Overview of GHG Protocol Integration in Mandatory Climate Disclosure Rules
Revised October 2024

A key goal of Greenhouse Gas (GHG) Protocol's update process for its corporate suite of standards is ensuring alignment with mandatory climate disclosure rules that have been implemented or are under development. *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004),* referred to here as the Corporate Standard (2004), is designed to be policy and program neutral such that relevant parts of the standard can be adopted by policymakers and architects of GHG programs. In recent years there have been significant developments in the policy and regulatory environment mandating organizations to disclose their GHG emissions. This resource provides an overview of four major climate-related disclosure rules that are either in effect or are under development that integrate GHG Protocol standards and guidance:

- IFRS S2 Climate-related Disclosures issued by the International Sustainability Standards Board (ISSB) – *In effect as of January 1, 2024*
- European Sustainability Reporting Standards (ESRS) mandated by the European Union Corporate Sustainability Reporting Directive (CSRD) – *In effect as of January 1, 2024*
- The Enhancement and Standardization of Climate-Related Disclosures for Investors Rule adopted by the United States Securities and Exchange Commission (U.S. SEC) – *Under judicial review as of April 4, 2024*
- Climate Corporate Data Accountability Act (SB 253) and amendment (SB 219) enacted by the California State Legislature for regulatory development by the California Air Resources Board (CARB) – *Pending judicial review and subject to forthcoming regulatory development by July 1, 2025*

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Summary of Alignments and Differences Between GHG Protocol and Climate Disclosure Mandates

Standard	Design objectives	Requirement to use GHG Protocol	Organizational Boundaries	Operational Boundaries	Scope 2	Scope 3	Land Sector and Removals
GHG Protocol Corporate Standard (2004)	Designed to be program or policy neutral to support multiple reporting objectives and audiences	-	Choice among operational control, financial control, or equity share	Scope 1 and 2	Dual reporting of location-based and market-based required	Scope 3 reporting optional in Corporate Standard (2004); 15 categories required in Scope 3 Standard (2011)	Biogenic emissions and GHG removals reported separately from scopes
IFRS S2 (ISSB)	Designed to meet investor needs	Requirement to use GHG Protocol, unless required by jurisdictional authority or exchange on which it is listed to use a different method[1]	Choice among operational control, financial control, or equity share	Scope 1, 2, and 3	1. Location-based 2. Disclosure of information about contractual instruments that could inform users' understanding of the entity's scope 2 GHG emissions (might include information about market-based scope 2 GHG emissions as part of this disclosure).	Scope 3 GHG emissions information required if that information is material, using IFRS S2 measurement framework, and with consideration of the categories found in the Scope 3 Standard (2011)	When information is material, reported separately from the scopes
ESRS E1 (EU CSRD)	Designed to convey material impacts on people and environment	Option between GHG Protocol and ISO 14064: 2018.	Operational control approach required	Scope 1, 2, and 3	Dual reporting required	Significant scope 3 emissions required; 15 categories with one optional sub-category	Biogenic emissions and GHG removals reported separately from scopes
U.S. SEC Rule	Designed to meet investor needs	The rules do not specify the protocol or standard that a registrant must use to report GHG emissions	The rules do not specify how a registrant must set its organizational boundaries	Scope 1 and/or 2 emissions that are deemed material to investors and if the registrant is a large accelerated filer or an accelerated filer that is not an emerging growth company or smaller reporting company	The rules do not specify the protocol or standard that a registrant must use to report its scope 2 GHG emissions	Scope 3 emissions not required	Not mentioned
CA SB 253 and SB 219	Designed to inform investors, empower consumers, and activate companies	Requirement to use GHG Protocol	TBD	Scope 1, 2, and 3 (subject to changes)	TBD	TBD	TBD

[1] To avoid conflicts in disclosure requirements, IFRS S2 states that the GHG Protocol is used to the extent it does not conflict with IFRS S2.

A. IFRS S2 Climate-related Disclosures

A.1. IFRS S2 Overview

The International Sustainability Standards Board (ISSB) is a standard-setting body established under the IFRS Foundation to develop sustainability-related financial reporting standards to meet investors' needs. In June 2023, the ISSB issued IFRS S1 (General Requirements for Disclosure of Sustainability-related Financial Information) and IFRS S2 (Climate-related Disclosures). IFRS S1 is the core framework for the disclosure of financially material information about sustainability-related risks and opportunities across an entity's value chain. IFRS S2 is a thematic standard that sets out requirements for entities to disclose information about climate-related risks and opportunities. This overview focuses solely on IFRS S2 because of the reference and utilization of GHG Protocol standards.

IFRS Sustainability Standards are being mandated by jurisdictions around the world. For example, IFRS S2 is being adopted into regulatory frameworks in Turkey, Nigeria and Sri Lanka, Brazil, Costa Rica, Singapore and Australia while other governments have expressed intention to make IFRS S2 mandatory, including Canada, Japan and the United Kingdom, among others. The effective date of IFRS S2 is on or after January 1, 2024 with jurisdictional application depending on jurisdictional requirements.

