Greenhouse Gas Protocol Scope 3 TWG

Discussion Paper C.1 Investments (Category 15)

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Table of Contents

Abstract 4
1. Background information and context 6
2. Key terms 7
3. Other frameworks and programs (requirements and guidance) 14
4. Third-party standards/guidance 18
5. Summary of Relevant Research 19
6. Current GHG Protocol requirements and guidance 21
7. Summary of Stakeholder Feedback 26
8. Options Under Consideration 29
8.1 Applicability of scope 3, category 15 for non-financial institutions 30
8.2 Harmonization with Partnership for Carbon Accounting Financials (PCAF) 35

Appendices 47
Appendix A1. Summary of PCAF standards and GHG Protocol comparison 48
Appendix A2. Accounting and Reporting Principles: 52
Appendix A3. Consolidation approaches 53
Appendix A4. Greenhouse gases 53
Appendix A5. Classification (investment/asset type) (unmatched) 54
Appendix A6. Classification (investment/asset type) (matched) 55
Appendix A7. Minimum boundaries (organized horizontally) 56
Appendix A8. Minimum boundaries (organized vertically) 57
Appendix A9. Calculation methods and Attribution/Allocation 60
Appendix A10. Investment types (detail) 66
Appendix A10.1. Equity vs. unlisted equity (PCAF, 5.2) 67
Appendix A10.2. Equity vs. listed equity (PCAF, 5.1) 68
Appendix A10.3. Debt (known uses) vs. business loans (PCAF, 5.2) 69
Appendix A10.4. Debt (known uses) vs. commercial real estate (PCAF, 5.4) 70
Appendix A10.5. Debt (known uses) vs. mortgages (PCAF, 5.5) 71
Appendix A10.6. Debt (known uses) vs. motor vehicle loans (PCAF, 5.6) 72
Appendix A10.7. Project finance (known uses) vs. project finance (PCAF, 5.3) 73
Appendix A10.8. Debt (unknown uses) vs. corporate bonds (PCAF, 5.1) 74
Appendix A10.9. Debt (unknown uses) vs. sovereign bonds (PCAF, 5.7) 75
Appendix A10.10. Managed investments and client services vs. Facilitated (PCAF, Part B) 76

Appendix A11. Data quality scoring by asset type in (PCAF, 2022a) Part A 77
Appendix B1. International Financial Reporting Standard Climate-related Disclosures (IFRS S2) 78
Appendix B2. European Sustainability Reporting Standards reporting on Climate Change (ESRS E1) 80
Appendix B3. Securities and Exchange Commission Climate-Related Disclosures 81
Appendix B4. SB-253 Climate Corporate Data Accountability Act 82
Appendix B5. Science-based targets initiative (SBTi) 83
Appendix B6. Global Reporting Initiative (GRI) 85
Appendix B7. CDP 86
Appendix B8. The Institutional Investors Group on Climate Change (IIGCC) 87
Appendix B9. Paris Aligned Asset Owners (PAAO) 91
Appendix B10. The Net Zero Asset Managers (NZAM) 92
Appendix B11. Task Force on Climate-related Financial Disclosures (TCFD) 93
Appendix B13. Asset-class prioritization: 94
Appendix B14. (IFRS, S2, Paragraph B61) 95
Appendix B15. (IFRS, S2, Paragraph B62) 96
Appendix B16. (IFRS, S2, Paragraph B63) 97
Appendix B17. Financials for large-cap companies 98
References 99

Abstract

This discussion paper concerns how companies should quantify, account for, and report GHG emissions attributable to investments (category 15). Investments includes equity, debt, project finance, and other investments made by a reporting company; it includes debt with known or unknown use of proceeds, investments managed by a reporting company on behalf of clients (using clients' capital), corporate underwriting and issuance, and advisory services (Table 5.9 and Table 5.10 of the *Scope 3 Standard*).

Issues detailed in this discussion paper are as follows:

- (8.1) Clarify whether category 15 is applicable for both financial institutions (FIs) and non-financial institutions (non-FIs).

- (8.2) Consider harmonizing all, some, or no currently non-harmonized requirements and guidance between the GHG Protocol *Scope 3 Standard* and the *Financed Emissions Standard* (Part A), specifically, and possibly all PCAF standards.

Issues which will be detailed in a future version(s) in this discussion paper are as follows:

- (8.3) Consider harmonizing the classification and nomenclature for investment/asset types between the GHG Protocol *Scope 3 Standard* (revised) and the PCAF *Financed Emissions Standard* (Part A), *Facilitated Emissions Standard* (Part B), and *Insurance-Associated Emissions Standard* (Part C).

- (8.4) Consider the inclusion/exclusion of other investment/asset types (including associated minimum boundaries, calculation method(s), data sources and/or quality, and other requirements and guidance).

- (8.5) Consider making all optional investments required in the minimum boundary for non-FIs and/or also non-FIs and consider specifying requirements by investment/asset type and/or by another rule (e.g., reporting company size or a significance threshold).

- (8.6) Consider including more specific language on requiring the inclusion of investees' scope 3 emissions and/or tightening the definitions of "if significant" and "relevant" (e.g., setting a significance threshold of 5%).

- (8.7) Consider reporting the projected lifetime emissions associated with financed projects (like "infrastructure and industrial projects") inside a scope 3 inventory and/or requiring it as a separate measure (Technical Guidance, p. 146).

- (8.8) Consider specifying the inclusion/exclusion of facilitated emissions inside a reporting company's scope 3 inventory; and develop methodological requirements and guidance to quantify and account for it.

- (8.9) Consider specifying the inclusion/exclusion of insurance-associated emissions inside a reporting company's scope 3 inventory; and develop methodological requirements and guidance to quantify and account for it.

- (8.10) Consider developing calculation methods for optional investments.
- (8.11) Consider revising calculation methods for equity or debt (with known use of proceeds).
- (8.12) Consider developing calculation methods for investments in listed equity or debt.
- (8.13) Consider harmonizing the inclusion of emissions attributable to sovereign debt between the GHG Protocol Scope 3 Standard and *Financed Emissions Standard* (Part A) by PCAF.
- (8.14) Consider specifying if/how financial institutions or companies can use the revenue- (or spend-based) method(s) to approximate emissions attributable to investments or investees.
- (8.15) Consider how investors (including asset/fund managers and other financial institutions) and umbrella organizations (with vertically-integrated supply-chains and/or multiple subsidiaries/joint ventures that transact with one another) — can, should, or shall quantify (aggregate) portfolio-level, roll-up emissions.

1. Background information and context

The market of users of the *Scope 3 Standard* has grown significantly over the past thirteen years. Thousands more FIs and non-FIs are disclosing scope 1, scope 2, and scope 3 emissions via CDP disclosures. In just the past four years, the number of companies submitting climate disclosures to CDP more than doubled from 9,526 in 2020 to 23,202 in year 2023.[1] Of these, 93% of Fortune 500 companies rely on the suite of GHG Protocol corporate standards.[2]

Hundreds of FIs and non-FIs across the globe participate in voluntary disclosure frameworks that rely on GHG Protocol (refer to **Table 3.2** in **section 3**). At least 532 financial institutions have disclosed with and/or committed to disclosing using investment or category 15-dedicated standards developed by the Partnership for Carbon Accounting Financials (PCAF), for financed, facilitated, and insurance-associated emissions (refer to **section 4**).

The legislative landscape of GHG accounting and reporting—specifically, mandatory disclosures—has dramatically changed since the initial publication of the *Scope 3 Standard* (2011). Mandatory disclosures have been legislated in multiple jurisdictions that require both financial institutions and non-FIs to begin disclosing scope 3 emissions, including category 15 (refer to **Table 3.1** in **section 3**).

Stakeholder feedback provided in year 2022-2023 (refer to **section 7**) prompted the GHG Protocol to consider revisions to category 15 requirements and guidance (summarized in **section 6**).

Note on terminology: This discussion paper includes an extensive glossary that pulls definitions of similar and distinct words — all concerning scope 3 category 15 (investments) — from the *Scope 3 Standard*, PCAF's *Financed Emissions Standard* (Part A, second edition), and *IFRS S2 Climate-related Disclosures*. This is intended to support a clear understanding of terminology by readers.

Further, the term "company" is used in the *Scope 3 Standard* as shorthand to refer to an entity developing a scope 3 greenhouse gas (GHG) inventory; company includes any organization or institution, either public or private, such as businesses, corporations, government agencies, non-profit organizations, assurers and verifiers, universities, etc. (refer to the Glossary herein).

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[1] CDP: https://www.cdp.net/en/companies/cdp-2023-disclosure-data-factsheet
[2] WRI: https://www.wri.org/initiatives/greenhouse-gas-protocol

2. Key terms

The following table outlines key terms from the glossary of the *GHG Protocol Scope 3 Standard*, the glossary of PCAF's *Financed Emissions Standard* (Part A, second edition), and the glossary of *IFRS S2 Climate-related Disclosures*, unless otherwise noted and cited. For example, the terms attributional approach and line of credit (LOC), were added from (UNEP, 2011) and Merriam-Webster, respectively, for reference. The term non-financial institution (non-FI) is being used, exclusively, in this document.

Table 2.1 Glossary of key terms

Glossary	Source	Definition
Absolute target	*IFRS S2 Climate-related Disclosures*	"…a total amount of a measure or a change in the total amount of a measure…" (B66)
Associate	GHG Protocol *Scope 3 Standard*	"An entity in which the parent company has significant influence but neither financial control nor joint financial control. (section 5.5, category 15 (Investments))"
Attributional approach	SETAC (UNEP, 2011)	"System modelling approach in which inputs and outputs are attributed to the functional unit of a product system by linking and/or partitioning the unit processes of the system according to a normative rule."
Attribution factor	PCAF *Financed Emissions*	"The share of total greenhouse gas (GHG) emissions of the borrower or investee that are allocated to the loan or investments."
	SBTi *Financial Sector Science-Based Targets Guidance*	"The share of total greenhouse gas emissions of the borrower or investee that are allocated to the loan or investments."
Business model	*IFRS S2 Climate-related Disclosures*	"An entity's system of transforming inputs through its activities into outputs and outcomes that aims to fulfil the entity's strategic purposes and create value for the entity and hence generate cash flows over the short, medium and long term."
Company	GHG Protocol *Scope 3 Standard*	"[U]sed in… [the Scope 3 Standard] as shorthand to refer to the entity developing a scope 3 GHG inventory, which may include any organization or institution, either public or private, such as businesses, corporations, government agencies, non-profit organizations, assurers and verifiers, universities, etc."
Corporate bonds	PCAF *Financed Emissions*	**Listed equity and corporate bonds**: "This asset class includes all on-balance sheet listed corporate bonds and all on-balance sheet listed equity that are traded on a market and are for general corporate purposes, i.e., unknown use of proceeds as defined by the GHG Protocol."

Glossary	Source	Definition
Corporate debt	PCAF *Financed Emissions*	"Money that is owed by companies rather than by governments or individual people."
Debt *See also: Corporate bonds; Corporate debt; Mortgages; Motor vehicle loans; Project finance (if debt); and Sovereign debt.*	GHG Protocol *Scope 3 Standard*	**Debt investments**: "Investment in an entity (e.g., through loans or bonds) for a fixed period of time that entitles the holder to repayment of the original investment (i.e., principal sum) plus interest, but does not entitle the investor to ownership in the entity. (section 5.5, category 15 (Investments))"
	PCAF *Financed Emissions*	**Debt**: "A financing instrument that requires repayment by the borrower. In the context of this Financed Emissions Standard, debt refers only to the principal amount owed by the borrower and excludes interest."
Emissions	GHG Protocol *Scope 3 Standard* and PCAF *Financed Emissions*	**Indirect emissions**: "Emissions that are a consequence of the activities of the reporting company, but occur at sources owned or controlled by another company."
	PCAF *Financed Emissions*	**Absolute emissions**: "Emissions attributed to a financial institution's lending and investing activity."
	PCAF *Financed Emissions*	**Financed emissions**: "Absolute emissions that banks and investors finance through their loans and investments."
Equity investments	GHG Protocol *Scope 3 Standard*	**Equity investments**: A share of equity interest in an entity. The most common form is common stock. Equity entitles the holder to a pro rata ownership in the company. (section 5.5).
	PCAF *Financed Emissions*	**Equity**: "The ownership of banks or investors in a company or project. There are various types of equity, but equity typically refers to shareholder equity, which represents the amount of money that would be returned to a company's shareholders if all company assets were liquidated and all company debt were paid off."
Enterprise Value including Cash (EVIC)	PCAF *Financed Emissions*	"The sum of the market capitalization of ordinary shares at fiscal year end, the market capitalization of preferred shares at fiscal year-end, and the book values of total debt and minorities' interests. No deductions of cash or cash equivalents are made to avoid the possibility of negative enterprise values."
Financed emissions	PCAF *Financed Emissions*	(p. 8): "… emissions resulting from activities in the real economy that are financed through lending and investment portfolios… attributed to financial institutions based on robust, consistent accounting rules specific to each asset class."

Glossary	Source	Definition
Financed emissions	*IFRS S2 Climate-related Disclosures*	"The portion of gross greenhouse gas emissions of an investee or counterparty attributed to the loans and investments made by an entity to the investee or counterparty. These emissions are part of Scope 3 Category 15 (investments) as defined in the *Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard* (2011) [emphasis added]."
	CDP 2024 Corporate Questionnaire Guidance	"Scope 3 Category 15 'Investments' total absolute emissions)." (Modules 8-13, p. 303-4)
Financial control	GHG Protocol *Scope 3 Standard*	"The ability to direct the financial and operating policies of an entity with a view to gaining economic benefits from its activities."
Financial institution *See also: non-financial institution (the binary opposite or binary antonym of financial institution).*	PCAF *Financed Emissions*	"A company engaged in the business of dealing with financial and monetary transactions such as deposits, loans, investments, and currency exchange… including commercial banks, investment banks, development banks, asset owners/managers (mutual funds, pension funds, close-end funds, investment trusts), and insurance companies."
Gross greenhouse gas emissions targets	*IFRS S2 Climate-related Disclosures*	"Gross… targets reflect total changes in greenhouse gas emissions planned within the entity's value chain…" (B68). See also: 'Net greenhouse gas emissions targets' (as per IFRS).
Intensity target	*IFRS S2 Climate-related Disclosures*	"…a ratio of a measure, or a change in the ratio of a measure, to a business metric." (B66)
Internal carbon price	*IFRS S2 Climate-related Disclosures*	"Price used by an entity to assess the financial implications of changes to investment, production and consumption patterns, and of potential technological progress and future emissions abatement costs."
Investee	PCAF *Financed Emissions*	Investee company or investee project: "A company or project in which an investor makes a direct investment."
Investment	PCAF *Financed Emissions*	"The term investment (unless explicitly stated otherwise) is used in the broad sense: 'Putting money into activities or organizations' with the expectation of making a profit.' Most forms of investment involve some form of risk taking… even fixed interest securities which are subject to inflation risk, among other risks."
Line of credit (LOC)	Merriam-Webster	"The maximum credit allowed a buyer or borrower… *also* : an agreement providing credit up to a certain amount". (E.g., 'Home equity line of credit (HELOC)' defined in PCAF Part B.)

Glossary	Source	Definition
Listed equity	PCAF *Financed Emissions*	Listed equity and corporate bonds: "This asset class includes all on-balance sheet listed corporate bonds and all on-balance sheet listed equity that are traded on a market and are for general corporate purposes, i.e., unknown use of proceeds as defined by the GHG Protocol."
Mortgages	PCAF *Financed Emissions*	"This asset class includes on-balance sheet loans for specific consumer purposes—namely the purchase and refinance of residential property, including individual homes and multi-family housing with a small number of units. This definition implies that the property is used only for residential purposes and not for commercial activities." (May include 'Home equity loan (HEL)', i.e., a "second mortgage").
Motor vehicle loans	PCAF *Financed Emissions*	"This asset class refers to loans and lines of credit to businesses and consumers for specific (corporate or consumer) purposes—namely the finance of one or several motor vehicles."
Operational emissions	*CDP 2024 Corporate Questionnaire Guidance*	All non-category 15 scope 3 emissions ("… i.e., the Scope 1, Scope 2 and Scope 3 emissions excluding Category 15 Investments…") of an organization, for the purpose of target setting (CDP Questionnaire, Module 7, 7.53, p. 261).
Net greenhouse gas emissions target	*IFRS S2 Climate-related Disclosures*	"… the entity's targeted gross greenhouse gas emissions minus any planned offsetting efforts (for example, the entity's planned use of carbon credits to offset its greenhouse gas emissions)" (B68). See also: 'Gross greenhouse gas emissions targets' as defined by IFRS.
Non-Financial institution (non-FI)	N/A	An organization that is *not* a financial institution (this term is *not* defined in the GHG Protocol *Scope 3 Standard* or *Technical Guidance*).
Portfolio GHG accounting	PCAF *Financed Emissions*	"The annual accounting and disclosure of GHG emissions associated with loans and investments at a fixed point in time in line with financial accounting periods." Also called: GHG accounting of financial portfolios.
Parent company	GHG Protocol *Scope 3 Standard*	"An entity that has one or more subsidiaries. (section 5.5, category 15 (Investments))"
Project finance	GHG Protocol *Scope 3 Standard*	"Long term financing of projects (e.g., infrastructure and industrial projects) by equity investors (sponsors) and debt investors (financiers), based on the projected cash flows of the project rather than the balance sheet of the sponsors/lenders. (section 5.5, category 15 (Investments))"

Glossary	Source	Definition
	PCAF *Financed Emissions*	"This asset class includes all on-balance sheet loans or equities to projects for specific purposes, i.e., with known use of proceeds as defined by the GHG Protocol. The financing is designated for a defined activity or set of activities, such as the construction and operation of a gas-fired power plant, a wind or solar project, or energy efficiency projects."
Significant influence	GHG Protocol *Scope 3 Standard*	"Power to participate in the financial and operating policy decisions but not control them. A holding of 20 percent or more of the voting power (directly or through subsidiaries) will indicate significant influence unless it can be clearly demonstrated otherwise. See International Accounting Standard (IAS) 28 for additional criteria for determining significant influence. (section 5.5, category 15 (Investments))"
Sovereign debt	PCAF *Financed Emissions*	"This asset class includes sovereign bonds and sovereign loans of all maturities issued in domestic or foreign currencies. Both sovereign loans and bonds lead to the transfer of funds to the country, which in turn creates a debt obligation to be repaid by the borrowing country."
Subsidiary	GHG Protocol *Scope 3 Standard*	"An entity over which the parent company has control, including incorporated and non-incorporated joint ventures and partnerships over which the parent company has control. (section 5.5, category 15 (Investments))"
Unlisted equity	PCAF *Financed Emission*	"All on-balance sheet equity investments to businesses, nonprofits, and any other structure of organization that are not traded on a market and are for general corporate purposes, i.e., with unknown use of proceeds as defined by the GHG Protocol. Unlisted equity is also referred to as equity investments in private companies (i.e., the financial institution obtains shares of the company)."
Total balance sheet value	PCAF *Financed Emissions*	"A balance sheet is a financial statement that reports a company's assets, liabilities, and shareholders' equity. The balance sheet value refers to the sum of total equity and liabilities, which is equal to the company's total assets."

Glossary	Source	Definition
Value chain	GHG Protocol *Scope 3 Standard*	"…all of the upstream and downstream activities associated with the operations of the reporting company, including the use of sold products by consumers and the end-of-life treatment of sold products after consumer use."
	IFRS S2 Climate-related Disclosures	"The full range of interactions, resources and relationships related to a reporting entity's **business model** and the external environment in which it operates. A value chain encompasses the interactions, resources and relationships an entity uses and depends on to create its products or services from conception to delivery, consumption and end-of-life, including interactions, resources and relationships in the entity's operations, such as human resources; those along its supply, marketing and distribution channels, such as materials and service sourcing, and product and service sale and delivery; and the financing, geographical, geopolitical and regulatory environments in which the entity operates.

Table 2.2 Acronyms

Acronym	Definition
AF	Accelerated filer
AMI	Actions and Market Instruments (a GHG Protocol TWG)
AUM	Assets under management
CDP	Formerly, Carbon Disclosure Project (CDP)
CH4	Methane
CO2	Carbon dioxide
ESRS	European Sustainability Reporting Standards
EVIC	Enterprise value including cash
FI	Financial institution
FY	Fiscal year
GDP	Gross domestic product
GRI	Global Reporting Initiative
HFC	Hydrofluorocarbon
IFRS	International Financial Reporting Standards
IIGCC	Institutional Investors Group on Climate Change Ltd.
ISSB	International Sustainability Standards Board (managed by IFRS)
JV	Joint venture
KPI	Key performance indicator
LAF	Large accelerated filer
N2O	Nitrous oxide
NF2	Nitrogen trifluoride
Non-FI	Non-financial institution (i.e., any organization that is *not* a financial institution)[3]
NZAM	The Net Zero Asset Managers
NZIF	The Net Zero Investment Framework
O&G	Oil and gas
PAAO	Paris Aligned Asset Owners
PCAF	Partnership for Carbon Accounting Financials
PFC	Perfluorocarbon
PPP	Purchasing power parity
REC	Renewable energy credit
SASB	Sustainability Accounting Standards Board (managed by IFRS)
SBTi	Science-based targets initiative
SDA	Sectoral Decarbonization Approach (specified by the SBTi in **Appendix B1** herein)
SEC	U.S. Securities and Exchange Commission
SF6	Sulphur hexafluoride
SME	Small-to-medium-sized enterprise
TWG	Technical Working Group (herein, the **scope 3 TWG** unless otherwise specified)
TCFD	Task Force on Climate-related Financial Disclosures (managed by IFRS)

[3] Non-financial institution (as defined herein) is the term being used by the GHG Protocol *tentatively* to refer to any and all organizations which are *not* financial institutions, the latter being specified by PCAF.

3. Other frameworks and programs (requirements and guidance)

Scope 3 inventory disclosures — as a component of financial climate-risk disclosures — is being jurisdictionally legislated and made legally obligatory for thousands of companies, asset managers, and financial institutions (FIs) globally. Refer to **Appendix series B** for more relevant information on the framework or program.

The following tables list key voluntary and mandatory frameworks for FIs and non-financial institutions (non-FIs) to disclose scope 3 category 15 emissions (financed emissions) and relevant information. **Table 3.1** lists relevant voluntary disclosure frameworks, including: SBTi, GRI, CDP, IIGCC (NZIF), PAAO, NZAM, and TCFD (now part of IFRS). **Table 3.2** lists relevant mandatory disclosure frameworks, including: IFRS S2 (ISSB), ESRS E1, and potentially both the SEC Climate-Risk Disclosures Rule and SB-253 Corporate Climate Data Accountability Act in the state of California.

Table 3.1 Mandatory disclosures

The following table outlines several of the world's most relevant mandatory disclosure frameworks. Appendices C1, C2, C3, and C4 detail the scope 3 category 15 relevant requirements of IFRS S2, ESRS E1, SEC Climate-Related Disclosures, and California SB-253. Refer to this 'Overview of GHG Protocol Integration in Regulatory Climate Disclosure Rules' available on GHG Protocol's website here for more.[4]

Framework	Documents	Notes
International Financial Reporting Standards (IFRS), International Sustainability Standards Board (ISSB), disclosure rule (**Appendix B1**)	Mandate: IFRS S2 Climate-related disclosures	• 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, however, it was published alongside and refers to the *IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information*. • "The objective of IFRS S2 Climate-related Disclosures is to require an entity to disclose information about its climate-related risks and opportunities that is useful to primary users of general purpose financial reports in making decisions relating to providing resources to the entity" (IFRS, S2, clause 1). • Regarding materiality, the IFRS S1 specifies that "An entity shall disclose material information about the sustainability-related risks and opportunities that could reasonably be expected to affect the entity's prospects" (p. 8, clause 17). • Regarding financed emissions, specifically, IFRS specifies that: "additional information about the entity's category 15… emissions or those associated with its **investments (*financed emissions*)** [emphasis added], if the entity's activities include **asset management, commercial banking or insurance** [emphasis added]…" must be disclosed as per Paragraph B60 and Paragraph 29(a).

