CEN Workshop 108_3° draft CWA_rev2020.10.29_CLEAN

MAPPING OF THE MANDATORY AND VOLUNTARY CARBON MANAGEMENT FRAMEWORK IN THE EU

Contents

Foreword

CWA xxxx was developed in accordance with CEN-CENELEC Guide 29 "CEN/CENELEC Workshop Agreements - The way to rapid agreement" and with the relevant provisions of CEN-CENELEC Internal Regulations – Part 2. It was agreed on 2020-xx-xx in a Workshop by representatives of interested parties, approved and supported by CEN following a public call for participation made on xxx-xx-xx. It does not necessarily reflect the views of all stakeholders that might have an interest in its subject matter.

The final text of CWA xxxx was submitted to CEN for publication on 2020-xx-xx. It was developed and approved by:

Name surname, organization
…
…

It is possible that some elements of CWA xxxx may be subject to patent rights. The CEN-CENELEC policy on patent rights is set out in CEN-CENELEC Guide 8 "Guidelines for implementation of the Common IRP Policy on Patents (and other statutory intellectual property rights based on inventions)". CEN shall not be held responsible for identifying any or all such patent rights.

The Workshop participants have made every effort to ensure the reliability and accuracy of the technical and non-technical content of CWA xxxx, but this does not guarantee, either explicitly or implicitly, its correctness. Users of CWA xxxx should be aware that neither the Workshop participants nor CEN can be held liable for damages or losses of any kind whatsoever which may arise from its applications. Users of CWA xxxx do so on their own responsibility and at their own risk.

Introduction

Climate change arising from anthropogenic activity has been identified as one of the greatest challenges the world has to face and will continue to affect business and citizens over future decades.

Climate change has implications for both human and natural systems and could have significant impacts on resource availability, economic activity, and human well-being. In response, international, regional, national, and local initiatives are being developed and implemented by public and private sectors to mitigate greenhouse gas (GHG) concentrations in the Earth's atmosphere as well as to facilitate adaptation to climate change. Although adaptation represents an extremely important and crucial topic, it is not included in the analysis reported in the present document, that is focused on monitoring, reporting and verification (MRV) and mitigation aspects.

There is a need for an effective and progressive response to climate change's urgent threat based on the best available scientific knowledge. There is a growing development of mandatory and voluntary tools and programs, both at the national and European level, meant to promote effective actions for GHG emissions reduction. In general, these pathways are developed from two sides: at the organisation and the product level, that should be in line with national inventories based on provisions of the Paris Agreement. All GHG initiatives on mitigation rely on the monitoring, reporting, and verification (MRV) of GHG emissions and/or removals. The synergy between MRV methodologies foreseen by the mandatory framework and by voluntary market mechanisms becomes a fundamental element to maximise the mitigation results from an overall system point of view and create the maximum possible synergy between the pathway established by EU policies and the most interesting market's dynamics.

The EU emissions trading system (EU ETS) is a cornerstone of the EU's policy to combat climate change, and represents its key tool for reducing greenhouse gas emissions (GHG) cost-effectively. It is the world's first major carbon market. The EU ETS Directive (2003/87/EC) was adopted in 2003 and the system was launched in 2005, and it has undergone several changes over time. [1]It was structured in four trading periods, known as phases, with the fourth that will be in place from 2021 until 2030.The EU ETS has inspired the development of emissions trading in other countries and regions, such as in Canada, China, Japan, New Zealand, South Korea, Switzerland and the United States. The EU aims to link the EU ETS with other compatible systems; for this, international standards will certainly play a crucial role.

On the product side, the EU Commission recommends the use of the multi criteria PEF method. At the moment, it has not been decided which will be the political use of this instrument and if it will entail normative requirements in terms of product, even if its use is indicated in the communication COM(2020)98 of 11/03/2020 on the Circular Economy. However, it is important to note that the Climate Change impact category can be used to quantify the Carbon Footprint of products and under the current weighting scheme it has a larger weight compared to the other 15 impact categories of the PEF. Furthermore, the technical aspects for the quantification of the Climate Change impact category have been developed by following closely the ISO 14067, hereafter described.

ISO and CEN produce documents that support the transformation of scientific knowledge into tools that will help address climate change. With regard to MRV for climate change, ISO created some standards that constitute the ISO 14060 family of standards on MRV, hereafter synthetically described:

- ISO 14064-1 details principles and requirements for designing, developing, managing, and reporting organization-level GHG inventories. It includes requirements for determining GHG emission and removal boundaries, quantifying an organization's GHG emissions and removals, and identifying specific company actions or activities aimed at improving GHG management. It also includes requirements and guidance on inventory quality management, reporting, internal auditing, and the organization's responsibilities in verification activities.
- ISO/TR 14069 assists users applying ISO 14064-1, providing guidelines and examples for improving transparency in the quantification and reporting of emissions. It does not provide additional guidance to ISO 14064-1.
- ISO 14064-2 details principles and requirements for determining baselines and monitoring, quantifying and reporting, at the project level, GHG emissions reduction or removal enhancement. It focuses on GHG projects or project-based activities specifically designed to reduce GHG emissions and/or enhance GHG removals. It provides the basis for GHG projects to be validated and verified.
- ISO 14067 defines the principles, requirements, and guidelines for the quantification of the carbon footprint of products. This document aims to quantify GHG emissions associated with the life cycle stages of a product, starting from resource extraction and raw material sourcing and extending through the production, use, and end-of-life stages of the product.

For the three above mentioned standards, it is possible, voluntarily, to obtain a third-party verification under

[1] See Bibliography

accreditation, to demonstrate the conformity of the statements prepared by an organisation according to these standards and to confirm their reliability in terms of emissions and CO_2 equivalent quantification or removals. This process is guided by three other specific standards, hereafter detailed.

- ISO 14064-3 details requirements for verifying GHG statements related to GHG inventories, GHG projects, and products' carbon footprints. It describes the process for validation or verification, including validation or verification planning, assessment procedures, and the evaluation of organizational, project and product GHG statements.
- ISO 14065 defines requirements for bodies that validate and verify GHG statements. The requirements cover impartiality, competence, communication, validation and verification processes, appeals, complaints, and the management system of validation and verification bodies. It can be used as a basis for accreditation and other forms of recognition about the impartiality, competence, and consistency of validation and verification bodies.
- ISO 14066 specifies competence requirements for validation teams and verification teams. It includes principles and specifies competence requirements based on the tasks that validation teams or verification teams must be able to perform.

The modalities in which the verification, validation, and accreditation activities are carried out, constitute an important contact point between the mandatory and voluntary framework, since both refer to the mentioned standards ISO 14064-3 and ISO 14065, and in general the same conformity assessment bodies operate in both frameworks for the third-party verification under the same national accreditation system.
It could hence be useful for the entire system to enhance the mutual understanding about the requirements on the monitoring and reporting part of the two mentioned frameworks. This would allow organisations to use the voluntary standards to maximise the effectiveness of what is already in place in the international mandatory system and to increase the reach and the effectiveness of the mitigation actions of GHG emissions. Additionally, more globally it will also increase transparency, credibility and encourage common best practices.

1. Scope

This document aims at increasing, in the respective different fields, the integrated knowledge of mandatory norms and EN and ISO standards. It is also meant to highlight the existing contact points between these norms and the aspects where it is possible to increase synergies, in an evident and in an interpretative way, to promote their integrated use to maximise the actions in terms of GHG mitigation.

It has to be noticed that this document cannot constitute an official reference if necessary for interpretation of one or more requirements of the mentioned EN ISO standards, nor of the applicable legislation, and cannot be used in case of litigations or for verification aims. Furthermore, it cannot be used to add, reduce or modify the EN ISO standards requirements mentioned in this document.

2. Normative references

This document refers to the requirements included in other publications. These normative references are mentioned in the most appropriate paragraphs of the texts and listed hereafter. Concerning dated references, subsequent modifications or revisions to the publications above are to be taken into consideration only when introduced in this document as an update or a revision. For the recent references, it has to be considered the latest edition of the publication to which they refer.