Table A1. IRFS S2 Overview

Program	International Financial Reporting Standards (IFRS) Foundation International Sustainability Standards Board (ISSB)
Standard Name	IFRS S2 Climate-Related Disclosures
Disclosure Type	Mandatory when required by jurisdiction May also be applied voluntarily
Objective	To develop a comprehensive global baseline of sustainability reporting standards for consistent, comparable and high-quality sustainability reporting designed to meet investor needs
Impact	Estimated 100,000-130,000 companies globally in countries such as Japan, Canada, and Australia (Reuters)
Effective Date	January 1, 2024

A.2. IFRS S2 Direct Reference of the GHG Protocol

The Corporate Standard (2004) is directly referenced and required to be used to measure GHG emissions in IFRS S2, with application to the extent that the Corporate Standard (2004) does not conflict with the requirements in IFRS S2 (such as the requirements to consider all 15 categories of scope 3 GHG emissions and to report material information on scopes 1, 2 and 3). However, if an entity is required by a jurisdictional authority or an exchange on which it is listed to use a different method for measuring its GHG emissions, the entity is permitted to use this method rather than using the Corporate Standard (2004) for as long as the jurisdictional or exchange requirement applies to the entity. IFRS S2 requires the disclosure of the categories included within the entity's measure of scope 3 GHG emissions, in accordance with the scope 3 categories described in the *Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011),* referred to here as Scope 3 Standard (2011)[2].

The publication years of GHG Protocol standards are referenced in IFRS S2, meaning any updated versions of GHG Protocol standards must undergo review by the ISSB and publication consultation prior to being referenced in IFRS S2.

Table A2. IFRS S2 Direct Reference of GHG Protocol

Referenced GHG Protocol Standards	Greenhouse Gas Protocol: A Corporate and Accounting Reporting Standard (2004); Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011)
Other Allowable Disclosure Frameworks	The Corporate Standard (2004) is required to be used to measure GHG emissions, unless the reporting entity is required by a jurisdictional authority or an exchange on which it is listed to use a different method for measuring its GHG emissions.
Requirements to Transition to GHG Protocol	Transition relief in the first annual reporting period in which an entity applies IFRS S2. *"If, in the annual reporting period immediately preceding the date of initial application of IFRS S2, the entity used a method for measuring its greenhouse gas emissions other than the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004), the entity is permitted to continue using that other method in the first annual reporting period in which the entity applies IFRS S2" (IFRS S2, paragraph C4).*

A.3. IFRS S2 Organizational Boundaries

There is alignment between IFRS S2 and the Corporate Standard (2004) in requirements related to organizational boundaries: both allow for a choice in consolidation approach between equity share and control.

Table A3. IFRS S2 Organizational Boundaries

Category	GHG Protocol	IFRS S2	Differences
Organizational Boundaries	*"For corporate reporting, two distinct approaches can be used to consolidate GHG emissions: the equity share and the control approaches" (Corporate Standard (2004), pg. 17).*	*"When the entity discloses its greenhouse gas emissions measured in accordance with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004), the entity is required to use the equity share or control*	None

[2] IFRS S2 references the categories of this standard for all entities, including those that use the jurisdictional relief for measurement of GHG emissions, but does not require measurement in accordance with this standard.

Category	GHG Protocol	IFRS S2	Differences
		approach" (IFRS S2, paragraph B27).	

A.4. IFRS S2 Operational Boundaries

IFRS S2 requires the disclosure of scope 1, 2, and 3 emissions when that information is material, while the Corporate Standard (2004) allows for the option of reporting scope 3 emissions, unless also following the Scope 3 Standard (2011).

Table A4. IFRS S2 Operational Boundaries

Category	GHG Protocol	IFRS S2	Differences
Operational Boundaries	*"Companies shall separately account for and report on scopes 1 and 2 at a minimum" (Corporate Standard (2004), pg. 25).* *"Companies shall report scope 3 emissions following the requirements of the Scope 3 Standard" (Scope 3 Standard (2011), pg. 6).*	*"An entity shall disclose its absolute gross GHG emissions generation during the reporting period, expressed as metric tonnes of CO_2 equivalent classified as Scope 1 greenhouse gas emissions, Scope 2 greenhouse gas emissions, and Scope 3 greenhouse gas emissions" (IFRS S2, paragraph 29(a)(i)).* *"An entity shall disclose the categories included within the entity's measure of Scope 3 greenhouse gas emissions, in accordance with the Scope 3 categories described in the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011)" (IFRS S2, paragraph 29(a)(vi)(1)).*	IFRS S2 requires disclosure of scope 3 GHG emissions. This differs from the Corporate Standard (2004), though aligns with the the Scope 3 Standard (2011). IFRS S2 requires all entities to disclose the categories included within the entity's measure of scope 3 GHG emissions in accordance with the scope 3 categories described in the Scope 3 Standard (2011). IFRS S2 only references the categories of this standard and does not require measurement in accordance with this standard.

