



European Union

Accreditation and Verification approaches under the
European Union Emission Trading Scheme (EU ETS)

Good practice summary

[Results/insights]

The EU ETS requires operators of installations or aviation operators under the EU ETS to submit annual emissions reports which are verified by an independent verifier, in accordance with the Accreditation and Verification Regulation (AVR). The AVR sets out detailed requirements for the accreditation of the verifiers and the preparation and implementation of the verification. It is complemented by an extensive set of detailed guidance. This allows for strongly harmonised approaches with regards to accreditation and verification in the EU Member States, increasing trust in the ETS.

This high level of harmonisation has been developed based on a situation with virtually no harmonisation and a very basic set of rules, using assessments and information exchange between EU Member States to identify potential for improvements and good practices.

Scope covered

Functions

Measuring Reporting Verification Accounting

Administrative scope

National Regional City-level Policy/programme/project Corporate/Facility-level

Legal basis

[policies, regulations and commitments that the case study has to comply with]

Kyoto Protocol¹ and Doha Amendment to the Kyoto Protocol²: Setting mitigation targets for the EU as a whole for 2008-2012 (Kyoto Protocol, 8% reduction compared to 1990 in the period 2008-2012) and for 2020, Doha Amendment to the Kyoto Protocol, 20% or 30%³ compared to 1990.

Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC⁴: 2003/87/EC establishes the legal basis for the EU ETS, the industries covered, and monitoring, reporting and verification (MRV) activities under the system.

Directive 2009/29/EC of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community⁵: Directive 2009/29/EC includes revisions to Directive 2003/87/EC, among other setting an EU-wide emission target for 2020 for the industries covered, extending the industries covered and stipulating the introduction of a Regulation on Monitoring and Reporting as well as a Regulation on Verification and Accreditation.

Commission Regulation 600/2012 on the verification of greenhouse gas emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council Text with EEA relevance⁶: Laying down the requirements for verification and accreditation of verifiers under the EU ETS from 2013 onwards. In the following abbreviated as AVR (Accreditation and Verification Regulation).

Commission Regulation 601/2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council⁷: Laying down the requirements for monitoring and reporting under the EU ETS from 2013 onwards. In the following abbreviated as MRR (Monitoring and Reporting Regulation).

¹See <http://unfccc.int/resource/docs/convkp/kpeng.pdf>

²See http://unfccc.int/files/kyoto_protocol/application/pdf/kp_doha_amendment_english.pdf

³The 30% reduction was offered under the condition that other developed countries committed themselves to comparable emission reductions and developing countries contributed adequately according to their responsibilities and respective capabilities.

⁴See <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32003L0087>

⁵See <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0029>

⁶See <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012R0600>

⁷See <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012R0601>



Operational since

2005, current set of requirements in force since 2013.

How is this related to accounting?

[The following is based solely on the consultant's opinion]

» What kind of measures, policies, or commitments are a) monitored and included in an accounting system, b) only monitored, but not included in an accounting system, or c) not even monitored?

Accounting under the EU ETS itself is relatively simple, as EU-wide a fixed target has been set. Emission data in the registry can simply be added up to calculate total emissions in the EU ETS sectors for a year in question. The verification process ensures that data reported under the EU ETS is reliable and the accreditation process contributes to a high-quality verification process. Accreditation and verification therefore ensure the reliability of data for the accounting process.