[4] GHG Protocol: https://ghgprotocol.org/blog/overview-ghg-protocol-integration-regulatory-climate-disclosure-rules

Table 3.1 Mandatory disclosures (continued)

Framework	Documents	Notes
European Union Corporate Sustainability Reporting Directive (CSRD), European Sustainability Reporting Standards (ESRS), disclosure rule (**Appendix B2**)	Mandate: ESRS E1 Climate Change	• In July 2023 the European Union has adopted as Delegated Act twelve European Sustainability Reporting Standards (ESRS). E1 Climate Change covers the topical disclosures and has to be applied in conjunction with ESRS 1 General Requirements and ESRS 2 General Disclosures. ESRS E1 directly references and adopts the *GHG Protocol Corporate Standard* and *Scope 3 Standard*. • Undertakings "shall" consider the principles and provisions of the *Scope 3 Standard* (2011); and • "… if it is a financial institution, consider… PCAF… specifically part A, 'Financed Emissions' (version December 2022)**…**" • Regarding **materiality**, the ESRS specifies "double materiality," which includes both impact materiality and financial materiality, i.e., both actual or potential positive or negative impacts on people or the environment and risks or opportunities that affect an undertaking's financial position, performance, cash flows, and/or access to finance or capital.
U.S. Securities and Exchange Commission (SEC), disclosure rule (**Appendix B3**)	Mandate: The Enhancement and Standardization of Climate-Related Disclosures for Investors, Final Rule (SEC Rule)	• "The final rules will require information about a registrant's climate-related risks that have materially impacted, or are reasonably likely to have a material impact on, its business strategy, results of operations, or financial condition" (p. 1), and "disclosure of scope 1 and/or scope 2 emissions on a phased in basis by certain larger registrants when those emissions are material" (p. 15). • The primary benefit and goal of GHG emissions disclosure is: "providing investors with material metrics that will aid in the assessment of transition risk for those registrants that have identified a material climate risk; and facilitating investors' evaluation of a registrant's progress towards achieving a material target or goal and the attendant effects on the registrant's business, results of operations, or financial condition" (p. 248). • Regarding **materiality**, the SEC requires that "a registrant apply traditional notions of materiality under the Federal securities laws when evaluating whether its Scopes 1 and/or 2 emissions are material…" whereby "the , 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… 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" (p. 246).
California Air Resources Board (CARB), climate disclosure rule (**Appendix B4**)	Mandate: California Senate Bill 253 (CA SB 253), Corporate Climate Data Accountability Act	• 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 requires 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 greenhouse gas emissions starting in 2026 and their scope 3 greenhouse gas emissions starting in 2027.

Table 3.2 Voluntary frameworks

The following table outlines several of the world's most relevant voluntary disclosure frameworks.

Framework	Documents	Notes
Science-Based Targets Initiative (SBTi), target-setting standards, guidance and frameworks (**Appendix B5**)	SBTi Financial Sector Science-Based Targets Guidance	• "The SBTi framework for financial institutions aims to support FIs in their efforts to address climate change by providing resources for science-based target setting. The framework includes target setting methods, criteria, a target setting tool, and this guidance document." (p. 6)
	SBTi Financial Institutions Net-Zero Standard Draft V0.1 (the 'FINZ Standard')	• A "draft of the conceptual framework, requirements, and recommendations and supporting annexes to enable financial institutions to set science-based targets on their scope 3 category 15 emissions." (p. 4)
	SBTi Corporate Net-Zero Standard	• The SBTi's Corporate Net-Zero Standard provides the guidance and tools companies need to set science-based net-zero targets. • This SBTi standard is currently undergoing major revision.[5]
Global Reporting Initiative (GRI), standards (**Appendix B6**)	Climate Change Exposure Draft (February 24, 2024) for *GRI 305: Emissions 2016*	• The GRI 305 contains disclosure requirements for organizations to report information about their emissions-related impacts and how they manage said impacts. • It requires that companies report the gross scope 3 emissions for each upstream and downstream category (disaggregated) • Further, GRI specifies additional requirements for disclosure, including "the base year for the calculation", and "standards, methodologies, and assumptions, including for each of the 15 scope 3 categories, the sources of emission factors, and calculation tools used" (p. 34).
CDP (formerly the Carbon Disclosure Program) (**Appendix B7**)	CDP 2024 questionnaire, Module 7: Environmental Performance – Climate Change (see: Climate)	• Guidance for companies reporting on climate change on behalf of investors & supply chain members.
The Institutional Investors Group on Climate Change (IIGCC) (**Appendix B8**)	Net Zero Investment Framework (NZIF) 2.0	• The IIGCC published the Net Zero Investment Framework (NZIF) 2.0 in June 2024 after three years of implementation. As per NZIF 2.0, this framework "… is the most widely used guide by investors to set targets and produce related net zero strategies and transition plans… [and] is a guide… not a protocol" (IIGCC, 2024a, p. 4).

[5] SBTi: https://sciencebasedtargets.org/developing-the-net-zero-standard (accessed October 28, 2024).

Table 3.2 Voluntary frameworks (continued)

Framework	Documents	Notes
Paris Aligned Asset Owners (PAAO) (**Appendix B9**)	n/a	• Paris Aligned Asset Owners (PAAO) rely on NZIF and, as articulated in the 2023 Progress Report (PAAO, 2024)
Net Zero Asset Managers (NZAM) (**Appendix B10**)	n/a	• NZAM endorses "… three target-setting methodologies… the Paris Aligned Investment Initiative Net Zero Investment Framework (refer to the NZIF 2.0 in **Appendix B8** herein), Science Based Target initiative for Financial Institutions (refer to SBTi in **Appendix B5** herein) and the UN-convened Net Zero Asset Owner Alliance Target Setting Protocol."
Task Force on Climate-related Financial Disclosures (TCFD) (**Appendix B11**)	n/a	• The TCFD disbanded on January 1, 2024 and was replaced by the International Financial Reporting Standards (IFRS) Foundation, which oversees the International Sustainability Standards Board (ISSB).
Glasgow Financial Alliance for Net Zero (GFANZ)	(GFANZ, 2022)	• GFANZ lists GHG Protocol and PCAF as building blocks of the next-zero financial system, specifically, for net-zero measurement and accounting (Figure 2, GFANZ 2022 work program, p. 4)

4. Third-party standards/guidance

Other frameworks include the ISO 14064 series and standards by the Partnership for Carbon Accounting Financials (PCAF) standards for financed, facilitated, and insurance-associated emissions (i.e., Part A, Part B, and Part C, respectively).

ISO 14064 series:

The ISO 14064 series is a three-part international standard for GHG management activities, including the development of entity emission inventories that is "GHG programme neutral".[6] This document uses the term "investment", exclusively, in clause (B.6.2.d) stating that: "Emissions from investments are mainly targeting private or public financial institutions. Emissions could result from four types of operations: equity debt, investment debt, project finance and others". Section B.6 of ISO 14064-1 classifies investments within: "Category 5: Indirect GHG emissions associated with the use of products from the organization".

The Partnership for Carbon Accounting Financials (PCAF):

PCAF is an industry-led partnership of financial institutions, formed in 2015 by fourteen Dutch financial institutions which expanded to North America and was adopted by twelve financial institutions in North America in 2018, and it was adopted by the then twenty-eight banks of the Global Alliance for Banking on Values (GABV).[7] As of "January 13, 2023, PCAF has become a legal [501(c)3, i.e., non-profit] entity with the Steering Committee transforming into the Board of Directors…" and "Amalgamated Charitable Foundation serves as the fiscal sponsor… until PCAF has become a self-sustaining initiative" (p. 3-4).[8]

PCAF launched the second version[9] in 2022 and 2023, comprised of three parts: *Financed Emissions Standard* (Part A), *Facilitated Emissions Standard* (Part B), and *Insurance-Associated Emissions Standard* (Part C) (collectively, the "**PCAF standards**").[10] Refer to **Appendix A1** for tables comparing GHG Protocol and PCAF high-level and in summary. Refer to **Appendix series A10** for more detailed comparisons of requirements and calculation methods between the PCAF and the *Scope 3 Standard*. For reference, PCAF standards referenced in this discussion paper are as follows (Table 4.1):

Table 4.1 PCAF standards (as referenced in this document)

Citation	Part	Name
(PCAF, 2020)	n/a	'Financed Emissions Standard' (First Edition)
(PCAF, 2022a)	Part A	'Financed Emissions Standard' (Second Edition)
(PCAF, 2023a)	Part B	'Facilitated Emissions Standard' (first version)
(PCAF, 2022b)	Part C	'Insurance-Associated Emissions Standard' (first version)

[6] (ISO, 2024): https://www.iso.org/standard/66453.html. (Accessed October 28, 2024)
[7] PCAF: www.carbonaccountingfinancials.com/about (September 19, 2023)
[8] (PCAF, 2023a): PCAF. *Concept of Operations*. https://carbonaccountingfinancials.com/files/downloads/PCAF_OperatingModel_03.pdf (September 24, 2024). This document outlines the governance and operating model of Partnership for Carbon Accounting Financials Inc.
[9] PCAF: https://carbonaccountingfinancials.com/en/newsitem/pcaf-launches-the-2nd-version-of-the-global-ghg-accounting-and-reporting-standard-for-the-financial-industry
[10] Note that this does *not* include any other standards that have been or may be prepared by PCAF, nor revision, edits, and/or updates to the existing PCAF standards.

5. Summary of Relevant Research

The following reflects relevant research on category 15 disclosures by/for investors.

CDP (formerly Carbon Disclosure Project):

CDP is a global non-profit that provides a platform for companies, cities, states, and regions to report on their environmental impacts. In year 2023 CDP prepared a technical note, "CDP Technical Note: Relevance of Scope 3 Categories by Sector", which reviewed literature and analysis of 2021 CDP response data to identify the relevant and most significant (by size) scope 3 categories for CDP's high-impact sectors. As per CDP, this "signposts the categories of Scope 3 emissions that companies should be measuring and taking action to mitigate" (CDP, 2023, p. 4). Here are some key findings:[11]

- Scope 3 emissions significance
  - For the Financial Services (sector), **category 15 accounts for 100% of scope 3 emissions** (of respondents to the CDP survey).
  - For the Real Estate (sector), category 2 accounts for over half (50%) of scope 3 emissions while category 13 and category 1, together, account for nearly the remaining half (38%) of scope 3 emissions.
- Relevance of scope 3 categories as indicated by Financial Services (sector) respondents
  - At least 70% identified category 1, category 6, and category 7 as relevant.
  - Between 35% to 50% identified category 2, category 3, category 4, category 5, and category 15 as relevant.
  - Between 5% to 25% identified category 8, category 9, category 10, category 11, category 12, category 13, and category 14 as relevant.
- Calculation of scope 3 category 15 emissions by Financial Services (sector) companies
  - Category 15 accounts for 100% of scope 3 inventory emissions (by respondents when calculated and reported)
  - **Approx. 50% of respondents identified category 15 as relevant**, of which:
    - Approx. 70% calculated category 15 emissions
    - Approx. 30% did *not* calculate category 15 emissions
  - **Approx. 5% identified category 15 as *not* relevant**, of which:
    - 100% did *not* calculate category 15 emissions
  - **Approx. 45% did *not* evaluate nor calculate category 15 emissions**
- Of the 50% of respondents representing Financial Services (sector) who identified a scope 3 category as either: Not relevant, not evaluated, or who left it blank
  - On average, over 80% of respondents identified categories 8 through 14 as being either not relevant, no evaluated, or left it blank
  - On average, approx. 40% of respondents identified categories 1 through 7 as being either not relevant, no evaluated, or left it blank
- Scope 1 and scope 3 emissions significance (sector-agnostic)
  - For a few sectors (cement, steel, transport services, and electric utilities), scope 1 emissions account for the largest fraction of total GHG inventory emissions.
  - Across all sectors (average), the three largest scope 3 categories (in terms of scale of emissions) account for on average 90% of companies' scope 3 emissions.

[11] Note: Figures herein rely on approximate percent (%) figures extracted from the (CDP, 2023) report. Actual summary percentage figures may differ from original data.

London Stock Exchange Group (LSEG):

FTSE Russell is a subsidiary of the London Stock Exchange Group (LSEG) that produces, maintains, licenses, and markets stock market indices. LSEG is a global financial markets data and infrastructure provider that offers a variety of services. The FTSE Russell's LSEG team argues that the "lack of consensus on which categories should be regarded as material is key to the Scope 3 Conundrum." They "suggest that investors should consider a company's [i.e., investee's] Scope 3 disclosures as covering their [i.e., the investee's] material emissions if, based on its sector classification, its Scope 3 disclosures cover at least their top two categories" (p. 14).

- Scope 3 disclosure continue increasing:
  - As per LSEG, "Figure 6 shows that the proportion of companies globally that report some form of Scope 3 emissions has steadily increased from 37% of FTSE All-World constituents in 2016 to 45% in 2021, the last year for which complete data is available at the time of writing" (FTSE Russel, p. 16).
- Scope 3 emissions significance (sector-agnostic)
  - A company's exposure to value chain activities and associated emissions account for approximately 80% of the GHG inventories of FTSE All-World Index constituents reporting Scope 3 emissions (FTSE Russel, p. 4).
  - LSEG found that the two most material scope 3 categories in each sector account for, on average, over 80% of total scope 3 emissions. T
- Lack of data is a barrier to assessing scope 3 emissions for investors
  - "Poor quality and gaps in the data often make it challenging for investors to systematically assess Scope 3 exposures in their portfolios and to factor Scope 3 emissions in investment processes and reporting" (FTSE Russell, p. 4).
  - "Scope 3 estimation models must work with a third less input data – which, on average, is also almost twice as variable and more than twice as volatile." (FTSE Russel, p. 5)
- Disclosure frameworks
  - LSEG provides the following summary of disclosure frameworks based on the following four requirements (FTSE Russel, p. 11):
    - Report scope 3 emissions if 'appropriate' (TCFD), 'material' (ISSB), or 'significant' (GRI)
    - Conform with the GHG Protocol *Scope 3 Standard* (ISSB, TCFD, GRI) *
    - Follow guidelines of the PCAF to disclose category 15 emissions (TCFD, ISSB) *
    - Provide a description of the methodologies, assumptions and data quality controls used to calculate or estimate Scope 3 emissions (GHG Protocol *Scope 3 Standard*, ISSB, TCFD, GRI) *

* Note that the ESRS E1 also mandates that companies shall consider the GHG Protocol *Scope 3 Standard* and *PCAF* (refer to **Appendix B2)**

6. Current GHG Protocol requirements and guidance

Background:

The *Scope 3 Standard* (p. 51-54) provides accounting and reporting requirements and guidance for **required** investments (Table 5.9, p. 53) and **optional** investments (Table 5.10, p. 55). The *Scope 3 Technical Guidance* details calculation methods for required investments (p. 136-152), which are summarized in Appendix D (p. 162-182); however, it "does not provide calculation guidance for many of the investment types that may be optionally reported" (p. 139). Calculation methods itemized are:

- Investment-specific method (p. 142) – specified for equity investments
- Average-data method (p. 144, 150)
- Project-specific method (p. 148) – specified for project finance and debt (known uses)

Shall, should, may language:

The *Scope 3 Standard* uses precise language to indicate which provisions "… are requirements, which are recommendations, and which are permissible or allowable options that companies may choose to follow" (p. 19). On this same page the *Scope 3 Standard* explains that:

> "The term 'shall' is used throughout this standard to indicate what is required in order for a GHG inventory to be in conformance with the GHG Protocol Scope 3 Standard. The term 'should' is used to indicate a recommendation, but not a requirement. The term 'may' is used to indicate an option that is permissible or allowable. The term 'required' is used in the guidance to refer to requirements in the standard. 'Needs,' 'can,' and 'cannot' may be used to provide guidance on implementing a requirement or to indicate when an action is or is not possible."

Requirements and guidance:

Note: The following requirements and guidance is copied directly from the *Scope 3 Standard* unless otherwise indicated by the use of square brackets […]. Some words are emboldened and/or underlined in this document which do not exhibit such formatting in the *Scope 3 Standard* text.

Refer to the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* (the "*Scope 3 Standard*") for all requirements here: https://ghgprotocol.org/corporate-value-chain-scope-3-standard.

Refer to the *Technical Guidance for Calculating Scope 3 Emissions (version 1.0)* (the "*Technical Guidance*") for all requirements here: https://ghgprotocol.org/scope-3-calculation-guidance-2

(Scope 3 Standard requirements and guidance continues next page)

Requirements:

- This category includes scope 3 emissions associated with the reporting company's investments in the reporting year, not already included in scope 1 or scope 2.
    - Investments are categorized as a downstream scope 3 category because the provision of capital or financing is a service provided by the reporting company.[12]
- Investments may be included in a company's scope 1 or scope 2 inventory depending on how the company defines its organizational boundaries.
    - For example, companies that use the equity share approach include emissions from equity investments in scope 1 and scope 2.
    - Companies that use a control approach account only for those equity investments that are under the company's control in scope 1 and scope 2.
    - Investments not included in the company's scope 1 or scope 2 emissions are included in scope 3, in this category.
    - A reporting company's scope 3 emissions from investments are the scope 1 and scope 2 emissions of investees [and in some cases also said investees' scope 3 emissions].
- For purposes of GHG accounting, this standard divides financial investments into four types:
    - Equity investments
    - Debt investments
    - Project finance
    - Managed investments and client services
- Table 5.9 provides the types of investments included in the minimum boundary of this category.
- Table 5.10 identifies types of investments that companies **may** optionally report, in addition to those provided in table 5.9.
- Emissions from investments **should** be allocated to the reporting company based on the reporting company's proportional share of investment in the investee.
- Because investment portfolios are dynamic and can change frequently throughout the reporting year, companies **should** identify investments by choosing a fixed point in time, such as December 31… or using a representative average over the course of the reporting year.

(Scope 3 Standard requirements and guidance continues next page)

[12] Equity investments do not easily fit into the upstream and downstream definitions but are included along with other types of investments in Category 15 so that all investments are included in a single category.

Table 5.9 Accounting for emissions from investments (required) (*Scope 3 Standard*, p. 53)
* Additional guidance on *italicized* terms is provided on the next page *

Financial investment/service	Description	GHG accounting approach (Required)
Equity investments	Equity investments made by the reporting company using the company's own capital and balance sheet, including: • Equity investments in subsidiaries (or group companies), where the reporting company has financial control (typically more than 50 percent ownership) • Equity investments in associate companies (or affiliated companies), where the reporting company has significant influence but not financial control (typically 20-50 percent ownership) • Equity investments in joint ventures (non-incorporated joint ventures/ partnerships/ operations), where partners have joint financial control	In general, companies in the financial services sector **should** account for emissions from equity investments in scope 1 and scope 2 by using the equity share consolidation approach to obtain representative scope 1 and scope 2 inventories. If emissions from equity investments are not included in scope 1 or scope 2 (because the reporting company uses either the operational control or financial control consolidation approach and does not have control over the investee), account for ***proportional scope 1 and scope 2 emissions*** of equity investments that occur in the reporting year in scope 3, category 15 (Investments).
	Equity investments made by the reporting company using the company's own capital and balance sheet, where the reporting company has neither financial control nor significant influence over the emitting entity (and typically has less than 20 percent ownership)	If not included in the reporting company's scope 1 and scope 2 inventories: Account for ***proportional scope 1 and scope 2 emissions*** of equity investments that occur in the reporting year in scope 3, category 15 (Investments). Companies **may** establish a threshold (e.g., equity share of 1 percent) below which the company excludes equity investments from the inventory, if disclosed and justified.
Debt investments (with known use of proceeds)	Corporate debt holdings held in the reporting company's portfolio, including corporate debt instruments (such as bonds or convertible bonds prior to conversion) or commercial loans, with known use of proceeds (i.e., where the use of proceeds is identified as going to a particular project, such as to build a specific power plant)	For each year during the term of the investment, companies **should** account for ***proportional scope 1 and scope 2 emissions*** of ***relevant projects*** that occur in the reporting year in scope 3, category 15 (Investments). In addition, if the reporting company is an initial sponsor or lender of a project: Also account for the ***total projected lifetime scope 1 and scope 2 emissions*** of ***relevant projects*** financed during the reporting year and report those emissions separately from scope 3.
Project finance	Long-term financing of projects (e.g., infrastructure and industrial projects) by the reporting company as either an equity investor (sponsor) or debt investor (financier)	

Additional guidance on key concepts *italicized*[13] in table 5.9 (above) is as follows:

Equity investments:

- Proportional emissions from equity investments **should** be allocated to the investor based on the investor's proportional share of equity in the investee.
  - Proportional emissions from project finance and debt investments with known use of proceeds **should** be allocated to the investor based on the investor's proportional share of total project costs (total equity plus debt).
  - Companies may separately report additional metrics, such as total emissions of the investee, the investor's proportional share of capital investment in the investee, etc.

Investee emissions (scope 1, scope 2, and scope 3):

- Scope 1 and scope 2 emissions include the direct (scope 1) emissions of the investee or project, as well as the indirect scope 2 emissions from the generation of electricity consumed by the investee or project.
  - For example, if a financial institution provides equity or debt financing to a light bulb manufacturer, the financial institution is **required** to account for the scope 1 and scope 2 emissions of the light bulb manufacturer (i.e., direct emissions during manufacturing and indirect emissions from electricity consumed during manufacturing).
- **Where relevant**, companies **should** also account for the scope 3 emissions of the investee or project.
  - The financial institution **should** account for the scope 3 emissions of the light bulb producer (e.g., scope 3 emissions from consumer use of light bulbs sold by the manufacturer) when scope 3 emissions are significant compared to other source of emissions or otherwise relevant.

Relevant projects:

- Relevant projects include those in GHG-intensive sectors (e.g., power generation), projects exceeding a specified emissions threshold (developed by the company or industry sector), or projects that meet other criteria developed by the company or industry sector.
- Companies **should** account for emissions from the GHG-emitting project financed by the reporting company, regardless of any financial intermediaries involved in the transaction.

Project lifetime:

- Total projected lifetime emissions are reported in the initial year the project is financed, not in subsequent years.
- Where there is uncertainty around a project's anticipated lifetime, companies may report a range of likely values (e.g., for a coal-fired power plant, a company may report a range over a 30- to 60-year period).
- Companies **should** report the assumptions used to estimate total anticipated lifetime emissions.
- If project financing occurs only once every few years, emissions from project finance may fluctuate significantly from year to year.
  - Companies **should** provide appropriate context in the public report (e.g., by highlighting exceptional or non-recurring project financing).

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[13] Specifically: ***Proportional scope 1 and scope 3 emissions*** of equity/debt investments; ***proportional scope 1 and scope 3 emissions*** and ***total projected lifetime scope 1 and scope 2 emissions*** of ***relevant projects*** of debt investments/project finance.