A.5. IFRS S2 Scope 2 Emissions

IFRS S2 and the Corporate Standard (2004) have differing requirements related to scope 2 emissions. IFRS S2 requires location-based reporting with requirements for separate disclosure of contractual instruments. The Corporate Standard (2004) requires reporting of both the location- and market-based methods.

Table A5. IFRS S2 Scope 2 Emissions

Category	GHG Protocol	IFRS S2	Differences
Dual Reporting	*"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'" (Scope 2 Guidance (2015), pg. 8)*	*"For Scope 2 greenhouse gas emissions, disclose its location-based Scope 2 greenhouse gas emissions, and provide information about any contractual instruments that is necessary to inform users' understanding of the entity's Scope 2 greenhouse gas emissions" (IFRS S2, paragraph 29(a)(v)).* *"Various types of contractual instruments are available in different markets and the entity might disclose information about its market-based Scope 2 greenhouse gas emissions as part of its disclosure" (IFRS S2, section paragraph B31).*	IFRS S2 requires disclosure of information about any contractual instruments that is necessary to inform users' understanding of the entity's scope 2 GHG emissions. The market-based method is not required under IFRS S2 but may be reported as part of an entity's disclosure.

A.6. IFRS S2 Scope 3 Emissions

IFRS S2 requires the disclosure of scope 3 emissions and requires disclosure of the categories included in this measurement using the categories outlined in the Scope 3 Standard (2011). The disclosure of categories is required of all entities even if they use the jurisdictional relief and thus measure emissions using an approach other than that in the Corporate Standard (2004). IFRS S2 also provides transition relief for entities in the first annual reporting period in which they apply IFRS S2, which would permit an entity to omit disclosure of its scope 3 GHG emissions in the first annual reporting period in which the entity applies IFRS S2.

Table A6. IFRS S2 Scope 3 Emissions

Category	**GHG Protocol**	**IFRS S2**	**Differences**
Scope 3 Emissions	*"Companies shall report scope 3 emissions following the requirements of the Scope 3 Standard" (Scope 3 Standard (2011), pg. 6).*	*"An entity shall disclose Scope 1, Scope 2, and Scope 3 emissions" (IFRS S2, paragraph 29(a)).* *"In the first annual reporting period in which an entity applies this Standard, an entity is not required to disclose its Scope 3 greenhouse gas emissions" (IFRS S2, paragraph C4(b)).*	IFRS S2 does not reference the Scope 3 Standard (2011) in relation to the measurement of scope 3 GHG emissions. IFRS S2 requires the use of its own scope 3 measurement framework to prioritize inputs and assumptions when measuring scope 3 GHG emissions. Furthermore, the optional provisions in the Scope 3 Standard (2011) are also not used to determine what is included in the measure of the entity's scope 3 GHG emissions—IFRS S2 requires that the determination of what scope 3 GHG emissions to include is based on relevance to an entity's value chain and materiality as required by ISSB Standards.
Scope 3 Categories	*"[There are] 15 categories that comprise scope 3 emissions. Companies are required to report scope 3 emissions by*	*"The entity shall consider its entire value chain (upstream and downstream) and shall consider all 15 categories of Scope 3*	IFRS S2 requires an entity to consider its entire value chain (upstream and downstream) and consider all 15 categories of scope 3

Category	GHG Protocol	IFRS S2	Differences
	scope 3 category. Any scope 3 activities not captured by the list of scope 3 categories may be reported separately" (Scope 3 Standard (2011), pg. 31).	*greenhouse gas emissions, as described in the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard" (IFRS S2, paragraph B32).*	GHG emissions, as described in the Scope 3 Standard (2011). An entity is required to disclose which of those categories are included in its scope 3 GHG emissions disclosures.

A.7. IFRS S2 Land Sector and Removals

While IFRS S2 does not explicitly mention reporting of biogenic emissions or GHG removals, they are required to be reported separately from the scopes if the information is deemed material. Information about these emissions might be required to be disclosed when using the Industry-based Standards on Implementing IFRS S2. In these cases, this is aligned with the Corporate Standard (2004) which requires disclosure of biogenic emissions and GHG removals outside of the GHG inventory.

B. European Sustainability Reporting Standards (ESRS 1, ESRS 2 and ESRS E1)

B.1. ESRS 1, ESRS 2 and ESRS E1 Overview

In the European Union, the Corporate Sustainability Reporting Directive (CSRD) requires companies to disclose sustainability information, covering environmental, social and governance topics. In July 2023 the European Union adopted as Delegated Act twelve European Sustainability Reporting Standards (ESRS). E1 Climate Change covers the topical disclosures and must be applied in conjunction with ESRS 1 General Requirements and ESRS 2 General Disclosures. ESRS E1 directly references and adopts the Corporate Standard (2004) and Scope 3 Standard (2011).

CSRD sets forth the ESRS to specify what information an undertaking organization shall disclose about its material impacts, risks, and opportunities in relation to sustainability matters. Materiality as defined in the ESRS refers to "double materiality," which includes both impact materiality and financial materiality. Impact materiality pertains to the undertaking's material actual or potential positive or negative impacts on people or the environment over short-, medium- and long-term time horizons. Financial materiality relates to any risks or opportunities that affect (or could reasonably be expected to affect) the undertaking's financial position, financial performance, cash flows, access to finance or cost of capital over the short, medium or long term.