Related to accounting towards the national and EU-wide targets, EU Member States will rely mainly on their GHG inventories for accounting under the Kyoto protocol. The EU ETS data can be used as input data for the GHG inventory compilation or for quality checks of relevant sectors of the national GHG inventory. As the EU ETS data is installation-based, it can help move from country-specific activity data (Tier 2) to installation specific activity data (Tier 3), thus increasing accuracy. As large installations have to provide fuel-specific emission factors for their main emission sources, the information can also help improving country-specific emission factors over time, again increasing accuracy. Where the EU ETS data is not used as input, it can be used as alternative dataset for cross-checks, thus supporting QA/QC processes. Whether the EU ETS data is used as input data for the compilation of the national GHG inventory or as alternative dataset for QA/QC purposes, depends, among other things, on the availability of a full-time series (since 1990). The earliest data the EU ETS can provide dates back to 2005, for some industries (e.g. bulk chemical production) back to 2013. It also depends on the sectoral coverage – the EU ETS excludes installations below certain capacity thresholds, meaning that the dataset might not cover all installations in a sector in certain EU Member States. Summarising, the EU ETS data helps improving the accuracy of the national GHG inventories, which means better data for the accounting process.

Case description

Background

» What was the need, pre-conditions, and/or experiences that motivated the country to develop this system?

The Kyoto Protocol was signed in 1997, and further ratified in 2005 by European nations. Under the Kyoto Protocol, the then EU-15 nations agreed to meet their commitment of an 8% GHG emissions reduction in the timeframe 2008-2012 compared to 1990 levels collectively. Despite considerable reductions in the United Kingdom and Germany, in the year 2000, many European members had difficulties driving their GHG emission levels towards the reduction commitment. The EU Emission Trading System was enacted as a measure supporting the EU Member States to meet the Kyoto target in a cost effective way. In order to ensure a functioning GHG certificate market, providing a clear price signal, a thorough MRV approach was required.

General description of the system

[Questions below should be answered only when applicable]

- » General definition/description of the system
- » What are the main types of action that mitigate GHG emissions?
- » What linkages to other systems/ system elements of environmental information (including adaptation to climate change or emissions trading schemes) do exist and why were they established? What linkages exist to other statistical/ monitoring systems?
- » Which platforms are used to transport information and are they specific to the purpose of usage MRV information?

The EU ETS is the largest multi-country, multi-sector GHG emissions trading system in the world. It includes more than 11,000 power stations and industrial plants across the EU and covers emissions from domestic and international flights. Table 1 below specifies the GHGs and sectors currently covered by the system.

GHGs covered	Sectors covered
Carbon dioxide (CO ₂)	<ul style="list-style-type: none"> • Power and heat generation • Energy-intensive industry sectors including oil refineries, steel works and production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk. • Organic chemicals. • Civil aviation.
Nitrous oxide (N ₂ O)	<ul style="list-style-type: none"> • Production of nitric, adipic, glyoxal and glyoxlic acids.
Perfluorocarbons (PFCs)	<ul style="list-style-type: none"> • Aluminium production

Table 1 GHGs and sectors covered by the EU ETS

The system sets a cap on the allowable level of emissions from participating facilities (this term is used in this document to mean both stationary installation and aviation) across EU Member States. The cap is reduced over time - in 2020, emissions from sectors covered by the EU ETS will be 21% lower than in 2005. Within the cap, companies receive or buy emission allowances which they can trade with one another as needed. They can also buy and use limited amounts of Certified Emission Reduction (CER) units from specified types of projects under the Clean Development Mechanism (CDM). Each year facilities must report on its GHG emissions during the previous calendar year and surrender enough allowances to cover these emissions. Allowances are kept, traded and surrendered through an EU-wide registry, the European Union Transaction Log (EUTL)⁸.

⁸More information on the EUTL can be found under http://ec.europa.eu/clima/policies/ets/registry/index_en.html

The EU Monitoring Reporting Regulation (MRR)⁹ specifies how each installation has to determine and report its emissions. The monitoring methodologies depend on the specific industry an installation belongs to, and its annual emissions. Mostly GHG emissions are calculated by multiplying activity data by emission factors (EFs). Activity data can be input materials (e.g. limestone) or production amounts (e.g. tons of glass produced). Certain industries (e.g. iron and steel producers) are allowed to use mass balance approaches, where they consider carbon inflows and carbon outflows to the production process. Installations can also use continuous emissions measurement systems (CEMS)¹⁰.

