven gas, only one IEF slightly above the IPCC range was detected, which was explained by a country-specific composition of the reported gas with a higher IEF.

Fuel oil was the fuel with the most IEF outliers (11 out of 26 countries); however, as shown in Figure 3.5, the IPCC default range is very narrow and the deviations from the IPCC default were not very significant. The main reason for the fluctuation of IEFs for fuel oil was that countries aggregated different fuel types under the category fuel oil. Some countries only included residual and heavy fuel oil while others included, for example, light fuel oil. The following reasons led in some cases to significant differences in IEFs compared to default IPCC EFs for some countries:

- When mass balance approaches are used to estimate CO₂ emissions (which estimate the input and output of carbon in and from installations), fuel consumption and calorific values are often not reported as they are not necessary for the estimation methodology. This leads to higher IEFs⁽⁶⁸⁾. A similar situation occurs when continuous measurement methods are used for the monitoring of emissions that also do not need the fuel consumption data and may result in incomplete reporting on fuel consumption.
- The reported CO₂ emissions include process emissions (e.g. emissions from the calcination of carbonates in cement production) as well as emissions from fuel combustion⁽⁶⁹⁾. The IPCC default EFs only relate to fuel combustion emissions. This leads to higher IEFs in some countries.

⁽⁶⁵⁾ IPCC default EFs are average EFs considered suitable for calculating emissions where country-specific EFs are unavailable.

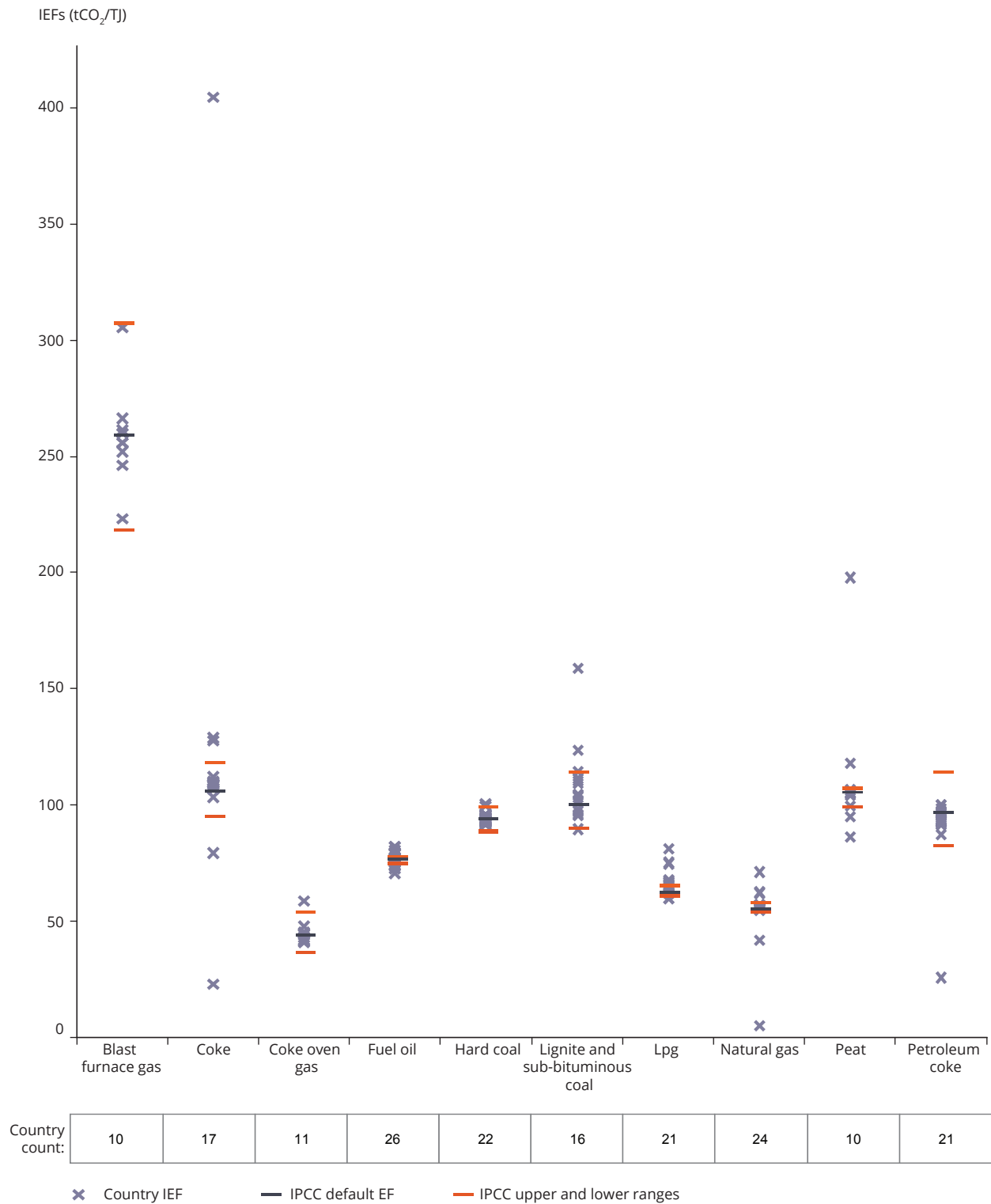
⁽⁶⁶⁾ 2006 IPCC Guidelines for National Greenhouse Gas Inventories were used for all comparisons provided in this section.

⁽⁶⁷⁾ For some fuels, the possibility of countries interpreting the fuel definition in different ways and including different sub-types means caveats should be attached to the analysis. For the analysis for coke, lignite and sub-bituminous coal, petroleum coke, peat, fuel oil and hard coal, the EFs from the IPCC may have different definitions to those that countries used for EU ETS reporting.

⁽⁶⁸⁾ This reason was indicated by Germany and the Netherlands for the slightly higher IEFs for coke and coke oven gas. Germany estimated that this concerns about 3% of the source streams utilised as fuels.

⁽⁶⁹⁾ For example, Finland's reported natural gas and petroleum coke emissions.

Figure 3.5 Implied emission factors (t CO₂/TJ), 2013



Note: France and Italy did not submit in time for inclusion.

- Countries allocated different fuel types under the requested fuel categories ⁽⁷⁰⁾. In some cases, country-specific fuels were allocated to the most similar standard fuel types ⁽⁷¹⁾. This is detected as an outlier, but the EFs are correct for the country-specific fuel.
- The non-energy use of some fuel quantities as feedstocks in the chemical industry or in refineries (e.g. natural gas is used for ammonia and fertiliser production where it is used as part of the chemical reactions and not burnt) that is not combusted and therefore does not cause emissions could potentially also change the IEFs.
- Some reported fuel quantities may be used as feedstocks in the chemical industry or in refineries and are therefore not combusted and do not cause emissions. If these quantities are included in the fuel consumption used for the calculation of IEFs, this leads to lower IEFs.

Similar to fuel oil, the LPGs category shows a relatively high number of outliers (10 out of 21 countries), but the deviations are not very large.

For coke, five outliers (5 out of 17 countries) of the IEFs were detected, and these showed very strong differences to the IPCC range for coke (Figure 3.5). In most cases, these deviations were explained by the use of mass balance approaches for coke that do not provide fuel consumption data. The very high IEF reported by one country was due to incomplete fuel consumption data while CO₂ emissions are complete. Deviations were also caused by the inclusion of process emissions in the emission estimates, as already explained above.

For natural gas, 4 outliers (4 out of 24 countries) were detected and they show relatively strong deviations from the IPCC range, similar to coke. The higher IEFs are due to the fact that total annual emissions of natural gas include process-derived emissions for which fuel consumption in TJ is not determined. For one country, this increases the IEF for natural gas from 55 t CO₂/TJ (EF only for combustion emissions) to 61.6 t CO₂/TJ (including process emissions in calculation of the IEF). The use of natural gas as feedstock was also confirmed as one of the reasons for higher EFs. Further checks of the reported fuel consumption data should occur for countries with low IEFs for natural gas.

For peat, 4 outliers (4 out of 10 countries) were detected, of which only 1 is really significant. In this case, the analysis of the underlying reason for the reporting installation was still ongoing when this report was finalised.

The IEFs for lignite and sub-bituminous coal showed three outliers. In one specific case, this is related to the reporting of CO₂ emissions from the use of graphite electrodes for which no corresponding fuel consumption is available. This caused higher IEFs. The total quantities of lignite and sub-bituminous coal consumed in this country are very low, therefore this allocation has a strong effect on the IEF.

For petroleum coke, only one outlier occurred for which no specific explanations had been provided at the time this report was finalised; however, the data-checking process will continue to either correct or be able to explain the deviation found.

Some of these outliers are only marginally outside the upper and lower ranges of the IPCC EFs, and thus are an indicative spread of IEFs only. The EEA will further work on quality checking and assurance of the data provided with the aim to explain or correct all remaining significant outliers.

The reporting countries recommended improving the reporting guidance related to definitions for the different fuel categories as well as related to the way in which process-derived emissions should be treated in the reporting in the Article 21 questionnaire.

3.4 Transfer of inherent CO₂

Inherent CO₂ — summary

Inherent CO₂, the CO₂ that is part of a fuel, can be transferred between EU ETS installations. Nine countries reported transferring or receiving inherent CO₂, but the poor data quality in this area prevented assessment of whether Article 48 of the MRR is being fully implemented.

Only Norway transferred CO₂ from EU ETS installations to long-term geological storage. Iceland and Norway reported developing technologies that could potentially permanently store CO₂.

⁽⁷⁰⁾ For example, Belgium (Flemish Region), Estonia, Lithuania, Luxembourg, Spain, and Sweden included light fuel oil in residual fuel oil, which has a lower EF.

⁽⁷¹⁾ For example, Estonia reported the country-specific fuel 'oil shale semi-coke gas' under the fuel type 'coke oven gas', which has a higher EF.