EN ISO 14064-1 Greenhouse gases - Part 1: Specifications and guidelines, at the organisational level, for the quantification and reporting of greenhouse gases emissions and their removal

EN ISO 14064-2 Greenhouse gases - Part 2: Specifications and guidelines, at the project level, for the quantification, monitoring and reporting of the greenhouse gases emissions or the increasing of their removal

EN ISO 14064-3 Greenhouse gases - Part 3: Specifications and guidelines for the validation and the verification of the statements on greenhouse gases

EN ISO 14067 Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification

EN ISO 14065 Greenhouse gases - Requirements for the validation and verification bodies of greenhouse gases for their use in the accreditation or in other forms of recognition

ISO 14066 Greenhouse gases — Competence requirements for greenhouse gas validation teams and

verification teams

3. Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

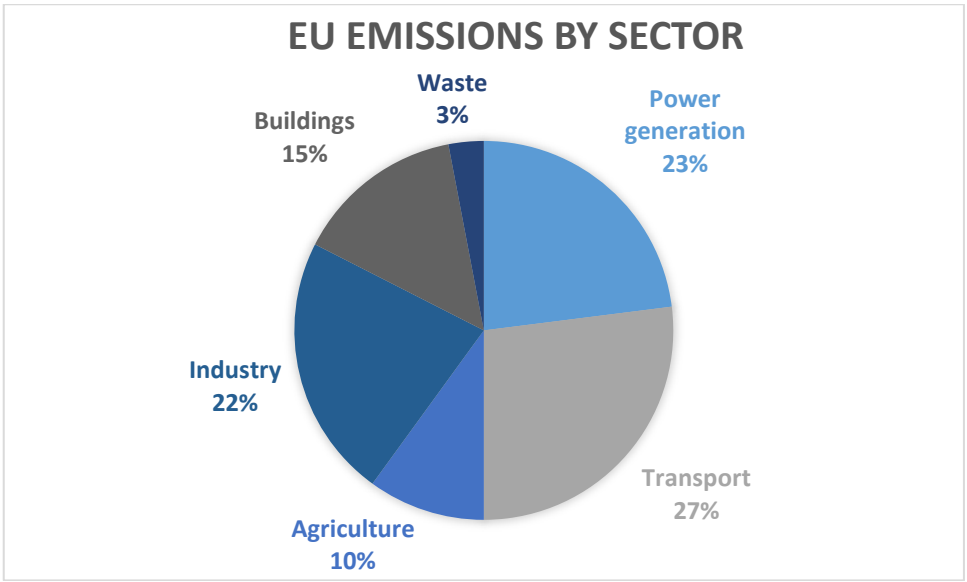
3.1.1 CEN Workshop Agreement (CWA)
CEN agreement, developed by a Workshop, which reflects the agreement of identified individuals and organizations responsible for its contents. It is a document made available by CEN in at least one of the official languages.

3.2 Abbreviated terms

AVR	Accreditation and Verification Regulation
CDS	Data Collection System
CFP	Carbon Footprint of Product
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
EPD	Environmental Product Declaration
ESD	Effort-Sharing Decision
ETS	Emission Trading System
EU	European Union
IMO	International Maritime Organisation
MLA	Multilateral Agreements
MRR	Monitoring and Reporting Regulation
MRV	Monitoring Reporting Verification
OEF	Organisational Environmental Footprint
PEF	Product Environmental Footprint/ Organisational Environmental Footprint

4. Introduction to the fundamentals of GHG in the EU

Data that map EU GHG emissions at the EU level are available in Figure 1, which shows the contribution of economic sectors responsible for the most emissions in the EU in 2016. It can be noticed that the main responsible of emissions are transport, power generation and industry.



Source 2016 Adapted by Transport & Environment from EEA European Environmental Agency

Figure 1 - Greenhouse gases emissions by economic sector in the EU (2016)

In Figure 2 the same is presented, but the diagrams are based on a slightly different categorization of the emitting sectors. In this case, the main emitting sectors appear to be the one related to fuel combustion and fugitive emissions from fuels, followed by transport (with a lower share). It can be highlighted how, between 1990 and 2018, the relative impact of emissions from the transport sector (including international aviation) significantly increased, while an important decrease is observed for the relative emissions of the fuel sector (mainly related to energy generation).

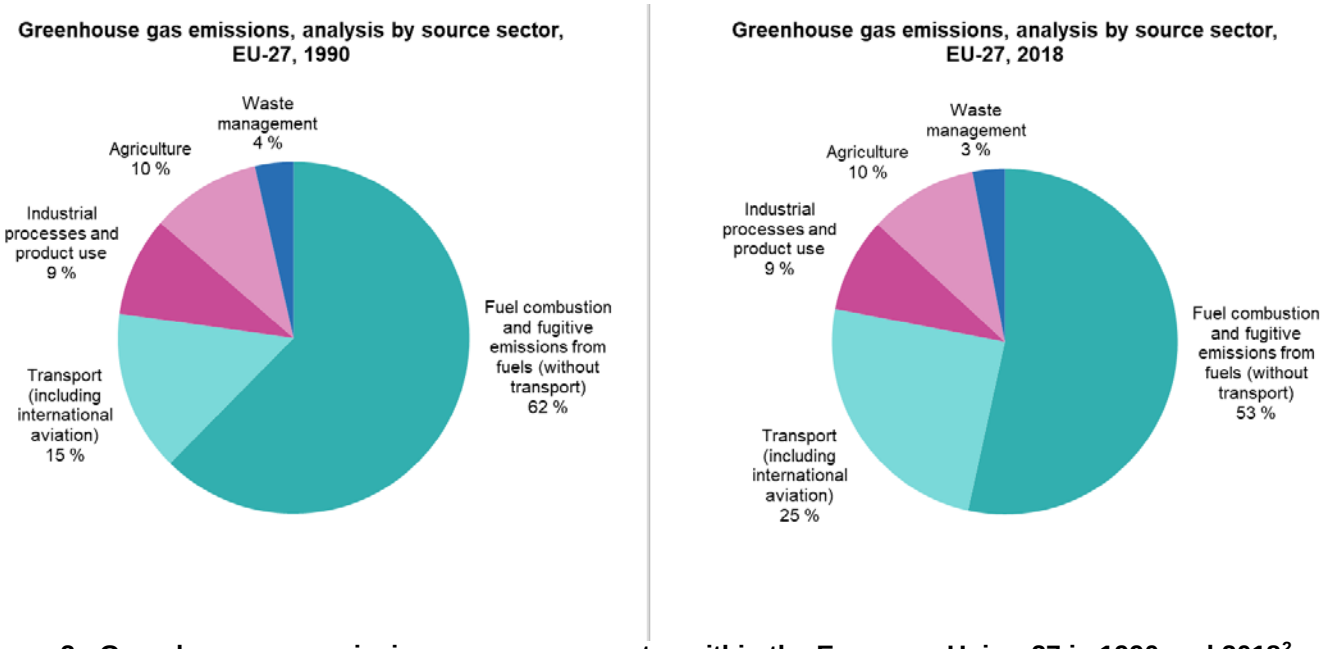
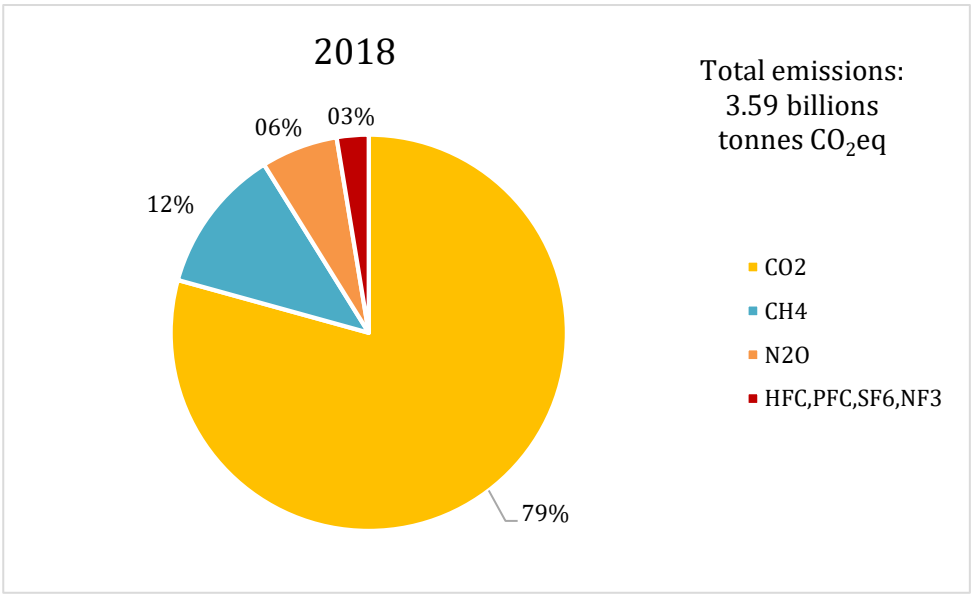


Figure 2 - Greenhouse gas emissions per source sector within the European Union-27 in 1990 and 2018[2]

While the absolute value of the total emissions in the EU declined over time, the share related to the type of gas released did not significantly change[3]. Figure 3 reports the share of the different GHG that contribute to the global emissions in the EU in 2018, weighted on their global warming potential. Carbon dioxide is the main source of GHG emissions, representing 79% of all the CO_2 equivalent released, followed by methane, with 12% of all CO_2 equivalent emissions.