For each industry and approach, so-called “tiers” offer methodologies of different levels of accuracy. The highest numbered tier offers the highest accuracy. The selection of tiers depends on a facility’s annual GHG emissions as well as the contribution a certain fuel or process in total emissions.¹¹

Operators have to develop a monitoring plan (MP), detailing, to put it simply, which data is to be monitored how. The monitoring plan has to be approved by the relevant Competent Authority (CA). Depending on the specific EU Member State, this could be a national, regional or local authority.

The EU MRR also stipulates minimum requirements for the annual emission reports (e.g. total emissions, activity data, EFs, etc.). EU Member states have developed individual report formats, some in the form of software, others using simple formats like Excel. The EU Commission provides an Excel-based reporting template which EU Member States may use¹². Facilities are required to submit a verified emission report for the previous calendar year by March 31 at the latest. The verification has to be performed by an accredited verifier. The processes of verification and accreditation and the related requirements are presented in detail in the following section.

MRV and accounting systems, processes and procedures

[Questions below should be answered only when applicable]

- » How is information generated, communicated, integrated, and verified at each stage of the MRV chain?
- » What information needs to be gathered in order to quantify the effect of these actions?
- » How is such information gathered or estimated? By whom?
- » How is this information reported? How is it verified?
- » In what areas information is shared among accounting and MRV systems?
- » What kind of agreements are used to establish the relevant institutional roles?

The verification process:

The aim of the verification process is to independently assess, whether:

- a) monitoring has been carried out in compliance with the approved MP;
- b) the compilation of the report is in line with the requirements of the MRR;
- c) the emission report does not contain any misstatements with regards to the emission data contained and;
- d) there is potential for improvement in the operator’s performance (for more information see Art. 30 of the AVR).

The verifier is contracted and paid by the operator. The verification itself includes preparatory activities, in most cases a site visit (for exceptions see Art. 31 of the AVR), and reporting and documentation activities. Preparatory activities start by a strategic analysis, aiming to understand the installation, its processes and emission sources, and a risk analysis, allowing to establish the areas which require particular focus during the verification (e.g. specific production processes, data flows, receipts, etc.). The risk analysis aims to focus the limited

⁹http://ec.europa.eu/clima/policies/ets/monitoring/docs/gd1_guidance_installations_en.pdf

¹⁰<https://www3.epa.gov/ttnemc01/cem.html>

¹¹Some exceptions to threshold exist. As noted, for a few reporting industries, there is no threshold, so all facilities meeting definitions are required to report (based on analysis of emissions from sector as rule was being designed, it was noted that most facilities are likely to exceed it).

¹²<https://ghgreporting.epa.gov/ghg/login.do>

resources available for the verification on the assessment of data where errors are most likely to occur and/or would have the largest impact. Focus might, for examples, be on the largest emission sources (as errors related to these sources would have a large impact on total emissions), processes which were subject to changes (e.g. where technical equipment for the production process has been altered) or data flows which bear risk of errors (e.g. where data is manually transferred). On this basis, the verifier will design a verification plan which sets out the activities to be carried out during the site visit and the remainder of the verification process. During the site visit, the verifier will, among other things, assess compliance with the monitoring plan, review data collected and reported, and review the data management and quality control procedures. The verification approach does not vary much for the different sectors and methodologies. The specific data generally relevant for the verification of varies depending on sector, however, the risk analysis will play a more relevant role in deciding which data and which share of it is assessed.

The results of this assessment are laid down in a verification report (for more detail see Art. 27 of the AVR). The EU Commission has provided a template for the verification report, its use by EU Member States is voluntary¹³. Additionally, the verifier is required to document each verification internally, among other, to allow reviews of verifications performed by the accreditation or certification body, and in case of appeals.

Where the report indicates that an installation could improve the monitoring process, the operator is required to prepare a report to the competent authority by June 30th of the same year, indicating how this will be addressed. This is done to enable the verification process to facilitate monitoring approaches to be improved over time. By April 30th of each year, the operator must surrender at least the number of emission allowances equivalent to emission's value in the verified emissions report.

