RECS ENERGY CERTIFICATE ASSOCIATION

RECS' POSITION PAPER ON CORPORATE DISCLOSURE STANDARDS AND REGULATIONS

September 2025

GHGP, ISO, and SBTi: Why Industry Representation Matters in Standardisation Efforts

On 9 September 2025, International Standards Organisation (ISO) and Greenhouse Gas Protocol (GHGP) announced partnership to harmonise and co-brand their portfolios of greenhouse gas standards. RECS understands that the Science Based Targets Initiative (SBTi) is also following these developments with a view to alignment as well. RECS welcomes alignment and cohesion in principle, as such convergence could strengthen the overall robustness of sustainability frameworks.

However, without strong industry representation in all relevant standards processes, there is a risk that tried and tested sustainability reporting techniques may be needlessly discarded. These include the market-based method of allowing consumers to claim the use of renewable energy that they have procured via commercial agreements and contracts based on energy attribute certificates (EACs).

RECS is a vocal supporter of more consistent and aligned sustainability reporting standards. We are concerned that users of EACs, on whose behalf we speak, are critically underrepresented in the relevant standards development processes. This under-representation contributes to the persistence of outdated criticisms of EACs and the market-based method, and hinders the integration of the benefits and progress EACs have already delivered.

Therefore, we renew our call for all RECS members and stakeholders to take an active role in these processes, in particular by joining ISO Working Groups through their respective National Standardisation Bodies. This paper, is a call to action for RECS stakeholders as we work to secure greater participation and engagement in these critical sustainability reporting standardisation efforts.

RECS Members can access the full range of RECS' resources on EAC markets. Beyond that, being a RECS member allows you to be contribute to the development of RECS' policy positions, technical papers, and standard contracts through our members-only meetings and working groups. For more details on RECS Membership, please visit: www.recs.org/become-a-member/

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Navigating Sustainability and Reporting Standards: RECS' Call for Coherence

Despite inconsistent public and political attention on environmental matters, many organisations retain a strong commitment to sustainability. RECS works hard to support this commitment in general, and effective sustainability reporting in particular. One of our goals is to provide our members and stakeholders with a better understanding of the tools and frameworks they can use to measure and report their sustainability progress. We also work to ensure that these sustainability tools and frameworks are as clear, consistent, reliable and effective as possible.

We know that organisations face a wide range of different standards and schemes for reporting their scope 2 emissions. This proliferation, often using differing terminology and objectives, risks creating confusion and inefficiency. In such a scenario, it may discourage organisations from reporting at all. So, RECS advocates for greater harmonisation and mutual recognition across this eco-system. We believe this would help streamline scope 2 emissions reporting, could encourage companies to make climate commitments, and should help drive the rapid uptake of renewable energy. To unlock the full power of sustainability reporting, we believe all relevant efforts must be better coordinated and less fragmented.

As we work towards that ultimate goal, we also want to provide our members and stakeholders with an overview of what is currently in place, and how it is evolving. Through this publication, we share RECS' understanding of, and position on, international sustainability reporting standards and regulatory processes.

We maintain our advocacy for consistent recognition of the well-established use of Energy Attribute Certificates (EAC) to measure and account for greenhouse gas emissions resulting from energy use (scope 2). And we map out existing standards (see Table 2, 3) to both keep our members informed and to demonstrate the crucial role of market-based mechanisms in strengthening cohesive global frameworks for reporting.

Scope 2 Reporting: Avoiding Confusion, Driving Corporate Engagement

- Corporate action matters: RECS believes corporate choices are key to driving real impact. A purely location-based method risks inaction and "venue shopping." Progress should not rely only on political decisions but also on corporates taking clear, proactive steps – which requires consistent, non-contradictory standards. If location-based accounting is treated as the only credible method within the EU's single market, it creates unnecessary uncertainty for companies.

- Global role of EACs: EACs are the primary instrument that enables producers to offer renewable electricity and corporates to make credible choices. Other instruments alone are unlikely to deliver sufficient solutions. Wider application of the market-based method could drive stronger results and support companies in going the extra mile for the energy transition.

- Market-based as a baseline: Regardless of company size or consumption level, the market-based method provides a robust baseline for renewable energy claims. Corporates should be encouraged to go further, but not compelled. When reporting standards disregard established market practices, they create confusion rather than clarity.

- Hourly matching: RECS supports companies that choose to adopt hourly matching as an additional step, but does not support making it a mandatory "shall" requirement. Hourly matching should remain voluntary, building on the market-based baseline for those wishing to go further.

- EU disclosure framework: In the EU single electricity market, disclosure is built on Energy Attribute Certificates (EACs). Questioning this system in international standards does not incentivise additional action – it risks undermining trust and legitimising avoidance instead.

- Avoiding contradictions: Departing from established disclosure practices can create double counting or distort markets. In Europe, for example, suppliers are legally required to disclose their fuel and product mix to customers, based on GOs. If international standards suggest that location-based data is required and market-based optional, supplier disclosures, and the EACs they rely on, risk losing credibility, creating confusion around their meaning and purpose.

Why does corporate disclosure matter?

Corporations must play a central role in addressing the climate crisis. By measuring and transparently reporting efforts to minimise their environmental impact, corporations can foster accountability and help drive continuous improvement. When companies take meaningful action to reduce greenhouse gas emissions and publicly disclose their progress, they can provide a model of responsibility and transparency that influences both market standards and consumer behaviour. Corporate disclosure in particular helps to show the urgency of climate action to all stakeholders - including investors, consumers, and policymakers - and it incentivises further improvements in line with environmental standards and global agreements, such as the Paris Agreement. Transparency highlights progress and areas needing attention, helping align corporate practices with broader societal and environmental goals, foster trust with stakeholders, and create momentum for industry-wide change toward a low-carbon economy.

Energy supplier disclosure and corporate environmental disclosure serve related but distinct roles. Supplier disclosure refers to the information energy suppliers provide about the energy mix they deliver to consumers through Guarantees of Origin (GOs) or similar certificates. This gives consumers insight into the renewable content or other characteristics of the electricity they purchase, creating transparency at the point of sale.

Corporate environmental disclosure, however, pertains to the reporting that companies make about the impact of their business activities on the environment, such as their energy usage and its associated emissions. By transparently reporting their energy consumption, carbon emissions, and renewable energy procurement strategies, companies enable stakeholders–including investors, regulators, and consumers–to assess their contributions to climate action.

This paper focuses on corporate disclosure standards for energy and regulations that encourage companies to take a proactive role in their renewables journey.

How do EACs enable clear disclosure and accurate communication for renewable energy use?

Energy Attribute Certificates (EACs) enable clear disclosure and accurate communication by providing transparent information and assuring unique claims. The EACs used in different parts of the world are RECs (North America), GOs (in the EU), I-RECs (used in many countries outside the EU and North America) and national certificates (used in some additional countries).

EACs play four key roles:

1. Enabling transparency and accountability: By verifying that energy comes from a particular source, EACs allow consumers to make informed buying choices and have confidence in what they are paying for.

2. Preventing double counting: EAC issuers ensure accurate documentation of renewable energy generation by issuing only one EAC per MWh of generation. Multiple parties cannot make a claim on the same MWh of generation.

3. Facilitating corporate sustainability goals: Many organizations use EACs to meet renewable energy and climate commitments by proving their renewable electricity purchases. By linking EACs to corporate disclosure frameworks, companies can transparently communicate their renewable energy achievements in line with standards such as the Greenhouse Gas Protocol.

4. Supporting market development for renewables: EACs foster demand for renewable energy by enabling trades through a verifiable and reliable system. This can encourage investment in sustainable energy infrastructure and aligns market growth with environmental objectives, helping to reduce emissions across sectors.

International Standards

Standards developed by the International Organization for Standardisation (ISO) provide globally recognised frameworks. Regional standards, such as those issued by the European Committee for Standardisation (CEN), are tailored to address specific regulatory and market needs within a region and align with international frameworks wherever possible.

Independent or voluntary standards, often created by industry associations or third-party organizations, cater to niche markets or specialized sectors. While these standards may not have the same global reach as ISO or CEN, they play a vital role in addressing unique needs and ensuring sector-specific quality through tailored requirements and best practices.

Greenhouse Gas Protocol

The Greenhouse Gas (GHG) Protocol provides organizations with standardised methodologies to account for their emissions. Developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), the GHG Protocol is referenced in several mandatory and voluntary reporting systems such as the Science-Based Targets initiative (SBTi) and the European Corporate Sustainability Reporting Directive (CSRD) as a best practice framework and a de facto standard.

By categorizing emissions into 3 scopes (Scope 1 for direct emissions, Scope 2 for indirect emissions from purchased energy, and Scope 3 for all other indirect emissions across the value chain), the GHG protocol has helped organizations to systematically measure their emissions while developing strategies to reduce them.

The market-based method reflects the emissions impact from the energy that companies have purposefully chosen by buying from a specific generator or supplier. Regardless of their sourcing method, a corporate can prove their renewable energy purchases by acquiring and cancelling the relevant energy attribute certificates (EACs).

The location-based method reflects the average emissions intensity of grids on which energy consumption occurs (using mostly grid-average emission factor data). Using this method, a corporate can multiply its total electricity consumption (in MWh) by the average level of emissions per MWh of the grid area from which they take power.

Dual reporting method: To ensure greater transparency and accuracy, dual reporting utilises both the location-based context and the impact of purposeful energy procurement choices made by companies. Reflecting both location and market-based realities, dual reporting ensures a better understanding of a company's GHG emissions and efforts to mitigate them.

For the calculation of emissions from purchased electricity, the GHGP Guidance sets a methodology that takes location based and market-based data into account. Each of the two methods can lead to the reporting of corporate scope 2 emissions. Therefore, the current guidance states that:

"Companies with any operations in markets providing product or supplier-specific data in the form of contractual instruments shall report Scope 2 emissions in two ways and label each result according to the method: one based on the location-based method, and one based on the market-based method. This is also termed 'dual reporting'."