Table 5.10 Accounting for emissions from investments (optional) (*Scope 3 Standard*, p. 55)

Financial investment/service	Description	GHG accounting approach (Optional)
Debt investments (without known use of proceeds)	General corporate purposes debt holdings (such as bonds or loans) held in the reporting company's portfolio where the use of proceeds is not specified	Companies **may** account for scope 1 and scope 2 emissions of the investee that occur in the reporting year in scope 3, category 15 (Investments)
Managed investments and client services	Investments managed by the reporting company on behalf of clients (using clients' capital) or services provided by the reporting company to clients, including: • Investment and asset management (equity or fixed income funds managed on behalf of clients, using clients' capital) • Corporate underwriting and issuance for clients seeking equity or debt capital • Financial advisory services for clients seeking assistance with mergers and acquisitions or requesting other advisory services	Companies **may** account for emissions from managed investments and client services in scope 3, category 15 (Investments)
Other investments or financial services	Other investments, financial contracts, or financial services not included above (e.g., pension funds, retirement accounts, securitized products, insurance contracts, credit guarantees, financial guarantees, export credit insurance, credit default swaps, etc.)	Companies **may** account for emissions from other investments in scope 3, category 15 (Investments)

Table 8.2 Allocation guidance by scope 3 category (*Scope 3 Standard*, p. 93) (Redacted)

Category	Examples of primary data requiring allocation	Allocation guidance
15. Investments	• Site-specific energy use or emissions data	• Economic allocation based on the company's proportional share of equity or debt in the investee

7. Summary of Stakeholder Feedback

The following recommendations are paraphrased from the *Scope 3 Survey Summary* and *Proposals Summary* available online. Alpha-numerical indexes starting with an alpha character correspond with the *Scope 3 Survey Summary*; and those starting with a number correspond with the *Proposals Summary.*

Classification:

- Distinguish financing (upstream) and (b) investment (downstream) activities. (C.5.6) (C.8.2.g)
- Specify whether financial services (e.g., by investment advisory firms) are category 1. (C.5.13)
    - If so, then revise text in Table 5.4 (*Scope 3* Standard, p. 34-37), Table I (*Technical Guidance*, p. 7-10), and Table 5.10 (*Scope 3 Standard*, p. 55).
- Draft clear classification rules for other activities in Table 5.10 (*Standard*, p. 55) (2.1.12.e.i)
    - Including: retirement/pension funds (F.9.2), payroll or compensation, cash deposits in banks (C.5.7)[14], endowments, treasury bonds, securities, insurance coverage, derivatives.
    - Many of these activities are not necessarily investment activities.[15]
- Include retirement plan investments/assets (e.g., "Financial Investment/Services"). (2.1.12.e.ii)
    - Retirement plans (e.g., Defined Benefit and Defined Contribution) reflect investing associated with employee benefits (with employees being inputs to operation).[16, 17, 18]
- Broaden category 15 to include over-the-counter (OTC) derivatives (futures, forwards, swaps, and options) which account for a large fraction of revenue for banks. (2.1.12.e.iii)
    - Define it as "over-the-counter derivative contracts executed between the reporting company… and its clients… including interest rate, currency, equity, credit, and commodity derivative transactions." Companies should optionally quantify OTC derivatives emissions in scope 3 category 15 using either the contract's current market-to-market (MTM) value or the worst case MTM exposure (loan equivalent risk, LER).[19]

Minimum boundaries:

Several respondents provided recommendations to adjust, update, and/or revise the minimum boundary for investments (category 15). This includes:

- Make all currently optional types of financial investments **required** (C.5.1) (2.1.12.a)[20]
- Specify that category 15 is applicable to both FIs and non-FIs (C.5.2) (2.1.12.c)
    - Edit text saying that category 15 is "designed primarily for private… [and] public financial institutions… and other entities with investments not included in scope 1 and

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[14] Classify whether deposits reflect financed or facilitated emissions as companies depositing money have now control over bank use or allocation thereof and no equity in the bank itself. Distinguish between personal vs. business accounts; provide guidance on deposits/withdrawals within a reporting year; and government- or state-sponsored insurance (e.g., U.S. FDIC).
[15] Anonymous (UID 51).
[16] Ceres Accelerator for Sustainable Capital Markets (UID 54). File "Scope 3_Proposal_Ceres" available here.
[17] Sphere (UID 65) and Reflection Asset Management, Social(k), Green Retirement, the Intentional Endowments Network's Sustainable Retirements Initiative, and the Business Climate Finance Initiative. File: "Scope 3_Proposal_Sphere" here.
[18] As You Sow (UID 68). File: "Scope 3_Proposal_AsYouSow" available here.
[19] Ceres Accelerator for Sustainable Capital Markets (UID 54). File: "Scope 3_Proposal_Ceres" available here.
[20] Ceres Accelerator for Sustainable Capital Markets (UID 54). File: "Scope 3_Proposal_Ceres" available here.

scope 2" (*Scope 3 Standard*, p. 52) confuses the fact that all entities have "financial supply chain[s] and therefore fit under this broad description."
    - This closes the loophole for O&G companies which have non-operated JVs (2.1.12.b)[21, 22]
- Include minority share investments in the minimum boundary threshold. (C.5.8)[23]
- Do not require category 15 for SMEs for which investments are irrelevant/immaterial. (C.5.3)
- Mandate inclusion of one or both (or maintain the separate disclosure, as per PCAF):
    - Facilitated emissions (refer to PCAF Part B) (C.5.4).
    - Insurance-associated emissions (refer to PCAF Part C) (C.5.5).
    - Provide guidance for establishing boundaries between parties in principal-agent transactions and multi-party arrangements (C.1.6)

Temporal boundary:

- Consider harmonizing cumulative vs. annualized reporting for category 15, 10, 11 (C.4.6)
    - **Annual** scope 1 and 2 emissions associated with financed projects (category 15) are reported annually but "separately from scope 3"); versus
    - **Cumulative** scope 1 and 2 (direct use-phase) emissions associated with sold products (category 2 or category 11) are reported in the year of sale

Relevance:

- List the following "relevance" language as requirement in the standard proper (C.5.11)
    - The *Scope 3 Standard* on p. 54 states that "where relevant, companies should also account for the scope 3 emissions of the investee or project". The *Technical Guidance*, in Table 15.1 (p. 138), states that "companies should also account for the scope 3 emissions of the investee or project". These requirements should not be noted as "Additional guidance on key concepts in Table 5.9" (*Scope 3 Standard*, p. 54).
- For financed projects, like "infrastructure and industrial projects" (*Technical Guidance,* p. 146), tighten "relevant" scope 3 emissions to mitigate unjustifiable exclusions (C.5.9)
    - The separate reporting of "*total projected lifetime scope 1 and scope 2 emissions of relevant projects* financed during the reporting year" (*Technical Guidance,* p. 138) which, as per the in-text footnote, defines relevant projects to "include those in GHG-intensive sectors (e.g., power generation), projects exceeding a specified emissions threshold (defined by the company or industry sector), or projects that meet other criteria", leaves it open for companies to set superficially low thresholds for inclusion
- Identify the "GHG-intensive sectors" that signify a "relevant project" and specify the minimum requirements for including downstream lifetime scope 1 and scope 2 emissions (C.5.10)
    - In the absence of such guidance, align with industry-specific guidance documents

Significance:

- Reconsider the various "if significant" clauses (2.1.12.d)
    - Include investee emissions "**if significant**" (*Technical Guidance*, p. 141)

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[21] ERM (UID 224). File: "General_Proposal_ERM" available here.
[22] Anonymous (UID 51).
[23] Minority interest is the portion of a corporation's stock not owned by a parent company, generally less than 50%.

    - The "significant influence" clause of Table 5.9 (*Standard*, p. 53) leaves too much room for interpretation. Instead, "define a clear threshold at which scope 3 emissions…" from investees, subsidiaries, and joint ventures, "…are to be taken into account".[24, 25]
- Clarify the boundary for investors to include the downstream, indirect scope 3 emissions of investees if an investee's "scope 3 emissions are **significant** compared to other source[s] of emissions **or otherwise relevant**" (*Technical Guidance,* p. 138). (C.5.16)
    - Given that scope 3 emissions consistently account for the lion share of any company's GHG inventory (scope 1, 2, and 3), this guidance effectively requires (mandates) the inclusion of the scope 3 emissions of most if not all investees by investors.

Interoperability with PCAF:

- Respondents need clear guidance (C.5.14) and "… consistency… in definition and accounting for financed, insured and facilitated emissions"; one recommended aligning with ISSB (2.1.12.f.i)[26]Some recommended not integrating with PCAF standards or guidance, as written.
- Several recommended integrating recent PCAF *Financed Emissions Standard* (Part A)
- Few specified whether or how to integrate either the PCAF *Facilitated Emissions Standard* (Part B) or *Insurance-Associated Emissions Standard* (Part C).[27]
- Some asserted that PCAF's "attribution ratios" would not work for commercial real estate/projects; nor for listed equity and bonds due to the EVIC denominator. (C.5.15) (F.9.5)[28]

Portfolio rollups:

- Investors are being asked to assess portfolio level inventories and need guidance aggregating portfolio holdings and umbrella companies (subsidiary and franchisee). (C.7.7)[29]

Calculation methods:

- **Projects.** Calculation formula 15.4 (p. 152) of the *Scope 3 Technical Guidance,* which is for projected total lifetime emissions from a project (financing), should be itemized as formula 15.5 to distinguish it from 15.4 (p. 150) of the *Scope 3 Technical Guidance,* which estimates emissions associated with the construction of a project (investee) (F.9.1)
- **Other investments.** Specify calculation methods to account for the emissions attributable to all other types of investments (*Scope 3 Standard,* Table 5.9, p. 53). (F.9.3)[30]
- **Spend-based method(s).** Develop a calculation method using spend-based emission factors that multiplies "each asset category's total dollar amount by… [a] specific bank(s)' carbon intensity metric for that asset category… [or] use the most comparable equivalent via a national average or an intensity for a bank with similar lending/investing profiles." [31] (3.1.6.a)

[24] Sustainable AG (UID 36). File: "Scope 3_Proposal_sustainable AG_4" available here.
[25] Intentional Endowments Network (IEN) (UID 69). File: "Scope 3_Proposal_IntentionalEndowmentsNetwork" available here.
[26] Anonymous (UID 6).
[27] PCAF in Part B articulates that "facilitated emissions differ from financed emissions" and "views facilitation as a separate but important metric", and that they are off "balance sheet (representing services rather than financing)" and "temporary" (p. 8).
[28] Enterprise value including cash (EVIC) is the sum of market capitalization of ordinary shares and preferred shares, plus the book value of total debt, plus minorities interest, without deducting cash and cash equivalent (CC&E).
[29] "Scope 3 should not be aggregated across companies… to determine total emissions in a given region" (*Standard*, p. 27).
[30] Other types of investments mentioned include cash holdings or deposits, endowments, treasury bonds, privately traded, publicly traded securities and listed holdings, including over-the-counter (OTC) securities, and OTC derivatives.
[31] Anonymous (UID 51).

8. Options Under Consideration

This section lays out issues for consideration. Sub-sections may include these items:

- **Description of the issue** — an articulation of the issue being considered.
- **Current standard approach** — relevant notes concerning the current standard approach.
- **Options** — a summary of options or approaches to address the issue. *Disclaimer: These may not reflect all possible options nor the final specifications for a chosen option(s).*
- **Other consideration(s)** — other considerations that relate to the issue.
- **Cross-cutting item(s)** — notes on issues being considered by *other* GHG Protocol Technical Working Groups (TWGs) (i.e., the Corporate Standard, Scope 2 Guidance, and Action and Market Instruments TWGs) that are reviewing a consideration or topics relating to it.
- **Analysis of options (table format)** — The intent of any analysis of options is to provide an objective analysis of the pros and cons of different options to addressing or resolving an issue or consideration. While a preferred approach may be implied by the analysis, explicit recommendations on the part of the Secretariat will not be included. The decision-making criteria relied upon for analysis is available here: https://ghgprotocol.org/our-governance.

Options Under Consideration

Issues detailed in this document are itemized below. Pending items will be published in a future version(s) of this discussion paper.

This table may not reflect the complete list of issues to be discussed concerning investments.

Section	Issue for consideration
8.1	Applicability of scope 3, category 15 for non-financial institutions
8.2	Harmonization with PCAF
8.3 (pending)	Classification and nomenclature
8.4 (pending)	Other investment/asset types
8.5 (pending)	Minimum boundaries
8.6 (pending)	Relevant scope 3 emissions of investments (investees)
8.7 (pending)	Lifetime emissions of projects (separately from scope 3)
8.8 (pending)	Facilitated emissions
8.9 (pending)	Insurance-Associated emissions
8.10 (pending)	Calculation methods (for optional investments)
8.11 (pending)	Private/unlisted equity or debt (known uses)
8.12 (pending)	Listed equity or debt (with *unknown* uses)
8.13 (pending)	Sovereign debt
8.14 (pending)	Revenue- or spend-based method
8.15 (pending)	Portfolio rollups

8.1 Applicability of scope 3, category 15 for non-financial institutions

Description of issue:

Clarify whether category 15 is applicable for both financial institutions (FIs) *and* non-financial institutions (non-FIs).

Note on terms:

- Financial institutions: "A company engaged in the business of dealing with financial and monetary transactions such as deposits, loans, investments, and currency exchange… including commercial banks, investment banks, development banks, asset owners/managers (mutual funds, pension funds, close-end funds, investment trusts), and insurance companies" (as defined by PCAF, refer to Table 2.1 glossary of key term herein)
- Non-financial institution: An organization that is not a financial institution (refer to Table 2.1 glossary of key term herein)
    - Important: this term is *not* defined nor used in the GHG Protocol *Scope 3 Standard*

Note on interoperability with PCAF:

- The GHG Protocol in year 2020 reviewed the first edition of *Financed Emissions Standard* (PCAF, 2020) and determined it to be in conformance with the requirements of the *Scope 3 Standard*. This first edition is posted on the GHG Protocol website with the Built on GHG Protocol mark. Revisions made in the second edition (PCAF, 2022a), including Part B (PCAF, 2023a) and Part C (PCAF, 2022b), have *not* been reviewed by GHG Protocol for conformance with the requirements of the *Scope 3 Standard*. Generally, few changes were made between (PCAF, 2020) and (PCAF, 2022a).

Current standard approach:

From Chapter 5, sub-section, "Category 15: Investments", of the *Scope 3 Standard*:

- "This category is applicable to investors (i.e., companies that make an investment with the objective of making a profit) and companies that provide financial services. Investments are categorized as a downstream scope 3 category because the provision of capital or financing is a service provided by the reporting company" [footnote 8*] (p.
- Category 15 is designed primarily for private financial institutions (e.g., commercial banks), but is also relevant to public financial institutions (e.g., multilateral development banks, export credit agencies, etc.) and other entities with investments not included in scope 1 and scope 2."

* Footnote 8 (Chapter 5, *Scope 3 Standard*, p. 57): "Equity investments do not easily fit into the upstream and downstream definitions, but are included along with other types of investments in Category 15 so that all investments are included in a single category."

- Category 15 includes subsidiaries, associated companies, and joint ventures not accounted for (or reported) by a reporting company (including non-FIs) in scope 1 or scope 2 (Ch. 5, Table 5.9)

Options:

- **Option 1:** No change to the existing *Scope 3 Standard* requirements, guidance, and/or text.
- **Option 2 (clarification of existing approach):** All FIs and non-FIs **shall** account for and report [significant] category 15 emissions
- **Option 3:** All FIs and large-cap/non-SME non-FIs **shall** account for and report [significant] category 15 emissions; small-cap/SME non-FIs **[should** or **may]** account for and report [significant] category 15 emissions.
    - This distinction may be addressed via different minimum boundaries for investment types (refer to **section 8.5** herein)

Note: the topic/issue of significance thresholds (e.g., 5%) is being considered by Group B of the scope 3 TWG and will be considered by Group C for category 15-specific application in C.4 & C.5 alongside minimum boundary considerations.

Other consideration(s):

- The *Scope 3 Standard* identifies the applicability of category 15 for the following finance sector firms: investors, companies that provide financial services, private financial institutions (e.g. commercial banks), public financial institutions (e.g., multilateral development banks), and export credit agencies
- The *Scope 3 Standard* identifies the applicability of category 15 for non-FIs, including:
    - " … other entities with investments not included in scope 1 and scope 2" (Scope 3 Standard, p. 52)
    - Entities with equity investments in subsidiaries, associated companies, or joint ventures
- Discussion prompts:
    - Should FIs/non-FIs have different requirements?
        - What are the pros and cons of this based on the decision-making criteria?
    - Is it simpler to use an entity-type-agnostic significance threshold to determine inclusion?
        - For example, a 5% significance threshold
    - Should FIs have a different recommendation ("**should**" or "**may**" language) to use the PCAF standards for preparing scope 3 category 15 emissions inventories?
        - Should non-FIs be required ("**shall**" language) to use only the *Scope 3 Standard* for preparing category 15 emissions inventories or be given the option to use PCAF standards?[32]
    - Are there other considerations that need to be factored into this discussion?
- Consider classifying and/or defining unambiguously the entity or undertaking type(s) that are Fis vs. non- FIs relying on a standardized classification system, e.g., include companies classified as Financials (GICS sector 40) which includes the following industries:
    - Banks (401010), Thrifts & Mortgage Finance (401020), Diversified Financial Services (402010), Consumer Finance (402020), Capital Markets (402030), Mortgage Real Estate Investment Trusts (REITs) (402040), Insurance (403010)

Cross-cutting item(s)

[32] All considerations and recommendations made by the TWG and the Secretariat will be reviewed, approved, and ratified by the ISB and SC in accordance with the Governing Documents, including interoperability with third-party standards.

- Consider clarifying or reiterating that O&G companies which have *non-operated* joint ventures (JVs) must be included in scope 3 category 15 (for companies using the operational control approach).
    - Note: this may be resolved via revisiting minimum boundary in **section 8.5**.
- The topic/issue of significance thresholds (e.g., 5%) is being considered by Group B of the scope 3 TWG and will be considered by Group C for category 15-specific application in C.4 & C.5 alongside minimum boundary considerations.

Example text edits:

Note: Proposed deletions are in red strikethrough; additions in **bold, blue text**; and requirements and/or specifications which are to be decided later in **italicized, bold text** in brackets.

Option 1 (current text in the *Scope 3 Standard*, p. 51):

- "This category is applicable to investors (i.e., companies that make an investment with the objective of making a profit) and companies that provide financial services… Category 15 is designed primarily for private financial institutions (e.g., commercial banks), but is also relevant to public financial institutions (e.g., multilateral development banks, export credit agencies, etc.) and other entities with investments not included in scope 1 and scope 2."

Sample text edits for Option 2:

- "This category is applicable to investors (i.e., companies that make an investment with the objective of making a profit) and companies that provide financial services… Category 15 is ~~designed primarily for~~ **applicable to** private financial institutions (e.g., commercial banks), ~~but is also relevant to~~ public financial institutions (e.g., multilateral development banks, export credit agencies, etc.)**,** and other entities with [**significant**] investments not included in scope 1 and scope 2."

Sample text edits for Option 3:

- "This category is applicable to investors (i.e., companies that make an investment with the objective of making a profit) and companies that provide financial services… Category 15 ~~is~~ ~~designed primarily for~~ **applicable to** private financial institutions (e.g., commercial banks), ~~but is also relevant to~~ public financial institutions (e.g., multilateral development banks, export credit agencies, etc.)**,** and other [**large-cap or non-SME**] entities with [**significant**] investments not included in scope 1 and scope 2."

Table 8.1 (Applicability of scope 3 category 15 emissions for non-FIs)

The table below is a preliminary assessment for Technical Working Group discussion. Color coding reflects low alignment (orange), medium alignment (yellow), or high alignment (green) with the criteria.

	Option 1 (No change)	**Option 2** (Clarification of existing approach)	**Option 3** (Exempt SMEs)
Option description	No change to the *Scope 3 Standard* (2011)	All FIs and non-FIs **shall** account for and report [significant] category 15 emissions	Small-cap/SME non-FIs **[should** or **may]** account for and report [significant] category 15 emissions
Specifications			
Applicability for Non-Fis	(*Scope 3 Standard,* p. 52): "… applicable to investors… and companies that provide financial services… private… [and] public financial institutions… and other entities with investments not included in scope 1 and scope 2."	• GHG Protocol requires that all companies (including FIs and non-FIs) shall account for category 15 emissions. • This could be defined based on a significance threshold (note: significance is being considered by Group B for all scope 3 categories)	• Create exceptions for non-FIs based on company size
Entity types	(*Scope 3 Standard*, p. 52): Applicable to Fis and non-FIs: • Investors (firms) • Financial services (firms) • Financial institutions • Commercial banks • Public financial institutions • Development banks • Export credit agencies • Entities with investments (or including non-FIs)	Sample developments for implementation: • Requiring reporting companies to specify their company type by **GICS industry** • Classify each industry as either **FI versus non-FI** by the GHG Protocol *Scope 3 Standard*	Sample developments for implementation: • Setting employee, asset, and/or annual income thresholds to **define SMEs** (i.e., micro, small, medium enterprises)[33, 34] • Note that this would or could have implications for FIs that would be classified as an SME

[33] IFC: https://www.ifc.org/en/what-we-do/sector-expertise/financial-institutions/definitions-of-targeted-sectors
[34] IFRS: https://www.ifrs.org/issued-standards/ifrs-for-smes/

Table 8.1 (Applicability of scope 3 category 15 emissions to non-FIs) (continued)

	Option 1 (No change)	**Option 2** (Clarification of existing approach)	**Option 3** (Exempt SMEs)
Decision-making criteria			
Scientific integrity	N/A	N/A	N/A
GHG accounting and reporting principles	• Fully aligned in terms of completeness and transparency by all companies	• Fully aligned in terms of completeness and transparency by all companies	• Reduced completeness and transparency by SMEs
Support decision making that drives ambitious global climate action	• Many non-FIs may be excluding category 15 emissions from their scope 3 inventory due to lack of clarity	• More non-FIs would likely include category 15 emissions; this may support more action (using disclosure as the proxy)	Same as **Option 2**
Support programs based on GHG Protocol and uses of GHG data	• May not facilitate data collection by non-FIs due to lack of clarity	• Could facilitate more data collection by entities which are the value chain partners of entities that are subject to ESRS E1 and IFRS S2 mandatory disclosure	Same as **Option 2**
Feasibility to implement	• It may be challenging for some non-FIs and/or SMEs to collect data	• It may be challenging for some non-FIs and/or SMEs to collect data	• Feasible by allowing SMEs with limited capacity to exclude category 15 from scope 3 GHG accounting and reporting

8.2 Harmonization with Partnership for Carbon Accounting Financials (PCAF)

Note to reader:

This section details six requirements (**8.2.1**, **8.2.3**, …, and **8.2.6**) in the *Scope 3 Standard* and the PCAF standards. There are other requirements and guidance which will be reviewed for harmonization are which are detailed in other sections in this document (e.g., facilitated emissions in **section 8.8**).

Note: This topic refers to technical harmonization only. Any process or partnership issues are to be addressed by the GHG Protocol governing bodies.

Description of issue:

Review harmonization of the requirements and guidance between the GHG Protocol *Scope 3 Standard* and PCAF's recently updated PCAF standards.

- Non-investment specific (general) related topics (**section 8.2)**:
  - (**8.2.1**) Accounting and reporting principles
    - Corporate Standard TWG (handled by)
  - (**8.2.2**) Greenhouse gases
    - Corporate Standard TWG (handled by)
  - (**8.2.3**) Avoided emissions
    - Action and Market Instruments TWG (handled by)
  - (**8.2.4**) Removals
    - Land Sector and Removals TWG
  - (**8.2.5**) Consolidation approaches
    - Corporate Standard TWG
  - (**8.2.6**) Data quality score
    - Scope 3 TWG Group A
- Classification of investments (**section 8.3**)
- Other investment/asset types (**section 8.4**)
- Minimum boundaries of investments (**section 8.5**, **section 8.6**, **section 8.7**)
- Facilitated emissions (**section 8.8**)
- Insurance-associated emissions (**section 8.9**)
- Calculation method(s) (**sections 8.10**, **section 8.11**, **section 8.12**, **section 8.13**)
- Attribution ratios (economic allocation) (**section 8.12**)

Other consideration(s):

- The *Scope 3 Standard* only currently provides four (4) pages of dedicated guidance on accounting for GHG emissions from investments (Chapter 5, p. 52-55)
- The *Technical Guidance* provides seventeen (17) pages (Chapter 15, p. 136-152) plus one page via Appendix D (p. 182) on quantifying emissions from investments that are *required* in the minimum boundary.
- *PCAF Financed Emissions* (second edition) (Part A) provides 151 pages of guidance on investments, including several investment types for which guidance is not provided by the GHG Protocol *Scope 3 Standard*, including: listed equity, corporate bonds (general purpose), commercial real estate, mortgages, motor vehicle loans, and sovereign debt.