CSRD is expected to affect approximately 50,000 companies that are not currently already reporting their environmental, social, and governance activities under the EU's Non-Financial

Reporting Directive (European Parliament, 2022). The scope of the CSRD will include EU subsidiaries of non-EU parent companies, including US companies and global multinational companies. The rule will begin to apply to organizations between 2024 and 2028 depending on company size, starting with the largest listed ones (over 500 employees) on January 1, 2024.

Table B1. ESRS E1 Overview

Program	Corporate Sustainability Reporting Directive (CSRD)
Standard Name	European Sustainability Reporting Standards (ESRS) General Requirements (ESRS 1) General Disclosures (ESRS 2) Climate Change (ESRS E1)
Disclosure Type	Mandatory for large companies in European Union
Objective	*"ESRS specify the information that an undertaking shall disclose about its material **impacts**, **risks** and **opportunities** in relation to environmental, social, and governance **sustainability matters.** […] The information disclosed in accordance with ESRS enables **users** of the **sustainability statement** to understand the undertaking's material impacts on people and environment and the material effects of sustainability matters on the undertaking's development, performance and position" (ESRS 1§2).*
Impact	Estimated 50,000 companies in EU and EU subsidiaries of non-EU parent companies, including US companies and global multinational companies
Effective Date	January 1, 2024 (or later depending on company size). More information on phase-in can be found in ESRS 1 Appendix C.

B.2. ESRS E1 Direct Reference of GHG Protocol

ESRS E1 has been written in order to produce disclosures that are aligned with the GHG Protocol and requires the use of the Corporate Standard (2004), including the Scope 2 Guidance (2015), the Scope 3 Standard (2011), Product Standard (2011), Agriculture Guidance (2014), and the Land use, Land-use Change, and Forestry Guidance for GHG Project Accounting (2006). The publication years of all GHG Protocol standards referenced in ESRS E1 are included, meaning any updated versions of GHG Protocol standards must undergo review by the European Commission in order to be adopted.

ESRS E1 requires the consideration of the principles, requirements and guidance of the GHG Protocol standard(s) and allows for the consideration of the requirements of ISO 14064-1:2018. However, if the entity chooses to use ISO 14064-1:2018, the entity shall comply with the requirements of ESRS E1, namely its alignment with the Scope 2 Guidance (2015) regarding the disclosure of market-based scope 2 GHG emissions.

Table B2. ESRS E1 Direct Reference of GHG Protocol

Referenced GHG Protocol Standards	Required: Greenhouse Gas Protocol: A Corporate and Accounting Reporting Standard (version 2004); GHG Protocol Scope 2 Guidance (version 2015); Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (version 2011) Considerations: Greenhouse Gas Protocol: A Corporate and Accounting Reporting Standard (version 2004); Product Standard (version 2011);

	Agriculture Guidance (version 2014); Land use, Land-use Change, and Forestry Guidance for GHG Project Accounting (version 2006)
Other Allowable Disclosure Frameworks	*"The undertaking may consider Commission Recommendation (EU) 2021/2279 or the requirements stipulated by EN ISO 14064- 1:2018. If the undertaking already applies the GHG accounting methodology of ISO 14064-1: 2018, it shall nevertheless comply with the requirements of this standard (e.g., regarding reporting boundaries and the disclosure of market-based Scope 2 GHG emissions)" (ESRS E1 §AR39(a)).*
Requirements to Transition to GHG Protocol	None, preparers are required to consider the principles, requirements and guidance provided by the GHG Protocol.
Cadence for Update	Not mentioned

B.3. ESRS 1 and E1 Organizational Boundaries

ESRS E1 requires the use of the financial control approach, while the Corporate Standard (2004) allows for choice between the equity share and the control approach. The amount of scope 1 and 2 GHG emissions of the group (ESRS E1 paragraph 50 a) is aligned with the amount resulting from the GHG Protocol under financial control. In addition, ESRS E1 requires undertaking organizations to include in scope 1 and scope 2 the GHG emissions of assets that are under operational control, but are not included in the consolidated financial statements, requiring these values to be reported separately (ESRS E1 paragraph 50 b), which is not a requirement in the Corporate Standard (2004).

Table B3. ESRS Organizational Boundaries

Category	**GHG Protocol**	**ESRS 1 and E1**	**Differences**
Control Approach	*"For corporate reporting, two distinct approaches can be used to consolidate GHG emissions: the equity share and the control approaches" (Corporate Standard (2004), pg. 17).*	ESRS 1, paragraph 62 states that *"The sustainability statement shall be for the same reporting undertaking as the financial statements" (ESRS E1 §62).* ESRS E1, paragraph 46 states that *"When disclosing the information on GHG emissions required under paragraph 44, the undertaking shall refer to ESRS 1 paragraphs from 62 to 67." and that the*	ESRS E1 requires the use of the financial control approach (the reporting undertaking, which is the consolidated accounting group), and in addition requires an extension of scope 1 and 2 reporting for assets under operational control that are not included in the consolidated financial statements.