Based on the 2023 CDP disclosure cycle, only six out of more than 23,000 companies disclosed operating exclusively in countries or areas where only the location-based method was available. However in the 2023 disclosure cycle, only 26% of companies reporting to CDP used the dual reporting method for their scope 2 emissions[1]

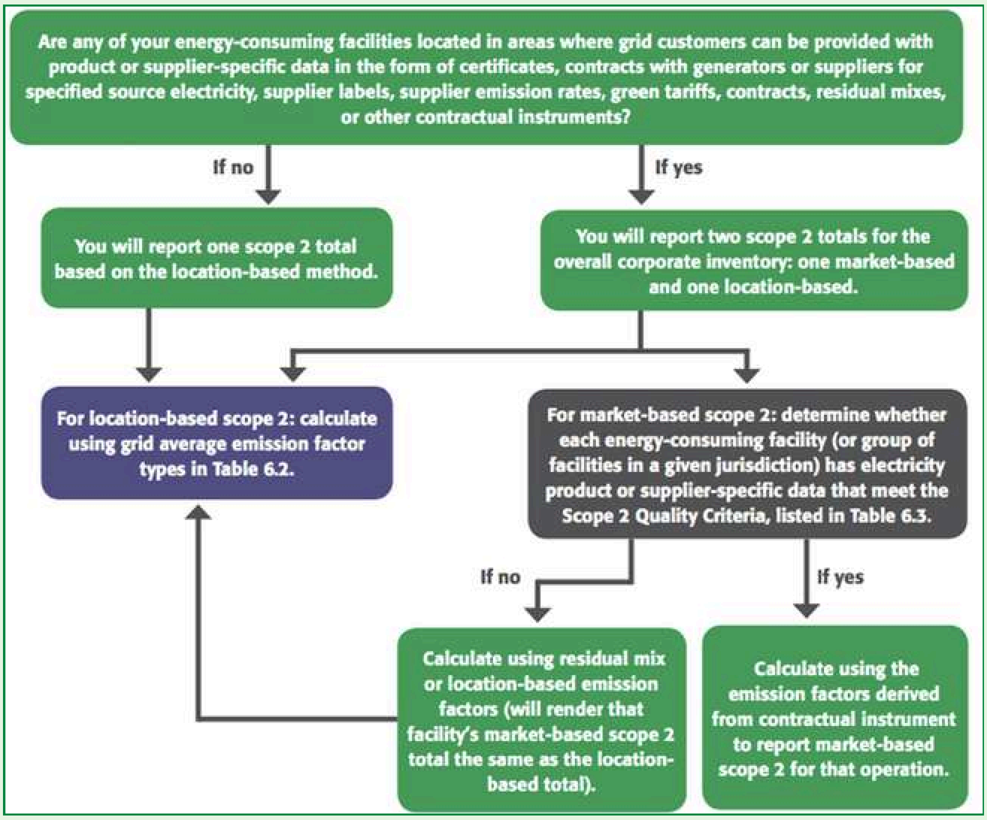
Location-based reporting suffers from a number of significant drawbacks. However, where a renewable energy market based on EACs is in place, addressing the drawbacks of the location-based method would not address the underlying problems or the problem of double counting of attributes.

1 CDP-Accounting-of-Scope-2-Emissions.pdf, p.13-14

1. RECS' stand is that in countries or regions where a market-based energy attribute certificate system is in place, the market-based approach shall be used. In order to have an accurate understanding of a corporate's scope 2 emissions and to avoid any double counting of renewable energy attributes, RECS supports downgrading the use of location-based accounting wherever an EAC market is in place. We set out the following principles: The measuring and reporting of attributes using the location-based method should only be done to provide indicative information on the attributes of total energy generation in that location. It should not be used to report a corporate's scope 2 GHG emissions under the protocol.

2. If a corporate is not actively buying EACs to cover their energy consumption, they should report the residual mix for that location. In some locations, this may require the development of residual mix calculations. While Europe has a robust and long-standing residual mix, other countries with renewable energy markets are still developing their residual mix methodologies, including some I-REC market countries.

On page 45 of the existing GHGP Scope 2 Guidance, a decision tree illustrates how to determine whether an organisation is required to undertake dual reporting:



The Greenhouse Gas Protocol revision process

Nearly a decade after releasing the current standards, the Greenhouse Gas Protocol (GHGP) initiated a comprehensive revision process for its Corporate Standard, Scope 2 Guidance, Scope 3 Standard, and related documents. This update is informed by surveys and proposals collected in late 2022 and early 2023. The stated goal of the revision is to align the standards with best practices, and ensure that the Scope 1, Scope 2, and Scope 3 frameworks are rigorous and credible. The Protocol Secretariat further states that these updates are designed to help businesses accurately measure, plan, and track their emissions reductions in line with science-based targets consistent with the Paris Agreement.

RECS' was among the over 400 responses to the GHGP secretariat's calls for evidence and input to the revision process. To manage this process, the GHG Protocol established a new Steering Committee (SC) and an Independent Standards Board (ISB). Additionally, the GHGP formed four Technical Working Groups (TWGs) to support the revision and updating of the suite of corporate standards.

Phase 1 of the revision process is almost complete, and a public consultation is expected in Q4 of 2025 with a simultaneous start of the Phase 2.

Phase 1 included the following topics:

1. Clarify objectives and consider any changes to the required reporting methods
2. Location-based method technical improvements
3. Market-based method technical improvements
4. Role of project-based accounting methodology relative to scope 2 accounting
5. Guidance for regional variation in energy markets
6. Interaction with policies and programs

Phase 2 includes:

1. TWG consultation on any additional topics as necessary from Phase 1
2. Interactions across Scope 2 and Scope 3
3. Guidance for purchased steam, heat, and cooling
4. Utility-specific guidance and clarification on T&D losses
5. Technical methodology guidelines for data providers
6. Technology-specific guidance

RECS’ recommendations to enhance the current GHGP standards

Given the strength and importance of the current guidance, RECS only sees scope for updates that maintain and enhance its fundamental basis. RECS advocates for five changes that highlight new developments and best practices. We believe that these revisions would strengthen the current guidance and help corporates to deliver additional positive impacts through their energy procurement.

RECS’ recommendations to enhance the current guidance are as follows:

1. Simplifying and updating the text
2. Limiting the role of the location-based method
3. Encouraging the most impactful purchasing options
4. Recognising that many stakeholders are still learning about scope 2 emissions
5. Enhancing the role of all stakeholders in the energy transition

For more information on RECS' advocacy for the update of the GHGP, see our previous publications.

RECS is particularly conscious of recent publications that present hourly matching as a requirement for consumption above a certain threshold. As set out in our previous publications, RECS has both technical and fundamental concerns with claims that granular tracking delivers greater transparency or drives further decarbonisation (see RECS’ policy position on granular electricity tracking and matching).

RECS is closely following the GHGP Scope 2 Standard revision process and will encourage active participation in the public consultation expected to begin in October 2025. GHGP Technical Working Group 2 will discuss the feedback from the public consultation, as well as Phase 2 topics (Scope 2 and 3 interaction, guidance for purchased steam and cooling, T&D losses, guidelines for data providers and technology specific guidance in Q1 2026).

International Sustainability Standards Board (ISSB)

The IFRS Foundation launched the International Sustainability Standards Board (ISSB) in November 2021 at COP26. The ISSB builds on the work of market-led investor-focused reporting initiatives such as the Climate Disclosure Standards Board (CDSB) and the Task Force for Climate-related Financial Disclosures (TCFD).

The ISSB aims to develop a comprehensive global baseline of sustainability disclosure for the capital markets to meet investors' information needs, enhancing the quality of financial information, enabling investors and other market participants to make informed economic decisions. The approach is similar to what was done previously by the IFRS with their Accounting Standards.

The ISSB is primarily working with local jurisdictions globally (usually central banks and national financial supervisory and regulatory authorities), to define regulatory sustainability disclosure requirements for participants into capital markets; the development of sustainability disclosure standards by the IFRS was backed by the G7, the G20, the International Organization of Securities Commissions (IOSCO), the Financial Stability Board, African Finance Ministers and Finance Ministers and Central Bank Governors from more than 40 jurisdictions.
The ISSB published two Sustainability Disclosure Standards: IFRS S1 - General Requirements for Disclosure of Sustainability-related Financial Information, and IFRS S2 - Climate-related Disclosures.

Disclosure using ISSB standards is usually a compliance mechanism, mandated by national market authorities globally, for use by listed companies. The IFRS has also developed a guide for companies aiming to apply IFRS S1 and IFRS S2 voluntarily, in advance of or in the absence of jurisdictional regulation.

IFRS S2 is effective for annual reporting periods beginning on or after 1 January 2024. It requires a company to use the GHG Protocol to measure greenhouse gas emissions unless the company is required by national regulation to use a different measurement method. According to the standard, a company is "required to disclose its Scope 2 greenhouse gas emissions using a location-based approach and is required to provide information about contractual instruments only if such instruments exist and information about them informs users' understanding of an entity's Scope 2 greenhouse gas emissions".

Science Based Targets Initiative (SBTi)

Founded in 2015 through a partnership between CDP, the UN Global Compact, the World Resources Institute (WRI), and the World Wildlife Fund for Nature (WWF), the SBTi aims to align corporate emissions reduction strategies with the Paris Agreement's goal of limiting global warming to 1.5ºC.

Companies that commit to the SBTi pledge to reduce emissions in line with what climate science deems necessary to avoid the worst impacts of climate change. These targets typically focus on Scope 1, 2, and 3 emissions, ensuring that a business addresses its direct, indirect, and value chain emissions.