  - Refer to **Appendix A5** and **Appendix A6** for tables summarizing and comparing investment/asset types and classification
  - Refer to **Appendix A9** for investment type calculation methods (formulas)
- A total of 532 institutions with a total of $91 trillion in financial assets have either committed to and/or have already started reporting their financed emissions in accordance with PCAF.[35]
  - Disclosed: 209 institutions with $53 trillion in financial assets.
  - Committed: 323 institutions with $39 trillion in financial assets.
  - This is approx. 20% of total assets of financial institutions worldwide in year 2022.[36]
- ESRS E1 (clause AR 46) states that reporting financial institutions shall consider PCAF guidance ("When preparing the information on gross Scope 3 GHG emissions required under paragraph 51, the undertaking **shall** [emphasis added]… (b) if it is a financial institution, consider the GHG Accounting and Reporting Standard for the **Financial Industry from the Partnership for Carbon Accounting Financial (PCAF)** [emphasis added], **specifically part A "Financed Emissions" (version December 2022)** [emphasis added]…")
  - From 2024 onwards the ESRS will affect nearly 50,000 companies that operate in EU-regulated markets (approximately 40,000 EU and 10,000 non-EU companies).[37]
- The (IIGCC, 2024a) "NZIF [2.0] endorses the PCAF Standard for accounting and/or attributing 'financed emissions' to listed corporate assets and sovereign bonds" (p. 18).
  - The IIGCC is used by 400+ members (including a broad range of asset owners and managers, including many of the largest global institutions investors) in 27 countries with $65 trillion in assets.[38]

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[35] PCAF does not disclose the year when this U.S. dollar ($) value of financial assets was determined: $91.4 trillion in financial assets between 532 companies; $52.6 trillion financial assets between 209 companies that have disclosed; $38.8 trillion financial assets between 323 companies that have committed. See: https://carbonaccountingfinancials.com/financial-institutions-taking-action (data accessed and downloaded on October 24, 2024).
[36] Statista. 'Total assets of financial institutions worldwide from 2002 to 2022'. Published January 31, 2024. https://www.statista.com/statistics/421060/global-financial-institutions-assets. (Accessed October 24, 2024)
[37] EcoAct: https://eco-act.com/blog/csrd-non-financial-disclosure-in-eu/. (Accessed October 24, 2024
[38] IIGCC members: https://www.iigcc.org/our-members. (Accessed October 24, 2024)

8.2.1 Accounting and reporting principles

Description:

- PCAF standards conform with the existing GHG Protocol accounting and reporting principles.

Current standard approach:

- Refer to **Appendix A1** for a comparison of GHG Protocol and PCAF accounting and reporting principles across the PCAF standards.

PCAF standards:

- Note that Part A (PCAF, 2022a) lists five requirements (not principles) "derived from GHG Protocol's five principles" (Part A, p. 36) which are handled in part in this **section 8.2** (e.g., refer to data quality requirements in **section 8.2.6**) and in other sections of this document (e.g., refer to minimum boundary requirements in **section 8.5**).

Cross-cutting item(s):

- The Corporate Standard TWG is considering maintaining, redefining, removing, and/or adding (new) accounting and reporting principles to the current accounting and reporting principles. Revision made by the Corporate Standard TWG may have implications for harmonization with PCAF.
- The *Land Sector and Removals Standard* by GHG Protocol includes three new principles which may affect this consideration at a future point in time (when the *LSR Standard* is published. For reference (but not necessarily consideration by nor relevance for immediate consideration or discussion by Group C, including because the Corporate Standard TWG will be considering the accounting and reporting principles), the *LSR Standard* introduced three new principles, two of which are *only* relevant for removals:
    - Conservativeness[39] and Permanence[40] are required for removals accounting; and
    - Comparability[41] is recommended for emissions and removals accounting when relevant.

[39] Conservativeness: "Use conservative assumptions, values, and procedures when uncertainty is high and accurate estimates are not practicable. Conservative values and assumptions are those that are more likely to overestimate GHG emissions and other metrics and underestimate removals." (*Land Sector and Removals Standard Version 0.11, p. 9*)

[40] Permanence: "Ensure mechanisms are in place to monitor the continued storage of reported removals, account for reversals, and report emissions from associated carbon pools." (*Land Sector and Removals Standard Version 0.11, p. 10*)

[41] Comparability: "Apply common methodologies, data sources, assumptions, and reporting formats such that the reported GHG inventories from multiple companies can be compared." (*Land Sector and Removals Standard Version 0.11, p. 10*)

8.2.2 Greenhouse gases and GWPs

Description:

- PCAF standards conform with existing GHG Protocol greenhouse gas and GWP requirements.

Current standard approach:

- Refer to **Appendix A4** comparing GHG type requirements of PCAF and the GHG Protocol.

Cross-cutting item(s):

- The Corporate Standard TWG is considering changing the number of greenhouse gases (GHGs) required and/or which global warming potential (GWP) values reporting organization may use to quantify GHG emissions in full conformance with the GHG Protocol. Revision made by the Corporate Standard TWG may have implications for harmonization with PCAF.

8.2.3 Avoided emissions

Description:

- PCAF standards currently conform with existing GHG Protocol greenhouse gas and GWP requirements.

Current standard approaches:

- The *Scope 3 Standard* explicitly does not permit the reporting of avoided emissions values inside a corporate scope 1, 2, and 3 GHG emissions *inventory*. This is consistent with the requirements of all existing PCAF standard.
- However, the *Scope 3 Standard,* exclusively, points to the *Project Protocol* by GHG Protocol regarding quantifying and/or accounting for avoided emissions.

PCAF standards:

- PCAF Part B currently requires that companies *report* avoided emissions values separately from a scope 3 category 15 inventory (refer to **Appendix A8**).
- PCAF Part B quantification, calculation, and accounting guidance for avoided emissions values *may* not correspond with the requirements and/or guidance of either the *Land Sector and Removals Guidance* by the GHG Protocol (expected in Q1 of 2025) or *The GHG Protocol for Project Accounting* (2005), also known as the 'Project Protocol'.

Cross-cutting item(s):

- The Actions and Market Instruments TWG is considering how to quantify, account for, and report avoided GHG emissions (i.e., projected *non*-emission events). This may extend to the purchase of credits, certificates, and/or other instruments that reflect atmospheric carbon removal and/or long-term storage (sequestration).

8.2.4 Removals

Description of issue:

PCAF standards would need to conform with requirements regarding removals from the *Land Sector and Removals Standard* by GHG Protocol (expected in Q1 of year 2025) to harmonize with the *Scope 3 Standard.* Currently, (PCAF, 2022a) Part A (p. 60) states that PCAF will conform with requirements on removals from the GHG Protocol *Land Sector and Removals Standard*.

Current standard approach:

- The *Scope 3 Standard* does *not* permit the inclusion of removals in a scope 3 inventory; removals may be reported separately.
- The *Land Sector and Removals Standard* by the GHG Protocol (currently undergoing final review, expected to be published in year Q1 of year 2025) specifies requirements for quantifying, accounting, and reporting emissions attributable to removals (including via biogenic or technological sinks). Requirements published in the *Land Sector and Removals Standard* may have implications for harmonization with PCAF.

PCAF standard:

- Currently, (PCAF, 2022a) Part A (p. 60) states that PCAF will conform with requirements on removals from the GHG Protocol *Land Sector and Removals Standard*.
- PCAF requires that companies *report* emission removals (values) separately from a scope 3 category 15 inventory (refer to **Appendix A8**).
- PCAF quantification, calculation, and accounting guidance for emission removals (values) *may not* correspond with the requirements and/or guidance of the *Land Sector and Removals Guidance* by the GHG Protocol.

Cross-cutting item(s):

- The Actions and Market Instruments TWG is considering how to quantify, account for, and report GHG emissions associated with or attributable to market instruments. This may extend to the purchase of removal credits, certificates, and/or other instruments that reflect atmospheric carbon removal and/or long-term storage (sequestration). Revision made by the AMI TWG may have implications for harmonization with PCAF.

8.2.5 Consolidation approaches

Description of issue:

- Consider whether the GHG Protocol *Corporate Standard* and *Scope 3 Standard* should not permit the equity share approach for FIs and/or non-FIs that report scope 3 category 15

Current standard approach:

- Table 5.9, Accounting for emissions from investments (p. 53): "In general, companies in the financial services sector **should** [emphasis added] account for emissions from equity investments in scope 1 and scope 2 by **using the equity share** [emphasis added] consolidation approach to obtain representative scope 1 and scope 2 inventories."

PCAF standards:

- PCAF currently does *not* permit financial institutions to use the equity share consolidation approach: "For PCAF reporting, financial institutions **shall** use the **operational control** [emphasis added] approach or the **financial control** [emphasis added] approach; as a result, all financed emissions shall be accounted for in their scope 3 category 15 reporting." (PCAF, Part A, Second Edition, Dec 2022, p. 123) (refer to **Appendix A3**)
- "This requirement eliminates inconsistencies in accounting that could arise from using the equity share approach, which would require scope 1 and 2 emissions from… equity investments to be reported under the financial institution's scope 1 and 2 emissions (according to its share of equity…)" (Part A, p, 37)
- Not that allowing the equity share approach for, exclusively, financial institutions (as is done by PCAF), is consistent with the current *Scope 3 Standard* (2011) which provides optionality in terms of consolidation approach selection.

Options:

These options are designed for the Scope 3 TWG to provide recommendations to the Corporate Standard TWG which will address consolidation approaches generally.

- **Option 1:** GHG Protocol makes no change to consolidation approach rules, nor any exceptions for FIs and/or non-FIs, in the *Scope 3 Standard*
- **Option 2:** GHG Protocol adopts PCAF's approach to not permit the equity share consolidation approach for **FIs** that comply with the *Scope 3 Standard*
- **Option 3:** GHG Protocol adopts PCAF's approach to not permit the equity share consolidation approach for **FIs** *and* **non-FIs** that account for category 15 emissions

Other consideration(s):

- Discussion prompts:
    - Option 2 would reflect a departure from existing *Scope 3 Standard* language in Table 5.9 (p. 52): "… the financial services sector **should** [emphasis added] account for emissions from equity investments in scope 1 and scope 2 by using the **equity share** [emphasis added] …"

- Should FIs/non-FIs have different requirements?
  - What are the pros and cons of this based on the decision-making criteria?
- What implications could different consolidation approaches of investees have on aggregate portfolio emissions?
  - Note that the topic of portfolio rollups, **section 8.15**, is scheduled for consideration in the Scope 3 TWG Group C meeting C.9
- ESRS E1 requires the use of the financial control approach (the reporting undertaking, which is the consolidated accounting group), requiring an extension of Scope 1 and 2 reporting for assets under operational control that are not included in the consolidated financial statements[42]

Cross-cutting item(s):

- The Corporate Standard TWG is considering limiting the number of consolidation approaches (i.e., equity share, operational control, and financial control) available for use. The outcome(s) of the *Corporate Standard* updates will be harmonized with those of the *Scope 3 Standard*. Revision made by the Corporate Standard TWG may have implications for harmonization with PCAF.

[42] (GHG Protocol, November 2024): 'Updated Overview of GHG Protocol Integration in Regulatory Climate Disclosure Rules' available here: https://ghgprotocol.org/blog/updated-overview-ghg-protocol-integration-regulatory-climate-disclosure-rules

Table 8.2.1 (8.2.5 Consolidation approaches)

The table below is a preliminary assessment for Technical Working Group discussion. Color coding reflects low alignment (orange), medium alignment (yellow), or high alignment (green) with the criteria.

	Option 1 (No change to the *Scope 3 Standard*)	**Options 2** (Do not permit equity share consolidation approach)	**Option 3** (… including for non-FIs)
Specification			
Consolidation approaches (refer to **section 8.2.5** herein)	The *Scope 3 Standard* **permits** the equity share consolidation approach (including for category 15 emissions), in fact: Specifically, from Table 5.9, Accounting for emissions from investments (p. 53): "In general, companies… should account for emissions from equity investments in scope 1 and scope 2 by **using the equity share** [emphasis added] consolidation approach…"	• FIs which do ***not*** use PCAF to account for category 15 emissions would report scope 3 inventories like all FIs which conform with PCAF Note: • If the Corporate Standard TWG revises the suite of GHG Protocol corporate standards by removing the equity share consolidation approach, then this Option 1 & 2 would be redundant	• Do not permit the equity share consolidation approach for **any** reporting companies that account for and report category 15 emissions Note: • If a significant threshold is specified by Group B of the Scope 3 TWG, then the above Option 2 would apply to all companies with significant category 15 emissions (e.g., >=5%)
Decision-making criteria			
Scientific integrity	N/A	N/A	N/A
GHG accounting and reporting principles	• Multiple consolidation approaches may negatively affect public stakeholders' ability to assess investor performance consistently	• Fewer consolidation approaches may support public stakeholders' ability to assess investors performance consistently	• Fewer consolidation approaches may support public stakeholders' ability to assess investors performance consistently
Support decision making that drives ambitious global climate action	• May limit comparing investor performance consistently to drive market pressure on capital allocation towards decarbonization	• May support comparing investor performance consistently to drive market pressure on capital allocation towards decarbonization	• May support comparing investor performance consistently to drive market pressure on capital allocation towards decarbonization
Support programs based on GHG Protocol and uses of GHG data	• Permitting the equity share approach does not align with ESRS E1	• Not permitting the equity share approach aligns with ESRS E1	• Aligns with ESRS E1 for both FIs and non-FIs
Feasibility to implement	• Multiple consolidation approaches may negative affect adoption and implementation by investors	• May support wider and more consistent adoption and implementation by investors	• May support wider and more consistent adoption and implementation by investors

8.2.6 Data quality soring for category 15

Description of issue:

- Consider harmonizing a data quality scoring methodology between the GHG Protocol *Scope 3 Standard* (and/or corporate standards generally) and the PCAF standards.

Current standard approach:

- While the "investment-specific" and "average-data" method are listed in order of priority (*Technical Guidance*), however, depending on the quality of data used for calculations, the quality may vary between said methods (refer to the series of **Appendices B10**).
- No data quality scoring hierarchy or scoring is provided in the *Scope 3 Standard*, however:
    - "Companies are required to provide a description of the data quality of reported scope 3 emissions data to ensure transparency and avoid misinterpretation of data (see chapter 11)." (Chapter 7, section 7.6, *Scope 3 Standard*, p. 84).

PCAF standards:

- PCAF provides a data hierarchy or "data quality score table" for each asset type
- Refer to Annex 10 (PCAF, 2022a, p. 142) for Detailed data quality score tables per asset class
- Refer to the series of **Appendices B10** for summary tables by asset type specified by PCAF (which include data quality scores by calculation method/data source in the footnote)

Options:

These options are designed for the Scope 3 TWG Group C to provide recommendations to the Scope 3 TWG Group A which will address data quality and potential data quality hierarchies across the *Scope 3 Standard* generally (i.e., category-agnostically *and* potentially on a category-specific level).

- **Option 1:** GHG Protocol to not adopt PCAF's data quality scoring methodology.
    - Consider recommending changes to the PCAF data scoring hierarchy to remove the potential for a mis-scoring of revenue-based calculations methods.
- **Option 2:** GHG Protocol to adopt PCAF's data quality scoring methodology and guidance in the *Scope 3 Standard* for, exclusively, category 15 investments (for FIs and non-FIs)
- **Option 3:** GHG Protocol should develop an independent scoring method (developed by Group A) informed by Group C.

Other consideration(s):

- PCAF to consider adopting and/or conform with scope 3 revision changes concerning data quality requirements, including a potential data quality hierarchy, which may be developed by the GHG Protocol during the update process
- PCAF's data quality scoring methodology (refer to the series of **Appendices B10** including footnotes therein) may already be widely and actively used by some or most of the 209

institutions that currently disclose financed, facilitated, and/or insurance-associated emissions using PCAF (excluding the 323 institutions that have committed to disclosing using PCAF).[43]

- Note a *potential* weakness of PCAF's data quality score:
  - A data quality score of 1 could correspond with the use of calculation methods that should receive a data quality score of 4 (using PCAF's data quality score)
  - For example, an investee using the average-data method (a revenue-based calculation in the Scope 3 Standard) would yield a score of 1 for these results, if verified for GHG Protocol compliance; thus
  - A financial institution using PCAF's data quality score could receive a score of 1 (for said investees' GHG Protocol-verified results) relying on a revenue-based method that should receive a score of 4
  - For example:
    - Annex 10.1, Table 10.1-2 ("Detailed description of the data quality score table for business loans and unlisted equity"), provides the following scores:
      - 1 for (Option 1a) "Verified GHG emissions data from the company [investee] in accordance with the GHG Protocol".
      - 2 for (Option 1b) "Unverified GHG emissions data calculated by the company [investee] in accordance with the GHG Protocol".
      - 4 for (Option 3a) revenue-based calculations using sector-specific emission factors per unit revenue (or "other suitable financial indicators as a proxy" (PCAF, Part A, p. 142)).
    - However, a financial institution (reporting company) could use emissions data from an investee that relied on the average-data method specified in the *Scope 3 Standard* (which uses a revenue-based calculation) and receive a data quality score (as per PCAF) of 1 if this investee emissions data is verified to comply with the GHG Protocol *Scope 3 Standard*.
    - A financial institution reporting in accordance with PCAF could rely on data from investees receiving a score of 1 using calculation methods and data quality (revenue-based calculations) that should receive a score of 4.
- Discussion prompts:
  - Should GHG Protocol consider a unique data quality score for category 15?
  - Or develop a consistent data quality score for all scope 3 categories?
  - Is it sensible to require a different data quality scoring system for investors?
  - Should scope 3 categories 1 through 14 feature a different data quality score versus 'financed' scope 3 emissions (category 15)?

Cross-cutting item(s):

- Group A of the Scope 3 TWG is considering data quality and calculation methods, which extends to potential data quality scoring and/or hierarchies. Based on this work, revisions may be introduced for a data quality hierarchy and/or accounting/reporting requirements and the use of a/the spend-based or revenue-based method for calculations. This may have implications for harmonization with PCAF.

[43] PCAF does not disclose the year when this U.S. dollar ($) value of financial assets was determined: $91.4 trillion in financial assets between 532 companies; $52.6 trillion financial assets between 209 companies that have disclosed; $38.8 trillion financial assets between 323 companies that have committed. See: https://carbonaccountingfinancials.com/financial-institutions-taking-action (data accessed and downloaded on October 24, 2024).

Table 8.2.2 (Data quality scoring)

The table below is a preliminary assessment for Technical Working Group discussion. Color coding reflects low alignment (orange), medium alignment (yellow), or high alignment (green) with the criteria. *Important: The Scope 3 TWG Group A is considering data quality and may introduce a data quality hierarchy which would apply to category 15.*

	Option 1* Group C of the TWG to **not** develop/adopt data quality scoring for category 15	**Option 2** GHG Protocol to **adopt** PCAF's scoring methodology for category 15 (independently of or next to score develop by Group A)	**Option 3** GHG Protocol should develop an independent scoring method (by Group A)
Specifications			
Data quality score (refer to **section 8.2.6** herein)		• Adopting PCAF's data quality scoring hierarchy would require mapping PCAF's calculation method classification/naming to GHG Protocol consistently (refer to the **Appendix A1** and **Appendices A10**).[44]	*• Scope 3 TWG Group A would develop such a data hierarchy with potential review by Group C.*
Decision-making criteria			
Scientific integrity	• Less optimal: Using more reliable data sources and calculations methods are a proxy for more closely ensuring scientific integrity and validity and adhering to the best applicable science and evidence	• More optimal: Using more reliable data sources and calculations methods are a proxy for more closely ensuring scientific integrity and validity and adhering to the best applicable science and evidence	Like **Option 2.**
GHG accounting and reporting principles	• Does not encourage the use of more reliable calculation methods and/or data sources which stunts improving relevancy and accuracy.	• Could improve relevance and accuracy if more reliable calculation methods and/or data sources are used (encouraged) by a data quality score.	Like **Option 2.**
Support decision making that drives ambitious global climate action	• The lack of data quality indicators for category 15 emissions may stunt data quality improvements in the market (particularly for FIs) which may stunt global action (using data quality as a proxy)	• The quality of category 15 emissions may improve (if data quality disclosure compel market developments)	Like **Option 2.**
Support programs based on GHG Protocol and uses of GHG data	N/A	N/A	N/A
Feasibility to implement	• Easy for compliance (compared to requiring data quality scoring calculations)	• Applying data quality scores for each vendor could be challenging for companies (especially non-FIs)	Like **Option 2.**

[44] PCAF provides a data quality scoring hierarchy for each investment type based on the calculation methods and data sources specified. The scoring methods differ for each investment type (even though the scoring runs uniformly from a low of 5 to a high of 1).

Appendices

There are two series of appendices. The first, **A series**, compares the GHG Protocol *Scope 3 Standard* and the PCAF standards (as defined herein); and the second, **B series**, provides notes on relevant frameworks, climate programs, reports, papers, and other.

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Appendix A1. Summary of PCAF standards and GHG Protocol comparison

This appendix provides a summary of the PCAF standards via **Table A1.1** and a comparison of GHG Protocol with PCAF via **Table A1.2**.

Regarding PCAF standard editions:

- First edition: The first PCAF Global Accounting and Reporting Standard for the Financial Industry (2020) (first edition), now commonly referred to as the *Financed Emissions Standard*, provides methodological guidance for investors to account for the emissions they finance through loans and investments, organized by asset classes. The first edition (PCAF, 2020) of Part A was "reviewed by GHG Protocol and is in conformance with the requirements… for Category 15 investment activities" of the *Scope 3 Standard*.[45] It is hyperlinked on GHG Protocol's website on the Guidance Built on GHG Protocol page.[46]
- Second edition: PCAF launched the second version[47] in 2022 and 2023, comprised of three parts: *Financed Emissions Standard* (Part A), *Facilitated Emissions Standard* (Part B), and *Insurance-Associated Emissions Standard* (Part C) (collectively, the "**PCAF standards**").

Regarding the Build on GHG Protocol mark:

Importantly: Any revisions or new requirements in the second edition (Part A) and the first versions (Part B and Part C) have not been reviewed for the GHG Protocol for conformance with the Scope 3 Standard and thus have not been granted a Built on GHG Protocol mark.

Table A1.1 PCAF standards

Program	Document	Notes
Partnership for Accounting Financials (PCAF)	The Global GHG Accounting and Reporting Standard Part A: Financed Emissions (Second Edition, Dec 2022) Revisions have *not* been reviewed by GHG Protocol for conformance.[48]	• "… the purpose… [of Part B] is to provide financial institutions with… methodologies to measure and report the emissions they finance through loans and investments in conformance with the GHG Protocol…" (p. 11) • **Financed emissions** are the "absolute emissions that banks and investors finance through their loans and investments" (p. 132) • **Absolute emissions** are the "emissions attributed to a financial institution's lending and investing activity" (p. 131)
Partnership for Accounting Financials (PCAF) (continued)	The Global GHG Accounting and Reporting Standard	• "[Part B] … provides detailed methodological guidance for the measurement and disclosure of

[45] GHG Protocol: https://ghgprotocol.org/global-ghg-accounting-and-reporting-standard-financial-industry (October 25, 2024)
[46] GHG Protocol: https://ghgprotocol.org/guidance-built-ghg-protocol (October 25, 2024)
[47] PCAF: https://carbonaccountingfinancials.com/en/newsitem/pcaf-launches-the-2nd-version-of-the-global-ghg-accounting-and-reporting-standard-for-the-financial-industry
[48] Any revisions and/or new requirements in the second edition (Part A) or first versions (Part B and Part C) have not been reviewed for GHG Protocol conformance and have not been granted a Built on GHG Protocol mark.