Category	**GHG Protocol**	**ESRS 1 and E1**	**Differences**
		"undertaking shall include the GHG emissions in accordance with the extent of the undertaking's operational control over them" (ESRS E1 §44). ESRS E1, paragraph 50 further states that scope 1 and 2 emissions of the consolidated accounting group and assets not fully consolidated for which it has operational control, need to be disaggregated *(ESRS E1 §50).*	
Joint Ventures	The Corporate Standard (2004) does not describe any requirement to disaggregate emissions for consolidation accounting groups and investees.	*"For Scope 1 and Scope 2 emissions [...] the undertaking shall disaggregate the information, separately disclosing emissions from the consolidated accounting group (the parent and subsidiaries); and investees such as associates, joint ventures, or unconsolidated subsidiaries that are not fully consolidated in the financial statements of the consolidated*	ESRS E1 requires an extension of the reporting for joint ventures and other investees and contractual arrangements for which there is operational control.

Category	GHG Protocol	ESRS 1 and E1	Differences
		accounting group, as well as contractual arrangements that are joint arrangements not structured through an entity (i.e., jointly controlled operations and assets), for which it has operational control" (ESRS E1 §50).	

B.4. ESRS E1 Operational Boundaries

ESRS E1 requires scope 1, 2, and significant scope 3 emissions as operational boundaries whereas the Corporate Standard (2004) requires only scope 1 and 2 emissions. However, the Scope 3 Standard (2011), a separate standard from the Corporate Standard (2004), does require disclosure of scope 3 emissions in addition to the requirements of the Corporate Standard (2004).

Table B4. ESRS E1 Operational Boundaries

Category	GHG Protocol	ESRS E1	Differences
Operational Boundaries	*"Companies shall separately account for and report on scopes 1 and 2 at a minimum" (Corporate Standard (2004), pg. 25).* *"Companies shall report scope 3 emissions following the requirements of the Scope 3 Standard" (Scope 3 Standard (2011), pg. 6).* *"Requirements: A scope 1 and scope 2 emissions report in conformance with the GHG Protocol Corporate Standard; Total scope 3*	*"The undertaking shall disclose in metric tonnes of CO_2eq its: (a) gross Scope 1 GHG emissions; (b) gross Scope 2 GHG emissions; (c) gross Scope 3 GHG emissions; and (d) total GHG emissions" (ESRS E1 §44).*	ESRS E1 requires scope 3 reporting, which goes beyond the current requirements of the Corporate Standard (2004), but conforms with the requirements of the Scope 3 Standard (2011). The requirement to report total emissions across scopes 1, 2 and 3 as set forth by ESRS E1 diverges from the Scope 3 Standard (2011) which requires separate

Category	GHG Protocol	ESRS E1	Differences
	emission reported separately by scope 3 category" (Scope 3 Standard (2011), pg. 119).		reporting of scope 3 emissions by category and apart from scopes 1 and 2.

B.5. ESRS E1 Scope 2 Emissions

There are no differences between ESRS E1 and the GHG Protocol regarding scope 2 emissions. Both frameworks require dual reporting using both the location and market-based methods.

Table B5. ESRS E1 Scope 2 Emissions

Category	GHG Protocol	ESRS E1	Differences
Scope 2 Emissions	*"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'" (Scope 2 Guidance (2015), pg. 8).*	*"When preparing the information on gross Scope 2 GHG **emissions** required under paragraph 49, the undertaking shall:* *Consider the principles and requirements of the GHG Protocol Scope 2 Guidance (version 2015, in particular the Scope 2 quality criteria in chapter 7.1 relating to contractual instruments); it may also consider Commission Recommendation (EU) 2021/2279 or the relevant requirements for the quantification of **indirect GHG emissions** from imported energy in EN ISO 14064-1:2018" (ESRS E1 §AR 45 a).*	None

Category	GHG Protocol	ESRS E1	Differences
		"[...] apply the location-based and market-based methods to calculate Scope 2 GHG emissions and provide information on the share and types of contractual instruments" (ESRS E1 §AR 45 d).	

B.6. ESRS E1 Scope 3 Emissions

ESRS E1 requires the disclosure of significant scope 3 emissions in all 15 scope 3 categories outlined by the Scope 3 Standard (2011). ESRS 1 offers relief to smaller companies with fewer than 750 employees in the first reporting year.

Table B6. ESRS Scope 3 Emissions

Category	GHG Protocol	ESRS 1 and E1	Differences
Scope 3 Emissions	*"Companies shall report scope 3 emissions following the requirements of the Scope 3 Standard" (Scope 3 Standard (2011), pg. 6).*	*"When preparing the information on gross Scope 3 GHG emissions required under paragraph 51, the undertaking shall consider the principles and provisions of the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (Version 2011); and it may consider Commission Recommendation (EU) 2021/2279 or the relevant requirements for the quantification of indirect GHG emissions from EN ISO 14064-1:2018"*	The Scope 3 Standard (2011) requires all categories but allows exclusions with disclosure and justification for exclusion. ESRS E1 requires only significant scope 3 emissions disclosure without the requirement to disclose justification for omission.