SBTi started a major revision of the Corporate Net-Zero Standard (CNZS) in October 2021. As part of this revision, the SBTi published in 2024 a discussion paper that shares its initial thinking on potential changes to scope 3 target setting and asked for feedback. RECS' response focused on section three of the feedback form – on Environmental Attribute Certificates.

RECS emphasized that where corporates are reporting the use of renewable energy to the SBTi under any of their emissions scopes, they should evidence such claims with energy attribute certificates.

Our response also encouraged SBTi consider the following points:

- Unbundled certificates (such as European Guarantees of Origin and possibly I-RECs as REC equivalent outside of the USA) should be incorporated into its assessment of a company's decarbonisation pathway.

- There is no difference in the traceability of electrons in a grid based on whether power is bought and sold bundled together with, or separate to, the related attribute certificates. Energy Attribute Certificates use the book and claim chain of custody model because it is most appropriate for the tracking of energy attributes in public grids. ISO 22095 recognises that different chain of custody models are appropriate in different applications and does not say that one model is inherently better or worse than another.

- Moving the goalpost further than buyers could possibly keep up with risks making renewable sourcing a "luxury" while it should be more accessible to encourage climate action and avoiding "analysis paralysis".

- The existing understanding and naming conventions which clarify carbon credits and energy attribute certificates as distinctive instruments and markets. Merging carbon credits and Energy Attribute Certificates (EACs) under the same title as "Environmental Attribute Certificates" is likely to cause significant confusion in both sectors, particularly for buyers new to these markets. Carbon offsets are sold as credits while the EACs represent the environmental attributes of a physical commodity (energy).

- Prioritising "value chain" traceability as a means for achieving higher impact would raise the question of how to best define a value chain, especially in emerging markets outside Europe and the US. Particularly in East Asian countries, being notoriously difficult for renewables procurement as shown in RE100, there are limited options of procuring renewable energy and only allowing EACs from "value chain" in a traditional understanding in such emerging markets could add burdens on corporates through language issues, as well as limited market knowledge and resources among, inter alia. Blocking demand and healthy competition this way, we believe, does not strengthen market development but could put it in jeopardy, particularly for local actors trying to educate consumers in such markets.

CDP

CDP (formerly the Carbon Disclosure Project) is a global non-profit organization whose stated goal is to encourage and facilitate the disclosure of environmental data by companies, cities, and other entities, including efforts related to renewable energy. Through its Climate Change Questionnaire and other reporting tools, CDP seeks to increase transparency in corporate environmental impacts. It also provides a standardised framework for measuring and reporting renewable energy use and greenhouse gas emissions. CDP updates their criteria yearly but there is no regular public consultation on the criteria. When CDP forms working groups, they are announced here: CDP External Stakeholder Working Groups - CDP.

CDP states that it works to encourage leadership and disclosure efforts by large corporations, as well as small and medium enterprises (SMEs). Since SMEs account for around 90% of global business, CDP considers it crucial that they are equipped with the knowledge, tools and resources required to commit to and accelerate climate action. For this reason, CDP rolled out a dedicated SME corporate questionnaire in 2024. RECS sees this as a positive step as we believe that corporate disclosure and reporting should be accessible to all organisations.

Like the GHGP, CDP also encourages dual reporting of Scope 2 emissions (see page 9) in locations where consumers have access to product or supplier-specific data and contractual instruments.

RE100

Launched in 2014, RE100 is a global initiative led by the Climate Group in partnership with CDP. RE100's stated aim is to accelerate the transition to a low-carbon economy by driving demand for renewable energy and influencing global policy and market development. RE100 has over 400 member companies and seeks to demonstrate that transitioning to renewable energy is both feasible and economically advantageous.

RE100 members commit to sourcing 100% renewable energy that is reliably tracked and not subject to double counting, with a target year typically set no later than 2050. By aggregating corporate demand, RE100 works to ensure that its member companies send a powerful signal to energy markets and policymakers in support of greater investment in renewable energy infrastructure and innovation.

To meet their goals, RE100 members employ strategies such as signing power purchase agreements (PPAs), purchasing Energy Attribute Certificates (EACs) like Guarantees of Origin, and investing directly in renewable energy projects.

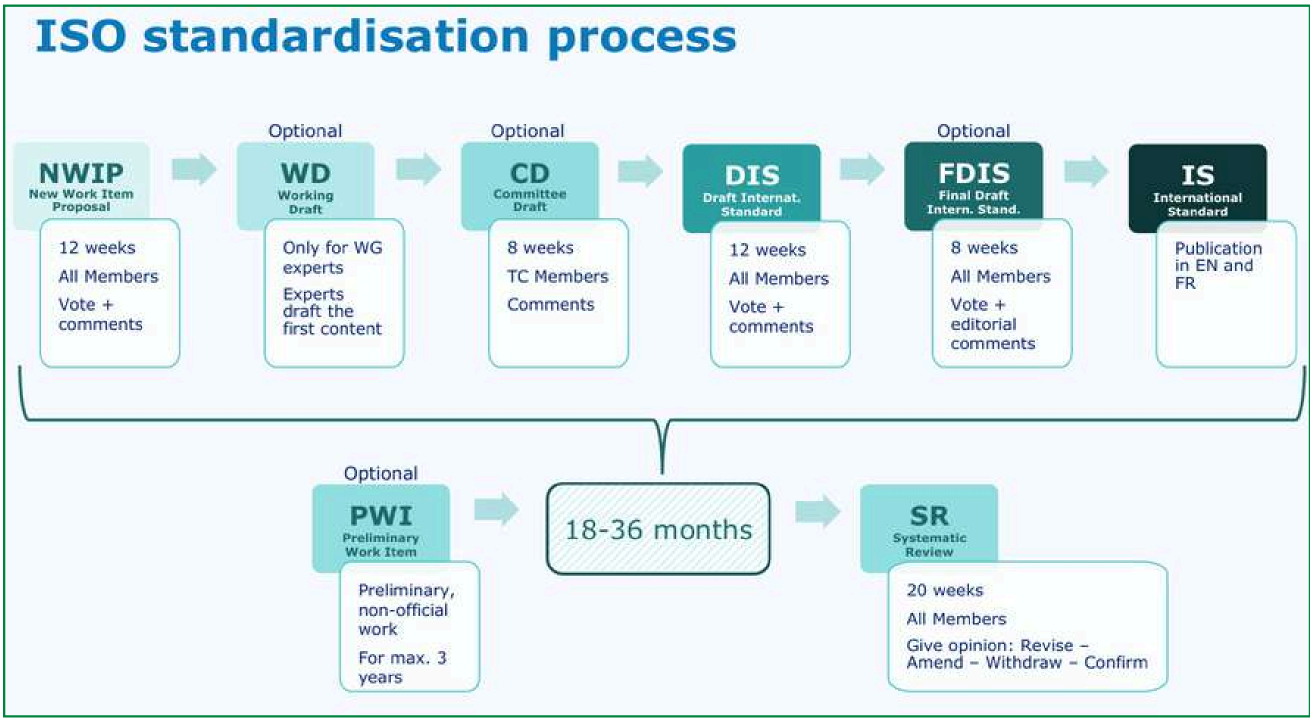
Through these efforts, RE100 members contribute to achieving global climate goals, including those outlined in the Paris Agreement, to significantly reduce greenhouse gas emissions associated with electricity use.

One of RE100's six Global Policy Messages calls for credible and transparent systems for issuing, tracking, and certifying competitively priced EACs. RECS responded an RE100 consultation in spring 2024 and called for the RE100 technical criteria to stop recognising claims about the use of renewable energy unless they are supported by cancellation of EACs. The RE100 update their technical criteria every 2 years.

International Standards Organisation (ISO) Standards

The International Organization for Standardisation (ISO) develops international standards through a structured process led by technical committees and working groups. Experts join these working groups through their national standardisation bodies. The process involves multiple stages designed to build consensus among national members. The diagram below illustrates the typical lifecycle of an ISO standard, highlighting the key steps and decision points involved in its development through to publication.

For timelines of the specific standards mentioned below, see Table 2 (p.31).



Source: Belgian National Standardisation Body NBN's presentation for national experts

There are several ISO standards relevant to sustainability reporting and climate-related disclosures. ISO 22095 defines terminology, models, and guidance for implementing chain of custody systems, while ISO 13659 focuses on the book-and-claim model used in Energy Attribute Certificate (EAC) tracking. ISO 14060-2 outlines a framework for organizations aligning with net zero goals. ISO 14064-1 specifies requirements for quantifying and reporting greenhouse gas emissions and removals at the organizational level, and ISO/TS 14064-4 provides technical guidance for applying ISO 14064-1. ISO 14077 extends chain of custody concepts to life cycle assessment. We provide further details on each of these standards below.

ISO 22095 Chain of custody – General terminology and models

A chain of custody is the documented trail that records the ownership, transfer and handling of a product, material, or document as it moves through each stage of its life cycle—from origin to final use. In ISO terminology, it is "process by which inputs and associated information are transferred, monitored and controlled as they move through each step in the relevant supply chain". In terms of energy attributes, chain of custody enables their secure transfer across different market actors or registries, carrying forward verified characteristics and thereby supporting credible, unique claims.

ISO 22095 set out to provide a universal framework for implementing and managing chain of custody systems across supply chains and is the 'mother' of subsequent ISO standards on each of the chains of custody. Its main stated objectives are to harmonise terminology, standardise requirements, and offer guidance on how the different chain of custody models work and when they should be used. Overall, the standard aims to enhance the transparency and reliability of claims about the use of materials or products.

ISO 22095 also defines various chain of custody models and provides initial guidance on selecting the most suitable model for specific circumstances. RECS participated in the interim amendment of this standard, and will also contribute to a full revision process that we expected to start in October 2025. RECS' contributions focus on ensuring that the standard supports the development of effective and efficient energy attribute tracking through book and claim certificate-based systems.