[2] See Bibliography

[3] CO_2 79% vs 81%, CH_4 13% vs 11%, N_2O 7% vs 6% and HFOs, PFOs, SF_6 and NF_3 1% vs 3% respectively in 1990 and 2018 (https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer)

Figure 3 - Greenhouse gases emissions per type within the European Union in 2018 (% of CO_2 equivalent tons)[4]

5. The mandatory framework/policy tools

This clause presents an overview of the existing mandatory framework implemented in the EU, together with crucial policy tools developed at the global or European level.

5.1 Mandatory framework

5.1.1 Kyoto Protocol

The EU formalized for the first time its commitment to tackle climate change after the signing in 1997 the Kyoto Protocol, which entered into force in 2005. In 2002, the EU divided the overall European objective into national ones through the Burden Sharing Agreement (Decision 2002/358/EC)[5]. Table 2 shows the reduction targets agreed in the Kyoto Protocol for the European Union member States.

Table 2 - Emission reduction targets for the EU countries over the period 2008-2012

Member States	Kyoto targets (%)
Austria	-13
Belgium	-7,5
Czech Republic	-8
Cyprus	-
Denmark	-21
Estonia	-8
Finland	0
France	0
Germany	-21
Greece	+25
Hungary	-6
Ireland	+13*)
Italy	-6,5*)
Latvia	-8
Lithuania	-8
Luxembourg	-28*)
Malta	-
The Netherlands	-6*)
Poland	-6
Portugal	+27*)
Slovakia	-8
Slovenia	-8
Spain	+15*)
Sweden	+4*)
United Kingdom	-12,5*)
*) Member States the 1 May 2004. Source: EU Decision 2002/358/CE [4]	

[4] See Bibliography

[5] See Bibliography

5.1.2 EU ETS

The EU ETS (Directive 2003/87/CE and following update) is the most important mandatory mechanism established by the EU Commission to mitigate specified GHG emissions [6]. It operates in all EU countries plus Iceland, Liechtenstein and Norway and it is applied in more than 11.000 heavy energy-using installations (power stations & industrial plants) and aviation activities between these countries, covering around 45% of the EU's GHG emissions. It works on the '*cap and trade*' principle, where a cap is set on the total amount of certain direct GHG emissions that can be emitted by all the installations covered by the system. The cap is reduced over time so that total emissions fall.
The first phase of the EU ETS ran from 2005 to 2007 and was seen as the pilot phase. The second phase of the EU ETS ran from 2008 to 2012, the same period as the first commitment period under the Kyoto Protocol. Phase-3 (2013-2020) was intended to become Kyoto's second commitment period. Phase-4 will be on place from 2021 until 2030 and corresponds to the European Union's first commitment under the Paris Agreement.[7] In 2030, emissions from sectors covered by the EU ETS will be cut by 43% from 2005 levels, as part of the EU's current 2030 climate and energy framework. Under the European Green Deal, the Commission is working for introducing still more ambitious GHG emission reduction target, that may have further implication for the EU ETS. The system covers the following activities and gases, focusing on emissions that can be measured, reported and verified with a high level of accuracy.

Table 3 - Groups of activities pursuant to Annex I to Directive 2003/87/EC and other activities pursuant to Articles 10a and 24 of Directive 2003/87/EC

Activity Group No.	Activities	GHG gases
1a	Combustion of fuels in installations, where only commercial standard fuels as defined in Commission Implementing Regulation (EU) 2018/2066 are used, or where natural gas is used in category A or B in-stallations	Carbon dioxide
1b	Combustion of fuels in installations, without restrictions	Carbon dioxide
2	Refining of mineral oil	Carbon dioxide
3	Production of coke Metal ore (including sulphide ore) roasting or sintering, including pelletisation Production of pig iron or steel (primary or secondary fusion) including continuous casting	Carbon dioxide
4	Production or processing of ferrous metals (including ferro-alloys) Production of secondary aluminium Production or processing of non-ferrous metals, including production of alloys	Carbon dioxide
5	Production of primary aluminium	Carbon dioxide Carbon dioxide and perfluorocarbons

[6] See Bibliography
[7] See Bibliography

6	Production of cement clinker Production of lime or calcination of dolomite or magnesite Manufacture of glass including glass fiber Manufacture of ceramic products by firing Manufacture of mineral wool insulation material Drying or calcination of gypsum or production of plaster boards and other gypsum products	Carbon dioxide
7	Production of paper or cardboard Production of pulp from timber or other fibrous materials	Carbon dioxide
8	Production of ammonia Production of carbon black Production of bulk organic chemicals by cracking, reforming, partial or full oxidation or by similar processes Production of hydrogen (H_2) and synthesis gas by reforming or partial oxidation Production of soda ash (Na_2CO_3) and sodium bicarbonate ($NaHCO_3$)	Carbon dioxide
9	Production of adipic acid (CO_2 and N_2O emissions) Production of glyoxal and glyoxylic acid (CO_2 and N_2O emissions) Production of nitric acid (CO_2 and N_2O emissions)	Carbon dioxide and nitrous oxide
10	Capture of greenhouse gases from installations covered by Directive 2003/87/EC for the purpose of transport and geological storage in a storage site permitted under Directive 2009/31/EC Transport of greenhouse gases by pipelines for geological storage in a storage site permitted under Directive 2009/31/EC	Carbon dioxide
11	Geological storage of greenhouse gases in a storage site permitted under Directive 2009/31/EC	Carbon dioxide
12	Aviation activities (emissions and tonne-kilometre data)	Carbon dioxide
98	Other activities pursuant to Article 10a of Directive 2003/87/EC	Carbon dioxide
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	Carbon dioxide

The EU Emission Trading System (ETS) Directive was adopted in 2003 and the system was launched in 2005. The rules in the first two trading periods of the EU ETS differed in important aspects from those of the third phase (2013-2020) and of fourth phase (2021-2030). In fact in the first and second phases the cap on allowances was set at national level through national allocation plans (NAPs) and almost all allowances were given to businesses for free.

From phase 1 the EU ETS covered GHG emissions from the most GHG-intensive sectors in the power and manufacturing industry. In 2012, the scope was expanded to cover CO_2 emissions from the aviation sector and nitrous oxide emissions from the production of nitric acid. Since the beginning of phase 3, instead, EU-wide cap on emissions is set centrally. During phase 3 this cap decreases each year by a linear reduction factor of 1,74% of the average total

quantity of allowances issued annually in 2008-2012. In phase 4 the cap on emissions will be subject to an annual linear reduction factor of 2,2%. Furthermore, from phase 3 the sectoral scope was expanded to include the sectors aluminum, carbon capture and storage, petrochemicals and other chemicals. Additionally, starting from the phase 3, auctioning is the default method for allocating emission allowances to companies participating in the EU ETS. However, in sectors other than power generation, the transition to auctioning is taking place progressively. Some allowances continue to be allocated for free until 2020 and beyond. From 2021 onward, 57% of allowances will be auctioned.

Since 2013, the rules for free allocation have been harmonised across the EU ETS to make sure that companies are treated the same way irrespective of the Member State they are established in. The annual monitoring, reporting and verification activities is known as the ETS compliance cycle and it concludes with the submission of an emission report, verified by an accredited verifier, by 31 March of the following year. Once verified, operators must surrender the equivalent number of allowances by 30 April of the same year.

The rules related to the compliance cycle are set out in two regulations:

- Monitoring and Reporting Regulation (MRR)
- Accreditation and Verification Regulation (AVR)

and a set of Guidelines[8].

Within the cap, operators receive or buy emission allowances, which they can trade with one another as needed. They can also buy limited amounts of international credits from emission-saving projects around the world. If an operator has insufficient allowances must buy more allowances on the market. Operator can also decide to bank allowances (surplus) for use in later years.
International credits are financial instruments that represent one tonne of CO_2 removed or reduced from the atmosphere as a result of an emissions reduction project. At present, international credits are generated through two mechanisms set up under the Kyoto Protocol. These are:

- Clean Development Mechanism (CDM);
- Joint Implementation (JI).
- Operators in the EU ETS can use international credits from CDM (CERs) and JI (ERUs) towards fulfilling part of their obligations under the EU ETS until 2020, subject to qualitative and quantitative restrictions.

The establishment of a new market mechanism to replace the CDM and JI after 2020 is under discussion within the Paris Agreement

It is important to highlight that, while Kyoto Protocol and Paris Agreement encompass all human activities and all GHGs, the EU ETS only includes direct emissions of CO_2, N_2O and PFC.

The verification of data and the accreditation of verifiers are described by the Accreditation and Verification Regulation (AVR) - 2018/2067/EC. This Regulation was developed taking broad inspiration from what is contained in EN ISO 14064-3 and EN ISO 14065.