	Part B: Facilitated Emissions (First Version, December 2023) Part B has *not* been reviewed by the GHG Protocol for conformance with the *Scope 3 Standard*.	GHG emissions associated with capital market transactions" (p. 4) • "[Capital market transactions] are facilitated, using various services the facilitating institution provides, rather than finance, because the institution is not providing financing directly to the issuer. This leads to a temporary association with transactions… where usually no financial (credit) risk taken by the financial institution." • "Facilitated emissions differ from financed emissions in two respects: they are rarely held on a financial institution's balance sheet (representing services rather than financing); and… [an] institution's association with the transaction is temporary" (p. 8). • "PCAF views facilitation as a separate but important metric", different from financed (owned) emissions (p. 8).
	The Global GHG Accounting and Reporting Standard Part C: Insurance-Associated Emissions (First Version, November 2022) Part C has *not* been reviewed by the GHG Protocol for conformance with the *Scope 3 Standard*.	• Part C "Provides detailed methodological guidance for insurers to measure and disclose the GHG emissions associated with an insurer's "re/insurance underwriting portfolios… for two segments: commercial lines and personal motor lines" (p. 5). • Insurance-associated emissions in Part C are identified from the perspective of an insurer (*not* an insured party) to account for the operating emissions of its insured parties. • Thus, Part C does *not* provide guidance on quantifying or allocating emissions associated with the investments made and controlled by an insurer (using the insurance premiums paid by insured parties) to its insured parties. • Part B specifies that: "Insurance-associated emissions are a supplementary accounting note to the GHG Protocol scope 3 category 15 (Investments)" and "… shall be reported separately…" from financed emissions (p. 52).

Table A1.2 Comparison of GHG Protocol with PCAF

The following table compares the GHG Protocol *Scope 3 Standard* and PCAF standards (focusing primarily on the *Financed Emissions Standard*, Part A).

Item	**GHG Protocol**	**PCAF (Part A, Part B, Part C)**
Standards documents	One (1)[49]	Three (3)
Guidance documents	One (1)	N/A
Pages	• 4 pages (Standard) • 17 pages (Guidance)	• 151 pages (Part A), Financed • 56 pages (Part B), Facilitated • 82 pages (Part C), Insurance
Target user(s) (type of entity or undertaking)	• **FIs**: Investors, financial services (firms), private/public financial institutions (e.g., commercial banks or development banks), export credit agencies (*Scope 3 Standard*, p. 52). • **Non-FIs**: Entities with investments.	• **FIs**:[50] Commercial banks, investment banks, development banks, asset owners/managers (mutual funds, pension funds, close-end funds, investment trusts), and insurance companies (PCAF, Part A, p. 132).
Accounting and reporting principles	• Completeness, Consistency, Relevance, Accuracy, and Transparency.	• Same as GHG Protocol. • Refer to **Appendix A2**.
Greenhouse gases	• CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3.	• Same as GHG Protocol. • Refer to **Appendix A4**.
Consolidation approaches	• Equity share • Operational control • Financial control	• Operational control • Financial control • Refer to **Appendix A3**.
Investment types ***with*** calculation guidance	*Scope 3 Standard* (2011) and *Technical Guidance* (2013): • Equity investments* • Debt investments (with known use of proceeds) • Project finance * Note that the GHG Protocol calculation guidance for equity investments may not be suitable for listed equity. Refer to **Appendix A5** and **B5**.	Financed (**Part A**): • Listed equity (5.1) • Corporate bonds (5.1) • Unlisted equity (5.2) • Business loans (5.2) • Project finance (5.3) • Commercial real estate (5.4) • Mortgages (5.5) • Motor vehicle loans (5.6) • Sovereign debt (5.7) • Facilitated (**Part B**), select capital market transactions • Insurance-associated activities (**Part C**), for/by insurers • Refer to **Appendix A5** and **A6**.

[49] Note that the GHG Protocol *Land Sector and Removals Standard* may have implications for scope 3 category 15 emissions.
[50] (PCAF, Part A, p. 132): "A company engaged in the business of dealing with financial and monetary transactions such as deposits, loans, investments, and currency exchange..."

Table A1.2 Comparison of GHG Protocol with PCAF (continued)

Item	GHG Protocol	PCAF (Part A, Part B, Part C)
Investment types ***without*** calculation guidance	• Debt (unknown uses) • Managed investments and client services • Other investments or financial services	• N/A* * Excluding asset types for which neither PCAF nor GHG Protocol provides guidance (**section 8.4**).
Minimum boundaries	• **Required**: Equity, Debt (known uses), and Project financed • **Optional**: Debt (unknown uses), Managed investments and client services, and Other Refer to **Appendix A7** and **A8**.	• **Required**: All investment types are required (including scope 3 emissions of investees). Refer to **Appendix A7** and **A8**.
Calculation methods and attribution (allocation) ratios	Refer to **Appendix A9** and the series of **Appendices A10** for each investment/asset type.	Refer to **Appendix A9** and the series of **Appendices A10** for each investment/asset type.
Avoided emissions	N/A (recorded separately)	N/A (recorded separately)
Removals emissions	N/A (recorded separately) The *Land Sector and Removals Standard* by GHG Protocol will stipulate requirements (released expected Q1 2025)	Recorded separately (*identical*) Currently, (PCAF, 2022a) Part A (p. 60) states that PCAF will conform with requirements on removals from the GHG Protocol *Land Sector and Removals Standard*.
Data quality score	N/A	Data quality scores (hierarchy) by calculation method and data source(s), for each asset type. Refer to Annex 10 (PCAF, Part A, 2022, p. 142-148) for Detailed data quality score tables per asset class.

Appendix A2. Accounting and Reporting Principles:

Description: PCAF uses the same accounting and reporting principles as the GHG Protocol.

GHG Protocol	Partnership for Carbon Accounting Financials
Scope 3 Standard (2011): Completeness, Consistency, Relevance, Accuracy, and Transparency.	*Financed Emissions* (2022), Part A: PCAF recognizes all GHG Protocol accounting and reporting principles.
See: Table 3.1, List of requirements in this standard (*Scope 3 Standard*)	*Financed Emissions* (2022), Part A: PCAF lists five requirements (not principles) "derived from GHG Protocol's five principles" (Part A, p. 36) as follows (paraphrased): 1. **Recognition**: Reporting companies **shall** account for all emissions under category 15. 2. **Measurement**: Absolute emissions **shall** be measured (avoided and removed emissions may be measured).[51] 3. **Attribution**: Share of emissions **shall** be proportional to the share of its exposure relative to the total value. 4. **Data quality**: Reporting companies **shall** use the highest quality data and improve it over time. 5. **Disclosure**: Public disclosure is crucial (but not required).
	Facilitated Emissions (2023), Part B: "Once this proposed methodology has been finalized, and after review by the GHG Protocol, this paper will be included as a separate method within the [Part A] …" (PCAF, Part B, p. 20)
n/a	*Insurance-Associated Emissions* (2022), Part C: PCAF, Chapter 6, Reporting requirements…, states that all GHG Protocol accounting and reporting principles **shall** be followed. Note: Insurance-associated emissions are ***not*** inventory measures.[52]

[51] Removals, etc.

[52] Importantly: "For the avoidance of doubt, insurance-associated emissions and financed emissions are not, and are not intended to be, directly comparable" (*Insurance-Associated Emissions*, Part C, p. 52). Further, "…the output of financed emissions and insurance-associated emissions calculations are not aligned and will diverge significantly…" (Box 6-1, *Insurance-Associated Emissions*, Part C, p. 53).

Appendix A3. Consolidation approaches

Description: The GHG Protocol permits the use of three consolidation approaches; PCAF permits the use of two of said three consolidation approaches, namely, operational or financial control but *not* the equity share approach. Notes: The dedicated GHG Protocol *Corporate Standard* TWG will be reviewing consolidation approach requirements across the suite of GHG Protocol corporate standards.

GHG Protocol Scope 3 Standard	PCAF (Part A, *Financed Emissions*)
Equity share Operational control Financial control	~~**Equity share**~~ (i.e., not permitted as per PCAF) Operational control Financial control PCAF does *not* permit the equity share approach to ensure that equity holders don't account for investee scope 1 and scope 2 emissions in said investor's (reporting company's) scope 1 and scope 2 inventories (PCAF, Part A, p. 37). This ensures that an institution's financed emissions are reported in scope 3 rather than an institution's scope 1 or scope 2 inventories (based on their equity share in investees' scope 1 and scope 2 emissions). Not allowing the equity share approach thus ensures that all investor's invested emissions are recorded in said investors scope 3 category 15 inventory (see also requirement that "all financed emissions **shall** be accounted for in… [a company's] scope 3 category 15 reporting" (p. 123)).

Appendix A4. Greenhouse gases

Description: The GHG Protocol and PCAF require the same greenhouse gases (GHGs).

GHG Protocol Scope 3 Standard	PCAF (Part A, *Financed Emissions*)
CO2, CH4, N2O, HFCs, PFCs, SF6, NF3.	CO2, CH4, N2O, HFCs, PFCs, SF6, NF3. PCAF includes all the same greenhouse gases (GHGs) as the corporate suite of GHG Protocol standards and guidance.

Appendix A5. Classification (investment/asset type) (unmatched)

Description: This table lists the general investment/asset type classifications used by the GHG Protocol and PCAF in *Financed Emissions* (2022), Part A. Note that the GHG Protocol *Scope 3 Standard* provides more specific names, descriptions, and accounting approach guidance for required investments in Table 5.9 (p. 53) and optional investments and/or services in Table 5.10 (p. 55).

GHG Protocol *Scope 3 Standard*	*Financed Emissions* (2022), Part A
Table 5.9, *Scope 3 Standard*: • Equity investments (using company's own capital)[53] • Debt investments (with known uses of proceeds), including bonds and commercial loans)[54] • Project finance (equity sponsor or debt financier)[55] **Table 5.10 (optional):** • Debt investments (without known uses of proceeds), including corporate bonds or debt • Investments managed or services provided by the reporting company on behalf of clients • Other investments or financial services [or contracts]	**All instrument types (and section), all of which are required as per PCAF:** • Listed equity (5.1) • Corporate bonds (general purpose) (5.1) • Unlisted equity (5.2) • Business loans (including LOCs) (5.2) • Project finance (5.3) • Commercial real estate (5.4) • Mortgages (5.5) • Motor vehicle loans (5.6) • Sovereign debt (5.7)

[53] (Scope 3 Standard, p. 52): "Equity investments made by the reporting company using the company's own capital and balance sheet, including… subsidiaries… associate companies… and joint ventures… [including] where the reporting company has neither financial control nor significant influence…"

[54] (Scope 3 Standard, p. 52): "Corporate debt holdings held in the reporting company's portfolio, including corporate debt instruments (such as bonds or convertible bonds prior to conversion) or commercial loans, with known use of proceeds (i.e., where the use of proceeds is identified as going to a particular project, such as to build a specific power plant)"

[55] (Scope 3 Standard, p. 52): "Long-term financing of projects (e.g., infrastructure and industrial projects) by the reporting company as either an equity investor (sponsor) or debt investor (financier)"

Appendix A6. Classification (investment/asset type) (matched)

Description: This table matches PCAF's asset classifications with GHG Protocol's classification. The following tables uses nomenclature from the GHG Protocol *Scope 3 Standard*. Note that the GHG Protocol *Scope 3 Standard* provides more specific names, descriptions, and accounting approach guidance for required investments in Table 5.9 (p. 53) and optional investments and/or services in Table 5.10 (p. 55).

GHG Protocol *Scope 3 Standard*	*Financed Emissions* (2022), Part A	Appendix
Equity investments (using company's own capital) (**required**)	• Unlisted equity (5.2)[56] • Listed equity (5.1)[57]	**A10.1** **A10.2**
Debt investments (with known uses of proceeds), including bonds and commercial loans) (**required**)	• Business loans (including LOCs) (5.2)[58] • Commercial real estate (5.4) • Mortgages (5.5) • Motor vehicle loans (5.6)	**A10.3**, **A10.4**, **A10.5**, and **A10.6**
Project finance (equity sponsor or debt financier) (**required**)	• Project finance (5.3)	**A10.7**
Debt investment (without known uses of proceeds), including corporate bonds or debt (**optional**)	• Corporate bonds (general purpose) (5.1)[59] • Sovereign debt (5.7)	**A10.8**, and **A10.9**
Investments managed or services provided by the reporting company on behalf of clients (**optional**)	• *Facilitated Emissions* (Part B)	**A10.10**
Other investments or financial services [or contracts] (**optional**)	• *Insurance-Associated Emissions* (Part C)[60]	

[56] Equity investments in private companies, also referred to as unlisted equity (PCAF, Part B, p. 67). Note: PCAF classifies and specifies requirements and guidance for "Business loans and unlisted equity" together, in section 5.2.
[57] Listed equity (common stock and preferred stock); classified by PCAF in "Listed equity and corporate bonds".
[58] Business loans "include all on-balance sheet loans and lines of credit to businesses, nonprofits, and any other structure of organization that are not traded on a market and are for general corporate purposes, i.e., with unknown use of proceeds as defined by the GHG Protocol" (PCAF, Part A, p. 67).
[59] Corporate bonds (for general corporate purposes). Note: PCAF classifies and specifies requirements and guidance for "Listed equity and corporate bonds" together, in section 5.1.
[60] Insurance-associated emissions are not listed here as they "are not, and are not intended to be, directly comparable with financed emissions" (*Insurance-Associated Emissions*, 2022, p. 52) and "the output of financed emissions and insurance-associated emissions calculations are not aligned and will diverge significantly" (*Insurance-Associated Emissions*, 2022, p. 53).

Appendix A7. Minimum boundaries (organized horizontally)

Description: Minimum boundary requirements stipulated by GHG Protocol versus PCAF *Financed Emissions* (Part A). Nomenclature may be shortened in this table for ease of reading. Refer to **Appendix A5** and **Appendix A6** for actual/full nomenclature from the GHG Protocol *Scope 3 Standard*. Refer to **Appendix A8** for minimum boundaries (organized vertically).

Investment type	**GHG Inventory**			**Other measures**		
(**GHG Protocol**/PCAF)	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3
Equity (private)	Yes	Yes	Where relevant	n/a	n/a	n/a
Unlisted equity (5.2)	Yes	Yes	Yes	n/a	Separately	n/a
Listed equity (5.1)	Yes	Yes	Yes	n/a	Separately	n/a
Debt (known uses)	Yes	Yes	Where relevant	n/a	n/a	n/a
Business loans (5.2)	Yes	Yes	Yes	n/a	Separately	n/a
Commercial real estate (5.4)	Yes	Yes	Optional	n/a	n/a	n/a
Mortgages (5.5)	Yes	Yes	n/a	n/a	n/a	n/a
Motor vehicle loans (5.6)	Yes	Yes	Optional	n/a	n/a	n/a
Project finance	Yes	Yes	Where relevant	n/a	n/a	n/a
Project finance (5.3)	Yes	Yes	If relevant	n/a	Separately	Separately
Debt (unknown uses)	Optional	Optional	Optional	n/a	n/a	n/a
Corporate bonds (5.1)	Yes	Yes	Yes	n/a	Separately	n/a
Sovereign debt (5.7)	Territorial	Imports	Net imports (adj.)	n/a	n/a	n/a
Managed investments/services	Optional	Optional	Optional	n/a	n/a	n/a
Facilitated (Part B)	Yes	Yes	Separately	n/a	Separately	Separately
Other investments/services	Optional	Optional	Optional	n/a	n/a	n/a
Insurance-Associated (Part C)[61]	*Intentionally excluded from this table*					

[61] Insurance-associated emissions (including those specified in (PCAF, 2022b)) have not been itemized in this table but could belong within Other investments.

Appendix A8. Minimum boundaries (organized vertically)

Investment type		Minimum boundary		
GHG Protocol	**PCAF, Part A**	**Boundary**	**GHG Protocol**	**PCAF, Part B**
Equity	Unlisted equity (5.2)	Scope 1	Yes	Yes
		Scope 2	Yes	Yes
		Scope 3	Where relevant	Yes
		Other	n/a	n/a
		Removals	n/a	Separately
		Avoided emissions	n/a	n/a
	Listed equity (5.1)	Scope 1	Optional	Yes
		Scope 2	Optional	Yes
		Scope 3	Optional	Yes
		Other	n/a	n/a
		Removals	n/a	Separately
		Avoided emissions	n/a	n/a
Debt (private)	Business loans (5.2)	Scope 1	Yes	Yes
		Scope 2	Yes	Yes
		Scope 3	Where relevant	Yes
		Other	n/a	n/a
		Removals	n/a	Separately
		Avoided emissions	n/a	n/a
	Commercial real estate (5.4)	Scope 1	Yes	Yes
		Scope 2	Yes	Yes
		Scope 3	Where relevant	Optional
		Other	n/a	n/a
		Removals	n/a	n/a
		Avoided emissions	n/a	n/a
	Mortgages (5.5)	Scope 1	Yes	Yes
		Scope 2	Yes	Yes
		Scope 3	Where relevant	n/a
		Other	n/a	n/a
		Removals	n/a	n/a
		Avoided emissions	n/a	n/a

A8. Minimum boundaries (scopes organized vertically) (continued)

Description: This table summarizes the minimum boundary requirements stipulated by the GHG Protocol versus PCAF.

Investment type		Minimum boundary		
GHG Protocol	**PCAF, Part B**	**Boundary**	**GHG Protocol**	**PCAF, Part B**
Debt (private) (continued)	Motor vehicle loans (5.6)	Scope 1	Yes	Yes
		Scope 2	Yes	Yes
		Scope 3	Where relevant	Optional
		Other	n/a	n/a
		Removals	n/a	n/a
		Avoided emissions	n/a	n/a
Project finance	Project finance (5.3)	Scope 1	Yes	Yes
		Scope 2	Yes	Yes
		Scope 3	Where relevant	If relevant
		Other	n/a	n/a
		Removals	n/a	Separately
		Avoided emissions	n/a	Separately
Debt (unknown uses)	Corporate bonds (5.1)	Scope 1	Optional	Yes
		Scope 2	Optional	Yes
		Scope 3	Optional	Yes
		Other	n/a	n/a
		Removals	n/a	Separately
		Avoided emissions	n/a	n/a
	Sovereign debt (5.7)	Scope 1	Optional	Territorial
		Scope 2	Optional	Imports
		Scope 3	Optional	Net imports (adj.)
		Other	n/a	n/a
		Removals	n/a	n/a
		Avoided emissions	n/a	n/a

A8. Minimum boundaries (scopes organized vertically) (continued)

Description: This table summarizes the minimum boundary requirements stipulated by the GHG Protocol versus PCAF.

Investment type		Minimum boundary		
GHG Protocol	**PCAF, Part B**	**Boundary**	**GHG Protocol**	**PCAF, Part B**
Managed investments and client services	*Facilitated Emissions* (Part B)	Scope 1	Optional	Yes
		Scope 2	Optional	Yes
		Scope 3	Optional	Separately
		Other	n/a	n/a
		Removals	n/a	Separately
		Avoided emissions	n/a	Separately
Other investments or financial services	Insurance-associated Emissions (Part C)[62]	Scope 1	Optional	*Intentionally excluded from this table*
		Scope 2	Optional	
		Scope 3	Optional	
		Other	n/a	
		Removals	n/a	
		Avoided emissions	n/a	

[62] Insurance-associated emissions (including those specified in (PCAF, 2022b)) have not been itemized in this table but could belong within Other investments.

Appendix A9. Calculation methods and Attribution/Allocation

Description: This table compares the calculation methods and attribution (proportionate allocation) or GHG Protocol and PCAF.

<table>
<tr><th colspan="2"></th><th colspan="4">Data and calculation / Attribution</th></tr>
<tr><th colspan="2">Investment type</th><th colspan="2">GHG Protocol</th><th colspan="2">PCAF, Part B</th></tr>
<tr><th>GHG Protocol</th><th>PCAF, Part B</th><th>Data and calculation method</th><th>Attribution</th><th>Data and calculation</th><th>Attribution</th></tr>
<tr><td rowspan="7">Equity</td><td rowspan="4">Unlisted equity (5.2)</td><td>n/a</td><td rowspan="4">Share of equity (%)</td><td>1a. Verified emissions
1b. Unverified emissions</td><td rowspan="4">Share of equity plus debt (%)</td></tr>
<tr><td>Investment-specific method: Investee-specific scope 1 and scope 2 x share of equity (%)</td><td>2a. Physical activity-based (using Company's energy consumption)</td></tr>
<tr><td>n/a</td><td>2b. Physical activity-based (using Company's production)</td></tr>
<tr><td>Average-data method: Investee revenue x investee EF (CO2e/$) x share of equity (%)</td><td>3a. Revenue-based
3b. Asset type-based
3c. Revenue-based with asset turnover ratios</td></tr>
<tr><td rowspan="3">Listed equity (5.1)</td><td>n/a</td><td rowspan="3">Share of equity (%)</td><td>1a. Verified emissions
1b. Unverified emissions</td><td rowspan="3">Share of equity plus debt (%)</td></tr>
<tr><td>Investment-specific method: Investee-specific scope 1 and scope 2 x share of equity (%)</td><td>2a. Company's energy consumption
2b. Company's production</td></tr>
<tr><td>Average-data method: Investee revenue x investee EF (CO2e/$) x share of equity (%)</td><td>3a. Revenue-based
3b. Asset type-based
3c. Revenue-based with asset turnover ratios</td></tr>
</table>

Appendix A9. Data, Calculation method, and Attribution/Allocation **(continued)**

Investment type		Data and calculation / Attribution			
		GHG Protocol		PCAF, Part B	
GHG Protocol	**PCAF, Part B**	**Data and calculation method**	**Attribution**	**Data and calculation**	**Attribution**
Debt (known uses)	Business loans (5.2)	n/a	Share of **project cost** (%)	1a. Verified emissions 1b. Unverified emissions	<u>Unlisted</u>: Share of **equity plus debt** (%) <u>Listed</u>: Share of **EVIC** (%)
		Project-specific method for relevant project: reporting year project scope 1 and scope 2 x share of project cost (%)		2a. Physical activity-based (using Company's energy consumption)	
		n/a		2b. Physical activity-based (using Company's production)	
		Average-data method, construction: project construction cost $ x project EF (CO2e/$) x share of project cost (%)		n/a	
		Average-data method, operational: project revenue in reporting year $ x operating sector EF (CO2e/$) x share of project cost (%)		3a. Revenue-based 3b. Asset type-based 3c. Revenue-based with asset turnover ratios	
		Project-specific method (cumulative) for lifetime emissions: project scope 1 and scope 2 x projected lifetime x share of project cost (%)		Ibid.	