ISO 13659 Chain of Custody – Book and Claim – requirements and guidelines

This text sits under the "mother standard" ISO 22095. It provides a common methodology for the application of book and claim systems in value chains that utilise this model.

Book and claim is a chain of custody system used to track characteristics such as the renewable origin of energy, without linking them directly to the physical flow. Instead, these attributes are recorded and transferred separately, allowing the buyer to claim the environmental benefit–even though the actual energy they use comes from the general grid which cannot physically deliver that specific energy to them.

RECS participates in the development of this standard to represent the perspective of energy attribute tracking systems. RECS' contributions seek to ensure that the concepts and wording in the standard align with the realities of energy tracking in the real world. RECS is happy with the current version of the text, which is in Final Draft International Standard stage in August 2025.

ISO 14060-2 Net zero aligned organizations

This standard sets requirements for how organisations can develop and implement a net zero emissions strategy. It sets out how such organisations should make credible and verifiable progress towards contributing to global net zero in line with the Paris Agreement.

RECS has joined the working group developing this standard, which as of summer 2025 is halfway through a work programme that RECS expects to be finalised by the end of 2026. RECS' participation in the drafting of this standard focuses on advocating for the recognition of market-based instruments and EACs in the calculation of scope 2 emissions. However, RECS has faced opposition to this position from other working group participants.

The August 2025 consultation draft references contractual instruments and market-based mechanisms in interim renewable energy targets, but implies a strong preference for hourly matching tied to local grid consumption. It mentions contractual instruments only indirectly, with limited acknowledgement of their role—even in PPAs—and does not explicitly recognise as valid Scope 1 and 2 mitigation measures alongside options like energy efficiency or shifting demand away from fossil-heavy hours.

ISO 14064-1 Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

This standard provides guidance for quantification and reporting at the organisational level and serves as a normative reference for ISO 14060-2 on net zero-aligned organisations. RECS' main concern is that it would significantly limit the role of market-based accounting by making its use dependent on strict conditions such as hourly matching and physical deliverability.

This text is going to play an important role, as CEN (p.24) plans to adopt it as a CEN standard to be accepted as national standards in 34 CEN countries (more info on p.24), and aligned with the GHGP Scopes 1-2-3 under the agreement to publish co-branded standards.

The 2018 version of this standard requires the use of the location-based method ("shall") for reporting emissions from electricity use. RECS is concerned that as of August 2025, the text would make the market-based method optional for GHG mitigation purposes while continuing to require the location-based method for GHG performance. The majority of experts in the working groups for ISO 14064-1 and ISO 14067 are in favour of defining two intended uses: "GHG performance" for attributional accounting and "GHG mitigation" for consequential accounting.

RECS became aware of this standard's revision in early 2025 and has been actively participating in the drafting since then. Given the broad disagreement on the role of market-based accounting and the current lack of representation, RECS has repeatedly called on RECS members and stakeholders to join this Working Group through their National Standardisation Bodies. This is essential to ensure the standard reflects real market practices and practical experience with renewable energy accounting, while shaping it in a way that encourages broad and effective use of market-based methods. Since direct participation in the GHGP TWGs is no longer possible for those not selected, the ISO process remains the only available channel for influence.

ISO/TS 14064-4 Greenhouse gases – Part 4: Guidance for the application of ISO 14064-1

ISO/TS 14064-4 is a Technical Specification under ISO 14064-1, providing guidance for its application. Unlike full ISO standards, which pass through all stages of the ISO development process and achieve broad consensus, a Technical Specification (TS) is a normative document issued to give guidance or requirements in areas where work is still in development or consensus is not yet sufficient for a full standard.

ISO/TS 14064-4 offers practical guidance for applying ISO 14064-1 to greenhouse gas inventories at the organizational level. It addresses the quantification and reporting of direct and indirect GHG emissions, outlining steps for establishing organizational boundaries using either a

control (financial or operational) or equity share approach, defining reporting boundaries by identifying relevant direct and indirect emissions, and selecting appropriate methodologies for quantification. The document also aims to promote transparency in reporting by advising on the disclosure of boundaries, methodologies, and uncertainties.

This Technical Specification was developed by the same ISO working group responsible for ISO 14064-1. Publication was initially expected in February 2025 but has been delayed on the ISO side. RECS is participating in the final ballot in September 2025, submitting comments to propose corrections to sections referring to the role of the market-based approach and the use of contractual instruments.

ISO 14077 Environmental management – Life cycle assessment – Requirements and guidelines for application of Chain of Custody (CoC) approaches

ISO 14077 provides guidance on applying different Chain of Custody models within Life Cycle Assessment (LCA) practices. It includes key definitions, calculation methods, and protocols to help LCA experts accurately integrate chain of custody into environmental assessments. The standard complements ISO 22095, supporting the consistent and transparent use of chain of custody in LCA.

The current draft of this standard does not support the use of book and claim or credit mass balance chain of custody models for LCA purposes. While not actively participating in the development process, RECS continues to monitor the standard's progress and its implications for the use of market-based mechanisms.

European Standards and Regulations

International standards developed by International Organization for Standardization (ISO) and European standards developed by European Committee for Standardization (CEN) serve different but complementary roles. ISO brings together national standardisation bodies from over 165 countries to develop globally recognised standards, while CEN includes 34 European standardisation organisations, all of which are also members of ISO. CEN and ISO frequently collaborate to avoid duplication and promote harmonisation between European and international standards. Meanwhile, the EECS Rules -maintained by the Association of Issuing Bodies (AIB)- are not formal standards but operational rules governing the issuance and tracking of energy attribute certificates in Europe.

EECS and European Standards

EN 16325 sets the standardised rules for GOs across Europe, while EECS provides the practical system and governance to implement and manage these rules on a European scale.

- EECS operationalizes EN 16325 by ensuring that certificates are issued, transferred, and cancelled uniformly across participating countries.
- EECS provides the operational structure and IT infrastructure to implement the standard in practice.
- The EN 16325 standard focuses on the foundational aspects of GOs, while EECS evolves to address new market needs.
- The AIB updates the EECS rules to remain consistent with changes in EN 16325 and EU legislation.

EECS (European Energy Certificate System) Rules

The EECS rules are a standardised framework developed by the Association of Issuing Bodies (AIB) which seeks to ensure the reliable, transparent, and consistent issuance, transfer, and cancellation of energy attribute certificates (EACs) across Europe. While AIB membership is voluntary, it is a requirement for all members to implement the EECS Rules within their national certificate systems. The framework provides a commonly accepted and reliable standard for managing EACs, enabling cross-border transfer in a standardised way. EECS' goal is to ensure efficiency and trust in the handling of EACs. AIB created the EECS in response to EU legislation introduced in 2001 and continues to serve as the practical framework for implementing Guarantees of Origin across Europe. Over time, EECS and EU law have evolved in a mutually reinforcing way.

Each AIB member operating under the EECS Rules must maintain a domain protocol– a formally

structured document that outlines how the EECS framework is applied within that country or region. The issuing body, which acts as the national issuing authority, drafts these protocols and the AIB membership decides on their approval at the General Meeting. Domain protocols define local procedures, rights, and responsibilities; translate national or regional rules into the EECS framework; support audits and compliance checks; and ensure operational clarity for a wide range of stakeholders, including government authorities, market participants, consumers, and the European Commission.

While the EN 16325 standard aims to ensure that GOs in all countries are reliable, the issuing bodies in EECS jointly agree on the details for efficient operation.

The EECS framework seeks to harmonise practices across Europe and ensure compatibility between national systems to makes it easier to trade energy certificates among AIB member countries. The EECS uses a standardised approach to energy tracking to:

- Avoid double counting across markets,
- Track energy accurately and transparently, and
- Align with EU legislation, such as the Renewable Energy Directive.

EU Renewable Energy Directives

The EU first legislated for the promotion of renewables in 2001, with the original Renewable Electricity Directive (2001/28/EC). This directive laid the foundation by requiring Member States to set indicative national targets, and introduced Guarantees of Origin (GOs) as a means to certify and track electricity produced from renewable sources. The European Institutions have updated this landmark law three times:

- The 2009 Renewable Energy Directive (RED-1) (2009/28/EC) explained the basic regulations behind the Guarantee of Origin system (Art.15).

- The 2018 RED-2 ((EU) 2018/2001) extended the scope of the GO system and added detail to the article on GOs (Art.19).

- The 2023 RED-3 ((EU) 2023/2413) amended the RED-2 by further extending GO schemes, allowing for greater granularity, and adding clarity on specific points. However, the RED-3 missed an opportunity to build on the success of the current GO scheme and ensure total transparency for energy consumers through full consumption disclosure.

To support the consistent implementation of these evolving legal requirements, CEN developed the European standard EN 16325. Originally published in 2013 and based on the EECS rules, it provided a technical foundation for the electronic issuance, transfer, and cancellation of GOs for electricity. Following the expansion of the GO framework under RED II and RED III, the standard underwent a major revision beginning in 2020-2025 and extended its scope to other energy carriers and better align with EU legislation.

For more in-depth explanation of the EU's renewable energy directives, become a RECS member and benefit from a full briefing, including detailed analysis of the RED-3 and our 10-point plan for the anticipated RED-4.

CEN EN 1632

> The European Committee for Standardisation (CEN, French: Comité Européen de Normalisation) is a public standards organisation whose mission is to foster European economy by development, maintenance and distribution of coherent sets of standards and rules. CEN's 34 national members, representing Member-States and accession countries, work together to develop these European Standards in various sectors.

EN 16325 is a European standard which aims to streamline renewable energy verification across CEN member countries. It provides the technical specifications and processes for issuing, transferring, and cancelling GOs for renewable energy to enable European energy markets to work toward climate neutrality goals.

The Renewable Energy Directive (RED II) requires Member States of the EU and countries in the European Economic Area (EEA) to adhere to the CEN standard EN 16325 to foster consistency and transparency in renewable energy tracking across Europe.