5.1.3 Paris Agreement

The Paris Agreement, adopted on the 12th of December 2015 and legally binding, envisages the collaboration of all countries at a global level to limit the increase of global temperature to well below 2°C above pre-industrial levels, with efforts to limit it to 1.5°C.

The Paris Agreement foresees that each country submits mitigation pledges called National Determined Contributions (NDCs) that have to be updated and enhanced every five years on the occasion of the Transparency and Global Stocktake process. During the Global Stocktake, countries report progresses in their NDCs implementation in a transparent and accountable way[9].

The Kyoto's targets have been updated with the 2020 package in 2007 and afterwards with the signing of the Paris Agreement. On the 5th October 2016 the EU and its member States ratified the Paris Agreement.

The European Union NDC aims at reducing GHG emissions by at least 40% by 2030 compared to the 1990's levels and at implementing legislation to achieve this target at the end of 2018. By 2020, all Parties are required to submit their long-term strategies on GHG emissions reductions. For this reason, a long-term strategy has been prepared by the EU and submitted to the UNFCCC in March 2020[10].

Moreover, at the end of 2019 the first version of the National Energy and Climate Plans was published; these plans will guide the 2030 climate and energy policy implementation coordinating actions at the member States level[11].

---

[8] See Bibliography
[9] See Bibliography
[10] See Bibliography
[11] See Bibliography

In order to implement its commitments under the Paris Agreement the EU foresaw GHG emissions reductions in the ETS sector (see clause 5.5) by 43% compared to 2005 and in the non-ETS sectors emissions reductions of 30% (compared to 2005) that have been translated into targets at the member States level (see section 5.5)[12]. The targets for the non-ETS sectors are set in the Effort Sharing Directive and summarized in table 3 below.

Table 3 - Emission reduction targets for the EU countries - Effort Sharing Sectors for 2030

Member States	ESD Targets (%)
Austria	-36
Belgium	-35
Bulgaria	-0
Czech Republic	-14
Cyprus	-24
Denmark	-39
Estonia	-13
Finland	-39
France	-37
Germany	-38
Greece	-16
Hungary	-7
Ireland	-30
Italy	-33
Latvia	-6
Lithuania	-9
Luxembourg	-40
Malta	-19
The Netherlands	-36
Poland	-7
Portugal	-17
Slovakia	-12
Slovenia	-15
Spain	-26
Sweden	-40
United Kingdom	-37

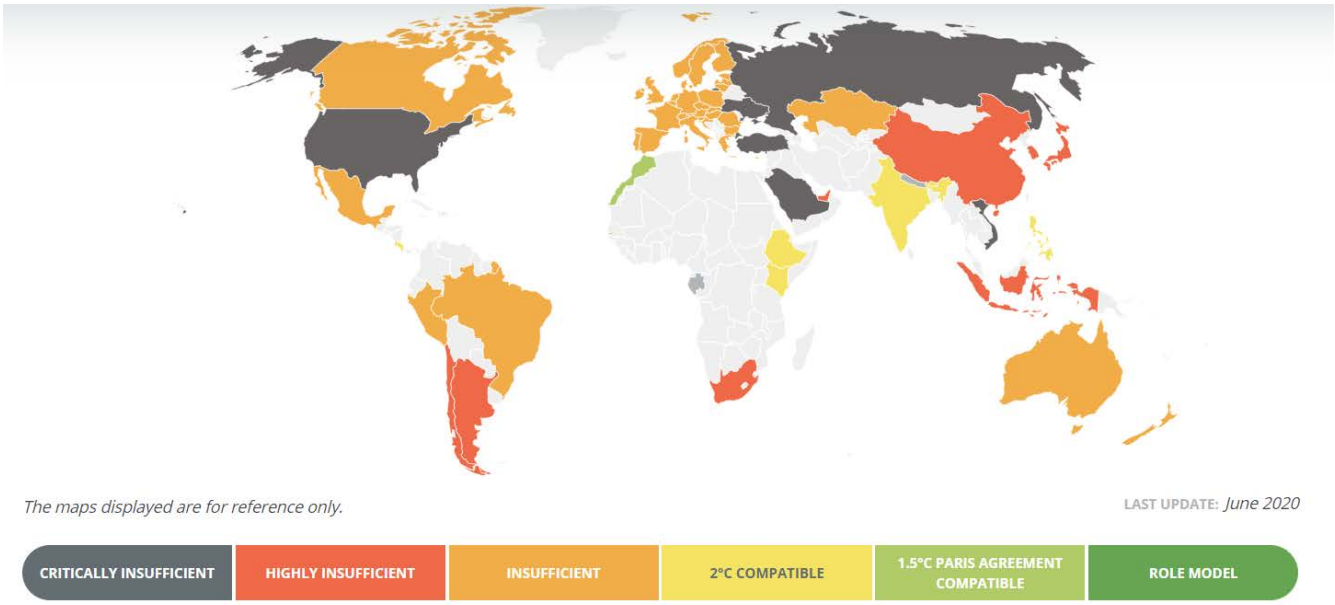
Source: Regulation (EU) 2018/842on binding annual greenhouse emissions reduction by Member States from 2021 to 2030

At the global level, the implementation of the NDCs has to be reported to the UNFCCC Secretariat that is responsible for collecting the member States pledges and to remind countries the efforts that need to be taken.

Figure 4 shows the most recent assessment, realized by Climate Action Tracker, of the NDCs implementation advancements of countries, ranging from highly insufficient to 2°C target compatible. It is worth to notice that, even if many of African and Latin America countries have not been assessed, Morocco is the only country under analysis which has policies in place compatible with the 1.5°C target.

The results of the assessment show how, at a European level, more compelling actions are needed in order to achieve the subscribed targets.

[12] See Bibliography



Source: Climate Action Tracker, June 2020

Figure 4 - Assessment of the NDCs implementation level (Climate Action Tracker, 2020)

5.1.4 Revised Renewable Energy Directive (RED II)

The European Union introduced the original renewable energy directive (2009/28/EC) in 2009, building on the 2001 Directive on Electricity Production from Renewable Energy Sources (2001/77/EC). The goal was to produce a minimum of 20% of energy consumed in the European Union from renewable sources by 2020, to be pursued through individual national targets, taking into account the energy mix and the resource availability of each country. The national plan and strategies to achieve them is reported in the national renewable energy action plans, and the monitoring of the state of advancement is reported every two years in the national renewable energy progress reports. Additionally, by 2020 each country had to achieve 10% of transport fuels from renewable energy.
In December 2018 the directive was recast to 2030, and it entered into force as the revised renewable energy directive (2018/2001/EU), also known as RED II[13].
RED II, legally binding, defines the update of the previous targets: the share of energy consumption from renewable energy is set to 32% in 2030, while 14% of each countries' energy needs for road and rail transport has to be supplied through renewable energy. Specific targets for the implementation of advanced biofuels, together with limitations of biofuels with indirect land use change (ILUC) risk, are also detailed. The directive provides constantly updated guidelines to be followed for the internal calculation of the GHG emissions, allowing for consistent and comparable results within countries.

5.1.5 MRV Shipping and IMO-DCS

From 1 January 2018, CO_2 emissions and other relevant information related to large ships over 5.000 gross tonnage loading or unloading cargo or passengers at ports in the European Economic Area (EEA) are to be monitored and reported, according to the EU Regulation 2015/757 (MRV Shipping). The EU Commission directly manages the programme; no mediation of national competent authorities is foreseen.

The main obligations for companies under the EU MRV Regulation, that is legally binding, are:

- monitoring, from 1 January 2018, each of their ships CO_2 emissions, fuel consumption and other parameters, such as distance travelled, time at sea, and cargo carried on a per voyage basis to gather annual data into an emissions report submitted to an accredited MRV shipping verifier;
- Emission Report, from 2019, by 30 April of each year, companies shall, through THETIS MRV, submit to the Commission and to the States in which those ships are registered ('flag States') a satisfactorily verified emissions report for each ship that has performed maritime transport activities in the European Economic Area in the previous reporting period (calendar year).
- Document of compliance, from 2019, by 30 June of each year, companies shall ensure that all their ships that have performed activities in the previous reporting period and are visiting ports in the European Economic Area carry on board a document of compliance issued by THETIS MRV. This obligation might be subject to inspections by Member States' authorities.

[13] See Bibliography

- The emission reported must then be verified, in accordance with the requirements of EN ISO
- 14064-3, by an accredited verification body pursuant to EN ISO 14065.

It is important to emphasize that the President of the EU Commission has expressed in her inaugural speech or interest in introducing MRV Shipping within the ETS.

The International Maritime Organization (IMO) is a dedicated UN agency, created to set international standards for the safety, security and environmental performance of international shipping[14]. The international shipping sector wants to be in line with the Paris Agreement goals and support the SDGs. The goal is to reduce GHG emissions of the sector of 50% respect to 2008 by 2050, and to phase them out by the end of the century. Directives for the emissions accounting are proposed with the scheme.