Appendix A9. Data, Calculation method, and Attribution/Allocation **(continued)**

Investment type		Data and calculation / Attribution			
		GHG Protocol		PCAF, Part B	
GHG Protocol	PCAF, Part B	Data and calculation method	Attribution	Data and calculation	Attribution
Debt (known uses)	Commercial real estate (5.4) and/or Mortgages (5.5)	**Project-specific method for relevant project**: reporting year project scope 1 and scope 2 x share of project cost (%)	Share of **project cost** (%)	1a. Actual energy consumption (using supplier-specific emission factors)1b. Actual energy consumption (using average emission factors)	Share of **Property value at origination** (%)
		n/a		2a. estimate energy consumption based on building energy labels AND floor area (average emission factors) 2b. estimate energy consumption based on building type and location-specific statistical data AND floor area (average emission factors) 3. estimate energy consumption based on building type and location-specific statistical data AND number of buildings (average emission factors)	
		Average-data method, construction: project construction cost $ x project EF (CO2e/$) x share of project cost (%)		n/a	
		Average-data method, operational: project revenue in reporting year $ x operating sector EF (CO2e/$) x share of project cost (%)		n/a	
		Project-specific method (cumulative) for lifetime emissions: project scope 1 and scope 2 x projected lifetime x share of project cost (%)		n/a	

Appendix A9. Data, Calculation method, and Attribution/Allocation (continued)

Investment type		Data and calculation / Attribution			
		GHG Protocol		**PCAF, Part B**	
GHG Protocol	**PCAF, Part B**	**Data and calculation method**	**Attribution**	**Data and calculation**	**Attribution**
Debt (known uses)	Motor vehicle loans (5.6)	**Project-specific method for relevant project**: reporting year project scope 1 and scope 2 x share of project cost (%)	Share of **project cost** (%)	1a. Actual vehicle fuel consumption 1b. Vehicle efficiency and fuel type (based on known make/model) are known AND actual distance (primary)	Share of **Vehicle/Fleet value at origination** (%)
		n/a		2a. Vehicle efficiency and fuel type (model/make) are known AND distance is estimated (local data) to estimate fuel use 2b. Vehicle efficiency and fuel type (model/make) are known AND distance is estimated (regional data) to estimate fuel use 3a. Vehicle efficiency and fuel type (model/make) are estimated (known vehicle type) AND distance is estimated (local or regional data) to estimate fuel use 3b. Vehicle efficiency and fuel type are estimated (average vehicle type) AND distance is estimated (local or regional statistical data) to estimate fuel use	
		Average-data method, construction: project construction cost $ x project EF (CO2e/$) x share of project cost (%)		n/a	
		Average-data method, operational: project revenue in reporting year $ x operating sector EF (CO2e/$) x share of project cost (%)		n/a	
		Project-specific method (cumulative) for lifetime emissions: project scope 1 and scope 2 x projected lifetime x share of project cost (%)		n/a	

Appendix A9. Data, Calculation method, and Attribution/Allocation **(continued)**

Investment type		Data and calculation / Attribution			
		GHG Protocol		PCAF, Part B	
GHG Protocol	**PCAF, Part B**	**Data and calculation method**	**Attribution**	**Data and calculation**	**Attribution**
Project finance	Project finance (5.3)	n/a	Share of **project cost** (%)	1a. Verified emissions 1b. Unverified emissions	Share of **equity plus debt** (%)
		Project-specific method for relevant project: reporting year project scope 1 and scope 2 x share of project cost (%)		2a. Project's energy consumption	
		n/a		2b. Project's production	
		Average-data method, construction: project construction cost $ x project EF (CO2e/$) x share of project cost (%)		n/a	
		Average-data method, operational: project revenue in reporting year $ x operating sector EF (CO2e/$) x share (%)		3a. Revenue-based 3b. Asset type-based 3c. Revenue-based with asset turnover ratios	
		Project-specific method (cumulative) for lifetime emissions: project scope 1 and scope 2 x projected lifetime x share (%)		Ibid.	
Debt (unknown uses)	Corporate bonds (5.1)	n/a	n/a	1a. Verified emissions 1b. Unverified emissions	Unlisted: Share of **equity + debt** (%) Listed: Share of **EVIC** (%)
				2a. Company's energy consumption 2b. Company's production	
				3a. Revenue-based 3b. Asset-based 3c. Revenue-based with asset turnover ratios	
Debt (unknown uses)	Sovereign debt (5.7)	n/a	n/a	1a. Verified sovereign emissions (UNFCCC) 1b. Unverified sovereign emissions	Share of **PPP-adjusted GDP** (%)
				2a. Estimated using primary energy consumption data AND energy-specific emission factors	
				3a. Estimated using sectoral revenue data AND revenue-specific emission factors 3b. Estimated by proxy (e.g., similar GDP)	

A9. Data, Calculation method, and Attribution/Allocation **(continued)**

Investment type		Data and calculation / Attribution			
		GHG Protocol		PCAF, Part B	
GHG Protocol	**PCAF, Part B**	**Data and calculation method**	**Attribution**	**Data and calculation**	**Attribution**
Managed investments and client services	*Facilitated Emissions* (Part B)	No calculation methods provided.	n/a	1a. Verified emissions 1b. Unverified emissions ——— 2a. Company emissions are estimated using company's energy consumption (primary) and supplier-specific EFs 2b. Company emissions are estimated using company's production (primary) and supplier-specific emission factors ——— 2b. Company emissions are estimated using company's production (primary) and supplier-specific emission factors ——— 3b. Only facilitated amount is known, emissions estimated using sector-specific emission factors per unit of asset 3c. Only facilitated amount is known, emissions estimated using sector-specific emission factors per unit of revenue and asset turnover ratios	Listed: Facilitated amount (÷) **EVIC** (x) **Weighting** factor (33%) Unlisted: Facilitated amount (÷) **Equity + debt** (x) **Weighting** factor (33%)
Other investments or financial services[63]	*Insurance-Associated Emissions* (Part C)	No calculation methods provided.	n/a	1a. Verified emissions 1b. Unverified emissions ——— 2a. Company's energy consumption 2b. Company's production ——— 3a. Revenue-based 3b. Asset-based 3c. Revenue-based with asset turnover ratios	Share of **EVIC** (%)

[63] Insurance-associated emissions (including those specified in (PCAF, 2022b)) have not been itemized in this table but could belong within Other investments.

Appendix A10. Investment types (detail)

Description: The following tables summarizes the classification, minimum boundary, calculation method(s), and proportion (%) (termed "allocation ratio" by PCAF), stipulated by the GHG Protocol versus PCAF:

- A10.1. Equity vs. unlisted equity (PCAF, 5.2)
- A10.2. Equity vs. listed equity (PCAF, 5.1)
- A10.3. Debt (known uses) vs. business loans (PCAF, 5.2)
- A10.4. Debt (known uses, private) vs. commercial real estate (PCAF, 5.4)
- A10.5. Debt (known uses, private) vs. mortgages (PCAF, 5.5)
- A10.6. Debt (known uses, private) vs. motor vehicle loans (PCAF, 5.6)
- A10.7. Project finance (known uses) vs. project finance (PCAF, 5.3)
- A10.8. Debt (unknown uses) vs. corporate bonds (PCAF, 5.1)
- A10.9. Debt (unknown uses) vs. sovereign bonds (PCAF, 5.7)
- A10.10. Managed investments and client services vs. Facilitated Emissions (PCAF, Part B)

Appendix A10.1. Equity vs. unlisted equity (PCAF, 5.2)

Asset type	GHG Protocol *Scope 3 Standard* and *Technical Guidance*	*PCAF Financed Emissions Standard* (2022), Part A
Equity	**Name/classification:** • Equity investments in subsidiaries, associate companies, and/or JVs	**Name/classification:** • Unlisted equity (5.2, p. 66)
	Minimum boundary: • Scope 1 • Scope 2 • Scope 3 ("where relevant")	**Minimum boundary:** • Scope 1 • Scope 2 • Scope 3 • Removals "should" be reported and, if so, "shall be reported separately from both absolute emissions and any carbon credits retired or generated" (p. 75).
	Calculation methods: • **Investment-specific method**: Investee-specific scope 1 and scope 2 x share of equity (%) • **Average-data method**: Investee revenue x investee EF (CO_2e/$) x share of equity (%)	**Emissions data/calculation methods:** Table 5-7 (p. 73)[64] **Reported emissions**: • 1a. Verified* emissions • 1b. Unverified* emissions **Physical activity-based (Primary)**: • 2a. Company's energy consumption • 2b. Company's production **Economic activity-based**: • 3a. Revenue-based • 3b. Asset type-based • 3c. Revenue-based with asset turnover ratios
	Proportion (%): • **Numerator**: Investor Equity • **Denominator**: Total Investee Equity "Proportional emissions from equity investments should be allocated to the investor based on the investor's proportional share of equity in the investee" (p. 54).	**Proportion (%)**: • **Numerator**: Investor equity ("Outstanding Amount") • **Denominator**: Equity plus debt (total investee)

* Verified GHG emissions data from the company in accordance with the GHG Protocol or Unverified GHG emissions data calculated by the company in accordance with the GHG Protocol as per PCAF's Annex (Part B, second edition).

[64] Data quality scores and (estimation methods) itemized in Table 5-3 (p. 73) for unlisted equity are as follows: Score 1 (1a); Score 2 (1b and 2a); Score 3 (2b); Score 4 (3a and 3b); Score 5 (3c).

Appendix A10.2. Equity vs. listed equity (PCAF, 5.1)

Asset type	*GHGP Protocol Scope 3 Standard*	*Financed Emissions Standard* (2022), Part A
Equity	**Name/classification:** • Other investments or financial services [or contracts]	**Name/classification:** • Listed equity (5.1)[65]
	Minimum boundary: *• Optional*	**Minimum boundary:** • Scope 1 • Scope 2 • Scope 3 • Removals (if reported) "shall be reported separately from both absolute emissions and any carbon credits retired and generated" (p. 60)
	Calculation methods: *• Not itemized*	**Emissions data/calculation methods:** Table 5-3 (p. 57)[66] **Reported emissions**: • 1a. Verified* emissions • 1b. Unverified* emissions **Physical activity-based (Primary)**: • 2a. Company's energy consumption • 2b. Company's production **Economic activity-based**: • 3a. Revenue-based • 3b. Asset-based • 3c. Revenue-based with asset turnover ratios
	Proportion (%): *• Not itemized*	**Proportion (%):** Bonds to **unlisted (private) entity:** • **Numerator**: Outstanding Amount* • **Denominator**: Equity plus debt Bonds to **listed entity:** • **Numerator**: Outstanding Amount* • **Denominator**: Enterprise Value Including Cash (EVIC) * Total equity must be set to *minimum* zero (0).

* Verified GHG emissions data from the company in accordance with the GHG Protocol or Unverified GHG emissions data calculated by the company in accordance with the GHG Protocol as per PCAF's Annex (Part B, second edition).

[65] Listed equity (common stock and preferred stock). Note: PCAF classifies and specifies requirements and guidance for "Listed equity and corporate bonds" together, in section 5.1.

[66] Data quality scores (and estimation methods) itemized in Table 5-3 (p. 57) for corporate bonds are as follows: Score 1 (1a); Score 2 (1b and 2a); Score 3 (2b); Score 4 (3a); Score 5 (3b and 3c).

Appendix A10.3. Debt (known uses) vs. business loans (PCAF, 5.2)

Asset type	*GHG Protocol Scope 3 Standard* and *Technical Guidance*	*PCAF Financed Emissions Standard* (2022), Part A
Debt (known uses, private, unlisted)	**Name/classification:** • Debt investments (with known use of proceeds)	**Name/classification:** • Business loans (5.2, p. 66)
	Minimum boundary: • Scope 1 • Scope 2 • Scope 3 ("where relevant")	**Minimum boundary:** • Scope 1 • Scope 2 • Scope 3 • Removals "should" be reported and, if so, "shall be reported separately…" (p. 75).
	Calculation methods: • **Project-specific method for relevant project**: reporting year project scope 1 and scope 2 x share of project cost (%) • **Average-data method, construction**: project construction cost $ x project EF (CO2e/$) x share of project cost (%) • **Average-data method, operational**: project revenue in reporting year $ x operating sector EF (CO2e/$) x share (%) • **Project-specific method (cumulative) for lifetime emissions**: project scope 1 and scope 2 x projected lifetime x share of project cost (%)	**Emissions data/calculation methods:** Table 5-7 (p. 73)[67] **Reported emissions**: • 1a. Verified* emissions • 1b. Unverified* emissions **Physical activity-based**: • 2a. Company's energy consumption • 2b. Company's production **Economic activity-based**: • 3a. Revenue-based • 3b. Asset type-based • 3c. Revenue-based with asset turnover ratios
	Proportion (%): • **Numerator**: Invested/loaned amount • **Denominator**: Equity plus debt (i.e., total project cost) "Proportional emissions from project finance and debt investments with known use of proceeds should be allocated to the investor based on… investor's proportional share of total project costs…" (p. 54).	**Proportion (%):** Loan to **unlisted (private) entity:** • **Numerator**: Outstanding Amount • **Denominator**: Equity plus debt (total investee) Loan to **listed entity:** • **Numerator**: Outstanding Amount • **Denominator**: Enterprise Value Including Cash (EVIC)

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* Verified GHG emissions data from the company in accordance with the GHG Protocol or Unverified GHG emissions data calculated by the company in accordance with the GHG Protocol as per PCAF's Annex (Part B, second edition).

[67] Data quality scores and (estimation methods) itemized in Table 5-3 (p. 73) for business loans are as follows: Score 1 (1a); Score 2 (1b and 2a); Score 3 (2b); Score 4 (3a and 3b); Score 5 (3c).

Appendix A10.4. Debt (known uses) vs. commercial real estate (PCAF, 5.4)

Asset type	GHG Protocol	*PCAF Financed Emissions Standard* (2022), Part A
Debt (known uses, private, unlisted)	*See: Table 5.b. Debt (known uses, private, unlisted)*	**Name/classification:** • Commercial real estate (CRE) (5.4, p. 88)
		Minimum boundary: • Scope 1 • Scope 2 • Scope 3 (optional for CRE)
		Emissions data/calculation methods: Table 5-14 (p. 92)[68] **Actual building emissions:** • 1a. **Actual energy consumption** (primary) with **supplier-specific emission factors** (from utility) ⇒ Market-based scope 2 emission factors[69] • 1b. **Actual energy consumption** (primary) with **average emission factors** (e.g., national or subnational) ⇒ Location-based scope 2 emission factors[70] **Floor area estimate:** • 2a. Estimated energy consumption based on **building energy labels** AND **floor area** (average emission factors) • 2b. Estimated energy consumption based on **building type and location-specific statistical data** AND **floor area** (average emission factors) **Number of buildings estimates:** • 3. Estimated energy consumption based on **building type and location-specific statistical data** AND **number of buildings** (average emission factors)
		Proportion (%): • **Numerator**: Outstanding Amount (loan amount for loan providers or investment amount for investors) • **Denominator**: Property value at origination

[68] Tables 5-14 (for CRE) and 5-15 (for Mortgages) are identical. Data quality scores (and methods) itemized in both tables for CRE and Mortgages are as follows: Score 1 (1a); Score 2 (1b); Score 3 (2a); Score 4 (2b); Score 5 (3).
[69] PCAF, Part A (footnote 142, p. 91): "supplier-specific emission factors are… market-based emission factors."
[70] PCAF, Part A (footnote 143, p. 91): "average emission factors… are the same as location-based emission factors."

Appendix A10.5. Debt (known uses) vs. mortgages (PCAF, 5.5)

Asset type	GHG Protocol	*PCAF Financed Emissions Standard* (2022), Part A
Debt (known uses, private, unlisted)	*See: Table 5.b. Debt (known uses, private, unlisted)*	**Name/classification:** • Mortgages (5.5, p. 94)
		Minimum boundary: • Scope 1 • Scope 2
		Emissions data/calculation methods: Table 5-15 (p. 98)[71] **Actual building emissions:** • 1a. **Actual energy consumption** (primary) with **supplier-specific emission factors** (from utility[72]) • 1b. **Actual energy consumption** (primary) with **average emission factors** (e.g., national or subnational[73]) **Floor area estimate:** • 2a. Estimated energy consumption based on **building energy labels** AND **floor area** (average emission factors) • 2b. Estimated energy consumption based on **building type and location-specific statistical data** AND **floor area** (average emission factors) **Number of buildings estimates:** • 3. Estimated energy consumption based on **building type and location-specific statistical data** AND **number of buildings** (average emission factors)
		Proportion (%): • **Numerator**: Outstanding Amount (loan amount for loan providers or investment amount for investors) • **Denominator**: Property value at origination

[71] Tables 5-14 (for CRE) and 5-15 (for Mortgages) are identical. Data quality scores (and methods) itemized in both tables for CRE and Mortgages are as follows: Score 1 (1a); Score 2 (1b); Score 3 (2a); Score 4 (2b); Score 5 (3).
[72] PCAF, Part A (footnote 153, p. 98): "Supplier-specific emission factor is an emission rate provided by the energy supplier (e.g., utility) to its customers reflecting the emissions associated with the energy it provides..."
[73] PCAF, Part A (footnote 153, p. 98): "Average emission factors represent the average emissions of the respective energy sources occurring in a defined boundary (e.g., national or subnational)."

Appendix A10.6. Debt (known uses) vs. motor vehicle loans (PCAF, 5.6)

Asset type	GHGP Protocol	*Financed Emissions Standard* (2022), Part A
Debt (known uses, private, unlisted)	*See: Table 5.b. Debt (known uses, private, unlisted)*	**Name/classification:** • Motor vehicle loans (5.6, p. 101)
		Minimum boundary: • Scope 1 • Scope 2 • Scope 3 (optional, lump sum production emissions)
		Emissions data/calculation methods: Table 5-16 (p. 106)[74] **Actual vehicle-specific emissions:** • 1a. **Actual vehicle fuel consumption*** (using fuel type-specific emission factors) • 1b. Vehicle efficiency and fuel type (based on **known make/model**) are known AND **actual distance** (primary) available to estimate fuel use* **Estimated vehicle-specific emissions:** • 2a. Vehicle efficiency and fuel type (based on **known make/model**) are known AND distance is estimated based on **local** statistical data (second) to estimate fuel use* • 2b. Vehicle efficiency and fuel type (based on **known make/model**) are known AND distance is estimated based on **regional** statistical data (secondary) to estimate fuel use* **Estimated vehicle-unspecific emissions:** • 3a. Vehicle efficiency and fuel type (based on **known vehicle type**) are **estimated** AND distance is estimated (secondary) based on **local or regional** statistical data (secondary) to estimate fuel use* • 3b. Vehicle efficiency and fuel type (for an **average vehicle type**) are **estimated** AND distance is estimated (secondary) based on **local or regional** statistical data (secondary) to estimate fuel use* ** All methods rely on known outstanding amount and value at origination; and use fuel-specific emission factors.*
		Proportion (%): • **Numerator**: Outstanding Amount • **Denominator**: Total value at origination (of vehicle or fleet)

[74] Data quality scores (and estimation methods) itemized in Table 5-16 (p. 106) for motor vehicle loans are as follows: Score 1 (1a and 1b); Score 2 (2a); Score 3 (2b); Score 4 (3a); Score 5 (3b).

Appendix A10.7. Project finance (known uses) vs. project finance (PCAF, 5.3)

Asset type	*GHGP Protocol Scope 3 Standard* and *Technical Guidance*	*Financed Emissions Standard* (2022), Part A
Projects (known uses, private, unlisted)	**Name/classification:** • Project finance (equity sponsor or debt financier)	**Name/classification:** • Project finance (5.3, p. 79)
	Minimum boundary: • Scope 1 • Scope 2 • Scope 3 ("where relevant") • Projected lifetime scope 1 and scope 2 emissions (reported separately from a reporting company's scope 3 inventory)	**Minimum boundary:** • Scope 1 • Scope 2 • Scope 3 ("if relevant") • "Avoided and removed emissions may be reported if relevant but… must be reported separately" (p. 80)
	Calculation methods: *The following are identical with the calculation methods of debt investments (known uses) shown in Table 5.b herein.* • **Project-specific method for relevant project**: reporting year project scope 1 and scope 2 x share of project cost (%) • **Average-data method, construction**: project construction cost $ x project EF (CO2e/$) x share of project cost (%) • **Average-data method, operational**: project revenue in reporting year $ x operating sector EF (CO2e/$) x share of project cost (%) • **Project-specific method (cumulative) for lifetime emissions**: project scope 1 and scope 2 x projected lifetime x share of project cost (%)	**Emissions data/calculation methods:** Table 5-10 (p. 83)[75] **Reported emissions**: • 1a. Verified* emissions • 1b. Unverified* emissions **Physical activity-based (Primary)**: • 2a. Project's energy consumption • 2b. Project's production **Economic activity-based**: • 3a. Revenue-based • 3b. Asset or economic activity-based • 3c. Revenue-based with asset turnover ratios
	Proportion (%): • **Numerator**: Invested/loaned amount • **Denominator**: Equity plus debt (total project cost)	**Proportion (%):** • **Numerator**: Outstanding Amount • **Denominator**: Equity plus debt (total investee)

* Verified GHG emissions data from the company in accordance with the GHG Protocol or Unverified GHG emissions data calculated by the company in accordance with the GHG Protocol as per PCAF's Annex (Part B, second edition).

[75] Data quality scores (and estimation methods) itemized in Table 5-10 (p. 83) for project finance are as follows: Score 1 (1a); Score 2 (1b and 2a); Score 3 (2b); Score 4 (3a); Score 5 (3b and 3c).

Appendix A10.8. Debt (unknown uses) vs. corporate bonds (PCAF, 5.1)

Asset type	*GHGP Protocol Scope 3 Standard*	*Financed Emissions Standard* (2022), Part A
Debt (unknown uses, public, listed)	**Name/classification:** • Debt (without known uses of proceeds, i.e., unknown uses), including corporate bonds or debt	**Name/classification:** • Corporate bonds (5.1)[76]
	Minimum boundary: • *Optional*	**Minimum boundary:** • Scope 1 • Scope 2 • Scope 3 • Removals "should" be reported and, if so, "shall be reported separately from both absolute emissions and any carbon credits retired and generated" (p. 60)
	Calculation methods: • *Not itemized*	**Emissions data/calculation methods:** Table 5-3 (p. 57)[77] **Reported emissions**: • 1a. Verified* emissions • 1b. Unverified* emissions **Physical activity-based (Primary)**: • 2a. Company's energy consumption • 2b. Company's production **Economic activity-based**: • 3a. Revenue-based • 3b. Asset-based • 3c. Revenue-based with asset turnover ratios
	Proportion (%): • *Not itemized*	**Proportion (%):** Bonds to **unlisted (private) entity:** • **Numerator**: Outstanding Amount • **Denominator**: Equity plus debt (total investee) Bonds to **listed entity:** • **Numerator**: Outstanding Amount • **Denominator**: Enterprise Value Including Cash (EVIC)

* Verified GHG emissions data from the company in accordance with the GHG Protocol or Unverified GHG emissions data calculated by the company in accordance with the GHG Protocol as per PCAF's Annex (Part B, second edition).

[76] Corporate bonds (for general corporate purposes). Note: PCAF classifies and specifies requirements and guidance for "Listed equity and corporate bonds" together, in section 5.1.

[77] Data quality scores (and estimation methods) itemized in Table 5-3 (p. 57) for corporate bonds are as follows: Score 1 (1a); Score 2 (1b and 2a); Score 3 (2b); Score 4 (3a); Score 5 (3b and 3c).

Appendix A10.9. Debt (unknown uses) vs. sovereign bonds (PCAF, 5.7)

Asset type	*GHGP Protocol Scope 3 Standard*	*Financed Emissions Standard* (2022), Part A
Debt (unknown uses, public, listed)	*See: Table 5.f. Debt (unknown uses, private, unlisted)*	**Name/classification:** • Sovereign debt (5.7)
		Minimum boundary: • Scope 1 (territorial)[78] • Scope 2 (energy imports) • Scope 3 (other imports, excluding energy, and excluding exports via an adjustment)
		Sovereign emissions Consumption-based emissions* = Production emissions less Exported emissions plus Imported emissions * Includes scope 1 and 2 emissions of a sovereign (unadjusted) plus *adjusted* [79] scope 3 emissions **Emissions data/calculation methods:** Table 5-26 (p. 120)[80] **Reported emissions** • 1a. Verified sovereign emissions (UNFCCC) • 1b. Unverified sovereign emissions **Physical activity-based emissions** • 2a. Estimated using primary energy consumption data AND energy-specific emission factors **Economic activity-based emissions** • 3a. Estimated using sectoral revenue data AND revenue-specific emission factors • 3b. Estimated by proxy (e.g., similar wealth, GDP)
		Proportion (%): • **Numerator:** Outstanding Amount (i.e., exposure to sovereign bonds) ($) • **Denominator:** PPP-adjusted GDP ($)

[78] Note that IIGCC's NZIF 2.0 summarizes scope 1 emissions for sovereign bonds as being: "production emissions including exports" (IIGCC 2024a, p. 9).
[79] This implies that adjusted scope 3 emissions equals: imported cradle-to-gate scope 3 emissions less exported cradle-to-gate scope 3 emissions).
[80] Data quality scores (and estimation methods) itemized in Table 5-26 (p. 120) for sovereign debt are as follows: Score 1 (1a); Score 2 (1b); Score 3 (2b); Score 4 (3a); Score 5 (3b).