Category	GHG Protocol	ESRS 1 and E1	Differences
		(ESRS E1 §AR 46 a). *"Undertakings or groups not exceeding on their balance sheet dates the average number of 750 employees during the financial year (on a consolidated basis where applicable) may omit the datapoints on scope 3 emissions and total GHG emissions for the first year of preparation of their sustainability statement" (ESRS 1 Appendix C).*	
Scope 3 Categories	*"[There are] 15 categories that comprise scope 3 emissions. Companies are required to report scope 3 emissions by scope 3 category. Any scope 3 activities not captured by the list of scope 3 categories may be reported separately" (Scope 3 Standard (2011), pg. 31).*	*"The undertaking shall screen its total Scope 3 GHG emissions based on the 15 Scope 3 categories identified by the GHG Protocol Corporate Standard and GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (Version 2011) using appropriate estimates" (ESRS E1 §AR 46 c).* *"The Scope 3 GHG emissions may also be presented by according to the indirect emission categories defined in*	ESRS E1 follows the same 15 categories as outlined in the Scope 3 Standard (2011) and adds an optional sub-category: Cloud computing and data center services.

Category	GHG Protocol	ESRS 1 and E1	Differences
		EN ISO 14064-1:2018" (ESRS E1 §AR 50).	

B.7. ESRS E1 Land Sector and Removals

There are no major differences between ESRS E1 and the Corporate Standard (2004) regarding the treatment of GHG removals and biogenic emissions. Both frameworks require GHG removals and biogenic emissions to be disclosed outside of the GHG inventory.

Table B7. ESRS Land Sector and Removals

Category	GHG Protocol	ESRS E1	Differences
GHG Removals	*"Information on sequestered carbon in the company's inventory boundary should be kept separate from project-based reductions at sources that are not in the inventory boundary. Where removal enhancement projects take place within a company's inventory boundary they would normally show up as an increase in carbon removals over time but can also be reported in optional information. However, they should also be identified separately to ensure that they are not double counted" (Corporate Standard (2004), pg. 89).* *"Any GHG removals (e.g., biological GHG sequestration) shall not be included in scope 3, but may be reported*	*"The disclosure on GHG removals and storage [...] shall include, if applicable: the total amount of GHG removals and storage in metric tons of CO_2eq disaggregated and separately disclosed for the amount related to the undertaking's own operations and its value chain, and broken down by removal activity" (ESRS E1 §58 a).*	None

Category	GHG Protocol	ESRS E1	Differences
	separately" (Scope 3 Standard (2011), pg. 60).		
Biogenic Emissions	*"Biogenic CO_2 emissions that occur in the reporting company's value chain shall not be included in the scopes, but shall be included and separately reported in the public report" (Scope 3 Standard (2011), pg. 60).*	*"Disclose biogenic emissions of CO_2 from the combustion or bio-degradation of biomass separately from the Scope 1 GHG emissions, but include emissions of other types of GHG" (ESRS E1 §AR 43 c).* *"Disclose biogenic emissions of CO_2 carbon from the combustion or biodegradation of biomass separately from the Scope 2 GHG emissions but include emissions of other types of GHG" (ESRS E1 §AR 45 e).* *"Disclose biogenic emissions of CO_2 from the combustion or biodegradation of biomass that occur in its upstream and downstream value chain separately from the gross Scope 3 GHG emissions, and include emissions of other types of GHG" (ESRS E1 §AR 46 j).*	None

C. U.S. SEC Rule: The Enhancement and Standardization of Climate-Related Disclosure for Investors

C.1. SEC Rule Overview

The United States Securities and Exchange Commission adopted The Enhancement and Standardization of Climate-Related Disclosures for Investors Rule (termed here, 'SEC Rule' to refer to the new rules and 'SEC Release' to refer to the Commission's adopting document), which will require companies publicly traded in the United States to disclose scope 1 and scope 2 emissions if the emissions are determined to be material to investors and if the companies are larger and more seasoned issuers (specifically, either large accelerated filers or accelerated filers that are not emerging growth companies or smaller reporting companies, as those terms are defined under U.S. securities laws). The rule was finalized on March 6, 2024, almost two years after the draft rule was proposed. In addition to scopes 1 and 2 emissions, the draft rule had required disclosure of scope 3 emissions if material, but the requirement to report scope 3 was not included in the final rule. On April 4, 2024, the Commission issued an Order that delayed the effective date of the Final Rules pending the completion of judicial review.