IMO, in response to the EU MRV scheme, created its own scheme IMO-DCS[15] that entered into force in December 2018 and now works in parallel to the EU MRV.

5.1.6 Aviation in EU ETS and ICAO Corsia

CO_2 emissions from aviation have been included in the EU ETS since 2012. Under the EU ETS, all airlines operating in Europe, European and non-European alike are required to monitor, report and verify their emissions and surrender allowances against those emissions. They receive allowances covering a certain level of emissions from their flights per year. The legislation was designed to apply to emissions from flights from, to and within the European Economic Area (EEA) – the EU Member States, plus Iceland, Liechtenstein and Norway.

The EU, however, decided to limit the scope of the EU ETS to flights within the EEA until 2016 (*Stop the clock*) to support the development of a global measure by the International Civil Aviation Organization (ICAO).

In October 2016, ICAO agreed on a Resolution for a global market-based measure to address CO_2 emissions from international aviation as of 2021. The agreed Resolution sets out the objective and key design elements of the global scheme, as well as a roadmap for the completion of the work on implementing modalities.

The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) aims to stabilise CO_2 emissions at 2020 levels by requiring airlines to offset the growth of their emissions after 2020[16].

Two main types of actions are encompassed: from one side, airlines will be required to monitor emissions on all international routes; in addition, a set of guidelines define rules for emissions offset from routes included in the scheme.

For what concerns GHG emissions monitoring and reporting, it is mandatory for all CORSIA-eligible operators from January 1st 2019.

In regards of carbon offsetting, instead, the scheme is currently not binding.
There are three phases for the implementation of the CORSIA emission offset:
- pilot phase (2021-2023)
- first phase (2024-2026)
- second phase (2027-2035).

Participation to the pilot and first phases are voluntary. From 2027 onwards, all states with a certain level of aviation activity are due to participate in the scheme. Nevertheless, states can decide not to participate and decline participation to the second phase by filling a specific reservation. In addition, ICAO has no legal capacity to ensure full compliance of the scheme requirements. Because of this, and because of the fact that it is still unclear which countries will participate the various phases, uncertainty still characterizes the scheme. A regular review of the scheme is required under the terms of the agreement. This should allow for continuous improvement, including how the scheme contributes achieving the goals of the Paris Agreement.

At the moment, the two systems coexist, EU ETS, for flights within the EEA and ICAO CORSIA for non-EEA flights.
The Regulation AVR includes activities aviation, while ICAO CORSIA has ISO 14064-3:2006 for the verification activities and ISO 14065 for accreditation of verification bodies.[17]

[14] See Bibliography
[15] See Bibliography
[16] See Bibliography
[17] See bibliography

5.1.7 European Green Deal

The Communication on the European Green Deal was published by the European Union the 11/12/2019, COM (2019) 640 Final[18]. The Communication constitutes the European Union strategy for achieving carbon neutrality by 2050; this means that no emissions are to be released, and decoupling between economic growth and resource use needs to be achieved.

The document presents several policy fields in which the EU will have to act in the following months to increase its ambition and decarbonise its economy, among which circular economy and carbon reduction mechanisms are explicitly mentioned.

The first two initiatives that have been published to implement the European Green Deal are the legally binding European Climate Law (March 2020), which transposes the 2050 carbon neutrality objective into EU law, and the European Climate Pact (March 2020), which aims at engaging citizens and society in climate action[19].

Furthermore, the European Commission will tailor the Member States' emissions reduction pathways with the National Energy and Climate Plans, which constitute an essential tool to cut further greenhouse gases emissions in the Member States. All Member States have to follow emission reduction pathways to achieve the 2030 targets, that are currently set at least at 50-55%. This points out how ambitious the actions to be undertaken during the next decade need to be.

5.2 Policy tools

5.2.1 PEF/OEF

The European Commission developed a pilot phase project based on LCA methodology between 2013 and 2018. The project was focused on two parallel aspects: Product Environmental Footprint (PEF) and Organisation Environmental Footprint (OEF). At this stage, they are still not mandatory, but represent a method that may be used in the context of voluntary or mandatory framework. In 2019 the Joint Research Centre published two reports proposing how the PEF and OEF Guide should be amended in the future to reflect the developments and the practical experience gained during the EF pilot phase.[20]

The Product Environmental Footprint (PEF) is a method, which is fit to support European policies for the creation of a green market. It is based on the development of LCA studies, carried out consistently for each product category, thanks to specific rules for the product categories (PEFCR), when available. Whenever a study is carried out in compliance with a PEFCR, the results can be compared to the European benchmark values (average product on the EU market, not available for intermediate products), hence allowing to provide a clear indication in terms of environmental impacts, that can also be made publicly available when a product is put on the market .
Even if the EU Commission chose an approach based on LCA that comprehends 16 impact categories, the highest weight is given to Global Warming (GW) [21].

Furthermore, it is important to underline that the EU Commission took part in the ISO works for the development of the standard ISO 14067, thus facilitating the creation of possible synergies.

For what concerns the Organisation Environmental Footprint (OEF), the environmental performances of an organization providing goods or services is evaluated through a multi-criteria analysis taking into account all the activities, from material supply chain, production processes, products use, waste management to all type of involved transport. The organization that can adopt the OEF can be either companies, public entities, non-profit organisations and other bodies. Depending on the sector in which the organization works, specific methodological requirements may be developed, called Organisation Environmental Footprint Sector Rules (OEFSRs).

5.2.2 Sustainable Development Goal 13

[18] See Bibliography
[19] See Bibliography
[20] Zampori, L. and Pant, R., Suggestions for updating the Product Environmental Footprint (PEF) method, EUR 29682 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-00653-4, doi:10.2760/265244, JRC115959, and Zampori, L. and Pant, R., Suggestions for updating the Organisation Environmental Footprint (OEF) method, EUR 29681 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 2019978- 92-76-00652-7, doi:10.2760/255104, JRC115960
[21] See Bibliography

It is important to underline how, for al the international conventions, the Sustainable Development Goals (SDGs) represent an important benchmark to promote sustainable development for all countries.

The SDGs were published in 2015 as part of the United Nation 2030 Agenda for Sustainable Development and represent a global framework to end poverty, protect the planet and ensure universal peace and prosperity by 2030. They build upon the UN Millennium Development Goals signed in 2000 and are structured in 17 integrated goals, each of them addressing a crucial field to be tackled through global action. The Division for Sustainable Development Goals, in the UNDESA, is the SDGs Secretariat, and the United Nations Development Programme (UNDP) is responsible of supporting countries with the definition and implementation of measures to achieve them[22].

SDGs are not legally binding, but all countries are expected to include strategies to achieve them in their policies, to constantly monitor the quality of their efforts and the outcomes, and to report them in the Voluntary National Reviews. In addition to these, the EU committed to report and assess the efforts of the member countries. The European Union legislation adopted the SDGs framework, and is working to reinforce the integration of the UN directives in its legal structure, as stated in the "Annual Strategic Report on the implementation and delivery of the Sustainable Development Goals" released in 2019. Additionally, the European Commission, Council and agencies are actively working to identify and address gaps, inconsistencies and synergies within policies and legislations in this sense.[23]

The SDG 13 articulates "Take urgent action to combat climate change and its impacts". It is focused on the necessity of ambitious actions, financing and capacity enhancement for climate change adaptation and mitigation. This is needed at a global level, with a special attention to developing countries and small island developing States.
SDG 13 comprehends three main outcome targets, namely the improvement of countries' resilience in adapting and reacting to climate disasters, the integration of climate change measures in the national political agendas, and the strengthening of education and culture on climate change actions.
For each item, specific quantitative indicators are defined in order to guide the evaluation of the state of achievement of each target. The indicators were developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) in 2016.[24]

5.2.3 Non-Financial Reporting Directive

Through the Directive 2014/95/EU, European Union defines a set of non-binding rules on disclosure of non-financial and diversity information by large companies on four sustainability issues, namely environment, social and employee issues, human rights, bribery and corruption. The directive applies to companies with more than 500 employees including banks, insurance groups, companies designated by national entities and listed companies, covering around 6000 groups in the EU. From 2018 onwards, these are required to include non-financial statements in their annual reports. On 20 February 2020 the Commission launched a public consultation on the review of the NFRD.

In addition to this, in June 2019 the European Commission published guidelines on reporting climate-related information as part of the Sustainable Finance Action Plan, acting as a supplement to the existing guidelines on non-financial reporting, which remain applicable. The guidelines, that build on the recommendations of the technical expert group on sustainable finance (TEG), also take into account the forthcoming taxonomy on sustainable activities under development (see section 5.10). Before the publication of the guidelines, in January 2019 the TEG published its report on climate-related disclosures for open consultation, and invited stakeholders for feedbacks. The section on reporting on GHG emissions is aligned to the GHG Protocol methodology or the ISO 14064-1:2018.