Transfer of inherent CO₂

Article 48 of the MRR covers the transfer of inherent CO₂ or CO₂ from installations performing activities covered by Annex I of the EU ETS Directive. Inherent CO₂ is CO₂ that results from an EU ETS activity and is contained in a gas transferred to other installations as a fuel ⁽⁷²⁾; e.g. blast furnace gas or coke oven gas is generated as a by-product in blast furnaces in the iron and steel industry and can be sold to an electricity or heat plant where it is used as a fuel and where finally the emissions occur. If transfers of inherent CO₂ take place between EU ETS installations, the CO₂ transferred should not be counted as emissions for the installation of origin, but for the installation where it is finally emitted. However, if the transfer occurs to an installation outside the EU ETS scope, the transferring installation has to account for the emissions.

According to the MRR, the quantities of transferred CO₂ can be determined both at the transferring or the receiving installations. The quantities should be the same; however, due to measurement uncertainties, differences in the quantities transferred may occur. If the differences are beyond the measurement uncertainties, the CA shall apply adjustments to align the estimates according to Article 48, paragraph 3 of the MRR. It is of course the initial responsibility of the operators and verifiers to ensure the data is checked appropriately.

Only 6 out of 29 countries reported a transfer of inherent CO₂ for 2013 (Belgium, Finland, Germany, Norway, Poland and Sweden) with 9 (the previous 6 plus Hungary, Spain and the United Kingdom) reporting receiving inherent CO₂. Most of the transferring installations were either coke production plants or iron and steel plants, and the receiving installations combustion plants. In general, the data quality was poor for this topic in the Article 21 questionnaire. One of the reasons seems to be that inherent CO₂ transferred as part of a fuel is not displayed in the operator reports when mass balance approaches are used, which frequently applies for iron and steel installations where such transfer is relevant. The transfer is reported if continuous measurement is used, which does however only apply in a few cases. Countries also interpreted the requested information in different ways. The most common issue was the reporting of which installations transferred CO₂, but

not indicating any quantities of CO₂ transferred, only quantities of CO₂ received by other installations (Spain, Hungary and the United Kingdom). Not all installations were identifiable through codes, anonymised or otherwise ⁽⁷³⁾ (Germany). Guidance should be further adhered to for future reporting, in particular on the terminology and data requirements.

As shown in Figure 3.6, Germany reported the highest amounts of CO₂ transferred at 26 838 kt CO₂ and of 27 666 kt CO₂ received. Belgium reported the second largest amounts of CO₂ transferred with 4 632 kt CO₂, and the amounts were only transferred between EU ETS installations. While Belgium reported identical quantities for the amounts of CO₂ transferred and received, the data provided by Finland ⁽⁷⁴⁾, Germany and Norway show small differences between the quantities transferred and received, which seems to indicate such measurement uncertainties that are mostly below 1%. In some specific pairs of transfers and receipts the differences are higher; however, from the data available the reasons for such higher differences are not accessible, and it could also be the case that part of the transfer occurred to another EU ETS installation and part of the transfer occurred to an installation outside the EU ETS.

For a better assessment of the data on CO₂ transfers, it would be useful to clarify the use of signs in the questionnaire for an improved automatic analysis of the reported data. The use of negative signs for transfers from installations and positive signs for receipt of inherent CO₂ seems to be a logical approach. In addition, it should be explained that a transfer from one EU ETS installation to another EU ETS installation should be indicated as a quantity of CO₂ transfer for the transferring installation with a negative sign, and as a quantity for the receiving installation with a positive sign.

Article 49 of the MRR allows the subtraction of CO₂ emissions from total installation emissions covered in the EU ETS if CO₂ is transferred out with the purpose of long-term geological storage. Only Norway reported that they had used this option, transferring 1 408 kt CO₂ from two installations to long-term storage sites.

Permanent storage of CO₂

Recital 13 of the MRR states that Article 49 of the MRR, as discussed above, should not exclude possible

⁽⁷²⁾ This could be natural gas, a waste gas including blast furnace gas, or coke oven gas.

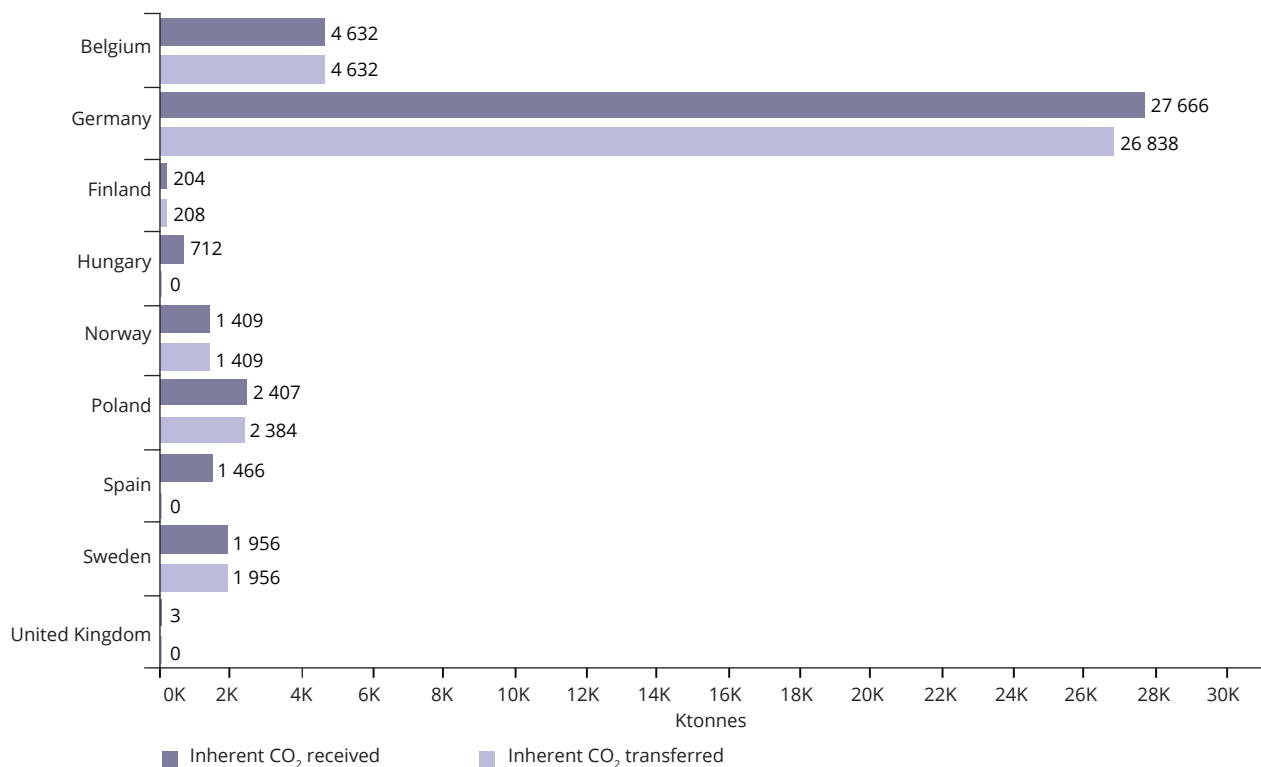
⁽⁷³⁾ Where due to special circumstances involving confidentiality a Member State is unable to reveal the installation identification code, a more anonymous code may be entered to represent the identity of the individual installation involved, as long as the correlation to the actual installation identification code is clearly and accurately indicated to the European Commission in a separate written communication.

⁽⁷⁴⁾ Finland reported that they are investigating whether these differences are indeed from measurement uncertainties.

future innovations. Countries were asked if innovative technologies are foreseen that could be applied for permanent storage of CO₂, to inform whether Article 49

of the MRR may need to be adapted in the future. Only Iceland and Norway reported that they are developing technologies ⁽⁷⁵⁾.

Figure 3.6 Amounts of inherent CO₂ (kt) transferred and received from EU ETS installations, 2013



Note: France and Italy did not submit in time for inclusion.

⁽⁷⁵⁾ Iceland gave a link to a project in which the natural storage process of CO₂ shall be imitated in basaltic rocks in Icelandic geothermal fields (<https://www.or.is/en/projects/carbfix>). Norway briefly described using 4D seismology as the technology they consider best for monitoring stored CO₂.

4 Outlook

This report has presented new and previously unavailable data regarding implementation of the EU ETS Directive. The conclusions are presented at the beginning of each subsection (light purple boxes) and are not repeated here. This information will be useful for policymakers to help inform improvements to the EU ETS.

4.1 Data quality

National responses to the questionnaire for Article 21 of the EU ETS Directive varied significantly in timeliness, completeness and quality. Only 19 countries reported in time; 10 reported after the set deadline, and France and Italy did not report in time for inclusion in this report. Some countries provided extensive explanation of their answers, which is commended, whilst others submitted the minimum required or sometimes even less. As this was the first reporting period based on a new questionnaire, data quality issues are to be expected. Improved quality checks by the EEA in future years will assist in improving the quality of data in future reporting.

The following types of data quality problems were found in the reports submitted this year.

- Incompleteness of the questionnaire and parts of questions, sometimes explained in note fields and sometimes not.
- Different format types used for completing the questionnaire — not all countries provided answers through the online reporting tool, so this has resulted in some inconsistencies in reporting formats.
- Some questions were rather open to interpretation in the way that they were answered; therefore, interpretation of aggregated data is difficult or not possible. Guidance on some questions could be improved in future years for these questions.

The format of the reporting system can be enhanced to ensure better completeness next year with more sophisticated checking systems in place.

Examples of where poor data quality has hindered data analysis are the questions regarding the following.

- The number of installations (see Appendix 4).
- The changes in allocation of emission allowances: 10 countries reported different changes in the number of emission allowances for this reporting period, and since the start of the third reporting period, which should have been the same. If data for the third trading period is used, the EU ETS saw 1 148 changes to installations, corresponding to a net decrease of 1 111 458 emission allowances. If data for this reporting year is used, the EU ETS saw 1 199 changes to installations, corresponding to a net decrease of 1 075 105 emission allowances. The inconsistencies in reporting across countries make the validity of deeper analysis questionable. Further discussion of this is provided in Appendix 3.
- Emissions by CRF code: countries interpreted this question differently and reported issues with obtaining the required data from operators. The guidance should be further adhered to for next year's reporting.
- Emissions from waste fuels: countries used inconsistent reporting codes for wastes and provided data at different levels of aggregation, which hindered analysis and comparisons.