Appendix A10.10. Managed investments and client services vs. Facilitated (PCAF, Part B)

Asset type	*GHGP Protocol Scope 3 Standard*	*Financed Emissions Standard* (2022), Part A *Facilitated Emissions Standard* (2023), Part B
Managed investments and client services	**Name/classification:** • Investments managed by the reporting company on behalf of clients (using clients' capital) or services provided by the reporting company to clients	**Name/classification:** • Financed Emissions: Unlisted equity (Table 5.a), Business loans (Table 5.b), CRE and/or mortgages (Table 5.c), Motor vehicle loans (Table 5.d), Project finance (Table 5.e), Corporate bonds (Table 5.f), Sovereign debt (Table 5.g) • Facilitated Emissions: **PCAF, Part B, *Facilitated Emissions*** for quantifying and attributing emissions by and to a facilitator(s) (i.e., an institution that helps entities issue equity and/or debt instruments)
	Minimum boundary: *Optional*	**Minimum boundary:** • Scope 1 and scope 2 emissions (of investee) • Scope 3 (*separately* from scope 1 and 2) (Part B, p. 33) • "Avoided and removed emissions may be reported if relevant but… must be reported separately" (Part B, p. 42)
	Calculation methods: *Not itemized*	**Emissions data/calculation methods:** Table 5-2 (p. 36) **Reported emissions** • 1a. Verified* emissions • 1b. Unverified* emissions **Physical activity-based emissions** • 2a. Company emissions are estimated using company's energy consumption (primary) and supplier-specific EFs • 2b. Company emissions are estimated using company's production (primary) and supplier-specific emission factors **Economic activity-based emissions** • 3a. Company emissions are estimated using company's revenue and sector-specific revenue-based emission factors • 3b. Only facilitated amount is known, emissions estimated using sector-specific emission factors per unit of asset • 3c. Only facilitated amount is known, emissions estimated using sector-specific emission factors per unit of revenue and asset turnover ratios
	Proportion (%): *Not itemized*	**Proportion (%):** • **Attribution factor** (%) multiplied by (x) **Weighing factor** (required to be 33% as of December 2023)[81]

* Verified GHG emissions data from the company in accordance with the GHG Protocol or Unverified GHG emissions data calculated by the company in accordance with the GHG Protocol as per PCAF's Annex (Part B, second edition).

[81] **Attribution factor** (%) = Facilitated amount divided by (÷) EVIC (for all listed companies) **or** Equity plus debt (for private, unlisted companies); **Weighting factor** = 33%; Annual emissions (in year of transaction); **Facilitated amount** = Total raise amount multiplied by (x) volume attributed to the financial institution **or** the league table credit; **Enterprise Value Including Cash** (EVIC) for listed companies.

Appendix A11. Data quality scoring by asset type in (PCAF, 2022a) Part A

The following table summarizes Annex 10.1 Detailed data quality score tables per asset class, in (PCAF, 2022a, p. 142-148). For reference, (PCAF, 2023b), "The importance of data quality in the journey toward decarbonization", provides a Data Quality Scoring Guide on p. 8 therein.

Score	Corporate bonds (5.1) & Listed equity (5.1)	Unlisted equity (5.2) & Business loans (5.2)	Commercial real estate (5.4) & Mortgages (5.5)	Motor vehicle loans (5.6)	Project finance (5.3)	Sovereign debt (5.7)
1	1a. Verified emissions	1a. Verified emissions	1a. Actual energy consumption (using supplier-specific emission factors)	1a. Actual vehicle fuel consumption 1b. Vehicle efficiency and fuel type (based on known make/model) are known AND actual distance (primary)	1a. Verified emissions	1a. Verified sovereign emissions (UNFCCC)
2	1b. Unverified emissions	1b. Unverified emissions 2a. Physical activity-based (using Company's energy consumption)	1b. Actual energy consumption (using average emission factors)	2a. Vehicle efficiency and fuel type (model/make) are known AND distance is estimated (local data) to estimate fuel use	1b. Unverified emissions 2a. Project's energy consumption	1b. Unverified sovereign emissions
3	2a. Physical activity-based (using Company's energy consumption) 2b. Physical activity-based (using Company's production)	2b. Physical activity-based (using Company's production)	2a. estimate energy consumption based on building energy labels AND floor area (average emission factors) factors)	2b. Vehicle efficiency and fuel type (model/make) are known AND distance is estimated (regional data) to estimate fuel use	2b. Project's production	2a. Estimated using primary energy consumption data AND energy-specific emission factors
4	3a. Revenue-based	3a. Revenue-based	2b. estimate energy consumption based on building type and location-specific statistical data AND floor area (average emission factors)	3a. Vehicle efficiency and fuel type (model/make) are estimated (known vehicle type) AND distance is estimated (local or regional data) to estimate fuel use	3a. Revenue-based	3a. Estimated using sectoral revenue data AND revenue-specific emission factors
5	3b. Asset type-based 3c. Revenue-based with asset turnover ratios	3b. Asset type-based 3c. Revenue-based with asset turnover ratios	3. estimate energy consumption based on building type and location-specific statistical data AND number of buildings (average emission	3b. Vehicle efficiency and fuel type are estimated (average vehicle type) AND distance is estimated (local or regional statistical data) to estimate fuel use	3b. Asset type-based 3c. Revenue-based with asset turnover ratios	3b. Estimated by proxy (e.g., similar wealth, GDP)

Appendix B1. International Financial Reporting Standard Climate-related Disclosures (IFRS S2)

Description: *IFRS S2 Climate-related Disclosures*, is a thematic standard that sets out requirements for entities to disclose information about climate-related risks and opportunities. "The objective of IFRS S2 Climate-related Disclosures is to require an entity to disclose information about its climate-related risks and opportunities that is useful to primary users of general purpose financial reports in making decisions relating to providing resources to the entity" (Paragraph 1) (IFRS, 2023a).

Timing of mandate: The effective date of (IFRS, 2023a) is on or after January 1, 2024, depending on the jurisdictional implementation of the standard (Paragraph C1). However, "In the first annual reporting period in which an entity applies this Standard, the entity is permitted to use one or both of these reliefs" corresponding with (Paragraph C4(a)) and (Paragraph C4(b)), respectively:

- "if, in the annual reporting period immediately preceding the date of initial application of this Standard, 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; and…"
- "an entity is **not required to disclose its Scope 3 greenhouse gas emissions** [emphasis added] (see paragraph 29(a)) which includes, if the entity participates in asset management, commercial banking or insurance activities, the additional information about its financed emissions (see paragraph 29(a)(vi)(2) and paragraphs B58–B63)."

Mandate: The (IFRS, 2023a) stipulates that: "An entity **shall** [emphasis added] apply the requirements for disclosing greenhouse gas emissions **in accordance with paragraph 29(a)** [emphasis added] when disclosing information about its **financed emissions** [emphasis added]" (Paragraph B60). Paragraphs from (IFRS, 2023a) relevant for scope 3 emissions, including scope 3 category 15 and, specifically, financed emissions, include that:

- Entities "shall" (Paragraph 29(a)):
  - "disclose its absolute gross… scope 3 [GHG] emissions" (Paragraph 29(a)(i)(3))
  - "disclose the approach it uses to measure its [GHG] emissions… including:" (Paragraph 29(a)(iii))
    - "measurement approach, inputs and assumptions…" (Paragraph 29(a)(iii)(1))[82, 83]
    - "the reason why the entity has chosen" said "measurement approach, inputs and assumptions…" (Paragraph 29(a)(iii)(2))
    - "any changes… to the measurement approach, inputs and assumptions… and the reason for those changes;" (Paragraph 29(a)(iii)(3))

[82] Regarding measurement approaches, B26: "(a) the measurement approach the entity uses in accordance with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004); (b) the applicable method if the entity is not using the [GHG Protocol Corporate Standard and the measurement approach used] …; and (c) the emission factors the entity uses…". Further, as per B27: "The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) includes different measurement approaches that an entity might use when measuring its greenhouse gas emissions. In disclosing information in accordance with paragraph 29(a)(iii), the entity is required to disclose information about the measurement approach it uses… Specifically, the entity **shall** [emphasis added] disclose: (a) the approach it uses to determine its greenhouse gas emissions (for example, the equity share or control approach)…; and (b) the reason, or reasons, for the entity's choice of measurement approach…"

[83] Regarding emission factors, B29: "… which emission factors the entity uses in its measurement of its greenhouse gas emissions. This Standard does not specify… [which] emission factors an entity is required to use… [it requires the use of] emissions factors that best represent the entity's activity…"

- "… for Scope 3… emissions…, disclose:"[84] (Paragraph 29(a)(vi))
  - "the categories included within the entity's measure of Scope 3… emissions… in accordance with the *Scope 3 categories* described in the *Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard* [emphasis added] (2011); and[85] (Paragraph 29(a)(vi)(1))
  - "additional information about the entity's **category 15** [emphasis added] … emissions or those associated with its **investments (*financed emissions*)** [emphasis added], if the entity's activities include **asset management, commercial banking or insurance** [emphasis added] …" (Paragraph 29(a)(vi)(2))

Paragraphs/clauses from (IFRS, 2023a) relevant for scope 3 category 15 inventories, from Appendix B: Application guidance, regarding "Scope 3 greenhouse gas emissions, include:

- "Entities participating in financial activities face risks and opportunities related to the greenhouse gas emissions associated with those activities… risks associated with technological changes, shifts in supply and demand and policy change… These risks and opportunities can arise in the form of credit risk, market risk, reputational risk and other financial and operational risks. Entities participating in financial activities, including commercial and investment banks, asset managers and insurance entities, are increasingly monitoring and managing such risks by measuring their **financed emissions** [emphasis added]. This measurement serves as **an indicator of an entity's exposure to climate-related risks and opportunities** [emphasis added] and how the entity might need to adapt its financial activities over time." (Paragraph B58)
- "An entity that participates in one or more of the following financial activities is required to **disclose additional and specific information** [emphasis added] about its Category 15 emissions or those emissions associated with its **investments** [emphasis added] … also known as **'financed emissions'** [emphasis added] …
  - (a) asset management (see paragraph B61);
  - (b) commercial banking (see paragraph B62); and
  - (c) insurance (see paragraph B63)." (Paragraph B59)

For a summary of paragraph B61, B62, and B63, for **asset management**, **commercial banking**, and **insurance**, respectively, refer to **Appendix B14**, **Appendix B15**, and **Appendix B16**, respectively, herein. Finally, industry-specific guidance on implementing IFRS S2 may be relevant: "An entity **shall** [emphasis added] disclose industry-based metrics that are associated with one or more particular business models, activities or other common features that characterize participation in an industry… [and] refer to and consider… the *Industry-based Guidance on Implementing IFRS S2*" (Paragraph 32) for the "financials sector" for: (i) Asset Management & Custodial Activities[86], (ii) Commercial Banks, (iii) Insurance, (iv) Investment Banking & Brokerage, and (v) Mortgage Finance.

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[84] Regarding scope 3 emissions, B32: "… an entity shall disclose information about its Scope 3 greenhouse gas emissions to enable users of general purpose financial reports to understand the source of these emissions. The entity shall consider its entire value chain (upstream and downstream) and shall consider **all 15 categories of Scope 3** [emphasis added] greenhouse gas emissions [and]… [i]n accordance with paragraph 29(a)(vi), the entity **shall disclose** [emphasis added] which of these categories are included in its Scope 3 greenhouse gas emissions disclosures."

[85] Regarding scope 3 categories, B33: "For the avoidance of doubt, regardless of the method an entity uses to measure its greenhouse gas emissions, the entity is required to disclose the categories included within its measure of Scope 3 greenhouse gas emissions as described in paragraph 29(a)(vi)(1)" (i.e., the categories itemized in the GHG Protocol *Scope 3 Standard*).

[86] Asset Management & Custodial Activities industry entities "manage investment portfolios on a commission or fee basis for institutional, retail and high net-worth investors" (IFRS, 2023d, p. 117))

Appendix B2. European Sustainability Reporting Standards reporting on Climate Change (ESRS E1)

Description: As per (ESRS, 2023), the European Sustainability Reporting Standards for reporting on Climate Change (ESRS E1) "…covers disclosure requirements related but not limited to the seven ***Greenhouse gases (GHG)***… It also covers Disclosure Requirements on how the undertaking addresses its GHG ***emissions*** as well as the associated ***transition risks***" (p. 73/284).

The following are relevant clauses from ESRS E1, Climate Change (p. 72-85), and Appendix A, Application Requirements (p. 86-110) (ESRS, 2023). This is not an exhaustive detailing of all requirements in ESRS E1 that concern scope 3 emissions inventories nor all scope 3 categories.

As it concerns all GHG emissions (scope 1, scope 2, and scope 3), with category 15 relevance:

- "For [an undertaking's] … **associates, joint ventures, unconsolidated subsidiaries (investment entities) and** [emphasis added] … **jointly controlled operations and assets**… [emphasis added], the undertaking shall include the GHG emissions in accordance with the extent of the undertaking's operational control over them." (46)

As it concerns scope 3 GHG emissions, specifically:

- "When preparing the information on **gross Scope 3 GHG emissions** [emphasis added] required under paragraph 51, the undertaking **shall** [emphasis added]:" (AR 46)
    - "(a) consider the principles and provisions of the…" ***Scope 3 Standard (2011)***[87]
    - "(b) if it is a financial institution, consider the GHG Accounting and Reporting Standard for the Financial Industry from the Partnership for Carbon Accounting Financial **(PCAF)** [emphasis added], specifically part A "Financed Emissions" (version December 2022);"

As it concerns all GHG emissions (scope 1, scope 2, and scope 3), generally:

- "In case of significant changes in… upstream and downstream value chain, the undertaking shall disclose these changes and explain their effect on the **year-to-year comparability** [emphasis added] of… emissions (i.e., … current versus previous reporting period)." (47)
- "… the undertaking is permitted to measure its GHG emissions in accordance with paragraph 44 using information for **reporting periods that are different from its own reporting period** [emphasis added] … from [value chain] entities … on the condition that:" (AR42)
    - "(a) the undertaking uses the most **recent data available** [emphasis added] …;"
    - "(b) the **length of the reporting periods is the same** [emphasis added]; and"
    - "(c) the undertaking **discloses the effects of significant events and changes in circumstances (relevant to its GHG emissions)** [emphasis added] that occur **between the reporting dates** [emphasis added] of the entities in its value chain and the date of the undertaking's general purpose financial statements."

[87] (ESRS, 2023): "… 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…"

Appendix B3. Securities and Exchange Commission Climate-Related Disclosures

Description: The United States Securities and Exchange Commission (SEC) adopted The Enhancement and Standardization of Climate-Related Disclosures for Investors Rule on March 6, 2024. It applies to publicly traded companies in the U.S. (including foreign companies that are publicly traded and registered with the SEC) that are large accelerated filers (LAFs)[88] and accelerated filers (AFs)[89] (not otherwise exempted). For a summary of the Climate-Related Disclosures refer to Subpart 229.1500—Climate-Related Disclosure (SEC, 2024a, p. 849).

Scope: This rule requires companies to disclose scope 1 and scope 2 emissions if the emissions are determined to be material. In addition to scope 1 and scope 2 emissions: "If carbon offsets or [renewable energy credits or] RECs have been used as a material component of a registrant's plan to achieve its disclosed climate-related targets or goals, the final rules (Rule 14-02(e)) require registrants to disclose (1) the aggregate amount of carbon offsets and RECs expensed, (2) the aggregate amount of capitalized carbon offsets and RECs recognized, and (3) the aggregate amount of losses incurred on the capitalized carbon offsets and RECs, during the fiscal year" (SEC, 2024a, p. 487-488).

Stay: The SEC exercised its discretion to "stay the Final Rules pending the completion of judicial review of the consolidated Eighth Circuit petitions" and stated that: "the Commission will continue vigorously defending the Final Rules' validity in court and looks forward to expeditious resolution of the litigation" (SEC, 2024b, p. 2).

[88] Footnote 65 (SEC, 2024a): "An LAF is an issuer after it first meets the following conditions as of the end of its fiscal year: (i) the issuer had an aggregate worldwide market value of the voting and non-voting common equity held by its nonaffiliates of $700 million or more, as of the last business day of the issuer's most recently completed second fiscal quarter; (ii) the issuer has been subject to the requirements of Section 13(a) or 15(d) of the Exchange Act for a period of at least twelve calendar months; (iii) the issuer has filed at least one annual report pursuant to Section 13(a) or 15(d) of the Exchange Act; and (iv) the issuer is not eligible to use the requirements for SRCs under the revenue test in paragraph (2) or (3)(iii)(B) of the SRC definition in Rule 12b-2. 17 CFR 240.12b-2 (defining LAF and providing how and when an issuer determines whether it qualifies as an LAF)."

[89] Footnote 66 (SEC, 2024a): "An AF is an issuer after it first meets the following conditions as of the end of its fiscal year: (i) the issuer had an aggregate worldwide market value of the voting and non-voting common equity held by its nonaffiliates of $75 million or more, but less than $700 million, as of the last business day of the issuer's most recently completed second fiscal quarter; (ii) the issuer has been subject to the requirements of Section 13(a) or 15(d) of the Exchange Act for a period of at least twelve calendar months; and (iii) the issuer has filed at least one annual report pursuant to Section 13(a) or 15(d) of the Exchange Act; and (iv) the issuer is not eligible to use the requirements for SRCs under the revenue test in paragraph (2) or (3)(iii)(B) of the SRC definition in Rule 12b-2. 17 CFR 240.12b-2 (defining AF and providing how and when an issuer determines whether it qualifies as an AF)."

Appendix B4. SB-253 Climate Corporate Data Accountability Act

Description: 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 requires 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 greenhouse gas emissions starting in 2026 and their scope 3 greenhouse gas emissions starting in 2027. The regulations would apply to an estimated 5,400 public and private companies as well as subsidiaries of non-US-headquartered companies.

Exact requirements for the disclosure of scope 1, 2, and 3 emissions will be determined by CARB, on or before January 1, 2025. In 2026, the reporting entity must disclose scope 1 and 2 emissions. In 2027, the reporting entity must disclosure scope 1, 2, and 3 emissions.

Appendix B5. Science-based targets initiative (SBTi)

(SBTi, 2024a) Financial Sector Science-Based Targets Guidance (version 1.2):

Description: SBTi relies on an "asset class-specific approach" for target setting (p. 7). This framework relies on three methods to link portfolios with climate stabilization pathways: (i) the sectoral decarbonization approach (SDA), i.e., physical intensity targets for real estate and mortgage-related investments, as well as for specific sectors; (ii) the portfolio coverage approach whereby investees set SBTi targets; and (iii) the temperature rating approach, which provides a weighted-average rating of portfolio alignment with ambitious long-term temperature goals (p. 7).

The framework (SBTi, 2024a, p. 55-57) includes four asset classes with varying minimum coverage requirements:

- Real estate;
- Mortgages;
- Electricity generation project finance; and
- Corporate and consumer loans, bonds, and equity (including common stock, preferred stock, corporate bonds, and exchange traded funds, listed real estate companies, real estate investment trusts (REITs), and real estate mutual funds)

The following asset classes are optional (Table 5.2, SBTi, 2024a, p. 55-57):

- Residential mortgages (consumer loans)
- SME loans (a form of corporate lending)
- Short-term debt (a form of corporate lending)
- Funds of funds (listed equity)
- Private equity (including mezzanine capital, ordinary shares, private real estate)

Harmonizing classification and nomenclature between GHG Protocol and PCAF, including other frameworks, is considered in **section 8.3** herein.

Regarding portfolio emissions intensity measurement for SDA targets, (SBTi, 2024a) specifies that investors should "measure the absolute GHG emissions of each investment and/or loan… (i.e., [the] scope 1 and 2 emissions… and scope 3 emissions [of borrowers and/or investees] where possible)" (p. 62). As such, SBTi guidance doesn't provide for alternative methods to quantify the scope 3 emissions of investees in a portfolio that may be double counted when aggregating at the portfolio level. However, (SBTi, 2024a) provides Portfolio Weighting Options (Table E1) "when assessing an index or portfolio of companies, such as in the context of financial portfolios" (p. 152). The issue of portfolio rollups is considered in **section 8.13**.

(SBTi, 2024b) Financial Institutions Net-Zero Standard (Consultation Draft v0.1):

Description: In terms of applicability, the (SBTi, 2024b) or 'FINZ Standard' "applies to entities that generate 5% or more of their revenue from lending, investing (as asset owner or manager), insurance underwriting, and/or capital market activities" (p. 13). Whether FIs versus non-FIs should rely on PCAF and GHG Protocol standards, respectively, is considered in **section 8.1** herein.

The (SBTi, 2024b, p. 10) includes the following financial activities:

- Lending

- Asset Owner Investing
- Asset Manager Investing
- Insurance Underwriting (note: neither GHG Protocol nor PCAF provide calculation guidance[90])
- Capital Market Activities[91] (note: refer to the *Facilitated Emissions Standard* by PCAF (Part B))

Regarding minimum boundaries for 2.1.1 baseline accounting of GHG emissions, FIs are to (p. 28):

- "Include scope 1 and scope 2 emissions for all portfolio holdings."
- "Include scope 3 emissions, at a minimum, for… sectors: automotive, coal, and oil and gas."
- "Report scope 1+2 and scope 1+2+3 GHG emissions separately."

Regarding minimum boundaries for 2.1.3 full absolute (inventory) GHG emissions, FIs are to (p. 29):

- "Include scope 1, 2 and 3 for all portfolio holdings."
- "Report scope 1+2 and scope 1+2+3 GHG emissions separately."

Table 8 (p. 45) in (SBTi, 2024b) specifies in- and out-of-scope financial activities.

Defining the distinction between FIs and non- FIs is considered in **section 8.1** herein; and harmonizing classification and nomenclature between GHG Protocol and PCAF, including other frameworks, is considered in **section 8.3** herein.
Finally, "SBTi recognizes that some FIs have dynamic portfolios that may be difficult to quantify in annual emissions inventories. To account for timing-related disparities between measurement, accounting, and disclosure, FIs are to describe the timing and weighting approaches used to construct their emissions inventories" (p. 28). The topic of portfolio rollups is considered in **section 8.13** herein.

[90] For reference, neither the GHG Protocol *Scope 3 Standard* nor *Facilitated Emissions Standard* (Part B) of PCAF provides calculation guidance on quantifying emissions from underwriting. Further, underwriting is optional in the *Scope 3 Standard* and "underwriting facilities are not covered by the …" *Facilitated Emissions Standard* by PCAF (Part B, p. 29).
[91] Includes primary issuance of capital market instruments and loan syndication (SBTi, 2024b, p. 14).

Appendix B6. Global Reporting Initiative (GRI)

Description: The exposure draft of the GRI Climate Change Topic Standard (GRI, 2023) includes new and revised disclosures from *GRI 305: Emissions 2016*. The (GRI, 2023) exposure draft is consistent with the *Scope 3 Standard* (2011) and proposes minor changes to *GRI 305: Emissions 2016*. There is no financial services sector-specific GRI guidance. However, the Global Sustainability Standards Board (GSSB) is currently preparing sector standards for Banking, Capital Markets, and Insurance sectors — which are expected to be released in Q2 2026.[92]

[92] GAAB: https://www.globalreporting.org/standards/standards-development/sector-standards-project-for-financial-services/

Appendix B7. CDP

Description: The CDP Full Corporate Questionnaire[93] helps organizations measure their environmental impacts and set targets to transition (to lowering environmental impacts) and includes climate change, forests, water security, plastics, and biodiversity.