- EN 16325 was initially adopted in 2013. EN 16325:2013 focused on electricity and outlined requirements to prevent double counting, ensure traceability, and align with the broader objectives of the first Renewable Energy Directive (RED I).

- In 2015, an amendment was issued (EN 16325:2013+A1:2015) to integrate updates aligned with the EU Energy Efficiency Directive (2012/27/EU), further refining the standard.
- RED II expanded the scope of GOs beyond electricity to include renewable gases, hydrogen, and heating and cooling, and the standard is updated to reflect this and other market developments.

- The members of the Working Group that developed the standard are reviewing EU legislation adopted after December 2023 to identify any potential conflicts and will inform the project leadership in 2025. Discussions on the comments received during the final voting stage remain under consideration and will take earlier resolutions into account. This process may lead to an early revision of EN 16325, rather than waiting for the standard's scheduled five-year review.

The revised EN 16325 seeks to reduce differences between Member States to achieve the highest possible level of standardisation and harmonisation between national EAC systems to support the implementation of Guarantees of Origin (GOs) in a transparent and interoperable manner, and without creating new legal obligations or legislating through the standard itself. Requiring compliance with the CEN Standard through the REDII is a significant step. However, due to weak enforcement mechanisms, on its own it may not deliver a fully harmonised GO system. Further efforts are still necessary to bring Member State EAC schemes closer together.

European Green Claims Directive (GCD)

Green Claims Directive (GCD) aims to make green claims reliable, comparable, and verifiable across the EU, protect consumers from greenwashing, contribute to creating a circular and green EU economy by enabling consumers to make informed purchasing decisions, and help establish a level playing field when it comes to the environmental performance of products.

It is meant to act as a "safety net for all sectors where environmental claims or labels are unregulated at EU level. It does not aim to change existing or future sectoral rules."

The GCD as proposed by the Commission will not cover claims in sectors where current laws already ensure that regulated claims are reliable. This means that if other EU laws establish more specific rules on environmental claims for a particular sector or product category, such as the EU Ecolabel, energy efficiency label, or organic farming label, those rules will prevail over those in the GCD.

Article 1.2 outlines specific exemptions if existing legislation already covers the relevant claims. While this article does not mention GOs as proof of the origin of renewable energy, it does include a paragraph that allows for future exemptions if the EU adopts new legislation that provides sector-specific requirements for robust and reliable reporting. RECS believes that it could lead to higher demand for GOs, supporting evidence-based green claims. However, without explicit recognition of GOs, there remains a risk of confusion and misalignment with existing market-based practices.

In mid-2025, the future of the GCD became uncertain after the European Commission signalled its intention to withdraw the proposal, citing concerns about administrative burdens on businesses, particularly for micro-enterprises (Politico, Commission to kill EU anti-greenwashing rules). Observers considered the move unusual, and it drew widespread criticism. On July 18, 2025, Politico Pro reported that a coalition of organisations urged the Danish Presidency of the Council to reschedule trilogue negotiations, which the Council had cancelled in response to the Commission's announcement. In doing so, the coalition highlighted the Commission's own findings that 53% of green claims are vague, misleading, or unfounded, and 40% lack supporting evidence.

Although the Commission can initiate a withdrawal, both the European Parliament and the Council must formally approve it. By mid-2025, both institutions had already adopted their respective negotiating positions – Parliament in March and Council in June 2024 – and they had planned to begin trilogue negotiations before the Commission changed course.

At the time of writing, the long-term outcome of the GCD remains unresolved. While a formal withdrawal would represent a setback in the EU's efforts to regulate greenwashing, ongoing stakeholder pressure and the existence of institutional positions suggest that the topic may return in a revised or alternative legislative form.

Corporate Sustainability Reporting Directive (CSRD)

The CSRD aims to strengthen corporate accountability on sustainability and facilitate investor access to reliable ESG data by broadening the scope of the existing Non-Financial Reporting Directive (NFRD) 2014/95/EU. The proposed directive mandates comprehensive sustainability reporting for large companies (including non-EU parent companies) and publicly listed SMEs. The environmental disclosure requirement includes Scopes 1, 2, 3 as outlined in the GHG Protocol.

Omnibus I simplification package

In response to concerns over administrative complexity, the European Commission included the CSRD and the Corporate Sustainability Due Diligence Directive (CSDDD) in the Omnibus I simplification package—a broader initiative aimed at easing regulatory burdens while maintaining core policy objectives. The package proposes streamlined reporting obligations and adjusted timelines for implementation. The European Parliament, the Council, and the Commission could agree on a final policy package by late 2025 or early 2026, depending on the progress of interinstitutional discussions. In parallel, the Council has proposed delaying the due diligence obligations under the CSDDD by an additional year, to July 2028.

Meanwhile, EFRAG is revising the European Sustainability Reporting Standards (ESRS) to reduce the number of mandatory data points —potentially by up to 50%— and make the framework more proportionate and manageable for reporting companies. EFRAG expects to deliver its final recommendations within the same timeframe as the policy negotiations.
The legislative and technical processes could still change in both content and timelines, as part of the broader simplification effort.

The following table summarises the key elements of the Omnibus I simplification package, comparing the positions of the European Commission, European Parliament, and Council of the EU on proposed changes to the Corporate Sustainability Reporting Directive (CSRD) and the Corporate Sustainability Due Diligence Directive (CSDDD). It highlights differences in applicability thresholds, due diligence requirements, climate disclosure obligations, and the approach to reducing reporting burdens under the European Sustainability Reporting Standards (ESRS). This comparison reflects the state of negotiations as of mid-2025 and shows where the institutions must still align to finalise the legislative package.

Table 1: Omnibus I Package: Comparing Commission, Parliament, and Council Positions

Topic	European Commission Proposal (Feb 2025)	European Parliament Draft (June 2025)	Council Position (June 2025)
CSRD Applicability Threshold	Exempts companies with fewer than 1,000 employees.	Raises the threshold to 3,000 employees and €450 million in net turnover.	Keeps the 1,000-employee threshold, adds €450 million net turnover, and introduces a review clause.
CSDDD Applicability Threshold	Applies to EU companies with 1,000+ employees and €450 million global turnover; non-EU companies with €450 million turnover in the EU.	Same turnover threshold for non-EU companies, without an employee threshold.	Increases the threshold to 5,000 employees and €1.5 billion global turnover.
Value Chain Due Diligence	Limited to direct business partners; SMEs encouraged to adopt voluntary measures.	Allows companies to report "best efforts" instead of full value chain disclosures.	Maintains limitation to direct partners but shifts focus from entity- to risk-based due diligence using "reasonably available information." Expands scope if credible risks are identified beyond direct partners; adds a review clause.
Climate Transition Plans	Mandatory disclosure required.	Disclosure only if a plan already exists.	Shifts focus to implementation of actions, with guidance expected. Requirement postponed by two years.
Civil Liability & National Implementation	Member States may impose stricter rules ("gold-plating").	Prohibits gold-plating; requires EU-wide harmonisation.	Drops EU-wide harmonised liability regime.
ESRS Scope & Reporting Burden	Proposes modest reduction in reporting scope.	Introduces strict limits: Max. 100 mandatory and 50 voluntary data points.	Delegates to the Commission with instructions to: 1) reduce total datapoints, 2) prioritise quantitative metrics, and 3) clarify what is mandatory vs. voluntary.

Draft Delegated Regulation under the EU Battery Regulation on carbon footprint methodology

The EU Battery Regulation applies to all manufacturers, importers, and distributors placing electric vehicle (EV) and industrial batteries on the EU market. While no official figure exists, employment data suggests that between 5,000 and 10,000 companies could be affected. This delegated act will set out how the carbon footprint (CFP) of EV and industrial batteries must be calculated and disclosed. As the battery market expands in the context of e-mobility and energy storage, the methodology will influence product design, market access, and sustainability reporting.

RECS has been actively engaged in the legislative process. Together with RE-Source and other organisations, RECS co-signed a joint letter to the European Commission urging changes to the draft to ensure corporates can demonstrate energy decarbonisation through Power Purchase Agreements (PPAs) supported by Guarantees of Origin (GOs).

In RECS' formal response to the public consultation in April 2024, we focused on the electricity modelling provisions in the draft annex. Our submission noted that the proposed method – calculating grid electricity consumption using a national average– conflicts with existing EU energy tracking legislation, including the Renewable Energy Directive (RED) and the Internal Energy Market Directive (IEM), and with the European Sustainability Reporting Standards (ESRS) and related EU corporate disclosure frameworks. RECS highlighted that this approach could undermine the role of GOs and create inconsistencies with widely adopted international frameworks such as the Greenhouse Gas Protocol. The response recommended aligning the CFP methodology with existing EU law and market-based tracking systems to ensure coherence and avoid double counting of renewable energy.

Summary – Next steps

This paper has mapped the evolving landscape of corporate sustainability disclosure regulations and international standards, with a focus on scope 2 greenhouse gas accounting. It has outlined RECS' positions on key frameworks, including the GHG Protocol (GHGP), the International Standards Organisation (ISO), as well as disclosure and target-setting initiatives such as CDP, SBTi, and RE100, and the developing body of corporate disclosure regulations in Europe. We have highlighted the risk that differing objectives and fragmented approaches can undermine both the credibility and efficiency of sustainability reporting – and potentially discourage organisations from reporting altogether.

RECS advocates for greater harmonisation and mutual recognition between standards and regulations. We believe that the market-based approach, underpinned by Energy Attribute Certificates (EACs), must remain a central, credible, and internationally recognised method for scope 2 accounting.

> The frameworks are being written now – our presence at the table will decide whether they work for us or against us.

Without strong representation from the EAC industry in these processes, there is a risk that outdated criticisms and misconceptions will persist, weakening the role of market-based accounting in accelerating renewable energy adoption.