Examples of where data was analysed, but improvements should be seen in future reporting years, are the questions regarding the following.

- Transfer of inherent CO₂: the most common issue was that countries reported which installations transferred CO₂, but did not indicate any quantities of CO₂ transferred, only quantities of CO₂ received by other installations. Guidance should be further adhered to for future reporting, in particular on the terminology and data requirements. Consistent use of signs for data (positive and negative) would improve analysis; a transfer from one EU ETS installation to another EU ETS installation should be indicated as a quantity of CO₂ transfer for the

transferring installation with a negative sign, and as a quantity for the receiving installation with a positive sign.

- Sustainability of biofuels and bioliquids: information on the use of sustainability criteria for biofuels and bioliquids was often incomplete. Improved adherence to the guidance in the explanatory note could help to improve next year's reporting and subsequent analysis of the reported data.

4.2 Future analysis

In future reports, the data for fuel consumption, fuel emissions and the changes to allocation allowances can be analysed over several years of responses, which will allow greater understanding of the direction in which the EU ETS market is heading. The analysis of IEFs in Section 3.3 will be expanded further in future work. Data quality checks by the EEA will be extended.

For areas where it is perhaps more difficult to assess whether flexibilities of the regulations are being used

appropriately, multiple years' data will allow better evaluation. For example, the number of instances where the highest tier is not being used for the monitoring methodology should not increase over time in a country.

In future years, assuming consistency of reporting, a trend analysis will be possible to see if there are shifts in the fuels used over time, and if IEFs are changing. More data will also be available regarding implementation of new requirements for Phase III, including verification and changes in allocations, and therefore more meaningful analysis will be possible. As this was the first reporting period based on a new questionnaire, data issues are to be expected. This information is expected to improve over the coming years, as more data become available, as the EEA performs more data quality checks, and as country submissions become more complete and coherent.

Abbreviations, units and acronyms

Acronyms and units

AVR	Accreditation and Verification Regulation
CA	Competent Authority
CEM	Continuous Emission Measurement
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CRF	Common Reporting Format
E-PRTR	European Pollutant Release and Transfer Register
EC	European Commission
EEA	European Environment Agency
EF	Emission Factor
EU ETS	European Union Emissions Trading System
EUTL	European Union Transaction Log
GHG	Greenhouse Gas
IED	Industrial Emissions Directive
IEF	Implied Emission Factor
IPCC	Intergovernmental Panel on Climate Change
Kt	Kilotonnes
LPG	Liquefied Petroleum Gas
MRR	Monitoring and Reporting Regulation
MRV	Monitoring, Reporting and Verification
MS	Member State
MWth	Megawatts Thermal
N ₂ O	Nitrous oxide
NAB	National Accreditation Body
PFCs	Perfluorocarbons
TJ	Terajoules
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value Added Tax
VOS	verification opinion statement

Countries

AT	Austria
BE	Belgium
BG	Bulgaria
HR	Croatia
CY	Cyprus
CZ	Czech Republic
DK	Denmark
EE	Estonia
FI	Finland
FR	France
DE	Germany
GR	Greece
HU	Hungary
IS	Iceland
IE	Ireland
IT	Italy
LV	Latvia
LI	Liechtenstein
LT	Lithuania
LU	Luxembourg
MT	Malta
NL	Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SK	Slovakia
SI	Slovenia
ES	Spain
SE	Sweden
UK	United Kingdom

Glossary

Allocation

Assignment of emissions allowances in a specific way, which could be to a specific party according to predetermined rules.

Calculation factor

An overarching term for parameters such as carbon content, conversion factor, biomass fraction, emission factor, net calorific value and oxidation factor.

Cap

The maximum amount of greenhouse gas emissions allowed to be emitted in the system by the participants covered in the system. A cap is used in combination with a trading element in an emissions trading system to allow the participants to meet their emissions reduction obligations through a least-cost mean.

Carbon dioxide equivalent (CO₂e)

CO₂e is a measurement unit to indicate the global warming potential of greenhouse gases. Carbon dioxide is the reference gas against which other greenhouse gases are measured. Other greenhouse gases that are reported as carbon dioxide equivalent are:

- carbon dioxide (CO₂)
- methane (CH₄)
- nitrous oxide (N₂O)
- sulphur hexafluoride (SF₆)
- perfluorocarbons (PFCs)
- hydrofluorocarbons (HFCs)

For the EU ETS, CO₂ is the main greenhouse gas that is covered, with N₂O and PFCs also covered for selected industry sectors.

Combustion emissions

Combustion emissions means greenhouse gas emissions occurring during the exothermic reaction of a fuel with oxygen.

Competent authority (CA)

The organisation(s) within Member States responsible for implementation of the EU ETS.

Continuous emission measurement

Continuous emission measurement means a set of operations having the objective of determining the value of a quantity by means of periodic measurements, applying either measurements in the stack or extractive procedures with a measuring instrument located close to the stack, whilst excluding measurement methodologies based on the collection of individual samples from the stack.

Determined by analyses

Calculation factors have to be determined either as default values or determined by (chemical) laboratory analyses. Laboratory analysis provides more accurate data but is more demanding than using default values. Where determined by analyses, the laboratory must demonstrate competence and the operator must develop sampling plans to be approved by the CA to ensure the way samples are taken from the material/fuel for analysis achieves representative results.

Emission allowance

Permission to emit 1 tonne of carbon dioxide or carbon dioxide equivalent in a specified period of time. Emissions allowances are given to participating installations and aircraft operators in the EU ETS, and to countries with a quantified greenhouse gas emissions reduction target under the Kyoto Protocol. EU ETS allowances are called EUAs (EU allowances) and allowances for aircraft operators are called EUAAs (EU Aviation allowances). Kyoto allowances are called Assigned Amount Units (AAUs). One EUA or one AAU represents the right to emit 1 tonne CO₂e. Allowance units are freely allocated or auctioned to members of the EU ETS and can then be sold or purchased through the carbon market.

Emission factor

An emission factor is the average emission rate of a given greenhouse gas for a given source, relative to units of activity.

Emissions trading

A market-based approach that provides flexibility for participants on meeting their emissions reduction objectives with the least-cost means while ensuring the emissions reduction targets are achieved. Participants that reduce their greenhouse gas emissions more than required can trade their excess allowances with other participants that have a shortage of allowances. Trading can take place at national or international level, or between companies. The achievement of environmental targets is ensured while providing relevant parties with flexibility in realising those targets.

Fall-back approach

A fall-back approach for estimating emissions can be applied for selected source streams or emissions sources where applying at least a Tier 1 approach is technically not feasible or would incur unreasonable costs, provided certain conditions regarding uncertainties are met.

Greenhouse gases (GHGs)

A group of gases contributing to global warming and climate change. The Kyoto Protocol covers six GHGs:

The non-fluorinated gases:

- carbon dioxide (CO₂)
- methane (CH₄)
- nitrous oxide (N₂O)

The fluorinated gases:

- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulphur hexafluoride (SF₆)

Converting them to carbon dioxide (or CO₂) equivalents makes it possible to compare them and to determine their individual and total contributions to global warming.

Implied emission factor (IEF)

An IEF is calculated by dividing emissions by the measure of activity, such as fuel consumption.

Inherent CO₂

Inherent CO₂ is CO₂ that results from an Annex I activity and is part of a gas that is considered a fuel. This could be natural gas, a waste gas including blast furnace gas, or coke oven gas.

Installation types

Installation types are defined by the average verified annual emissions of the trading period immediately preceding the current trading period, with the exclusion of CO₂ stemming from biomass and before subtraction of transferred CO₂, where:

- Category A installations emit equal to or less than 50 000 tonnes CO₂e;
- Category B installations emit more than 50 000 tonnes CO₂e and equal to or less than 500 000 tonnes CO₂e;
- Category C installations emit more than 500 000 tonnes CO₂e.

Installations with low emissions emit less than 25 000 tonnes CO₂e (and are thus included in category A installations).

IPCC default emission factor

Average emission factors considered suitable for calculating emissions where country-specific emission factors are unavailable.

National Accreditation Body

The organisation within Member States responsible for accrediting verifiers to a suitable standard.

Net calorific value

Net calorific value means the specific amount of energy released as heat when a fuel or material undergoes complete combustion with oxygen under standard conditions less the heat of vaporisation of any water formed.

Oxidation factor

This is the fraction of carbon that is oxidised during combustion.

Process emissions

Process emissions means greenhouse gas emissions other than combustion emission occurring as a result of intentional and unintentional reactions between substances or their transformation, including the chemical or electrolytic reduction of metal ores, the thermal decomposition of substances, and the formation of substances for use as product or feedstock.

Registry

A registry is a database that shows who owns what emission allowances and performs transactions between accounts. Account balances can be viewed

and transactions initiated online through a registry. A register is not a trading platform; it does not support the statement of sale and purchase orders or prices.

Reverse charge mechanism

The reverse charge mechanism moves the responsibility for the payment of the VAT from the seller of a good or service to the buyer.

Rated thermal input

Rated thermal input refers to the rate at which fuel can be burned at the maximum continuous rating (maximum output a generator is capable of producing continuously, under normal conditions, for a year) of the appliance, multiplied by the gross calorific

value of the fuel. Rated thermal input is expressed as megawatts thermal, and can usually be taken from the manufacturer's rated input for that appliance or design.

Tiers

Tiers are sets of requirements for determining calculation factors, activity data and emissions. Higher tiers have more stringent requirements and produce more accurate data.

Trading period

Periods of time for which EU ETS emissions allowances are issued. Initially, two trading periods were defined: 2005–2007 and 2008–2012. This has been further extended with a third trading period from 2013 to 2020.