2.1 Roles and responsibilities of the parties in EU ETS

The compliance chain and responsibilities of each party involved in EU ETS can be summarised by the following figure

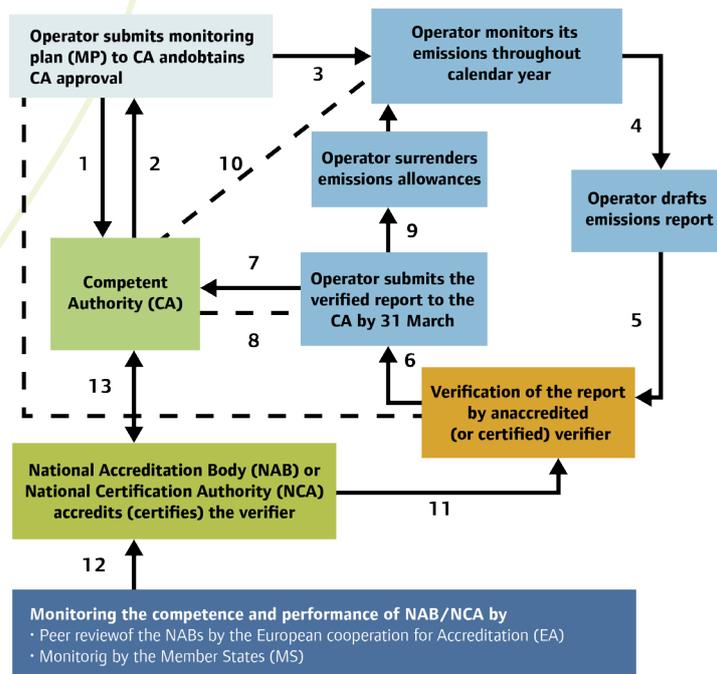


Figure 1 EU ETS Compliance Chain and the roles of parties involved

¹³See http://ec.europa.eu/clima/policies/ets/monitoring/docs/avr_verification_report_en.xls

Figure 1 shows the overall EU ETS compliance chain, steps relevant to the verification process and institutions involved.

The accreditation of verifiers

A verifier can be a legal entity or legal person accredited by a national accreditation body (NAB) or a natural person that is certified by a National Certification Authority (NCA) in compliance with the requirements of the AVR.

Both accreditation and certification systems aim to ensure that the verifiers have the required expertise and have processes in place which comply with the AVR requirements and ensure the quality of the verification process. For reasons of simplification, we will use the term NAB to mean both accreditation bodies and certification authorities.

Accreditation under the EU ETS is based on Regulation (EC) No 765/2008, which, among other things, sets out general requirements for national accreditation bodies. Prospective verifiers can issue a request for accreditation with the NAB and will be asked to provide information on the company/person, processes ensuring independence, competence of staff, internal processes and quality management systems (see Art. 45 AVR).

The accreditation body will review the information provided and visit the applicant's premises, to assess the relevant processes (e.g. documentation, quality management, etc.). It will also accompany the prospective verifier's staff during audits to understand their competence and ability in carrying out the verification process. This activity is called witness assessment. In order to ensure the quality of the assessment process, the AVR sets out the composition and competence of the team performing the assessment (see Art. 58 and 59). Upon satisfactory assessment, the accreditation will be granted.

The NAB has to continuously ensure the quality of the verification process. To this end it is required to annually visit the verifier's offices and perform a witness assessment. For the same reason, a reassessment is required after a number of years depending on the specific EU Member State (typically 4 or 5 years). Where the NAB is in doubt about the performance of a verifier, it can also perform an extraordinary assessment.

For the sake of quality, the AVR also requires that the competence and performance of the NAB is monitored by the EU Member State that has appointed the NAB (see Art 65 of the AVR). In addition, a regular and independent peer evaluation is organised by the European Cooperation for Accreditation (EA). In this peer evaluation process, experts from the EA, NABs and other parties assess whether the NAB that is subject to peer evaluation meets the requirements of the AVR (see Art. 64 of the AVR). This approach also aims to facilitate an experience exchange between the members of the evaluation team as well as the NAB under evaluation.