As of August 2025, RECS is actively engaged in multiple forums, contributing to consultations, ballots, and working groups across ISO standards and other processes such as the SBTi public consultation, as well as monitoring regulatory developments. We are advocating for consistent recognition of EACs, clarity in the application of market-based and location-based approaches, and the removal of barriers that limit effective disclosure.

To achieve these goals, we call on all RECS members and stakeholders to join their National Standardisation Body (NSB) and participate in the working groups. Broader participation will strengthen our industry's influence, help secure fair and consistent treatment of EACs across frameworks, and ensure that sustainability reporting remains a powerful driver of renewable energy uptake and climate action.

Table 2 Outline of ISO standards and timelines

ISO standard	Name	Responsible Committee and Working Group	Start date	Current stage	Project duration	Expected publication date	EAC relevance
ISO 14064-1	Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals	ISO/TC 207/SC 7/WG 4	2024-10-14	20.60 WG started working on the revision of the 2018 text, close of the first commenting period	36 Months	2027-10-14	High
ISO DTS* 14064-4	Greenhouse gases – Part 4: Guidance for the application of ISO 14064-1	ISO/TC 207/SC 7/WG 4	2023-02-01	50.20 FDIS** ballot initiated for approval	24 Months	Deadline exceeded: 2025-02-01	Medium
ISO 14067	Greenhouse gases – Carbon footprint of products –Requirements and guidelines for quantification	ISO/TC 207/SC 7/WG 8	2024-10-14	20.60 WG started working on the revision of the 2018 text, close of the first commenting period	36 Months	2027-10-14	Medium
ISO 14060-2	Net Zero Aligned Organizations	ISO/TC 207/SC 7/WG 18	2024-05-27	30.20 Committee Draft (CD***) initiated	36 Months	Target date: 2026-12-31 Limit date: 2027-05-27	Medium
ISO 14077	Environmental management – Life cycle assessment – Requirements and guidelines for application of Chain of Custody (CoC) approaches	ISO/TC 207/SC 5/WG 1	2024-09-30	20.60 Resolving comments. Awaiting WD**** approval for registration as CD	36 Months	2027-09-01	Low-Medium
ISO 13659	Chain of custody – Book and claim – Requirements and guidelines	ISO/TC 308/WG 2	2022-03-28	50.00 FDIS registered for formal approval	57 Months	2025-11-28	Low-Medium

*Draft Technical Specification (DTS) refers to a document for which there isn't yet sufficient consensus to be published a full International Standard, but the content is still technically mature and useful. It's faster to publish than a full standard and useful for rapidly changing or specialised fields.
**The Final Draft International Standard (FDIS) stage is only needed if technical changes are made in response to comments from the Draft International Standard (DIS) ballot, which is the formal enquiry stage where ISO member bodies provide feedback.
*** Committee Draft (CD) is the following stage after Working Draft, when the draft is considered mature enough for broader input. It is shared with the full Technical Committee (TC) and Subcommittee (SC) for comment and feedback.
**** Working Draft (WD) is the first formal draft of a proposed ISO standard. Typically reviewed internally by the working group (WG) responsible for drafting the standard

ISO Standard Development Stages Overview

Proposal Stage (20.xx)

- 20.00 – New Work Item Proposal (NWIP) registered
- 20.20 – Proposal under review
- 20.60 – Proposal approved
- 20.99 – Project approved and registered

Preparatory Stage (30.xx)

- 30.00 – Working Draft (WD) registered
- 30.99 – Working Draft finalized and ready for committee circulation

Enquiry Stage (40.xx)

- 40.00 – Draft International Standard (DIS) registered
- 40.20 – DIS under ballot (public enquiry and comments)
- 40.60 – Close of voting and comment period
- 40.92 – Full approval (positive ballot result)
- 40.99 – DIS approved and ready for next stage

Approval Stage (50.xx)

- 50.00 – Final Draft International Standard (FDIS) registered
- 50.20 – FDIS under ballot (final yes/no vote)
- 50.60 – Close of FDIS ballot
- 50.92 – FDIS approved
- 50.99 – Document ready for publication

Publication Stage (60.xx)

- 60.00 – International Standard officially published
- 60.60 – Standard confirmed (during systematic review)
- 60.99 – Standard withdrawn or replaced

Table 3 Outline of industry standards and timelines

Standard name	Status	Basis/framework	Led by	Responsible organisation / committee	Preference for a particular GHG accounting methodology	Reference to EACs	Approach to framework alignment
RE100	Version 5.0 revised on 24 March 2025. Reviewed periodically	Based on the GHG Protocol Corporate Standard market based scope 2 accounting guidance	CDP and the Climate Group.	RE100 Technical Advisory Group, with the approval of the RE100 Project Board	Dual reporting, market based.	Yes	GHGP
GHGP Scope 2 Guidance	Revision ongoing, public consultation of Phase 1* in Q4 2025. Final standard expected in Q4 2027	GHGP Scope 2 Guidance (2015)	WRI and WBCSD	Scope 2 Technical Working Group (TWG), GHGP Independent Standards Board	Previous reference to dual reporting is changing	Yes, with proposed restrictions on hourly matching and physical deliverability**	To be harmonised and co-branded with ISO 14064-1 and ISO/TS 14064-4
The Science Based Targets initiative (SBTi) Corporate Net Zero standard	Revision ongoing, consultation ended June 2025. NZS v2 Consultation Draft. Estimated publication in Q1 2026. Regular review cycle of 2-5 years.	First Corporate Net-Zero Standard was launched in 2021, targets to meet the goals of the Paris Agreement.	CDP, the United Nations Global Compact, the We Mean Business Coalition, WRI and WWF.	Five Expert Working Groups (EWGs), SBTi Technical Department	Location-based target accompanied by either a market-based or zero-carbon electricity target	Refers to "environmental" attribute certificates, geographical matching and zero carbon electricity***	ISO 14064-1, ISO/TS 14064-4, ISO 14060-2
CDP scoring methodology	Updated annually	Internal CDP framework, references GHGP	CDP	CDP	Dual reporting is incentivised, primarily based on market-based method	Yes	GHGP, rewards officially validated Science Based Targets
CDP corporate questionnaire	The questionnaire is updated annually, no regular external working group	First CDP corporate questionnaire February (2013), GHGP is referenced for dual reporting.	CDP	CDP	Promotes transparency through disclosure without prescribing a specific one.	Yes	Aligned with GHGP, TCFD recommendations, IFRS S2 standard. High degree of interoperability with ESRS E1, incentivizes Science Based Targets

*GHGP Scope 2 Guidance revision Phase 1 covers the improvement of location and market based accounting, role of project based, regional guidance and policy interaction
** The current draft of GHGP Scope 2 Guidance introduces restrictions to the use of EACs: Hourly matching for companies above a certain threshold (proposed: > 10 GWh), as well as temporal correlation and deliverability requirements for market based– reflecting flow of electricity on grids + metered or estimated hourly consumption data. Physical connection is added to the definition of Scope 2, and new definitions added for “matched” and “unmatched” consumption.
*** SBTi NZS has a confusing reference to “environmental” attribute certificates, including offsets, instead of Energy Attribute Certificates. The text mentions “zero carbon electricity targets” instead of renewable energy targets, and geographic matching – indirect mitigation with zero carbon electricity from other grids is mentioned as a time limited alternative.

About the authors

The RECS Secretariat produced this document with the support of RECS Members and the oversight of the RECS Board. The RECS Energy Certificate Association (RECS) is a non-profit foundation dedicated to tackling climate change by reducing emissions through an accelerated transition to renewable energy that is supported by consumer demand. We do this by fostering the development of existing and emerging Energy Attribute Certificate (EAC) markets, which are the foundation of trading renewable energy. With well over 100 members across the world, RECS is the leading industry association representing the users of EACs, from renewables producers, through traders, to consumers. RECS is dedicated to enhancing the knowledge, motivation, and confidence consumers need to buy 100% renewable energy

Annex: Extract from Hamburg Institut Relevance Assessment on EU Frameworks

RECS consulted with Hamburg Institut Research GmbH (HI) to develop an overview of GHG accounting requirements in EU regulatory frameworks and their relevance for Energy Attribute Certificates (EACs). This analysis supports RECS' work in assessing the impact of ongoing standardisation processes on EU legislation. Based on the specific context for RECS stakeholders, HI conducted a methodology-based relevance assessment to identify where strategic engagement would be most effective. The following annex presents an extracted version of HI's findings. RECS will make the full report available exclusively to RECS members.

GHG Accounting Requirements in EU legislation and relevance for EACs

With the EU Green Deal, GHG accounting is also becoming a binding regulatory requirement in the EU (Baehr et al. 2024). This means that, beyond voluntary or market-driven adoption, the accurate measurement and transparent disclosure of GHG emissions are increasingly becoming matters of compliance with binding legal frameworks. This also affects the question whether EACs are considered an integral and hence binding part of emission accounting within the EU legal framework.

The aim of the European Green Deal to achieve climate neutrality in the EU by 2050 is reflected in the evolving EU regulatory landscape, where GHG accounting is being systematically integrated into legislation. These frameworks are pushing organizations to adopt standardized methodologies for emissions accounting, thereby aligning environmental performance with financial and strategic decision-making in the EU. Figure 1 gives an overview of the EU regulatory instruments containing GHG accounting requirements respectively implications for GHG accounting.