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Appendix 1 Data collection processes and outcomes

A summary of reporting on the implementation of EU ETS Directive is shown in Table A1.1.

Table A1.1 National submissions in 2014

Country	Submission (uploaded to the Central Data Repository of the European Environment Information and Observation Network)	Resubmissions
AT	30/06/2014	
BE	22/07/2014	
BG	30/06/2014	
CY	30/06/2014	
CZ	09/07/2014	
DE	22/07/2014	
DK	30/06/2014	
EE	30/06/2014	
ES	19/09/2014	06/11/2014, 12/12/2014, 12/03/2015
FI	19/06/2014	
FR	27/03/2015 (*)	
GR	26/09/2014	
HR	30/06/2014	
HU	30/06/2014	
IE	30/06/2014	
IS	30/06/2014	
IT	10/12/2014 (*)	
LI	18/06/2014	
LT	20/06/2014	
LU	11/08/2014	
LV	24/07/2014	
MT	07/07/2014	
NL	30/06/2014	
NO	31/10/2014	
PL	30/06/2014	
PT	30/06/2014	
RO	27/06/2014	
SE	30/06/2014	
SI	15/07/2014	
SK	30/06/2014	24/02/2015
UK	30/06/2014	

Note: * Submitted too late to be included in analysis.

Table A1.2 shows which countries responded to which mandatory questions of the Article 21 questionnaire. Question numbers marked with (*) indicate questions that have not been analysed in this report.

Table A1.2 Summary of national responses to mandatory questions in 2014

	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR (**)	GR	HR	HU	IE	IS	IT (**)	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK				
Q.	93	100	95	100	100	100	81	100	100	100	0	98	100	100	100	100	0	100	100	98	100	100	98	98	86	100	100	100	98	100	100				
1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
2.1a (*)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
2.1b (*)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
2.1c (*)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
2.1d (*)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
2.3	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
2.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
3.1a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
3.1b	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
3.2a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
3.2b	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
3.3a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
3.3b (*)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4.1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4.2a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4.2b	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.1a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.1b	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.3a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.3b	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.5a	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.5b	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.7 (*)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.8a	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.8b (*)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.12	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.14 (*)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5.16	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table A1.2 Summary of national responses to mandatory questions in 2014 (cont.)

	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR (**)	GR	HR	HU	IE	IS	IT (**)	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK						
Q.	93	100	95	100	100	100	81	100	100	100	0	98	100	100	100	100	0	100	100	98	100	98	100	98	93	86	100	100	98	100	100						
5.17	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes						
5.18	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes						
5.19	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
5.20	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
5.21	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes					
5.22 (*)	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes					
5.24	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
5.25 (*)	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
5.26	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
5.27	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
6.1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
6.4	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
6.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
6.6 (*)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
6.8 (*)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
6.9 (*)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
6.10 (*)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
7.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.2	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
9 (*)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
10.1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
10.2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11.1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12.3a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12.3b	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12.3c	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14.2 (*)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: * Questions that were not included for analysis in this report.

**France and Italy did not submit in time for inclusion in this report.

Appendix 2 Links to country submissions

National responses can be viewed in full by following the links in Table A2.1.

Table A2.1 Country submission links, 2014

Country	Link to html file submitted
AT	http://cdr.eionet.europa.eu/at/eu/emt/envu5hdwa/Art_21_Report_AT_for_2013.pdf
BE	http://cdr.eionet.europa.eu/Converters/run_conversion?file=be/eu/emt/envu6gexg/Article_21_questionnaire_1.xml&conv=445&source=remote
BG	http://cdr.eionet.europa.eu/Converters/run_conversion?file=bg/eu/emt/envu5blw/Article_21_questionnaire_1.xml&conv=445&source=remote
CY	http://cdr.eionet.europa.eu/Converters/run_conversion?file=cy/eu/emt/envu56yia/Article_21_questionnaire_1.xml&conv=445&source=remote
CZ	http://cdr.eionet.europa.eu/Converters/run_conversion?file=cz/eu/emt/envu5f2bq/Article_21_questionnaire_2.xml&conv=445&source=remote
DE	http://cdr.eionet.europa.eu/Converters/run_conversion?file=de/eu/emt/envu85fla/article21_questionnaire_2013_english.xml&conv=445&source=remote
DK	http://cdr.eionet.europa.eu/Converters/run_conversion?file=dk/eu/emt/envu3s7ma/article21_questionnaire.xml&conv=445&source=remote
EE	http://cdr.eionet.europa.eu/Converters/run_conversion?file=ee/eu/emt/envu5rm_g/Article_21_questionnaire_1.xml&conv=445&source=remote
ES	http://cdr.eionet.europa.eu/Converters/run_conversion?file=es/eu/emt/envvqavba/Article_21_Questionnaire_v04.xml&conv=445&source=remote
FI	http://cdr.eionet.europa.eu/Converters/run_conversion?file=fi/eu/emt/envu47saw/Article_21_questionnaire_1.xml&conv=445&source=remote
FR	http://cdr.eionet.europa.eu/Converters/run_conversion?file=fr/eu/emt/envu9u0ra/Article_21_questionnaire_1.xml&conv=445&source=remote
GR	http://cdr.eionet.europa.eu/Converters/run_conversion?file=gr/eu/emt/envu5b8zg/Article_21_questionnaire_1.xml&conv=445&source=remote
HR	http://cdr.eionet.europa.eu/Converters/run_conversion?file=hr/eu/emt/envu5voha/Article_21_questionnaire_1.xml&conv=445&source=remote
HU	http://cdr.eionet.europa.eu/hu/eu/emt/envu7fcdw/QUESTIONNAIRE_ART_21_2013_HU.pdf
IE	http://cdr.eionet.europa.eu/Converters/run_conversion?file=ie/eu/emt/envu34roq/Article_21_questionnaire_1.xml&conv=445&source=remote
IS	http://cdr.eionet.europa.eu/Converters/run_conversion?file=is/eu/emt/envu5hsza/Article_21_questionnaire_1.xml&conv=445&source=remote
IT (*)	http://cdr.eionet.europa.eu/Converters/run_conversion?file=it/eu/emt/envu6l9jg/Article_21_questionnaire_1.xml&conv=445&source=remote

Table A2.1 Country submission links, 2014 (cont.)

Country	Link to html file submitted
LI	http://cdr.eionet.europa.eu/Converters/run_conversion?file=li/eu/emt/envu5f9mg/Article_21_questionnaire__1.xml&conv=445&source=remote
LT	http://cdr.eionet.europa.eu/Converters/run_conversion?file=lt/eu/emt/envu4czrq/Article_21_questionnaire.xml&conv=445&source=remote
LU	http://cdr.eionet.europa.eu/Converters/run_conversion?file=lu/eu/emt/envu56ba/Article_21_questionnaire__1.xml&conv=445&source=remote
LV	http://cdr.eionet.europa.eu/Converters/run_conversion?file=lv/eu/emt/envu5a82q/Article_21_questionnaire__1.xml&conv=445&source=remote
MT	http://cdr.eionet.europa.eu/Converters/run_conversion?file=mt/eu/emt/envu6kd2q/Article_21_questionnaire__1.xml&conv=445&source=remote
NL	http://cdr.eionet.europa.eu/Converters/run_conversion?file=nl/eu/emt/envu4m2vw/Article_21_questionnaire__1.xml&conv=445&source=remote
NO	http://cdr.eionet.europa.eu/Converters/run_conversion?file=no/eu/colp0r8w/colsjs89w/envvabh7q/Article_21_questionnaire__1.xml&conv=445&source=remote
PL	http://cdr.eionet.europa.eu/Converters/run_conversion?file=pl/eu/emt/envu6p9ya/Article_21_questionnaire__1.xml&conv=445&source=remote
PT	http://cdr.eionet.europa.eu/Converters/run_conversion?file=pt/eu/emt/envu42kpw/Article_21_questionnaire__1.xml&conv=445&source=remote
RO	http://cdr.eionet.europa.eu/Converters/run_conversion?file=ro/eu/emt/envu4laqw/Article_21_questionnaire__1.xml&conv=445&source=remote
SE	http://cdr.eionet.europa.eu/Converters/run_conversion?file=se/eu/emt/envu5vqcg/Article_21_questionnaire__1.xml&conv=445&source=remote
SI	http://cdr.eionet.europa.eu/Converters/run_conversion?file=si/eu/emt/envu60klg/Article_21_questionnaire__1.xml&conv=445&source=remote
SK	http://cdr.eionet.europa.eu/Converters/run_conversion?file=sk/eu/emt/envvocnjw/Article_21_questionnaire__1.xml&conv=445&source=remote
UK	http://cdr.eionet.europa.eu/Converters/run_conversion?file=gb/eu/emt/envu42pbg/UK_2013_Working_Draft.xml&conv=445&source=remote

Note: * Not submitted in time for inclusion in this report.

Appendix 3 Summary of other data submitted

A3.1 Administration arrangements

Table A3.1 lists the CAs for each country and the abbreviation entered in the table of CA roles. Where a country stated its focal CA, this is highlighted in bold.