5.2.4 Action on Sustainable Finance

Sustainable Finance is another field in which the EU has been recently very active. According to the European Commission, investments should be more sustainable and take into consideration environmental, social, and governance aspects (ESG). [25]It is calculated that in order to reach the 2030 energy and climate targets at the EU level, 180 billion euros of additional investments would be required by the private sector every year.[26]
In 2018, the European Commission published an Action Plan on Financing Sustainable Growth which foresaw a number of measures some of which on company disclosure. Company disclosure of climate-related information can bring many benefits to companies in terms of increase of awareness and improved reputation, but it could also diversify investors and help to build a more constructive dialogue with stakeholders.[27]

[22] See Bibliography
[23] See Bibliography
[24] See Bibliography
[25] See Bibliography
[26] See Bibliography
[27] ibidem

Moreover, after the adoption by the Council of the European Union on the 10th of June 2020, the European Commission welcomed on the 18th of June 2020 the adoption by the European Parliament of the EU Taxonomy Regulation.[28]

The taxonomy is a classification system that supports the classification of investments according to sustainability criteria. In the words of Vice-President Valdis Dombrovskis, Executive Vice-President responsible for Financial Stability, Financial Services and Capital Markets Union, it is the first classification system of this kind, and it will be capable of boosting sustainable investments.[29] The taxonomy requires financial products on sustainability to disclose information, and address 6 environmental objectives: water and marine resources, pollution, circular economy, biodiversity, climate adaptation (that is not encompassed in the present study), and also confirms climate mitigation as a crucial field of action.

The taxonomy is planned to be finalized by 2021, when the technical screening criteria will be further developed and the Platform on Sustainable Finance, including experts from the public and the private sectors will be created. It is important to notice that the most recent Guidelines on reporting climate-related information, issued by the European Commission in 2019 point at ISO 14064-1, GHG protocol or PEF/OEF methodologies as recommended methodology to calculate GHG emissions indicators.[30] Indeed, according to the EU Commission four indicators should be disclosed: direct emissions, indirect emissions from the generation of acquired and consumed electricity, steam, heat, or cooling; all other indirect GHG emissions that occur in the value chain of the reporting company; and GHG absolute emissions target.[31] In the text, it is expressly recognized the role of 14064-1 for the calculation of GHG emissions. The first company reports and investor disclosures using the EU Taxonomy are due at the start of 2022.

[28] See Bibliography
[29] ibidem
[30] See Bibliography
[31] ibidem

6 The international ISO voluntary framework

This chapter presents an overview of the existing ISO international voluntary framework on GHG[32]. It has to be highlighted that the voluntary framework would cover a broader scope, encompassing a variety of voluntary initiatives dealing with carbon management at the international level. Nevertheless, the scope of this section is limited to the ISO standards that are the ones mostly recognized at global level for the development of voluntary tools.

6.1 The EN ISO 14060 family of GHG standards

The standards of the EN ISO 14060 family deal with the MRV aspects of GHG emissions, the first and essential step for the credibility and effectiveness of any path of mitigation of GHG emissions.
The standards deal with the MRV aspects related to:

- organisation (EN ISO 14064-1);
- product (EN ISO 14067);
- projects for emissions reductions or removals enhancement (EN ISO 14064-2).

This is complemented by the standards on the verification and validation activities (EN ISO 14064-3), on the competences of verifiers and validators (EN ISO 14066) and the accreditation process (EN ISO 14065).

The relations between the six mentioned standards is described well in the following image:

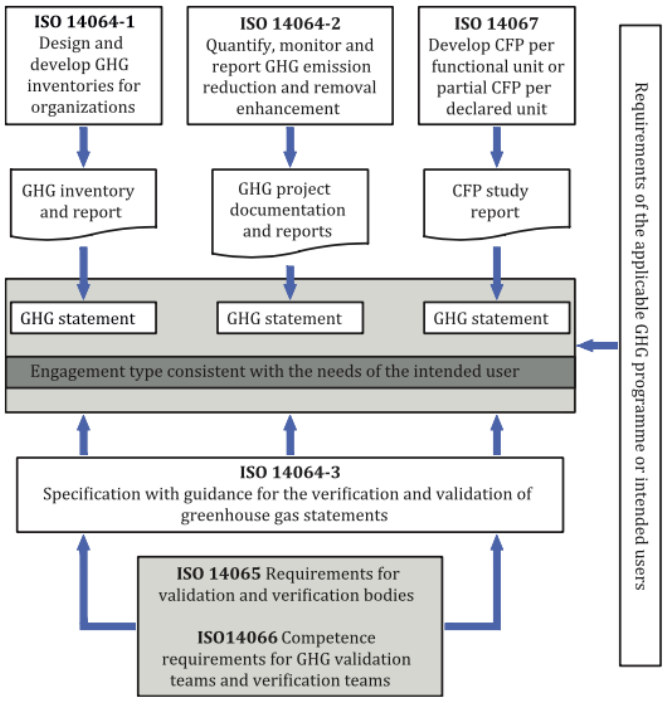


Figure 5 – Relationship among the ISO 14060 family of GHG standards

6.2 EN ISO 14064-1

EN ISO 14064-1 defines the principles and the requirements for the quantification and reporting of GHG emissions and their removal at the organisational or at the company level. Implementing this standard, an organisation can plan, develop, manage and communicate the GHG inventories related to a fixed period attesting completely and reliably the quantity of GHG emitted. The result of this inventory could eventually be verified by an accredited third-party to grant an external recognition of what declared by the organisation. The neutral regime in which the standard has been developed allows for its implementation both within entirely voluntary and within mandatory schemes.

Within the specific characteristic of the GHG inventories, developed in accordance to EN ISO 14064-1 there are:

- the identification of a baseline in respect to which GHG emissions can be compared over time;
- inclusion of all GHG;

[32] There are several ISO standards on sustainable finance under development that are not mentioned here, both because this document is focused on GHG standards and because they are not published yet.

- expansion of the inventory also to indirect emissions, whose inclusions, where significant, became mandatory with the latest version of 2018 of ISO 14064-1.

The new version of ISO 14064-3, published at the end of 2018, develops with reference to the last point, a more complete and reliable modality for the definition of the boundaries of the inventory. This happens through a dedicated evaluation process of the significance of the emissions that now are classified into 6 categories:

- direct GHG emissions and removals;
- indirect GHG emissions from imported energy;
- indirect GHG emissions from transportation;
- indirect GHG emissions from products used by organisation;
- indirect GHG emissions associated with the use of products from the organisation;
- indirect GHG emissions from other sources.

6.3 EN ISO 14067

EN ISO 14067 specifies the principles and the requirements at the product level to quantify in a consistent way the GHG emissions linked to a product along its life cycle. The methodology used is that of the LCA, described in ISO 14040, and developed in detail on the specific aspects related to the quantification and reporting of the Carbon Footprint of product (CFP). The standard, published in August 2018, foresees the use of pertinent PCR (or CFP-PCR) to maintain a consistent approach within the same product category. Compared to the previous Technical Specification the standard EN ISO 14067 had a reduction of scope to the sole quantification and reporting of GHG emissions, transferring in other ISO documents requirements contained in ISO/TS 14067, such as the communication (EN ISO 14026), the provisions on the PCR (EN ISO/TS 14027) and the GHG verification (EN ISO 14064-3).

An interesting option contained in EN ISO 14067 for mitigation purposes is performance tracking. This allows organisations to quantify the improvement in terms of CFP in a product on the base of the implementation of specific actions to reduce its total life cycle GHG emissions. Interesting news of ISO 14067:2018 is the introduction of CFP Systematic Approach (Annex C), that describes how to create a system within the organisation that facilitates the realisation of CFP of several products.

.

6.4 EN ISO 14064-2

The second part of EN ISO 14064 specifies the principles and the requirements at the project level for the quantification, monitoring, and reporting of the activities meant to produce emissions reductions or to enhance GHG removals. The attention thus shifts from the own MRV activities of an organisation or product to the projects outside the organisations' system boundaries. The purpose of this standard is to establish solid rules to quantify the benefit of a project in terms of GHG.

It is clear the importance of this part of the standard since the amount of GHG reduction connected with a project is often translated into carbon credits that have an economic value on the carbon offset voluntary markets. It shall be noted that the offset market is growing to satisfy the increasing request of companies, as part of voluntary internal policies, and aircraft operators, to satisfy the ICAO Corsia requirements. In addition, it is important to pay attention to what will happen concerning the market mechanism under discussion within the Paris Agreement, where it is still possible an evolution that may have a potential area of overlapping with this standard.

NOTE For example, California Climate Action Registry.