In the context of EU regulatory instruments that prescribe GHG accounting, it is essential to examine which specific methodologies they reference for GHG accounting and what these imply for accounting for electricity-related emissions. A key distinction often made is between market-based and location-based approaches to GHG accounting. The choice of method has significant implications for whether EACs are required, permitted, or disregarded within the accounting standard. Depending on the regulatory requirements, the role of EACs in emission accounting can vary substantially, influencing both corporate reporting practices and compliance strategies. As shown in Figure 2, most of the EU regulatory instruments introduce their own GHG accounting methodologies (blue boxes) tailored for their specific regulatory scope, like e.g. CBAM, the EU Battery Regulation or the Delegated Acts (DAs) on GHG emission savings from RFNBO, RCF and low-carbon fuels. However, several EU regulations explicitly refer to established GHG accounting standards (green boxes) such as the GHG Protocol or the ISO framework. The ESRS E1 standard mandatory under the CSRD for example requires the GHG Protocol Scope 2 Guidance (2015 version) to be applied for calculating electricity emissions. Alternatively, the OEF can be applied, but also the ISO 14064-1:2018 may be used for accounting for electricity emissions given that the additional requirements from ESRS E1, such as the dual reporting requirement, are fulfilled. The EU Taxonomy recommends the use of the ISO framework (ISO 14064-1 and ISO 14067) as well as the EU OEF/PEF methodology.

Figure A1: Overview of EU regulatory framework imposing GHG accounting requirements

When reviewing how EU rules reference GHG accounting standards, it's key to distinguish between explicit and general references. Some instruments –such as ESRS E1– cite specific versions (e.g. GHG Protocol Scope 2 Guidance 2015, EN ISO 14064-1:2018, EU OEF 2021). In these cases, later updates do not apply unless the regulation is amended, so practitioners must use the cited versions to stay compliant. Others–like the EU Taxonomy–refer more generally (e.g. ISO 14064-1, ISO 14067), offering flexibility but also uncertainty about which updates are valid. Stakeholders therefore need to track both regulatory changes and standard revisions to understand their interplay in practice.

The way electricity-related emissions are accounted for in these standards and methodologies plays a crucial role in determining whether EACs are to be used to demonstrate the use of renewable energy and reduce reported emissions in the context of EU regulatory instruments. A central distinction here lies in whether a standard or methodology requires the application of the location-based or market-based approach (or the application of both approaches in a dual reporting context). While the location-based method uses average grid emission factors, the market-based method allows organizations to report emissions based on contractual instruments like EACs and Power Purchase Agreements (PPAs), provided they meet specific quality criteria. Table 1 provides an overview of key accounting standards and methodologies referenced in EU regulations. It outlines their respective rules for electricity accounting, the relevance of EACs, and the regulatory instruments in which they are applied or referenced:

Furthermore, it highlights the diversity and complexity of electricity accounting rules across EU climate and sustainability legislation. It also underscores the importance of understanding which methodology is mandated or permitted in each context, as this directly influences the role and acceptance of EACs in the EU legislative GHG accounting landscape. Several of the referenced standards and regulatory methodologies are currently under revision or still in development (marked with *), which may open up opportunities to strengthen the role of EACs or to clarify their application.

Figure A2: Referenced standards/methodologies to account for GHG emissions under EU regulatory instruments

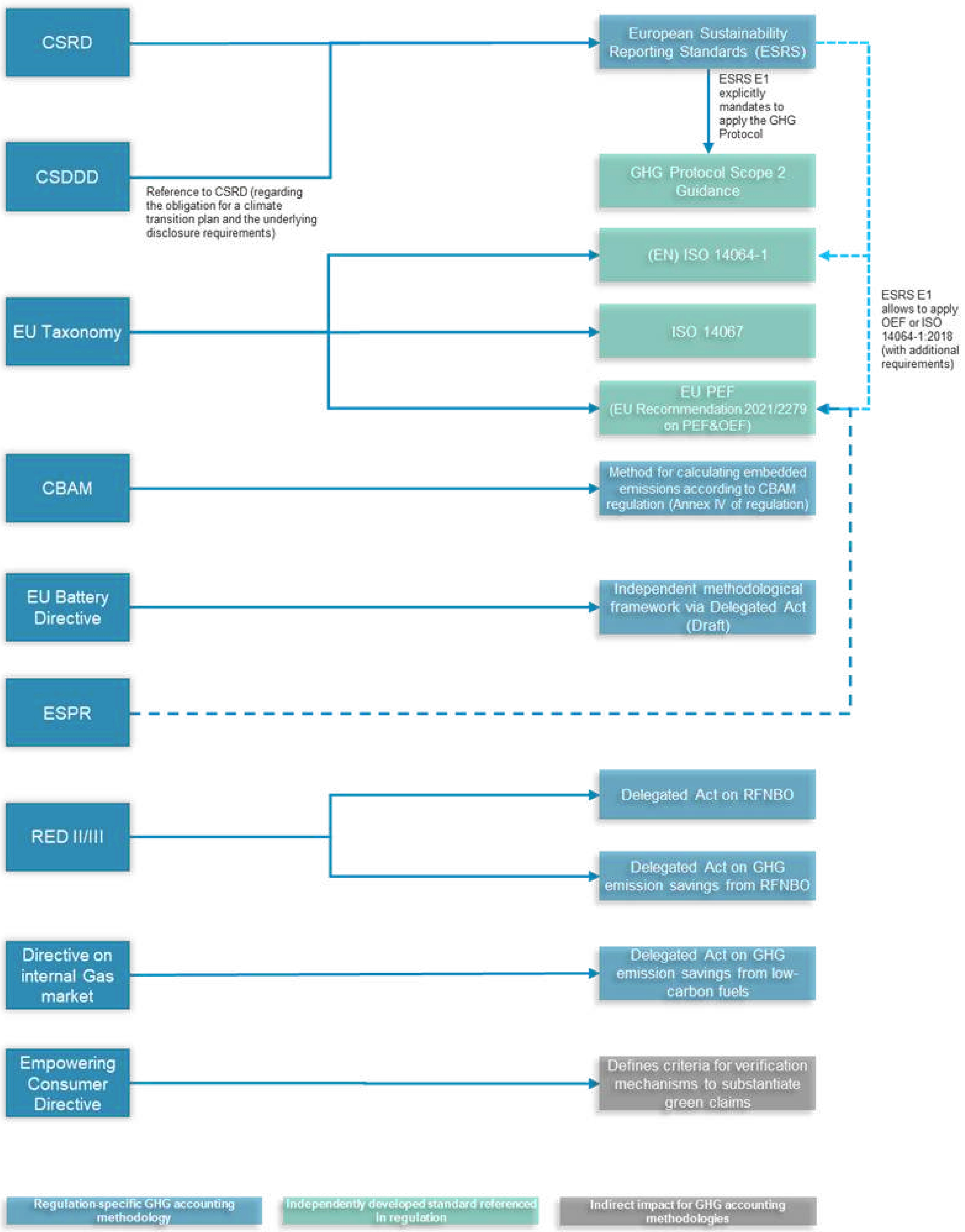


Table A1: Electricity Accounting Requirements in GHG accounting rules referenced in EU legislation

Accounting standard / methodology	Rules for electricity accounting and relevance of EACs	Regulatory relevance
ESRS E1 – Climate Change*	As per ESRS E1 in terms of Scope 2 emissions, dual reporting following both location- and market-based accounting approaches is required in accordance with the GHG Protocol Scope 2 Guidance. The latter necessitates the use of EACs or equivalent instruments, referencing the GHG Protocol Scope 2 Guidance and its criteria for contractual instruments as well as the EN ISO 14064-1:2018 criteria for contractual instruments. Newly established SME-Standards differ	CSRD
GHG Protocol Scope 2 Guidance*	The GHG Protocol Scope 2 Guidance requires dual reporting of emissions from purchased electricity. For the market-based approach quality criteria for contractual instruments are defined. EACs and PPA are defined as contractual instrument eligible under the market-based accounting approach.	ESRS (CSRD)
ISO 10464-1:2018 – Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*	As per ISO 14064-1:2018 a location-based approach shall be applied, meaning that grid-average emission factors shall be used. A market-based approach may be used. Criteria for market- and location-based approaches are defined. EACs and PPA are defined as contractual instruments eligible under the market-based accounting approach. However, the location-based approach is the predominant accounting approach in the context of ISO 14064-1.	EU Taxonomy, ESRS (CSRD)
ISO 14067:2018 Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification*	ISO 14067:2018 establishes a hierarchy of emission factors that must be followed, with a clear preference for the market-based approach. It defines criteria for market-based instruments, and explicitly recognizes EACs as eligible contractual instruments under this approach. ISO 14067:2018 differs significantly from ISO 14064-1 in their approaches to electricity accounting. While ISO 14064-1: 2018 prefers the location-based approach, ISO 14067:2018 promotes the market-based approach. This lack of alignment is especially relevant for stakeholders working across both product and organizational reporting, as it may lead to inconsistencies or require separate accounting strategies depending on the regulatory or voluntary framework applied. In the context of ongoing revisions, there are discussions within the ISO framework about harmonizing these standards, but it remains unclear which standard will take precedence, or which methodological direction will be adopted.	EU Taxonomy

EU PEF/OEF – Product/Organizational Environmental Footprint*	The EU PEF/OEF methodology requires a market-based approach for accounting for emissions from electricity. Contractual instruments or the country/EU residual mix should be used. The rules are tailored to the EU context and the EU Guarantees of Origin system. Hence, it explicitly recognizes EACs within its accounting requirements.	ESPR, EU Taxonomy, ESRS (CSRD)
CBAM Methodology (Annex IV of regulation)*	The CBAM Methodology refers to location-based default values; a PPA may be used as an alternative. No specific criteria for verifying PPAs are defined. The use of EACs to verify PPAs is not explicitly required, however, they could serve as a verification instrument in this case.	CBAM
Draft Delegated Regulation under the EU Battery Regulation on carbon footprint methodology*	As per the draft methodology, electricity emissions shall be accounted using a location-based approach. The national average electricity consumption mix shall be applied. The application of a market-based approach and hence, the use of EACs are not considered within the methodology.	EU Battery Directive
Delegated Act on Renewable Fuels of Non-Biological Origin	The RFNBO DA does not define GHG emissions from electricity use, but rather sets the conditions under which grid electricity can be considered renewable for RFNBO production. These include additionality, temporal and geographical correlation. Importantly, the use of EACs is not prescribed as a means of demonstrating compliance with these criteria, even though such certificates could potentially serve as a suitable verification instrument.	RED II/III
Delegated Act on emission savings from RFNBO und RCF	When calculating emissions under the DA on GHG emission savings from RFNBO and RCF, electricity amounts that meet the RFNBO criteria can be accounted for with zero emissions. For electricity that does not qualify as renewable under the RFNBO DA, one of three methods (location-based) must be used to assign emissions: (a) applying location-based default values defined in the regulation, (b) using a full-load-hour threshold to determine whether zero or default emissions apply, or (c) applying the actual GHG emissions value of the marginal power plant at the time of fuel production, provided this data is publicly available from the national transmission system operator. EACs do not play a role in this methodology. Their absence reflects the regulation's focus on system-level and time-specific verification approaches rather than market-based instruments.	RED II/III