The following are relevant disclosures in **Module 7** (Climate Change) (shortened):

- Relevance (in the context of detailing emission sources within the reporting boundary) (7.4.1)
- Base year (7.5) (for financial institutions or financial services sector companies, 12.1.1)
- Exclusions (7.8) (for financial services organizations, 12.1.1)
- Targets (7.53) and absolute emissions targets and progress (7.53.1)
- "Portfolio targets, i.e., targets on scope 3 category 15" (7.53.4) (p. 282)
- Net-zero target(s) (distinguishing "Organization-wide" targets that include all categories and "Organization-wide excluding portfolio" if category 15 emissions are excluded) (7.54.3) (p. 325)

The following are relevant disclosures in **Module 12** (Financial Services) (shortened):

- Does your organization measure the impact of your portfolio on the environment? (12.1)
- Provide details of "financed emissions" in the reporting and base year (12.1.1)
- Disclose or restate your financed emissions for previous years (12.1.2)
- Provide details of other metrics used to track the environmental impact of a portfolio (12.1.3)
- Break down your organization's financed emissions and other portfolio carbon footprinting metrics by asset class, by industry, and/or by scope (12.2.1)
- State the values of your financing and insurance of fossil fuel assets in the reporting year (12.3)
- For organizations providing finance and/or insurance to companies in the commodity value chain, for each commodity and portfolio, state the values of financing and/or insurance (12.4)
- Specify which data points are verified and/or assured and which standards were used (13.1.1)

Regarding **financed** versus **operational** activities or emissions, the CDP defines:

- "Financed emissions" as "Scope 3 Category 15 'Investments' total absolute emissions)" and explains that "organizations in the financial sector are only requested to disclose their Scope 3 Category 15 'Investments' total absolute emissions…" CDP goes on to explain that, for financial sector organizations, "… Categories 1-14 and… other upstream or downstream scope 3 emissions should be disclosed in 7.8", the latter being the gross, global scope 3 emissions of an organization (CDP 2024 Corporate Questionnaire Guidance for Modules 8-13, p. 303-4).
- "Operational emissions" as being all non-category 15 scope 3 emissions ("… i.e., the Scope 1, Scope 2 and Scope 3 emissions excluding Category 15 Investments…") of an organization, for the purpose of target setting (CDP Questionnaire, Module 7, question 7.53, p. 261).

This distinction between financed vs. operational emissions may be important to assess and compare scope 3 (and aggregate scope 1, scope 2, and scope 3) GHG inventories for FIs versus non-FIs that disclose scope 1, scope 2, and scope 3 inventories. The topic of distinguishing guidance for financial institutions (FIs) versus non-financial institutions (NFOs) is considered in **section 8.1**; the classification and nomenclature of investment-/asset-classes is considered in **section 8.3**; the topic of portfolio rollups is considered in **section 8.15**.

[93] CDP: https://www.cdp.net/en/2024-disclosure/cdp-full-corporate-questionnaire

Appendix B8. The Institutional Investors Group on Climate Change (IIGCC)

Description: The IIGCC published the Net Zero Investment Framework (NZIF) 2.0 in June 2024 after three years of implementation of the first version. As per NZIF 2.0, this framework "… is the most widely used guide by investors to set targets and produce related net zero strategies and transition plans… [and] is a guide… not a protocol" (IIGCC, 2024a, p. 4). In addition to (IIGCC, 2024a), the IIGCC published the following scope 3 guidance documents: (IIGCC, 2024b), (IIGCC, 2024c), and (IIGCC, 2024d). For reference, in 2023 the IIGCC formed "the Net Zero Engagement initiative (NZEI)… a voluntary, investor-led initiative…" which "… aims to help investors align… their individual portfolios with the goals of the Paris Agreement, by scaling the number of companies covered by collaborative engagement."[94]

(IIGCC, 2024a) Net Zero Investment Framework 2.0:

Governance and strategy: NZIF 2.0 recommends several actions for investors, including to "assess and disclose climate financial risk assessment[s] in line with legal obligations, fiduciary duties, and industry best practice (e.g., TCFD and ISSB)."[95]

Objectives: NZIF 2.0 recommends several actions for investors, including to "monitor and disclose baseline portfolio scope 1 and 2 financed emissions, with portfolio scope 3 emissions **kept separate** [emphasis added], and sovereign-related assets **disclosed separately** [emphasis added]" (p. 14). This is reiterated in (IIGCC, 2024b) which states as a core objective that investors should: "Monitor and disclose baseline portfolio scope 1, 2 and 3 financed emissions, with portfolio scope 3 emissions kept separate from scopes 1 and 2" (p. 14). The classification and nomenclature of investment/asset-classes is considered in **section 8.3** herein; the relevance of investees' scope 3 emissions is considered in **section 8.6**.

Further, NZIF 2.0 recommends the "disclosure to investors of scope 1, 2, and **material** [emphasis added] scope 3 absolute GHG emissions, "… as defined by leading guidance such as SBTi" for private equity (p. 37); and for private debt (p. 43). This is reiterated in (IIGCC, 2024b) which states, as a key message, that: "Reflecting data constraints and sizeable differences in materiality… [the IIGCC] recommend[s] a sector and category-specific approach to incorporating scope 3, that is focused on high impact sectors" (p. 5).

Minimum boundary revisions is considered in **section 8.5** and **section 8.6** herein. Portfolio rollups is considered in **section 8.15** herein.

Disclosure of data quality and calculation method(s): Further, NZIF 2.0 recommends that investors "Disclose the methodology used to calculate portfolio level objectives, including an assessment of the quality of underlying information used" and "set a target to reduce operational scope 1 and scope 2 emissions in line with a suitable global net zero pathway" (p. 14). The topic of data quality (hierarchy or score) is considered in **section 8.2** herein.

Rebaselining: NZIF 2.0 recommends several actions for investors, including to "… seek to understand [via attribution analysis] which factors are driving changes in financed emissions attached to their portfolios… to understand if they are '*financing reduced emissions*' and not merely '*reducing their financed emissions*'" (p. 16). The topic of target setting and rebaselining is being considered by the GHG Protocol scope 3 technical working group (TWG) Group B.

[94] (NZEI, 2023): https://www.iigcc.org/net-zero-engagement-initiative. (Accessed October 16, 2024)
[95] Note that the IFRS via ISSB has assumed the responsibilities of the TCFD.

Asset-level assessment and targets: "As a general rule, NZIF does not recommend divestment from secondary equity markets as an approach to drive alignment in individual portfolios, especially when primary market issuances such as bonds are more associated with new production capacity." This recommendation is based on findings from (Quigley, 2023) summarized in **Appendix B13** herein.

Derivatives and hedge funds: Regarding derivatives and hedge funds, NZIF 2.0 explains that:

> "Neither derivatives nor hedge fund holdings are considered to constitute an asset class. Derivatives are considered to be financial instruments that offer indirect exposure to an underlying asset class, a portion of the market, or a specific security. Hedge funds are considered as vehicles that offer a variety of investment strategies across different asset classes. Although indirect exposure to assets through derivatives may not directly contribute to GHG emissions, it is tied to underlying assets, such as stocks or bonds, which do have associated emissions."

NZIF 2.0 guidance recommends investors report the following separately: (i) financed emissions, (ii) associated emissions of long exposure and (iii) associated emissions of short exposure gained via prime brokers (e.g., hedge funds) or derivatives. The inclusion of derivatives as an investment-/asset-class is considered in **section 8.4** herein.

Sovereign bonds: (IIGCC, 2024d) 'Sovereign Bonds & Country Pathways – Target setting and implementation guidance' "endorses PCAF as the standard for apportioning 'financed emissions' to [sovereign bonds]" (p. 9). Refer to the table in **Appendix A10.9** which compares GHG Protocol *Scope 3 Standard* requirements and guidance for debt investments (without known use of proceeds) (Table 5.10, p. 55) versus PCAF Part A requirements and guidance for sovereign bonds (PCAF section 5.7). For reference, the NZIF recommends:

- Reporting "portfolio absolute emissions (including and excluding LULUCF) and emissions intensity" (p. 9); and
- That investors' "net zero targets on corporate assets and sovereign assets… be distinct and **not… aggregated** [emphasis added] to avoid double counting" (p. 20).

The quantification and attribution or proportioning of emissions attributable to sovereign bonds is considered in **section 8.13** herein.

Cash and cash equivalent (CC&E): Short-term (less than three month) certificate of deposit (CD) may be considered CC&E. NZIF states that the "management of cash will result in emissions due to… the carbon-intensity of associated bank lending" (p. 54). However, "managing cash associated emissions is purposefully an 'appendix'" as per NZIF, "due to several factors" including because cash is (p. 54):

- "… typically only a small component of total holdings."[96]
- "… Service providers [e.g., banks] are selected on many practical factors and risk management restrictions apply on the adopted service provider."
- "… Choice of service provider may be imposed on a fund/investor."

The above factors may weigh into findings from *The Carbon Bankroll* (Carbon Bankroll, 2022) and 2.0 (Carbon Bankroll, 2024) arguing for the inclusion of CC&E in category 15 emissions from companies (summarized in **Appendix B12** herein). The inclusion of CC&E is considered in **section 8.4** herein.

[96] Note that CC&E reflects a large component of total holdings of some publicly listed, large-cap companies (**Appendix A4**).

For "information on investor perspectives on the importance and complexity of the value chain emissions of their investee companies in the context of achieving net zero portfolio emissions" and executing transition plans (IIGCC, 2024a), the NZIF 2.0 points to two documents: 'Supplementary guidance on scope 3 emissions of investments' (IIGCC, 2024b) and 'Investor approaches to scope 3: Its importance, challenges and implications for decarbonizing portfolios' (IIGCC, 2024c).

(IIGCC, 2024b) Supplementary guidance on scope 3 emissions of investments:

As it concerns portfolio rollups, (IIGCC, 2024b) states that:

> "Scope 3 indicates exposure to emissions, and therefore at portfolio level it is still relevant for investors to understand and track their frequency of exposure to value chain emissions. However, **it's not meaningful to set targets to reduce aggregated portfolio scope 3** [emphasis added] because this doesn't necessarily reduce real-economy emissions. Despite this, it is an essential component of understanding alignment at asset-level, especially for corporate assets, because it represents emissions associated with products and services which are typically fundamental to a company's core purpose." (p. 6)

The IIGCC provides guidance in section 1, "Understanding scope 3 in a portfolio context", stating that:

> "Whilst the GHG protocol provides clear guidance for asset-level reporting, there is currently no one clear, universally accepted approach as to which of these asset level emissions scopes need to be included by investors" (p. 8); and points to "divergent approaches from the [TCFD], SBTi, [GRI], and [ISSB]" (p. 10).

However, this is not to underscore its importance. As per (IIGCC, 2024b):

> "Ultimately, given the magnitude of scope 3 and its value as an indicator of transition risk, investors risk omitting the key sources of greenhouse gas emissions that they are exposed to through asset value chains from their analysis of portfolio emissions, or from evaluations of climate transition risk exposure, or asset-level alignment with climate goals [if they exclude material scope 3 emissions of investees or assets]." (p. 9)

As stated in NZIF 2.0, and summarized above, (IIGCC, 2024b) expands upon the NZIF 2.0 scope 3 actions points in Table 1, specifying the objective as being to:

> "Monitor and disclose baseline portfolio scope 1, 2 and 3 financed emissions, with portfolio scope 3 emissions kept separate from scopes 1 and 2." (p. 14)

In addition, relating to portfolio rollups, (IIGCC, 2024b) provides more information:

> "It is recommended that material portfolio scope 3 emissions be phased into net zero efforts at the portfolio level, as data availability, quality, consistency allow, and where meaningful to net zero goals, reflecting the different materiality and category relevance across sectors. However, it is currently recommended that they be monitored separately to portfolio scope 1 and 2 emissions and a separate strategy is created to address these due to measurement, aggregation, and mis-incentivisation challenges (including double counting)." (p. 14)

Finally, the IIGCC supports and encourages standard setters "to consider investor usage of scope 3 data in the context of the development of new standards and updates of existing standards and reframe guidance to enable investor use of scope 3 data for investment portfolios" (IIGCC, 2024b, p. 25).

Materiality and relevance are considered in **section 8.5** and **section 8.6**, respectively, and portfolio rollups are considered in **section 8.15**.

(IIGCC, 2024c) Investor approaches to scope 3:

As it concerns portfolio rollups, (IIGCC, 2024c), 'Investor approaches to scope 3: its importance, challenges and implications for decarbonising portfolios', states that:

> "Presently, there are practical challenges with reporting, estimation and calculation of scope 3 data, which has led to a fragmented data landscape that lacks coverage and quality across the investable universe. Whilst the data is improving, including due to notable efforts by a number of industry actors, it is unlikely to be consistent and credible across investors' whole portfolios in a timeframe consistent with the urgent need to address climate change issues and manage climate-related risks… Yet, without recognising the scope 3 emissions of a company, it is not possible to fully understand and assess its contribution to climate change. Scope 3 is often where major emissions sources exist within investment portfolios." (p. 4)

Appendix B9. Paris Aligned Asset Owners (PAAO)

Description: Paris Aligned Asset Owners (PAAO) rely on NZIF and, as articulated in the 2023 Progress Report (PAAO, 2024), require quantifying and setting targets for, as well as disclosing, "material scope 3 emissions" (p. 17). That said, "addressing scope 3 emissions forms part of the PAAO commitment, however signatories have faced challenges when looking to include investee scope 3 emissions in the scope of their targets in a way that supports real economy emissions reductions" (p. 19).[97]

[97] (PAAO, 2024) 2023 Progress Report: https://www.parisalignedassetowners.org/media/2024/07/PAAO-2023-Progress-Report.pdf

Appendix B10. The Net Zero Asset Managers (NZAM)

Description: The Net Zero Asset Managers (NZAM) initiative, comprised of 325 signatories[98] with $57.5 trillion assets under management (AUM) in aggregate, "is an international group of asset managers committed, consistent with their fiduciary duty to their clients and beneficiaries, to supporting the goal of net zero greenhouse gas emissions by 2050 or sooner, in line with global efforts to limit warming to 1.5 degrees Celsius; and to supporting investing aligned with net zero emissions by 2050 or sooner."[99]

Scope 3 emissions are included in the commitment 2 "for assets committed to be managed in line with the attainment of net zero emissions by 2050 or sooner" for "portfolio [s]cope 1 & 2 emissions and, to the extent possible, material portfolio [s]cope 3 emissions."[100]

NZAM provides "… flexibility to signatories…" by endorsing "… three target-setting methodologies… the Paris Aligned Investment Initiative Net Zero Investment Framework (refer to the NZIF 2.0 in **Appendix B8** herein), Science Based Target initiative for Financial Institutions (refer to SBTi in **Appendix B5** herein) and the UN-convened Net Zero Asset Owner Alliance Target Setting Protocol."[101, 102]

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[98] NAZM signatories: https://www.netzeroassetmanagers.org/signatories/
[99] NZAM: https://www.netzeroassetmanagers.org
[100] The NZAM Commitment: https://www.netzeroassetmanagers.org/commitment/. (Accessed October 18, 2024)
[101] NZAM: https://www.netzeroassetmanagers.org/nzam-update-november-2022-initial-target-disclosure. (Accessed October 24, 2024)
[102] UNEP-FI: https://www.unepfi.org/net-zero-alliance/. (Accessed October 24, 2024)

Appendix B11. Task Force on Climate-related Financial Disclosures (TCFD)

Description: The Task Force on Climate-related Financial Disclosures (TCFD) disbanded on January 1, 2024, and was replaced by the International Financial Reporting Standards (IFRS) Foundation, which oversees the International Sustainability Standards Board (ISSB). Refer to *IFRS S2 Climate-related Disclosures* detailed in **Appendix B1** herein.

Regarding TCFD, as per the IFRS: "Companies applying IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures will meet the TCFD recommendations as the recommendations are fully incorporated into the ISSB Standards."[103] Refer to the Comparison of IFRS S2 Climate-related Disclosures with the TCFD Recommendations.[104]

[103] IFRS (regarding TCFD): https://www.ifrs.org/sustainability/tcfd/
[104] (IFRS, 2023f) Comparison: https://www.ifrs.org/content/dam/ifrs/supporting-implementation/ifrs-s2/ifrs-s2-comparison-tcfd-july2023.pdf

Appendix B13. Asset-class prioritization:

Description: (Quigley, 2023) provides that a "… body of evidence suggests that exclusions in public equity are unlikely to affect company behavior nor to have a perceptible impact on real-economy emissions…" even though "emerging evidence suggests that institutional investors' climate-related exclusions are overwhelmingly concentrated in public equity relative to other asset classes" (e.g., business loans, project financing, etc.). Further, this paper summarizes researching which finds that:

> "Exclusions in public equity holdings appear to have little effect on share price [with the exception of one study], except perhaps in the short term – and even then, it appears to be the divestment announcement itself that causes the pricing adjustment… This suggests that adverse news events may have a greater temporary effect on share prices than that of the sale of shares itself… [possibly because] public equity investments tend to be traded in the secondary market, meaning that shares are traded between and among shareholders as opposed to with the company itself."

This speaks to the inclusion of pension/retirement funds and other investment types considered in **section 8.4** and specifying listed equity in the minimum boundary for non-FIs considered in **section 8.5**.

(Quigley, 2023) provides that divestment has a potentially greater "direct financial impact on companies… in… debt markets, given their overwhelming role in providing new capital to fossil fuel companies." This is because most buildings, infrastructure, and other projects, including "a large majority of new financing for fossil fuels comes from debt, namely bank lending (64%) and bond issuance (26%)". This speaks to both the relevance of investee scope 3 emissions inclusion considered in **section 8.6** and separately accounting for the lifetime emissions of projects, e.g., fossil fuel projects, considered in **section 8.7**.

Appendix B14. (IFRS, S2, Paragraph B61)

The following is a summary of paragraph B61 from (IFRS, S2, 2023):

- B59(a): "**asset management** [emphasis added]"
  - B61: "… **shall** [emphasis added] disclose:"
    - B61(a): its **absolute gross** [emphasis added] financed emissions, **disaggregated** [emphasis added] by Scope 1, Scope 2 and Scope 3 greenhouse gas emissions."
    - B61(b): "for each of the disaggregated items in paragraph B61(a), the total amount of **assets under management (AUM)** [emphasis added] that is included in the financed emissions disclosure…"
    - B61(c): "the **percentage of the entity's total AUM included** [emphasis added] in the financed emissions calculation. If the percentage is less than 100%, the entity shall disclose **information that explains the exclusions** [emphasis added], including types of assets and associated amount of AUM."
    - B62: "the **methodology used to calculate** [emphasis added] the financed emissions, including the **method of allocation** [emphasis added] the entity used to attribute its share of emissions in relation to the size of investments."

Appendix B15. (IFRS, S2, Paragraph B62)

The following is a summary of paragraph B62 from (IFRS, S2, 2023):

- B59(b) "**commercial banking** [emphasis added]"
  - B62: "… **shall** [emphasis added] disclose:"
  - B62(a): "its **absolute gross** [emphasis added] financed emissions, **disaggregated** [emphasis added] by Scope 1, Scope 2 and Scope 3 greenhouse gas emissions for **each industry by asset class** [emphasis added]. When disaggregating by:"
    - B62(a)(i) "**industry** [emphasis added]—the entity shall use the Global Industry Classification Standard **(GICS) 6-digit industry-level** [emphasis added] code for classifying counterparties, reflecting the latest version of the classification system available at the reporting date."
    - B62(a)(ii): "**asset class** [emphasis added]—the disclosure shall include **loans, project finance, bonds, equity investments and undrawn loan commitments** [emphasis added]. If the entity calculates and discloses financed emissions for other asset classes, it shall include an explanation of why the inclusion of those additional asset classes provides relevant information to users of general purpose financial reports."
  - B62(b): "its **gross exposure to each industry by asset class** [emphasis added], expressed in the presentation currency of the entity's financial statements. For:"
    - B62(b)(i): "**funded amounts** [emphasis added]—gross exposure shall be calculated as the funded carrying amounts (before subtracting the loss allowance, when applicable), whether prepared in accordance with IFRS Accounting Standards or other GAAP."
    - B62(b)(ii): "**undrawn loan commitments** [emphasis added]—the entity shall disclose the full amount of the commitment separately from the drawn portion of loan commitments."
  - B62(c): "the **percentage of the entity's gross exposure included** [emphasis added] in the financed emissions calculation. The entity shall:"
    - B62(c)(i): "**if** [emphasis added] the percentage of the entity's gross exposure included in the financed emissions calculation is **less than 100%, disclose information that explains the exclusions** [emphasis added], including the type of assets excluded."
    - B62(c)(ii): "for funded amounts, **exclude from gross exposure all impacts of risk mitigants** [emphasis added], if applicable."
    - B62(c)(iii): "disclose separately the percentage of its undrawn loan commitments included in the financed emissions calculation."
  - B62(d): "the **methodology the entity used to calculate** [emphasis added] its financed emissions, including the **method of allocation** [emphasis added] the entity used to attribute its share of emissions in relation to the size of its gross exposure."

Appendix B16. (IFRS, S2, Paragraph B63)

The following is a summary of paragraph B63 from (IFRS, S2, 2023):

- B59(c): "**insurance** [emphasis added]"
  - B63: "An entity that participates in financial activities associated with the insurance industry **shall** [emphasis added] disclose:"
  - B63(a): "its **absolute gross** [emphasis added] financed emissions, **disaggregated** [emphasis added] by Scope 1, Scope 2 and Scope 3 greenhouse gas emissions **for each industry by asset class** [emphasis added]. When disaggregating by:"
    - B63(a)(i): "**industry** [emphasis added]—the entity shall use the Global Industry Classification Standard **(GICS) 6-digit industry-level code** [emphasis added] for classifying counterparties, reflecting the latest version of the classification system available at the reporting date.
    - B63(a)(ii): **asset class** [emphasis added]—the disclosure shall include **loans, bonds and equity investments, as well as undrawn loan commitments** [emphasis added]. If the entity calculates and discloses financed emissions for other asset classes, it shall include an explanation of why the inclusion of those additional asset classes provides relevant information to users of general purpose financial reports.
  - B63(b): the **gross exposure for each industry by asset class** [emphasis added], expressed in the presentation currency of the entity's financial statements. For:
    - B63(b)(i): **funded amounts** [emphasis added]—gross exposure shall be calculated as the **funded carrying amounts (before subtracting the loss allowance, when applicable)** [emphasis added], whether prepared in accordance with IFRS Accounting Standards or other GAAP.
    - B63(b)(ii): **undrawn loan commitments** [emphasis added]—the entity shall disclose the full amount of the commitment **separately from the drawn portion** [emphasis added] of loan commitments.
  - B63(c): "the **percentage of the entity's gross exposure included** [emphasis added] in the financed emissions calculation. The entity shall:"
    - B63(c)(i): "**if** [emphasis added] the percentage of the entity's gross exposure included in the financed emissions calculation is **less than 100%, disclose information that explains the exclusions** [emphasis added], including type of assets excluded."
    - B63(c)(ii): "disclose separately the **percentage of its undrawn loan commitments included** [emphasis added] in the financed emissions calculation."
  - B63(d): "the **methodology the entity used to calculate** [emphasis added] its financed emissions, including the **method of allocation** [emphasis added] the entity used to attribute its share of emissions in relation to the size of its gross exposure."

Appendix B17. Financials for large-cap companies

The following figures were pulled from publicly available data made available on *Yahoo! Finance* for fiscal year (FY) 2021 (accessed on October 15, 2024). These figures have *not* been reviewed for accuracy and my exhibit errors; all figures were rounded to the nearest billion.

	$ billion				
Company	Income	CC&E	Total asset	CC&E % Total assets	CC&E % Income
Alphabet	$258	$140	$359	39%	54%
Amazon	$470	$96	$421	23%	20%
Apple	$366	$63	$351	18%	17%
Disney	$67	$16	$204	8%	24%
J&J	$79	$32	$182	18%	41%
Meta	$118	$48	$166	29%	41%
Microsoft	$168	$130	$334	39%	77%
Netflix	$30	$6	$45	13%	20%
PayPal	$25	$13	$51	25%	52%
Salesforce	$21	$12	$66	18%	57%
Total	$1,602	$556	$2,179	26%	35%

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