6.5 EN ISO 14064-3

The third part of the EN ISO 14064 specifies the principles and the requirements for the verification or validation of the statements related to the emissions/removals of GHG[33]. Therefore, these statements are the result of the application of the three previous norms related to the quantification of emissions/reductions linked to organisations, products and projects. The meaning of the terms verification and validation was further clarified in the latest version of 2019 of EN ISO 14064-3. The verification is related to historical emissions, whereas validation is linked to emissions that can be generated or absorbed in the future as it happens, for example, in the case of projects.

EN ISO 14064-3 can be applied both by the organisations themselves, for internal reasons (first part) or to verify a supplier (second part), and by third-party bodies. The use of this standard for the verification/validation not only of the three standards above but also of potential specific national, Europeans and international programs, represents an important point of departure for the creation of a harmonised modality of emissions "checking" to give consistency to the important necessity, both at the normative and at the market level, that 1t of CO_2e is always corresponding to 1 t of

[33] In the context of conformity assessment the ISO 14064-3 is considered a "process standard" because it specifies how to carry out the verification and validation activities

CO_2e.

6.6 EN ISO 14065

The standard EN ISO 14065:2013[34] describes the requirements that the validation and verification bodies in the field of GHG have to satisfy to be accredited. The reference framework of this standard changed in the last years and, at present, is in a consolidation phase.

First of all, the publication of the new EN ISO 14064-3:2019 makes obsolete the direct references to ISO 14064-3:2006 in EN ISO 14065:2013. Moreover, the ISO 14065 review foresaw the extension of the scope of the standard from the activities of GHG verification/validation to those related to all environmental information. Lastly, the publication of ISO 17029[35] has to be remembered, with regard to accreditation of each type of verification and validation activity, not only environmental, and that hence acquires the role of a general overarching standard.

This standard can be used by verification or validation bodies with the purpose of self-assess their capability to carry out the verification and validation activities, or it could be used by the administrators of the GHG program, and by regulators and accreditation bodies to recognise the capacities and competencies of these bodies.

The use of the two standards EN ISO 14064-3 and EN ISO 14065 ensures the adoption of common rules in different countries, laying the essential foundations establishing multilateral agreements (MLA) within regional associations of accreditation bodies and between the different regional associations. This is a fundamental step to ensure that a verification performed in a European country could keep his validity when presented in another region, such as Asia or America. It is important to remember that ISO 14065, like ISO 14064-3, is already in use as an accreditation standard within specific EU MRV programs such as for example, the EU ETS and MRV Shipping.

7. Possible synergies between the mandatory framework and the family of voluntary EN ISO 14060 standards

7.1 General information

The standards EN ISO 14064-1 and EN ISO 14067 are certainly useful to substantiate policies on carbon management of each public or private organization, interested in introducing a reliable quantification of GHG emissions at company and product level. These quantifications can also be subject to an independent and accredited third party verification, extending in this way the recognition of GHG quantification at the international level, thanks to the multilateral agreement (MLA) at the European level (EA) or outside Europe (IAF).
This quantification becomes the first fundamental step to establish consistent and reliable commitments on mitigation of GHG emissions. This is also necessary in case the companies decide to set internal objectives for carbon neutrality, by compensating residue emissions through credits that can be generated in accordance with EN ISO 14064-2.
Hereafter it is briefly analysed how the above mentioned EN ISO standards could support EU policies on climate change, in the field of product (EN ISO 14067), organisation (EN ISO 14064-1) and of project (EN ISO 14064-2).

7.2 Use of EN ISO 14064-1

7.2.1 Use of EN ISO 14064-1 by organisations included in the area of application of the EU ETS

As is known, EN ISO 14064-1 is applicable to all organisations, including those which fall in the area of application of the EU ETS. This could seem an unnecessary duplication since these companies have to comply with a particularly complex and articulated set of rules. However, there are advantages related to the applicability of EN ISO 14064-1, that support aspects of EU's monitoring implementation:

- development of a set of procedures for the monitoring and reporting of emissions;
- implementation of a structured information management and for the control of data quality;
- development of procedures for internal audits and its execution.[36]

In presence of periodic verification of the GHG Inventory in accordance with EN ISO 14064-1, these aspects would undergo a continual and precise check. This could give confidence in the internal controls system for GHG emissions' monitoring, an important aspect to reduce the risk of misstatements and guaranteeing a further contribution to the

[34]The scope of the new version of ISO 14065 under publication is extended from the GHG assertions to all the environmental information statements.
[35] The future scenario is now complicated because of the publication of the ISO 17029, the generic standard for any kind of verification and validation activities, that shall be used in conjunction with the future ISO 14065 for any GHG accreditation.
[36] See Bibliography

implementation of an even more effective system for the management of the quality of data.

An annual verification under ISO 14064-1, often carried out by the same Verification Body that conducts the ETS verifications and under the same accreditation system could be beneficial. Indeed, the annual verification of ISO 14064-1 could guarantee a periodic coverage of the three points above which could be taken into account during the EU ETS verification.

Then there is another advantage, for the organisations that have in place specific policies on climate change and targets on the reduction of GHG emissions, such as those defined inside the program Science Based Targets. In these cases, a broader quantification to include all GHG is required, not only to CO_2 emissions covered by EU ETS, and also to indirect emissions of which the organisation is implicitly responsible. These programmes' system boundaries are more inclusive than those in the EUETS, but it is possible to combine both approaches allowing the creation of an integrated MRV system. This could allow the synergies between the mandatory scheme (EU ETS) and the voluntary (EN ISO 14064-1) to be recognized to support the organisation's own mitigation policies.

In addition, a complex aspect in terms of energy related emissions accounting can be identified. For example, the switch from the supply of heat from natural gas combustion towards heat generated through electricity can be interpreted as a positive factor in the ETS scheme; in reality, the direct plant emissions are transferred as indirect emissions to the power generation sector, that in some cases can be highly unbalanced towards coal. In this case, a closer contact between the two schemes could allow for an easier identification of these inconsistencies.

Finally, from the EN ISO 14064-1 perspective, for a plant that falls within the ETS scheme there is the possibility of preventing duplication by utilizing the ETS verification within the ISO 14064-1 verification for the sources that fall within both reporting regimes saving time and costs.

7.2.2 Use of EN ISO 14064-1 for the sustainable finance

As previously mentioned in section 5.5, ISO 14064-1 was recognised in the Guidelines on reporting climate-related information as the reference document for the quantification of organisations GHG emissions. Consequently, the takeover of this standard represents a crucial element for the further implementation of sustainable finance.
The ISO standard 14064-1 offers guidance for emissions calculation and is an example of how voluntary standards can play an active role in EU's legislation, considering that sustainable finance will be an asset in mobilizing private investments supporting the European Green Deal and thus complementing public action.

It has to be mentioned that since 2018 there is a dedicated ISO Technical Committee on Sustainable Finance (ISO/TC 322), with the goal to establish a framework under which new standards may be developed, and to define and guide sustainable finance activities.

7.2.3 Use of EN ISO 14064-1 by organisations applying the OEF

The last revision of 14064-1 introduced the demand to quantify all significant indirect emissions. Although a life cycle approach is not explicitly required, it appears evident how this makes the norm now significantly closer to what is defined in the OEF.
Because of this, the possibility to develop in a synergic way the GHG inventory of an organisation based on the LCA methodology is an interesting opportunity. This would allow for a better alignment between voluntary tools and the OEF framework.

7.3 Use of EN ISO 14067 by organisations that apply the PEF

The European Commission is evaluating different alternatives on how to implement the PEF in the EU's internal market. Anyway, either it will be decided to move towards a voluntary or a mandatory scheme, similar considerations to what previously described for the OEF scheme are valid. In fact, in both cases it would be desiderable that this implementation will take place in parallel with the Carbon Footprint of product, in accordance to EN ISO 14067, which is spreading on a voluntary basis.

It has to be recognised that the PEF is a more complete method for what concerns the number of considered impact categories. This is an important added value in terms of completeness of the assessment. Nevertheless, this completeness would need to be translated in effectiveness in terms of communication vehicles.

An example, in this sense, could be represented by the experience with EPD in Europe, which contributed to spread significantly the use of LCA and it is recognised as a credible tool to share the results of these studies in the B2B field. However, such success has not to be considered in an equal way in the B2C communication field, where the EPD

outputs are more difficult to be understood. On the other hand, the CFP tool represents the opposite example. In fact, in this case the communication of the results is simple and effective, and it is consistent with the increasing interest of consumers and public opinion on climate change.

It should thus be possible for companies that undertake the process of PEF to be able, in some specific circumstances, to communicate in a particularly effective way the values of Global Warming impact, creating an evident synergy with the EN ISO 14067.