Information Exchange

The AVR includes requirements on information exchange between the CA and NAB as enhancing the mutual understanding between the institutions will help to improve the verification and accreditation processes over time. An example might be that the CA identifies recurring errors or misinterpretations in verification reports with regards to a specific topic. Upon receiving this information, the NAB can adjust its surveillance and assessment activities accordingly (for more information see Art. 69 AVR).

Information exchange between CAs and NABs of different Member States is to take place where a verifier performs in an EU Member State other than the one where he has been accredited. This is possible under the requirements for mutual recognition of verifiers laid out in Article 15 of Directive 2003/87/EC (see also Art. 66 AVR).

Harmonised approaches through Guidance related to verification under the EU ETS

In order to ensure harmonization in the implementation of verification and accreditation activities as required under the AVR, the European Commission has developed an extensive set of guidance on the requirements of the AVR.¹⁴ A general guidance document "*Guidance on the Accreditation and Verification Regulation*" is supplemented by smaller guidance documents on a large number of specific issues, e.g. risk analyses, sampling, waiving site visits, verification reports, etc. The guidance documents facilitate harmonised approaches in verification and accreditation by providing interpretations on the practical application of the AVR, example cases, and electronic templates (e.g. for verification reports and improvement reports) including filled-out examples of the templates.

¹⁴The guidance can be found here: http://ec.europa.eu/clima/policies/ets/monitoring/documentation_en.html under the heading "Accreditation and Verification Regulation (AVR): Guidance and templates.

Design and set-up

[Questions below should be answered only when applicable]

- » How was the system designed?
- » What was the overall process to set-up the system?

Requirements for verification and accreditation under the EU ETS have vastly changed over time. When the system first became operational in 2005, only very basic requirements on the verification process were laid down legally. Sources of information were Directive 2003/87/EC and Commission Decision 2004/156/EC establishing guidelines for the monitoring and reporting of GHG emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council, the so-called Monitoring and Reporting Guidelines¹⁵. Both documents did not provide requirements on accreditation. Member States developed their own accreditation approaches mostly based on the existing national accreditation “culture” and verification approaches were mostly developed on the basis of financial auditing practices. In 2005 the EU Commission held a Verifier’s Forum to facilitate the exchange of experiences and practices among verifiers, competent authorities and accreditation bodies. The Commission also set-up the EU Compliance Forum, an initiative allowing EU Member States to exchange experiences and practices related to the EU ETS. EU Member State representative also met monthly in Brussels to discuss issues related to the EU ETS.

The Monitoring and Reporting Guidelines were revised with a new version agreed in 2007, but revisions focused on monitoring and reporting practices. Assessments on the implementation of MRV requirements in the EU Member States performed on behalf of the EU Commission in 2008, 2010 and 2011 and including interviews with CAs, NABs and verifiers showed vast differences in the way accreditation and verification was carried out. The assessments also showed that accreditation approaches were more harmonised in the EU Member States which were Members of the European Cooperation for Accreditation (EA) as well. The EA had developed guidance (“EA 6/03”)¹⁶ allowing to support the mutual recognition of verifiers among Member States through common accreditation approaches. However, this only applied to roughly half of the EU Member States.

Directive 2009/29/EC required the development of a Regulation for Accreditation and Verification. A Regulation would be directly legally applicable in the EU Member States and would thus not require implementation into national law, thus facilitating harmonisation by avoiding different interpretation at the national level.

The development of the AVR drew very strongly on the assessments performed in 2010 and 2011, considering identified room for improvement and good practices developed in the EU Member States. With regards to accreditation, the EA 6/03 was used as key input. While the format of a regulation limited the technical detail which could be included, comprehensive guidance was developed after the AVR had been agreed, aiming to address any remaining room for interpretation.