Delegated Act on GHG emission savings from low-carbon fuels	When calculating emissions under the DA on GHG emission savings from low-carbon fuels, electricity amounts that meet the RFNBO criteria can be accounted for with zero emissions. For electricity that does not qualify as renewable under the RFNBO DA, one of four methods (location-based) must be used to assign emissions: (a) a fixed annual average emission value provided in the regulation, (b) hourly average emissions based on day-ahead forecasts from the national transmission system operator (TSO), (c) a full-load-hour approach, assigning zero emissions if operation remains within a defined threshold, otherwise applying a default value, or (d) real-time marginal emissions, if such data is published by the national TSO. EACs are not referenced in this methodology. Their absence reflects the regulation's emphasis on system-level, time-specific emission data rather than market-based instruments for verifying electricity-related emissions.	Directive on the internal markets for renewable and natural gases and hydrogen

Relevance Assessment

In the relevance assessment, not all criteria contribute equally to the decision of whether engagement in a standard revision process is assessed as meaningful. Some criteria exert a stronger influence on this decision and are therefore weighed more heavily (see Annex). Specifically, the estimated scale and volume of market impact and level of market relevance, the openness to stakeholder contributions as well as the potential to shape market practice are considered particularly decisive, as they directly affect both the strategic importance and the feasibility of engagement. These criteria are assigned double weight in the evaluation. In contrast, the criterion reference to other standards is weighed only half, as it serves primarily an informative function. While it may indicate thematic overlaps or alternative frameworks, it does not substantially influence the core question of whether engagement should be pursued. Instead, it helps contextualize the standard within the broader landscape and may inform timing or complementary engagement opportunities.

Criteria for relevance assessment

Critera	Description	Response Type
Addressed sectors	Assesses which industry sectors are targeted by the standard. This includes determining whether the standard is tailored to specific sectors, applicable across multiple sectors, or designed as general guidance.	Sector-Specific, Cross-Sectoral, General Guidance
Estimated scale and volume of market impact	Estimates the potential reach and influence of the standard across markets. This involves evaluating how many organizations, installations, or market segments are likely to be affected. Where quantification is not possible, qualitative judgment is applied.	High, Medium, Low, Unknown / Not Quantified
Level of market relevance	Evaluates the degree to which the standard is recognized, adopted, or endorsed by industry stakeholders, including associations, companies, and regulatory bodies. This reflects the practical uptake and credibility of the standard in the market, which is essential for assessing its influence and legitimacy.	High, Medium, Low
Standard is currently* under revision	Indicates whether the standard is undergoing a revision process. This includes identifying the scope of the revision (major or minor) and whether updates are expected to significantly alter its content or applicability. Standards under revision may present opportunities for stakeholder engagement and influence.	Yes - major revisions, Yes - minor revision, No, Unknown
Regulatory obligation to comply with the standard	Determines whether compliance with the standard is mandated by law or regulation. This includes distinguishing between mandatory requirements, voluntary standards with strong incentives (e.g. linked to other reporting obligations or public/stakeholder requirements), purely voluntary frameworks, and those not applicable in the regulatory context.	Mandatory, Voluntary with strong incentives, Voluntary, Not applicable
Reference to other standards	Examines the extent to which the standard is connected to other existing standards. This includes explicit references, methodological dependencies, or alignment with broader frameworks. Understanding these linkages helps map the standard's position within the wider ecosystem and assess its coherence and interoperability.	Based on other standard, Mentions other standard; No reference

Openness to stakeholder contributions*	Assesses the accessibility and transparency of the standard's development or revision process. This includes whether public consultation is part of the process, participation is open to all interested parties and whether it is subject to fees or application procedures. The level of openness determines the feasibility of RECS's engagement and potential influence.	Open to all interested participants (potentially limited by industry type), no participation fees; Open to all interested participants (potentially limited by industry type), with participation fees; Limited access (application process), with public consultation; Limited access (application process), without public consultation; Closed process, with public consultation; Closed process, without public consultation
Potential to shape market practice	Evaluates the extent to which the standard has the capacity to influence, guide, or transform existing market practices. This includes assessing its normative strength, adoption potential, and ability to drive behavioral or procedural changes within industry.	Strong influence, Moderate influence, Limited influence, Unclear

**The criterion 'openness to stakeholder contributions' is assessed only for standards or methodologies that are still open to stakeholder input as of 1st of September or later.*

Table A2: Comparative Scoring Results of Relevance Assessment of GHG Accounting Methodologies referenced in EU Legislation, own representation Hamburg Institut 2025

Highest score possible: 57,5	ESRS E1 – Climate Change	GHG Protocol Scope 2 Guidance	ISO 10464-1 – Greenhouse gases at the organization level	ISO 14067 – Carbon footprint of products	EU PEF/OEF – Product/Organizational Environmental Footprint	CBAM Methodology (Annex IV of regulation)	Draft Delegated Regulation under the EU Battery Regulation on carbon footprint	Delegated Act on Renewable Fuels of Non-Biological Origin	Delegated Act on emission savings from Renewable Fuels of Non-Biological Origin	Delegated Act on GHG emission savings from low-carbon fuels	CDP - Carbon Disclosure Project	SBTi - Science Based Targets initiative
Total score	45,5	49	48,25	49,5	27,5	n.a.	32,25	n.a.	n.a.	n.a.	27	n.a.
Addressed sector	5	5	5	5	5	3	1	1	1	1	5	5
Estimated scale and volume of market impact	6	10	10	6	6	10	6	2	2	2	10	6
Level of market relevance	10	10	6	10	2	2	10	10	10	10	6	6
Regulatory obligation to comply with the standard	5	3	3	3	1	5	5	5	5	5	3	3
Reference to other standards	2,5	0	1,25	2,5	2,5	0	1,25	0	0	0	0	2,5
Standard is currently under revision	5	5	5	5	5	5	1	0	0	0	3	5
Openness to stakeholder contributions*	10	6	8	8	6	n.a.	2	n.a.	n.a.	n.a.	0	n.a.
Potential to shape market practice	2	10	10	10	0	6	6	2	2	2	0	0

*The criterion 'openness to stakeholder contributions' is assessed only for standards or methodologies that are still open to stakeholder input as of 1st of September or later. If a standard is not open for contributions, either because it is closed for revision or falls outside the defined assessment period, the criterion is marked as 'not applicable' (n.a.). In such cases, the overall assessment is also set to n.a., as it is not possible to make a meaningful contribution at the moment.

Table A3: Comparative Results of Relevance Assessment of GHG Accounting Methodologies referenced in EU Legislation, own representation Hamburg Institut 2025

	Climate Change	Scope 2 Guidance	Greenhouse gases at the organization level	Carbon footprint of products	Product/Organizational Environmental Footprint	Methodology (Annex IV of regulation)	Delegated Regulation under the EU Battery Regulation on carbon	on Renewable Fuels of Non-Biological Origin	on emission savings from Renewable Fuels of Non-Biological Origin	on GHG emission savings from low-carbon fuels	Disclosure Project	Based Targets initiative
Addressed sector	General Guidance	General Guidance	General Guidance	General Guidance	General Guidance	Cross-Sectoral	Sector-Specific	Sector-Specific	Sector-Specific	Sector-Specific	General Guidance	General Guidance
Estimated scale and volume of market impact	Medium	High	High	Medium	Medium	High	Medium	Low	Low	Low	High	Medium
Level of market relevance	High	High	Medium	High	Low	Low	High	High	High	High	Medium	Medium
Regulatory obligation to comply with the standard	Mandatory	Voluntary with strong incentives	Voluntary with strong incentives	Voluntary with strong incentives	Voluntary	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Voluntary with strong incentives	Voluntary with strong incentives
Reference to other standards	Based on other standard	No reference	Mentions other standard	Based on other standard	Based on other standard	No reference	Mentions other standard	No reference	No reference	No reference	No reference	Based on other standard
Standard is currently under revision	Yes - major revisions	Yes - major revisions	Yes - major revisions	Yes - major revisions	Yes - major revisions	Yes - major revisions	Unknown	No	No	No	yes - minor revisions	Yes - major revisions
Openness to stakeholder contributions*	Open to all interested participants (potentially limited by industry type), no participation fees	Limited access (application process), with public consultation	Open to all interested participants (potentially limited by industry type), with participation fees	Open to all interested participants (potentially limited by industry type), with participation fees	Limited access (application process), with public consultation	Not applicable	Closed process, with public consultation	Not applicable	Not applicable	Not applicable	Closed process, without public consultation	Not applicable
Potential to shape market practice	Limited influence	Strong influence	Strong influence	Strong influence	Unclear	Moderate influence	Moderate influence	Limited influence	Limited influence	Limited influence	Unclear	Unclear

*The criterion 'openness to stakeholder contributions' is assessed only for standards or methodologies that are still open to stakeholder input as of 1st of September or later.