Table A3.1 List of competent authorities and abbreviations, 2013

	Competent authority	Abbreviation
AT	CA responsible for the permitting of the installation (local administrative bodies, in some cases federal state governments)	Local permitting authority
	Austrian Treasury	OeBFA
	Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, Division I/4 – Climate Change and Air Quality	BMLFUW
BE	BRU: Government of the Brussels-Capital Region	BRU-GBC/BHG
	FL: Flemish Competent Authority (Environment, Nature and Energy Department/Air, Nuisance, Risk Management, Environment and Health Division/Climate Unit)	FL-CA
	FED: The Registry Administrator (Federal Public Service of Public Health, Food Chain Safety and Environment/ DG Environment, Climate Change Division/ The registry administrator)	FED-REG
	WA: Municipalities	WA-WM
	WA: Département des Permis et Autorisation	WA-DPA
	WA: Département de la Police et des Contrôles	WA-DPC
	WA: Walloon Air And Climate Agency	WA-AwAC
	WA: Walloon Government	WA-GW
	FL: Flemish Government	FL-FG
	FL: Flemish Minister of the Environment	FL-FME
	FL: Benchmarking Verification Bureau of Flanders	FL-VBBV
	FL: Flemish Business Agency	FL-FBA
	FL: Provincial Executive(s) of the Provincial Council(s)	FL-PE
	BRU: Brussels Institute for Management of the Environment	BRU-IBGE/BIM
	FED: General Directorate Air Transport	FED-DGTA/DGLV
BG	Executive Environment Agency	ExEA
	Ministry of Environment and Water	MOEW
	Council of Ministers of the Republic of Bulgaria	CMRB
	Regional Inspectorates of Environment and Water (и води)	RIEW
CY	Ministry of Energy, Commerce, Industry and Tourism, Energy Service	MECIT_ES
	Ministry of Labour and Social Insurance, Department of Labour Inspection	MLSI_DLI
	Cyprus Scientific and Technical Chamber	ETEK
	Ministry of Finance	MoF
	Ministry of Communication and Works, Department of Civil Aviation	MCW_DCA
	Federation of Environmental and Ecological Organisations of Cyprus	FEEO
	Cyprus Energy Regulatory Authority	CERA
	Ministry of Agriculture, Natural Resources and Environment, Department of Environment	MANRE_DoE
Cyprus Stock Exchange	CSE	

Table A3.1 List of competent authorities and abbreviations, 2013 (cont.)

	Competent authority	Abbreviation
CZ	Ministry of the Environment	MoE
	OTE, a.s.	OTE
	Czech Environmental Inspectorate	CIZP
DE	German Emissions Trading Authority (Deutsche Emissionshandelsstelle im Umweltbundesamt)	DEHSt
	Various German federal state (Bundesland) authorities and in some cases municipal authorities; national law has devolved responsibility for emission permits to the authorities responsible for issuing permits under the Industrial Emissions Directive (IED) – the German federal states, have adopted rules on competencies that diverge in many procedural and substantive respects.	Federal state/municipal authorities
DK	Danish Energy Agency (Energistyrelsen)	DEA (ENS)
EE	Ministry of the Environment (Keskkonnaministeerium)	KeM
ES	Government Departments of the Autonomous Communities (Consejerías de las Comunidades Autónomas)	CCAA
	The Designated National Authority for mechanisms based on projects under the Kyoto Protocol (La Autoridad Nacional Designada para los mecanismos basados en proyectos del Protocolo de Kioto)	DNA (AND)
	Central State Administration (Administración General del Estado)	AGE
	Climate Change Policy Coordination Committee (body coordinating between competent authorities of the Central State Administration and the Autonomous Communities) (Comisión de Coordinación de Políticas de Cambio Climático (Órgano de coordinación entre autoridades competentes de la Administración General del Estado y las Comunidades Autónomas))	CCPCC
	Inter-Ministerial Group on Climate Change (body coordinating between competent authorities of the Central State Administration) (Grupo Interministerial de Cambio Climático (Órgano de coordinación entre autoridades competentes de la Administración General del Estado))	GICC
	Spanish Climate Change Office, Ministry of Agriculture, Food and the Environment (Oficina Española de Cambio Climático. Ministerio de Agricultura Alimentación y Medio Ambiente)	OECC - MAGRAMA
FI	The National Government of Åland (for Traditional ETS)	NGA
	Energy Authority (for Traditional ETS)	EV
	Finnish Transport Safety Agency (for ETS on Aviation)	Trafi
	Ministry of Employment and the Economy (for Traditional EU ETS)	TEM
	Ministry of the Transport and the Communications (for ETS on Aviation)	LVM
FR (*)		
GR	Athens Stock Exchange S.A. (ΧΡΗΜΑΤΙΣΤΗΡΙΟ ΑΘΗΝΩΝ Α.Ε.)	X.A.
	Ministry of Environment, Energy and Climate Change (ΥΠΕΚΑ)/ Directorate-General for Energy/ Directorate for Electricity Production (ΥΠΕΚΑ/ ΓΕΝ.ΓΡΑΜ ΕΝΕΡΓΕΙΑΣ/ Δ/ΝΣΗ ΗΛΕΚΤΡΟΠΑΡΑΓΩΓΗΣ)	ΥΠΕΚΑ (ΔΙΕΥΘΥΝΣΗ ΗΛΕΚΤΡΟΠΑΡΑΓΩΓΗΣ ΥΠΕΚΑ)
	Ministry of Infrastructure, Transport and Networks/ Hellenic Civil Aviation Authority (ΥΠΟΥΡΓΕΙΟ ΜΕΤΑΦΟΡΩΝ ΥΠΟΔΟΜΩΝ ΚΑΙ ΔΙΚΤΥΩΝ/ ΥΠΗΡΕΣΙΑ ΠΟΛΙΤΙΚΗΣ ΑΕΡΟΠΟΡΙΑΣ)	ΥΠΑ (ΥΠΑ)
	Emissions Trading Office (ΓΡΑΦΕΙΟ ΕΜΠΟΡΙΑΣ ΔΙΚΑΙΩΜΑΤΩΝ ΕΚΠΟΜΠΩΝ)	GEDE (ΓΕΔΕ)
HR	Croatian Environment Agency (Agencija za zaštitu okoliša)	CEA (AZO)
	Environmental Protection and Energy Efficiency Fund (Fond za zaštitu okoliša i energetske učinkovitost)	EPFEE (FZOEU)
	Ministry of Finance (Ministarstvo financija)	MFIN
	Ministry of Environmental and Nature Protection (Ministarstvo zaštite okoliša i prirode)	MENP (MZOIP)
HU	National Inspectorate for Environment and Nature	NIEN
	Ministry of National Development	MND
IE	Environmental Protection Agency	EPA
IS	The Environment Agency of Iceland	EAI
IT (*)		
LI	Office for the Environment (Amt für Umwelt)	AU

Table A3.1 List of competent authorities and abbreviations, 2013 (cont.)

	Competent authority	Abbreviation
LT	Environmental Protection Agency under the Ministry of the Environment (Aplinkos apsaugos agentūra prie Aplinkos ministerijos)	EPA (AAA)
	Regional environmental protection departments (Regionų aplinkos apsaugos departamentai)	REPD (RAAD)
	Ministry of Finance of the Republic of Lithuania (Lietuvos Respublikos finansų ministerija)	MoF (FM)
	Ministry of Energy of the Republic of Lithuania (Lietuvos Respublikos energetikos ministerija)	MoEne (EM)
	Ministry of Agriculture of the Republic of Lithuania (Lietuvos Respublikos žemės ūkio ministerija)	MoA (ŽŪM)
	Ministry of Transport and Communications of the Republic of Lithuania (Lietuvos Respublikos susisiekimo ministerija)	MoTC (SM)
	Ministry of the Economy of the Republic of Lithuania (Lietuvos Respublikos ūkio ministerija)	MoEc (ŪM)
	Ministry of the Environment of the Republic of Lithuania (Lietuvos Respublikos aplinkos ministerija)	MoEn (AM)
	Lithuanian Environmental Investment Fund (Lietuvos aplinkos apsaugos investicijų fondas)	LEIF (LAAIF)
LU	Ministry of Sustainable Development and Infrastructure – Environment Department (Ministère du Développement durable et des Infrastructures – Département de l'environnement)	(MDDI)
	State Treasury (Trésorerie de l'Etat)	(TS)
	Ministry of Sustainable Development and Infrastructure – Environment Administration (Ministère du Développement durable et des Infrastructures - Administration de l'environnement)	(AEV)
LV	State Revenue Service (Valsts ieņēmumu dienests)	VID
	Ministry of Environmental Protection and Regional Development (Vides aizsardzības un reģionālās attīstības ministrija)	VARAM
	State Environmental Service (Valsts vides dienests)	VVD
	Civil Aviation Agency (Civilās aviācijas aģentūra)	CAA
	Latvian National Accreditation Bureau (Latvijas Nacionālais akreditācijas birojs)	LATAK
	Latvian Environmental, Geological and Meteorological Centre (Latvijas Vides, ģeoloģijas un meteoroloģijas centrs)	LVĢMC
	The State Office for Environmental Monitoring (Vides pārraudzības valsts birojs)	VPVB
MT	Treasury Department – Ministry for Finance	TD-MFIN
	Malta Resources Authority	MRA
NL	Netherlands Enterprise Agency (Rijksdienst voor Ondernemend Nederland)	RVO.nl
	Netherlands Emissions Authority (Nederlandse Emissieautoriteit)	NEa
	Ministry of Infrastructure and Environment, Department of Climate, Air and Noise (Ministerie van Infrastructuur en Milieu, Directie Klimaat, Lucht en Geluid)	IenM, KLG
NO	Ministry of Climate and Environment	KLD
	Norwegian Environment Agency	NEA
PL	Competent authority in charge of issuance of permits for the participation in the trading scheme (district governor – DG or Province Marshal – PM). Province Marshal in the case of facilities with installations classified as projects likely to have significant impact on the environment, for which it is obligatory to prepare an environmental impact assessment report. Organ właściwy do wydawania zezwoleń na udział w handlu (starosta – S lub Marszałek Województwa - MW). Marszałek Województwa dla zakładów, gdzie jest eksploatowana instalacja, która jest kwalifikowana jako przedsięwzięcie mogące znacząco oddziaływać na śr	DG/PM (S/MW)
	Institute of Environmental Protection – National Research Institute, National Centre for Emissions Management (Instytut Ochrony Środowiska – Państwowy Instytut Badawczy, Krajowy Ośrodek Bilansowania i Zarządzania Emisjami)	KOBiZE
	Provincial Environmental Protection Inspector (Wojewódzki inspektor ochrony środowiska)	PEPI (WIOŚ)
	Minister for the Environment (Minister Środowiska)	ME (MŚ)
	Council of Ministers (Rada Ministrów)	CM (RM)
PT	Portuguese Environment Agency, Public Institut	APA. I.P.
	Regional Directorate of the Environment of Azores (Direção Regional do Ambiente)	DRA
	Regional Directorate of Spatial Planning and Environment of Madeira (Direção Regional do Ordenamento do Território e Ambiente)	DROTA

Table A3.1 List of competent authorities and abbreviations, 2013 (cont.)