Table C1. SEC Rule Overview

Program	United States Securities and Exchange Commission (SEC)
Proposed Rule	The Enhancement and Standardization of Climate-Related Disclosures for Investors
Disclosure Type	Mandatory for companies publicly traded in the U.S.
Objective	To ensure that investors have access to consistent, comparable, and decision-useful information on the climate-related risks faced by public companies, and to encourage companies to inform their investment and voting decisions
Impact	Estimated 4,000 companies
Effective Date	The Final Rules were to become effective on May 28, 2024, with compliance dates phased in. On April 4, 2024, the Commission issued an Order that delayed the effective date of the Final Rules pending the completion of judicial review in consolidated proceedings in the Eighth Circuit. The Commission will publish a subsequent notice announcing the effective date of the Final Rules following the completion of judicial review.

C.2. SEC Rule Direct Reference of GHG Protocol

The SEC Rule provides registrants with the option to use the emissions accounting standards of their choice, including the GHG Protocol, without recommending a particular standard.

Table C2. SEC Release Direct Reference of GHG Protocol

Referenced GHG Protocol Standards	GHG Protocol: A Corporate and Accounting Reporting Standard (2004); GHG Protocol Scope 2 Guidance (2015)
Other Allowable Disclosure Frameworks	*"Registrants have flexibility to leverage standards of their choice in calculating and disclosing GHG emissions metrics required by the final rules, including the GHG Protocol or relevant ISO standards, or other standards that may be established over time" (SEC Release, pg. 245).*
Requirements to Transition to GHG Protocol	None

C.3. SEC Rule Organizational Boundaries

The SEC Rule provides registrants with the flexibility to choose the method for determining organizational boundary as long as it discloses the method it uses, and if the organizational boundaries materially differ from the scope of entities and operations included in the registrant's consolidated financial statements, the registrant must provide a brief explanation of this difference in sufficient detail for a reasonable investor to understand.

Table C3. SEC Rule Organizational Boundaries

Category	GHG Protocol	SEC	Differences
Organizational Boundaries	*"For corporate reporting, two distinct approaches can be used to consolidate GHG emissions: the equity share and the control approaches" ([Corporate Standard (2004), pg. 17](#)).*	*"A registrant will have flexibility to use, for example, one of the methods for determining control under the GHG Protocol, including the operational control approach, as recommended by some commenters, as long as it discloses the method used, and provides investors with information material to understanding the scope of entities and operations included in the GHG emissions calculation as compared to those included in its financial statements" ([SEC Release, pgs. 251-252](#)).*	The SEC Rule does not specify a particular method for determining the organizational boundaries.

C.4. SEC Rule Operational Boundaries

The SEC Rule only requires disclosure of scope 1 and scope 2 emissions if those emissions are deemed material, as defined in the table below.

Table C4. SEC Rule Operational Boundaries

Category	GHG Protocol	SEC	Differences
Operational Boundaries	*"Companies shall separately account for and report on scopes 1 and 2 at a minimum" ([Corporate Standard (2004), pg. 25](#)).* *"Companies shall report scope 3 emissions following the requirements of the Scope 3 Standard"*	*"The final rules will require the disclosure of Scope 1 emissions and/or Scope 2 emissions metrics by LAFs and AFs that are not SRCs or EGCs, on a phased in basis if such emissions are material" ([SEC Release, pgs. 244-245](#)).* *"As with other materiality determinations under the*	SEC Rule requires disclosure of scope 1 and scope 2 emissions if they are deemed material and if the registrant is a large accelerated filer or an accelerated filer that is not an emerging growth

Category	GHG Protocol	SEC	Differences
	(Scope 3 Standard (2011), pg. 6).	*Federal securities laws and Regulation S-K, the guiding principle for this determination is whether a reasonable investor would consider the disclosure of an item of information, in this case the registrant's Scope 1 emissions and/or its Scope 2 emissions, important when making an investment or voting decision or such a reasonable investor would view omission of the disclosure as having significantly altered the total mix of information made available" (SEC Release, pg. 246).*	company or smaller reporting company.

C.5. SEC Rule Scope 2 Emissions

The SEC Rule does not specify the method by which registrants must report their scope 2 emissions, but indicates, as examples, that registrants may use the market-based method, the location-based method, or both.

Table C5. SEC Rule Scope 2 Emissions

Category	GHG Protocol	SEC Rule	Differences
Scope 2 Emissions	*"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'"*	*"We would expect a registrant to also disclose whether it calculated its Scope 2 emissions using a particular method (which may differ from the method used to calculate Scope 1 emissions, to the extent both Scope 1 and 2 emissions are required to be disclosed under the final rules), such as the location-based method, market-based method, or both" (SEC Release, pg. 253).*	The SEC Rule does not specify the method by which registrants must report their scope 2 emissions.

Category	GHG Protocol	SEC Rule	Differences
	(Scope 2 Guidance (2015), pg. 8).		

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C.6. SEC Rule Scope 3 Emissions

The SEC Rule does not require scope 3 emissions reporting.

Table C6. SEC Rule Scope 3 Emissions

Category	GHG Protocol	SEC Rule	Differences
Scope 3 Emissions	*"Companies shall report scope 3 emissions following the requirements of the Scope 3 Standard" (Scope 3 Standard (2011), pg. 6).*	*"No registrants are required to disclose Scope 3 emissions or obtain an attestation report for Scope 3 emissions under the final rules" (SEC Release, pg. 332).*	The SEC Rule does not require scope 3 emissions reporting.