This can have positive market consequences also for the European products sold in geographical areas outside the EU, where the ISO instruments can sometimes have a bigger recognition than PEF, thanks also to MLA.
The possibility to communicate the CFP in an equivalent way through EN ISO 14067 and PEF would certainly be a great support, helping to avoid confusion at the market level, where the CFP is already widely adopted on a voluntary basis.

This would also be translated in the necessity of wider consistency for the verification and accreditation processes (for example, through the use of EN ISO 14064-3 and EN ISO 14065) for the CFP according to EN ISO 14067 and to PEF.

7.4 Use of EN ISO 14064-2 by organisations that apply RED-II

Although currently the RED II does not apply to the forest sector, it foresees an expansion to cover this sector in the next future. When it will be developed, there will be an important opportunity for synergies in the integrated management of the process of CO_2 absorption, according to the RED II and the EN ISO 14064 in a forest sustainable management perspective.

7.5 An harmonised approach for verification/validation and accreditation

The proliferation of mandatory and voluntary programs in several countries is probably meant to grow over time with the intention of providing a wide range of flexible instruments for MRV, as a base for the successive mitigation actions of GHG.
However, the verification and validation activities of these programs are, in general, carried out by the same bodies and professions, specialised in the verification processes of GHG.

Therefore, it would make sense not to let proliferate the rule system related to the processes of verification and accreditation, since the creation of similar but not identical rule systems could increase in parallel the complexity of the verification and validation activity for rather formal aspects, with the risk that the overall verification and validation system increases the relative costs and reduces its reliability level.

For these reasons, it would be advisable that each verification and validation activities would be framed requiring the strict respect of the standards EN ISO 14064-3, EN ISO 14066 and EN ISO 14065 adding only the additional requirements strictly necessary for the effectiveness of the managed programme, but only as an extension of what is already required by the three aforementioned standards and with a clear reference to specific points of the standards under consideration.

ANNEX A - Relations between the norms of the grouping ISO 14060 and the EU legislation

Hereafter, a simplified framework comparing the norms from EN ISO 14060 family and the main mandatory EU programmes in terms of GHG emissions is reported.

Norm EN ISO	Mandatory program	Normative framework
EN ISO 14064-1	EU ETS	EU ETS Directive 2003/87/EC EU ETS Directive 2018/410/EC
		Regulation 2018/2066/EC – MRR
		GD No. 1 “General guidance for installations” GD No. 2 “General guidance for aircraft operator” GD No. 3 “Biomass issues” GD No. 4 “Uncertainty Assessment” GD No. 4a “Exemplar Uncertainty Assessment” GD No. 5 “Sampling and Analysis” GD No. 5a “Exemplar Sampling Plan” GD No. 6 “Data flow activities and control system” GD No. 8 “EU ETS Inspections”
	MRV Shipping	Regulation 2015/757 - MRV Shipping
		Delegated Regulation: 2016/2071 2016/2072 Implementing Regulation 2016/1927 Implementing Regulation 2016/1928
		Preparation of monitoring plans by companies Monitoring and reporting of fuel consumption, CO_2 emissions and other relevant parameters; Assessment of monitoring plans by verifiers; Backward assessment of monitoring plans; Use of external ship tracking data by verifiers; Materiality and sampling; Verification of emissions reports by verifiers; Recommendations for improvements issued by verifiers; Assessment of verifiers by National Accreditation Bodies in order to issue an accreditation certificate; Dealing with situations where the accreditation is suspended or withdrawn close to the planned issuing date of the Document of Compliance (DOC) by the verifier
EN ISO 14067	PEF	….
…		
EN ISO 14064-3	EU ETS	Regulation 2018/2067/EC – AVR
		- Key guidance note II.1 on the scope of verification - Key guidance note II.2 on risk analysis - Key guidance note II.3 on process analysis - Key guidance note II.4 on sampling - Key guidance note II.5 on site visits concerning installations - Key guidance note II.6 on the verification report - Key guidance note II.7 on competence of verifiers - Key guidance note II.10 on information exchange - Key guidance note II.11 on certification - Key guidance note II.12 on time allocation in verification - The Accreditation and Verification Regulation - Verification Guidance for EU ETS Aviation (GD III)
		Regulation 2018/2067/EC – AVR

EN ISO 14065	EU ETS	- Key guidance note II.8 on the relation between EN ISO 14065 and AVR - Key guidance note II.9 on the relation between EN ISO/IEC 17011 and AVR - The Accreditation and Verification Regulation - Verification Guidance for EU ETS Aviation (GD III)

Bibliography

[1] EC Decision C130(2004) implementing provisions of the EC Decision C(2004)130 of 29 January 2004 establishing guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC

[2] European Environment Agency (online data code: [env_air_gge])

[4] Data from EEA (2020), Eurostat database “Air emissions accounts by NACE Rev. 2 activity [env_ac_ainah_r2]”, available at: https://ec.europa.eu/eurostat/data/database

5] Council Decision 2002/358/EC (25 April 2002) concerning the approval, on behalf of the European Community, of the Kyoto Protocol attached to the United Nations Framework Convention on Climate Change and the joint fulfillment of the related commitments

[5] European Union (2018) Consolidated version of Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community as amended by Directive EU 2018/410 of 14 March 201808/04/2018 - 2003/87/EC

[6] UNFCCC United Nations Framework Convention on Climate Change - Official Journal of European Communities N° L 033 del 07/02/1994

[7] European Commission (2018) AVR - Commission Implementing Regulation (EU) 2018/2067 on the verification of data and on the accreditation of verifiers and European Commission (2018) MRR- Commission Implementing Regulation (EU) 2018/2066 on the monitoring and reporting of greenhouse gas emissions amending Commission Regulation (EU) No 601/2012

[8] European Commission (2020) “Paris Agreement” retrieved from https://ec.europa.eu/clima/policies/international/negotiations/paris_en

[9] European Commission (2020) “2050 long term strategy” retrieved from https://ec.europa.eu/clima/policies/strategies/2050_en

[10] European Commission (2020) “National Energy and Climate Plans (NECPs)” retrieved from https://ec.europa.eu/energy/topics/energy-strategy/national-energy-climate-plans_en

[11] European Commission (2020) “Effort Sharing Member States’ emissions targets” retrieved by https://ec.europa.eu/clima/policies/effort_en

[12] European Commission, Renewable Energy – Recast to 2030 (RED II) (2019), available at: https://ec.europa.eu/jrc/en/jec/renewable-energy-recast-2030-red-ii

[13] IMO, available at: http://www.imo.org/en/About/Pages/Default.aspx

[14] IMO, Data collection system for fuel oil consumption of ships, available at: http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Data-Collection-System.aspx

[15] CORSIA: Annex 16, Volume IV to the Chicago Convention

[16] European Commission (2018) AVR - Commission Implementing Regulation (EU) 2018/2067 on the verification of data and on the accreditation of verifiers

[17] European Commission (2019) The European Green Deal COM (2019) 640 final Brussels, 11.12.2019, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52019DC0640&from=EN

[18] European Commission (2020) “A European Green Deal” https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

[19] https://eplca.jrc.ec.europa.eu//permalink/2018_JRC_Weighting_EF.pdf

[20] European Commission (2013). "Annex II: Product Environmental Footprint (PEF) Guide in Commission Recommendation of 9 April 2013 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations (2013/179/EU)." Official Journal of the European Union

56(L 124): 6-106 and European Commission (2013). "Annex III: Organisation Environmental Footprint (OEF) Guide in Commission Recommendation of 9 April 2013 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations (2013/179/EU)." Official Journal of the European Union 56(L 124): 107-210

[21] United Nations (2020), Sustainable Development Goals Knowledge Platform, available at: https://sustainabledevelopment.un.org/sdgs

[22] European Commission (2019), EU's implementation of the Sustainable Development Goals (SDGs), available at: https://ec.europa.eu/environment/sustainable-development/SDGs/implementation/index_en.htm

[23] United Nations (2019), Sustainable Development Goal 13, available at: https://sustainabledevelopment.un.org/sdg13

[24] European Commission (2020) “Sustainable finance” Retrieved from: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance_en

[25, 26] European Union (2019) “Guidelines on reporting climate-related information” https://ec.europa.eu/finance/docs/policy/190618-climate-related-information-reporting-guidelines_en.pdf

[27, 28] European Commission (2020) “Sustainable Finance: Commission welcomes the adoption by the European Parliament of the Taxonomy Regulation” https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1112

[29, 30] European Commission (2019) “Guidelines on reporting climate-related information”, retrieved by https://ec.europa.eu/finance/docs/policy/190618-climate-related-information-reporting-guidelines_en.pdf

[31] European Commission (2020) “Monitoring, reporting and verification of EU ETS emissions” retrieved by https://ec.europa.eu/clima/policies/ets/monitoring_en#tab-0-1

[