	Competent authority	Abbreviation
RO	Ministry of Environment and Climate Change	MECC
	National Environmental Guard	NEG
	Romanian Aeronautical Civil Authority	RACA
	Ministry of Transport	MT
	Romanian Accreditation Association	RENAR
	Ministry of Public Finance	MPF
SE	Swedish Environmental Protection Agency (Naturvårdsverket)	NV
	Finansinspektionen	FI
	Swedish National Debt Office (Riksgäldskontoret)	RG
	County Administrative Boards (Länsstyrelsen)	LST
SI	Slovenian Environment Agency	ARSO
	Inspectorate of RS for Agriculture and the Environment	Inspectorate
	Ministry of Agriculture and the Environment	MKO
SK	Ministry of the Environment of the Slovak Republic	MoE
	72 District Offices	DO
	Export-Import Bank of the Slovak Republic (Exportno-importná banka Slovenskej republiky)	EXIM
UK	Department of Energy and Climate Change	DECC
	Environment Agency	EA
	Scottish Environment Protection Agency	SEPA
	Northern Ireland Environment Agency	NIEA
	Natural Resources Wales	NRW
	Department of Energy and Climate Change Offshore Oil and Gas Environment and Decommissioning	DECC - OGED

Note: Focal CA is in bold.

* France and Italy did not submit in time for inclusion in this report.

Table A3.3 Competent authorities and their roles, aircraft operators, 2013

	Free allocation pursuant to Article 3e and 3f of Directive 2003/87/EC	Auctioning	Financial measures w.r.t. Indirect carbon leakage	Issuance of allowances	Approval of the monitoring plan	Receiving and assessing verified emissions reports and verification reports	Making a conservative estimation of emissions	Approval of improvement reports	Approval of the operator's application to waive a verifier's site visit	Inspection and enforcement	Information to the public	Total number of CAs
AT	BMLFUW	OsBFA		BMLFUW	BMLFUW	BMLFUW	BMLFUW	BMLFUW	BMLFUW	BMLFUW	BMLFUW	3
BE (WA)	GW	FED-REG		GW	AwAC	AwAC	AwAC	AwAC	AwAC	AwAC, FED-DGTA/DGLV	AwAC, FED-REG	15 (5)
BE (BRU)		FED-REG								FED-DGTA/DGLV	FED-REG	15 (2)
BE (FL)	CA	FED-REG		FME	CA	CA	CA	CA	CA	CA, FED-DGTA/DGLV	FED-REG, CA	15 (6)
BG	MOEW	MOEW		MOEW, EXEA	EXEA	EXEA	EXEA	EXEA	EXEA	EXEA	MOEW, EXEA	4
CY	MANRE_DoE	CSE		MANRE_DoE	MANRE_DoE	MANRE_DoE	MANRE_DoE	MANRE_DoE	MANRE_DoE	MANRE_DoE	MANRE_DoE	9
CZ	MoE, OTE	OTE		MoE, OTE	MoE	MoE	MoE	MoE	MoE	CI2P	MoE, OTE	3
DE	DEHSt	DEHSt		DEHSt	DEHSt	DEHSt	DEHSt	DEHSt	DEHSt	DEHSt	DEHSt	2
DK	DEA (ENS)	DEA (ENS)		DEA (ENS)	DEA (ENS)	DEA (ENS)	DEA (ENS)	DEA (ENS)	DEA (ENS)	DEA (ENS)	DEA (ENS)	1
EE	KeM	KeM		KeM	KeM	KeM	KeM	KeM	KeM	KeM	KeM	1
ES	AGE	AGE		AGE	AGE	AGE	AGE	AGE	AGE	AGE	AGE, OFCC - MAGRAMA, CCPCC, GICC	6
FI	Trafi			Trafi	Trafi	Trafi	Trafi	Trafi	Trafi	Trafi	Trafi	5
GR	GEDE (TEAE)	XA (X.A.)		GEDE (TEAE)	YPA (YPIA)	GEDE (TEAE)	GEDE (TEAE)	GEDE (TEAE)	GEDE (TEAE)	GEDE (TEAE), YPA (YPIA)	GEDE (TEAE), YPA (YPIA)	4
HR	MZOIP			AZO						MZOIP	MZOIP	4
HU	MND	MND		NIEN	NIEN	NIEN	NIEN	NIEN	NIEN	NIEN	MND, NIEN	2
IE	EPA	EPA		EPA	EPA	EPA	EPA	EPA	EPA	EPA	EPA	2
IS	EAI	EAI		EAI	EAI	EAI	EAI	EAI	EAI	EAI	EAI	1
LT	AM	FM		UM	AAA	AAA	AAA	AAA	AAA	AAA	AAA	9
LU	AEV	TS		MDDI	AEV	AEV	AEV	AEV	AEV	AEV, MDDI	AEV, MDDI	3
LV	VARAM	VARAM		VARAM	CAA	CAA	CAA	CAA	CAA	CAA	VARAM, CAA	7
MT	MRA	TD-MFIN		MRA	MRA	MRA	MRA	MRA	MRA	MRA	MRA	2
NL	NEa	NEa		NEa	NEa	NEa	NEa	NEa	NEa	NEa	NEa	3
NO	NEA	KLD		NEA	NEA	NEA	NEA	NEA	NEA	NEA	NEA	2
PL	MŚ	KOBIZE		KOBIZE	MŚ	KOBIZE	WIOŚ	MŚ	MŚ	WIOŚ	MŚ, KOBIZE	5
PT	APA. I.P.			APA. I.P.	APA. I.P.	APA. I.P.	APA. I.P.	APA. I.P.	APA. I.P.	APA. I.P.	APA. I.P.	3

A3.2 Reported activity and emissions data

Table A3.4 Fuel consumption (TJ) reported in Article 21 questionnaire, 2013

Country	Blast Furnace Gas	Coke	Coke Oven Gas	Fuel Oil	Hard Coal	Lignite and Sub-bituminous Coal	LPG	Natural Gas	Other Fossil Fuels	Peat	Petroleum Coke	Refinery Gas and Other Derived Gas
AT	0	19 336	0	14 369	99 948	1 699	2	158 217	366	0	1 591	23 688
BE	18 000	37 137	12 879	8 522	73 045	7 855	46	285 881	1 604	0	4 418	112 440
BG	0	323	0	1 960	36 177	194 779	154	102 904	163	0	13 312	10 988
CY	0	0	0	26 637	0	0	38	0	10 111	0	4 354	0
CZ	21 151	1 418	15 995	3 391	55 985	161 282	2	750 067	6 562	0	1	19 556
DE	80 012	5 517	57 027	73 363	1 271 446	1 544 023	720	1 090 821	507 198	1	3 906	219 237
DK (*)												
EE	0	0	2 727	27	1 464	0	0	10 354	125 299	1 118	172	541
ES	10 918	8 926	819	103 208	244 565	135 701	144	645 671	120 351	103	48 676	106 302
FI	0	696	686	12 260	108 397	5	5 334	95 888	1 013	51 205	1 885	28 353
GR	0	0	0	54 418	2 190	292 600	214	104 982	15 469	0	64 907	40 182
HR	0	360	0	6 936	18 995	449	0	51 548	1 086	0	4 222	8 805
HU	2 654	11 243	3 622	2 425	12 398	56 147	5	114 838	18 640	0	2 378	17 713
IE	0	0	0	6 558	43 696	0	116	111 409	3 473	21 928	3 736	5 131
IS	0	0	0	116	0	0	27	0.01	5 877	0	0	0
LI	0	0	0	8	0	0	0	6	0	0	0	0
LT	0	474	0	6 007	0	0	2	72 661	5 420	54	3	22 412
LU	0	0	0	43	2 703	95	0	19 320	337	0	29	0
LV	0	0	0	362	1 747	0	0.1	32 169	2 122	42	0	0
MT	0	0	0	19 130	0	0	0	0	2 473	0	0	0
NL	24 925	7 663	0	13 855	222 648	1 090	89	653 626	0	410	0	377 835
NO	0	13 852	0	3 539	17 971	0	4 486	13 090	77 371	0	9 525	266 131
PL	13 851	22 127	54 066	37 187	1 080 051	537 187	74	218 309	11 026	0	0	71 421
PT	0	0	0	0	106 794	0	60	71 996	17 085	0	14 540	8 743
RO	0	496	0	3 147	12 429	201 058	10	185 380	3 697	0	11 007	23 018
SE	6 327	729	1 151	24 476	20 774	0	3 636	7 293	84 012	7 618	1 402	8 712
SI	0	630	0	333	217	54 400	10	14 837	1	0	1 458	3
SK	12 121	480	9 784	9 102	26 214	27 665	0	56 953	3 687	587	3 405	14 257
UK	50 211	146 575	25 406	40 086	1 243 657	0	1 921	1 030 491	2 018	0	2 264	33 853
Totals (all)	240 170	277 693	184 162	471 464	4 703 511	3 216 035	17 090	5 898 710	1 026 461	83 066	197 192	1 419 321
Totals (EU (**))	240 170	263 841	184 162	467 801	4 685 540	3 216 035	12 577	5 885 614	943 213	83 066	187 667	1 153 190

Note: * Denmark did not respond to this question.