C.7. SEC Rule Land Sector and Removals

The SEC Rule does not explicitly mention reporting of biogenic emissions or GHG removals.

D. California Climate Corporate Data Accountability Act (SB 253 and amendment SB 219)

D.1. California Senate Bill 253 Overview

In October 2023, California Governor Gavin Newson signed the Climate Corporate Data Accountability Act, or California Senate Bill 253 (SB 253) into law. This Act required the California Air Resources Board (CARB), on or before January 1, 2025, to develop and adopt regulations requiring companies with over $1 billion in revenues that do business in California to publicly disclose their scope 1 and scope 2 GHG emissions starting in 2026 and their scope 3 GHG emissions starting in 2027. A subsequent signing of California Senate Bill 219 (SB 219) on September 27, 2024, amended SB 253, providing a six-month extension for CARB to adopt implementing regulations.

The regulations would apply to an estimated 5,400 public and private companies as well as subsidiaries of non-US-headquartered companies.

Table D1. SB 253 Overview

Program	California State Legislature and California Air Resources Board (CARB)
Standard Name	Senate Bill 253: Climate Corporate Data Accountability Act (SB 253) and Senate Bill 219: An act to amend Sections 38532 and 38533 of the Health and Safety Code, relating to greenhouse gases (SB 219)
Disclosure Type	Companies operating in California with over $1 billion in annual revenue

Objective	To mandate GHG emissions data reporting for large companies that do business in California, as well as ensure public access to the data in a manner that is easily understandable and accessible to inform investors, empower consumers, and activate companies. SB 253 is a step for California to protect the state and its residents and improve risk management to move towards a net-zero carbon economy.
Impact	Estimated 5,400 companies (Withum)
Effective Date	Pending judicial review; Extended from January 1, 2025 to July 1, 2025 due the SB 219 amendment to SB 253

D.2. SB 253 Direct Reference of GHG Protocol

The bill requires companies to use the Corporate Standard (2004) and the Scope 3 Standard (2011). Starting in 2033 and every five years thereafter, the state board may survey and assess other available GHG accounting and reporting standards and adopt another standard if it determines its use would more effectively further the goals of the bill.

Table D2. SB 253 Direct Reference of GHG Protocol

Referenced GHG Protocol Standards	Greenhouse Gas Protocol: A Corporate and Accounting Reporting Standard; Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard
Versions of the Standards	Versions of standards are not specified
Other Allowable Disclosure Frameworks	The GHG Protocol standards are the only allowable frameworks until a reevaluation year of 2033
Requirements to Transition to GHG Protocol	None
Cadence for Update	*"The bill would authorize the state board, starting in 2033 and every 5 years thereafter, to assess the global greenhouse gas accounting and reporting standards and to adopt an alternative standard if it determines that using the alternative standard would more effectively further the goals of the bill" (SB 253).*

D.3. SB 253 Organizational Boundaries

While exact requirements on organizational boundaries are to be determined by the California Air Resources Board (CARB), SB 219 introduced a requirement for reports to be consolidated at the parent company level (SB 219, Section 38532 (c)(A)(iii)).

D.4. SB 253 Operational Boundaries

Exact requirements for the disclosure of scope 1, 2, and 3 emissions will be determined by CARB, on or before July 1, 2025 (SB 219, Section 38532 (c)(1)). In 2026, the reporting entity must disclose scope 1 and 2 emissions. In 2027, the reporting entity must disclose scope 1, 2, and 3 emissions.

Table D4. SB 253 Operational Boundaries

Category	GHG Protocol	SB 253	Differences
Operational Boundaries	*"Companies shall separately account for and report on scopes 1 and 2 at a minimum" (Corporate Standard (2004), pg. 25).* *"Companies shall report scope 3 emissions following the requirements of the Scope 3 Standard" (Scope 3 Standard (2011), pg. 6).*	*"On or before January 1, 2025, the state board shall develop and adopt regulations to require a reporting entity to annually disclose to the emissions registry, reporting organization, and verify, all of the reporting entity's scope 1 emissions, scope 2 emissions, and scope 3 emissions" (SB 253, Section 38532 (c)(1)).*	SB 253 will require scope 3 reporting. This differs from the requirements of the Corporate Standard (2004), though aligns with the requirements of the Scope 3 Standard (2011).

D.5. SB 253 Scope 2 Emissions

The California Air Resources Board (CARB) will develop the specific requirements regarding scope 2 emissions disclosure. Companies will need to begin disclosing scope 2 emissions in 2026 with the requirements determined by the state board.

D.6. SB 253 Scope 3 Emissions

The California Air Resources Board (CARB) will develop the specific requirements regarding scope 3 emissions disclosure. Companies will need to begin disclosing scope 3 emissions in 2027 with the requirements determined by the state board.

D.7. SB 253 Land Sector and Removals

Requirements for GHG removals and biogenic emissions will be determined by the California Air Resources Board (CARB).