Improvement over time

- » Is there an internal evaluation of the systems established aiming to enable improvement over time?

In the sections above, a number of approaches taken by the EU Commission to identify and implement potential improvements are set out. The EU Compliance Forum still arranges meetings between CA representatives, including through its Task Forces (one of which is specific to Accreditation and Verification) and also an EU ETS Compliance Conference that usually takes place on an annual basis. The EA also coordinates exchanges on EU ETS issues via its EU ETS Network of NABs. Reporting under Article 21 of Directive 2003/87/EC also provides an annual summary of how well Member States are implementing EU ETS requirements. Internally, the AVR provides a number of approaches aiming to identify potential for improvement. This includes the information exchange mentioned above as well as the peer evaluation under the EA. The various information sources help the EU Commission, among other things, identify the need for e.g. further guidance and capacity building.

¹⁵See <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32004D0156>

¹⁶This document is no longer available on the website of the European Cooperation for Accreditation (EA).

In order to further optimize the implementation of the relevant legislation within each single EU Member State, the EU Commission has drafted “action plans” for each EU Member State. The action plans contain suggestions for improvement based on, among other things, the results of a review conducted in 2014, the Art. 21 questionnaire, additional questions sent to the EU Member States. Suggestions for example include where capacity building of staff could be helpful.

Institutions involved

- » What institutional arrangements allow for the flow and integration of this information?
- » What types of entities take a role in the above structures?

Lead: European Commission

Institutional arrangements: Competent Authorities (CA); Operators (including aircraft operators); Accredited or certified verifiers; National Accreditation Body (NAB); National Certification Authority (NCA); European Cooperation for Accreditations (EA); Member states (MS).

Please refer to figure 1 for a lay out of institutional roles.

Case learning

Why is it good practice

- 1) Harmonization of high-quality verification approaches across EU Member States, allowing to create the trust necessary for a functioning emission trading system
 - 2) Clarity of roles and procedures of the accreditation and verification process, laid down in a manner not allowing legal interpretation at Member State level, complemented with wide-ranging and detailed guidance
 - 3) Continuous identification of potential for improvement of the verification and accreditation approaches and increased harmonisation
 - 4) Strong development over time from a virtually unregulated situation to a situation with detailed requirements and guidance.
 - 5) Harmonized standards of accreditation and verification requirement provide verifiers opportunity to work in all EU ETS Member States irrespective of the Member State in which they have been accredited.
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Barriers that have been overcome

[barriers that have been overcome till date]

Institutional: EU Member States applied differing accreditation and verification approaches in the first and second phase of the EU ETS, as existing regulation only provided limited requirements. Harmonisation was achieved through legislation directly applicable in the EU Member States, setting out detailed requirements for verification and accreditation. This legislation was based on careful assessment of approaches implemented in the EU Member States as well as best practices among these approaches.

²⁷<http://www.epa.gov/ghgreporting/reporters/notices/index.html>

Capacity: Lack of understanding of requirements and best practices with verifiers, NABs and CAs were overcome through detailed requirements and guidance

Information: Assessments showed that NABs, CAs and verifiers often worked in parallel, without understanding the other's problems or point of view. For this reason, potentials for improvement were often not identified and exploited. The requirements for information exchange in the AVR have addressed this barrier.

Barriers to overcome

[barriers that are still present and needed to overcome]

No barriers to overcome were identified.

Quantitative information

Funding obtained

Confidential

Funding required

Confidential

Staff

[Number of staff involved in the design and implementation of the case study]

As a long-term average, two staff members at the EU Commission work on monitoring and reporting as well as accreditation and verification issues related to the EU ETS.

Time

[Time required to get to this stage]

As an example, the design and approval of the MRR and AVR took nearly 12 months. EU Member States had to implement the MRR and AVR within six months, which was a challenge.

Further information

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http://ec.europa.eu/clima/policies/ets/monitoring/index_en.html

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