** Excluding Denmark, and France and Italy did not respond in time for inclusion.

Table A3.5 Total emissions by fuel (kt CO₂) reported in Article 21 questionnaire, 2013

Country	Blast Furnace Gas	Coke	Coke Oven Gas	Fuel Oil	Hard Coal	Lignite and Sub-bituminous Coal	LPG	Natural Gas	Other Fossil Fuels	Peat	Petroleum Coke	Refinery Gas and Other Derived Gas
AT	0	3 657	0	1 566	9 198	165	0.1	8 771	26	0	151	1 258
BE	4 600	4 015	529	701	6 979	772	3	15 649	127	0	426	5 730
BG	0	3	0	151	3 462	20 181	10	4 321	12	0	1 253	733
CY	0	0	0	2 106	0	0	2	0	744	0	406	0
CZ	5 495	156	709	278	5 098	15 314	0.2	3 596	281	0	0.1	1 257
DE	20 874	708	2 330	5 780	118 786	170 143	47	61 342	29 480	0.1	373	12 839
DK (*)												
EE	0	0	160	2	140	0	0	581	14 822	117	16	84
ES	2 839	1 000	36	7 492	23 385	13 037	9	36 305	6 479	10	4 235	5 721
FI	0	74	28	965	10 007	1	345	5 269	74	5 449	176	1 592
GR	0	0	0	4 167	206	36 113	13	5 805	1 418	0	1 673	2 669
HR	0	146	0	535	1 761	47	0	2 813	81	0	420	401
HU	667	1 227	172	191	1 247	6 125	0.3	6 412	1 115	0	220	770
IE	0	0	0	514	4 099	0	7	6 340	215	2 582	347	275
IS	0.3	92	0	9	295	0	3	0	1 380	0	0	1
LI	0	0	0	1	0	0	0	0.3	0	0	0	0
LT	0	52	0	482	0	0	0.1	4 050	512	6	0.2	1 518
LU	0	0	0	3	256	9	0	1 092	21	0	3	0
LV	0	0	0	27	163	0	0	1 775	93	4	0	0
MT	0	0	0	1 516	0	0	0	0	181	0	0	0
NL	5 554	977	0	1 064	21 002	125	6	36 749	0	81	0	14 187
NO	0	1 250	0	27	1 750	0	285	731	3 665	0	989	12 551
PL	3 408	2 410	2 427	2 871	101 090	59 738	6	12 120	981	0	0	3 980
PT	0	0	0	0	9 942	0	4	5 121	269	0	1 364	411
RO	0	39	0	249	1 157	17 998	1	10 167	323	0	1 021	1 332
SE	1 931	75	51	1 728	2 068	0	237	414	7 044	800	130	574
SI	0	68	0	25	21	5 518	1	820	0.1	0	143	0
SK	3 101	53	406	714	2 591	2 850	0	3 166	293	56	326	1 007
UK	13 376	3 335	1 082	3 145	115 144	0	155	64 573	104	0	227	2 224
Totals (all)	61 845	19 337	7 931	36 310	439 846	348 136	1 133	297 984	69 739	9 105	13 901	71 116
Totals (EU (**))	61 844	17 995	7 931	36 274	437 800	348 136	846	297 252	64 695	9 105	12 912	58 564

Note: * Denmark did not respond to this question.

** Excluding Denmark, and France and Italy did not respond in time for inclusion.

A3.3 Arrangements for verification

Table A3.6 provides an overview of the scope of accredited verifiers across all countries that reported. Scope 1b concerning fuel combustion has the most accredited verifiers (114) and is the most widespread amongst countries (22). This is also due to the fact that all 28 countries that responded have installations with permits for fuel combustion. The least number of verifiers (5 for each) are for scope categories 10, 11 and 99. Only Norway reports having installations with permits for the capture and storage of GHGs, and only Germany reports verifiers for the capture, transport, and geological storage of GHGs.

A3.4 Fees and charges

Sixteen out of 29 countries reported that fees are charged to installation operators. Fees charged vary widely between countries, with Croatia charging EUR 10 for all instances, and Norway charging EUR 8 418

for permit issuance/monitoring plan approval. The approval of monitoring plans and issue of permits was the highest charge in all countries that reported. Transferring permits was typically the cheapest charge. Finland, Iceland, Portugal, Romania, Spain and the United Kingdom charge different fees for different sizes of installations, with installations with higher emissions paying larger fees. Croatia, Spain, and the United Kingdom were the only countries reporting charges for the surrender of permits.

Eighteen countries reported that they charge one-off fees, usually for the opening of an account, related to registry accounts. These vary from EUR 46 in the Czech Republic to EUR 1 500 in Austria (for the opening of an account from applicants outside the European Economic Area). Nineteen countries reported charging annual fees in relation to registry accounts, 17 of which charge a general maintenance fee ranging from EUR 25 in Poland to EUR 866 in Portugal. Some countries also charged fees per allowance allocated, for verifiers, for traders and for data delivery.

Table A3.6 Number of accredited verifiers by Annex I scope, 2013

Scope	Verifiers
1a Fuel combustion of commercial standard fuels in installations, or of natural gas in category A or B installations	109
1b Fuel combustion in installations without restrictions	114
2 Refining of mineral oil	67
3 Production of coke; metal ore; pig iron or steel	81
4 Production/processing of ferrous metals; secondary aluminium; non-ferrous metals	72
5 Production of primary aluminium (CO ₂ and PFC emissions)	34
6 Production of cement clinker; lime, dolomite, magnesite; glass; ceramic products; mineral wool; drying/calcination of gypsum or production of plaster boards/other gypsum products	100
7 Production of pulp; paper or cardboard	92
8 Production of carbon black; ammonia; bulk organic chemicals; hydrogen; soda ash; sodium bicarbonate	72
9 Production of nitric acid; adipic acid; glyoxal and glyoxylic acid; caprolactam	45
10 Capture of GHGs from installations for transport and geological storage; transport of GHGs by pipelines for geological storage	5
11 Geological storage of GHGs	5
12 Aviation activities	48
98 Other activities pursuant to Article 10a of Directive 2003/87/EC	49
99 Other activities, included by a Member State pursuant to Article 24 of Directive 2003/87/EC, to be specified in detail in the accreditation certificate	5

Note: Poland submitted the number of verifiers per individual scope. These have been averaged to allow comparison between the aggregated scopes. France and Italy did not submit in time for inclusion. Countries were not asked the total number of accredited verifiers in their country, and as verifiers can be accredited in more than one scope, a percentage cannot be calculated.

A3.5 Fraud

Six countries (Belgium, Czech Republic, the Netherlands, Norway, Slovakia and the United Kingdom) out of 16 that responded to the questions on fraud reported at least one fraud investigation ongoing in this reporting period. Belgium reported theft of units, the Czech Republic suspected free allocation fraud, the Netherlands, Norway and Slovakia reported VAT fraud, and the United Kingdom reported a boiler-room scam.

Twenty-three countries reported on arrangements concerning fraudulent activities related to the free allocation of allowances. The majority had no specific arrangements for operators to raise concerns, but rather relied on general communication lines being used as needed. Austria, Lithuania, and Luxembourg have a specific complaints form that can be used. Austria and Latvia reported that national administrators established specific contacts within the police force for investigations regarding potential fraud of free allowances, whilst Belgium reported close cooperation with a special tax investigation service. Spain reported that operators suspected of not providing information that would impact their emission allowance allocation would be subject to site visits by the CA to confirm the situation.

Twenty countries reported on arrangements so that CAs are made aware of fraudulent activities. Only the CAs of Denmark and the Netherlands are informed by the fraud investigation services about each fraud case. Ireland, Spain and Sweden report good general ongoing communication between CAs and fraud investigation units, but most countries report that the investigation unit will only contact the CA if they require information or the CA is the plaintiff, as investigations are kept secret.

Eleven countries reported specific penalties in the event of prosecution to fraudulent activities, which range from EUR 100 per unjustified allowance allocation in Slovakia to EUR 2 million in Spain, and from 6 months imprisonment in Poland to 10 years in the United Kingdom. Spain added that temporary partial or full closure of the site and suspension of the authorisation for up to 2 years was possible.

A3.6 Aviation

According to Regulation (EU) No 421/2014 of the European Parliament and of the Council of 16 April 2014, the reporting on the aviation sector corresponding to 2013 emissions is not required until 2015. In spite of

this, some countries provided some answers to aviation questions.

In this context, fewer countries reported measures to ensure aircraft operator compliance than installation operator compliance. The most common measures reported to ensure aircraft operator compliance were prohibiting sales of allowances (16 countries), regular meetings with the aircraft operator (14 countries), and publishing the operator's names that were in non-compliance (13 countries). Eleven countries reported carrying out spot checks of the operators. Cyprus, Finland, Germany, Iceland and Liechtenstein reported that they did not use any of the four measures identified above. Liechtenstein reported that this is because they do not have any aircraft operators, and Finland reasoned that as aircraft operator reporting has been deferred until 2015 they have not had to address aircraft compliance yet. The Netherlands stated that they are keeping aircraft operators updated with the development of regulations and specific consequences for the operators.

No fines or prison sentences were reported as being imposed on aircraft operators during this reporting period. Eight countries reported imposing excess emission penalties on aircraft operators during the reporting period for failing to surrender sufficient allowances.

Countries reported on the methods used to simplify compliance for aviation operators that are small emitters⁽⁷⁶⁾. Five countries stated that they had used innovative ways to do this, including customised guidance (3 countries) and simplified templates (3). Additional measures have been implemented by the United Kingdom in the form of customised guidance made available via newsletter and provision of helpdesk support alongside a web-based reporting system with automated email workflow reminders. Belgium has applied, in the region of Wallonia, an overview of which sections of the monitoring plan are required for small emitters.

Five countries waived verifier site visits for aircraft operators with low emissions: Austria, Luxembourg, Poland, Spain, and Sweden. Poland commented that site visits were not yet required; the others only waived one, except for Spain who waived 6.

Five countries have developed specific templates or file formats for aviation operators: Austria, Belgium (Flemish Region), Germany, Ireland, and the United Kingdom.

⁽⁷⁶⁾ As referred to in Article 54(1) of Regulation (EU) No 601/2012.

Thirteen out of 29 countries reported charging fees to aircraft operators.

Countries can request an operating ban from the Commission on aircraft operators that are in non-compliance. Almost all countries reported that this would be a last resort, after all other measures, including notification, imposing fines and sanctions, had failed to achieve compliance. Ireland, Latvia, Poland and the United Kingdom would discuss and clarify the

reasons behind non-compliance with the operators, which is recommended. However, many countries report instances of attempting to apply these measures without response, particularly if the aircraft operator was not based in their own country. If they continue to receive no response, they would proceed to legal action. Bulgaria, Finland, Spain, and Sweden said they would consider temporarily suspending or restricting the activities of the operator.

Appendix 4 Further analysis

A4.1 Installation numbers and installation size classes

Countries reported the number of installations per category under Articles 19 and 47 of the MRR:

- Category A installations with medium emissions ($\leq 50\,000$ tonnes CO₂e) and installations with low emissions ($< 25\,000$ tonnes CO₂e). Installations with low emissions are a subset of category A.
- Category B installations with high emissions ($> 50\,000$ tonnes CO₂e and $\leq 500\,000$ tonnes CO₂e);
- Category C with very high annual emissions ($> 500\,000$ tonnes CO₂e⁽⁷⁷⁾).

Table A4.1 provides the number of installations by emission category size per country. In Table A4.2 the comparison is provided between reported installation numbers⁽⁷⁸⁾ and installations in the EUTL (public website) as of 19 August 2014. For this comparison, only stationary installations with an open account have been considered. The categorisation following Article 19 of the MRR is not available in the EUTL (public website), therefore the categorisation has been decided by the quantity of verified emissions in 2013.

Only for Liechtenstein and Malta were the total numbers of installations consistent between the Article 21 questionnaire and the EUTL (public website) data. For most countries the differences concerned fewer than 10 installations. For some countries the differences were larger, with Spain and the United Kingdom appearing to have the largest discrepancies. Spain reported 168 installations less in the Article 21 questionnaire compared to the EUTL (public website) data and the distribution of emission size classed is different. While 214 more category A installations were reported in the EUTL (public website), the number of category C installations was 31 installations higher in the Article 21 questionnaire and 15 installations higher for the

category B installations. The United Kingdom reported 62 more installations in the Article 21 questionnaire compared to the EUTL (public website). The reported number of installations is higher for all installation categories in the Article 21 answers for the United Kingdom: 36 more installations in category A, 15 more in category C and 11 more in category B.

Most countries reported more category C installations in the Article 21 questionnaire than in the EUTL (public website) (between 1 and 31 installations), whereas Slovakia reported 1 installation less.

These comparisons show that the answers provided in the Article 21 questionnaire cannot be directly compared to EUTL (public website) data. One reason is the different point in time: whereas the reporting to Article 21 relates to the amount of installations covered at the end of the year 2013, it is not possible to catch exactly the same point in time with EUTL (public website) data without higher effort. Accounts might be closed or open in between the different points in time. In addition, it became clear that countries also might include information about legally not finalised cessations, grouping of installations and changes in capacities in Article 21 reporting that is not reflected as early in the EUTL public website. Due to the change of scope in the third trading period of the EU ETS, installations in the EUTL (public website) data set might still have open accounts although they 'opted-out', which explains the high differences in numbers in category A installations.

Possibly resulting from these installations that opted out, there is a high number of stationary installations with open accounts in the EUTL (public website) for which no verified emission data is available for the year 2013 (715 in total). In addition, for 612 installations zero emissions have been reported in the EUTL (public website) for the year 2013. These installation accounts possibly will be closed, a fact that already might have been taken into account for the Article 21 reporting. On the other hand, countries may have their own systems that affect

⁽⁷⁷⁾ This refers to the amount of CO₂ that would have the same level of radiative forcing (global warming potential) as a given mixture of GHGs.

⁽⁷⁸⁾ The number of category A installations has been corrected for some countries where low emitting installations were not included in category A (highlighted red in Tables A4.1 and A4.2). This may have been due to erroneous guidance on the submission forms.

installation registry, such as new incumbents captured by the United Kingdom's Small Emitter Opt-out Scheme that are not required to have a registry account, but have been included in reporting, which leads to higher installation numbers in Article 21 reporting in category A.

The categorisation of installations differs between the EUTL (public website) data and Article 21 reporting because the grouping is referring to actual emissions instead of information from submitted monitoring plans. The categorisation in these plans has to be done by operators, based on average verified emissions immediately preceding the current trading period. If this data is not available, operators shall use conservative estimates (MRR Article 19(4)). With this,

the current emission level is not necessarily consistent with the category of the monitoring plan. This may well be the case for installations that are used as back-up or peak-load installations. These installations are often operated at a lower load than specified in the monitoring plan. It can be noted that if there are differences between the categorisation in monitoring plans and actual emissions, in most cases emissions of installations are higher than their formal categorisation in categories B and C.

It can be concluded that for the reporting on installations, countries interpreted the question in different ways with regard to the reporting of installations that opted out. The reporting guidance

Table A4.1 Number of installations by category, 2013

Country	Category A installations		Category B installations	Category C installations	Total installations
	Total Category A installations	Installations with low emissions			
AT	124	85	56	12	192
BE	221	168	79	28	328
BG	91	77	29	16	136
CY	9	8	0	3	12
CZ	248	213	65	31	344
DE	1 292	917	455	176	1 923
DK	314	292	35	11	360
EE	29	0	11	3	43
ES	609	444	259	84	952
FI	497	476	69	24	590
GR	104	57	27	29	160
HR	36	28	13	7	56
HU	131	93	47	11	189
IE	68	53	17	13	98
IS	1	0	2	2	5
LI	2	2	0	0	2
LT	87	30	4	4	95
LU	10	5	6	2	18
LV	62	54	4	2	68
MT	0	0	1	1	2
NL	297	223	107	47	451
NO	57	47	58	17	132
PL	542	348	175	70	787
PT	172	142	31	12	215
RO	137	103	39	25	201
SE	694	659	57	9	760
SI	39	33	9	3	51
SK	108	86	38	7	153
UK	693	559	218	73	984
Total	6 674	5 202	1 911	722	9 307
%	71.7%	55.9%	20.5%	7.8%	100%

Note: Red text indicates calculated numbers where the country reported more installations with low emissions than category A installations. This may have been due to erroneous guidance on the submission forms. France and Italy did not submit in time for inclusion.

could give more clarity on this point. In addition, the erroneous quality checks on the Article 21 questionnaire will be fixed to make it clear that installations with low emissions are a subcategory of category A. Guidance may be needed to clarify that the categorisation of installations shall be based on the categorisation in monitoring plans.

A4.2 Emissions of installations covered by continuous emission measurement

Table A4.3 presents information on emissions covered by CEM by country. The highest total emissions

covered by CEM are reported from the Czech Republic (26 541 kt) followed by Germany (12 862 kt). For installations that had emissions partly or fully covered by CEM, Denmark reported the highest average percentage of emissions covered by CEM at 93%. The Czech Republic had the highest percentage of their total EU ETS emissions covered by CEM (39%) in 2013. Second highest percentage of emissions covered by CEM is 7% of stationary emissions in Slovakia.

Table A4.2 Difference between Article 21 questionnaire responses and EUTL data, 2013

Country	Total installations	Category C installations	Category B installations	Category A installations	Installations with low emissions
AT	- 5	3	4	- 12	- 13
BE	- 7	9	12	- 28	- 22
BG	- 3	3	2	- 8	- 5
CY	0	0	0	0	- 1
CZ	5	7	0	- 2	- 4
DE	- 17	25	33	- 75	- 166
DK	2	2	1	- 1	- 1
EE	- 7	0	0	- 7	- 30
ES	- 168	31	15	- 214	- 247
FI	- 9	6	9	- 24	- 17
GR	1	3	6	- 8	- 46
HR	- 2	1	1	- 4	- 5
HU	- 5	5	9	- 19	- 38
IE	3	3	0	0	- 4
IS	0	1	- 1	0	- 1
LI	0	0	0	0	0
LT	0	0	0	0	- 47
LU	- 2	1	0	- 3	- 4
LV	1	0	2	- 1	- 1
MT	0	0	0	0	0
NL	- 5	10	2	- 17	- 19
NO	- 20	2	4	0	- 26
PL	17	5	11	1	- 33
PT	- 12	5	- 6	- 11	- 18
RO	- 36	1	3	- 40	- 39
SE	- 26	1	4	- 31	- 34
SI	- 25	0	0	- 25	- 25
SK	15	- 1	7	9	2
UK	62	15	11	36	21

Note: + = more installations in Article 21 questionnaire;
- = less installations in Article 21 questionnaire.

The EUTL public website data includes all stationary installations with open accounts, extracted 19 August 2014. Category A installations that have been corrected (where a country did not include installations with low emissions in category A) are in red. France and Italy did not submit in time for inclusion.

Table A4.3 Emissions of installations covered by CEM, 2013

	Number of installations with CEM		Total emissions of these installations	of which covered by CEM	Average percentage of emissions covered by CEM on installation level	Percentage of emissions covered by CEM of total ETS emissions 2013
	CO ₂	N ₂ O				
AT	1	1	2 875	297	10	1
BE	0	5	4 133	541	63	1
BG	2	2	1 037	123	12	0
CZ	14	4	27 310	26 541	84	39
DE	26	11	25 719	12 862	59	3
DK	9	0	1 016	964	93	4
ES	1	4	748	334	81	0
FI	3	2	4 113	1 065	51	3
HR	0	1	1 394	240	17	3
HU	2	2	774	38	15	0
LT	1	1	2 387	336	14	5
NL	2	5	6 559	1 084	72	1
NO	3	2	4 259	1 343	38	5
PL	0	4	3 617	634	39	0
PT	3	3	89	49	63	0
RO	0	4	3 590	465	9	1
SE	5	1	649	491	77	2
SK	5	2	4 572	1 618	67	7
UK	4	2	6 746	1 663	15	1

Note: Total EU ETS emissions for 2013 have been obtained from the EUTL public website. France and Italy did not submit in time for inclusion.

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