GREENHOUSE GAS PROTOCOL

Scope 3 Technical Working Group Meeting

Working draft, do not cite

Full TWG
Phase 2, Meeting 3
Category-specific boundaries & optionality (continued)

October 9th, 2025

WORLD RESOURCES INSTITUTE

World Business Council for Sustainable Development

(Draft; for discussion)

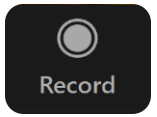
Agenda

- Housekeeping (5 min)
- Timeline for Phase 2 (5 min)
- A1. Disaggregation by specificity (30 min)
- Cross-cutting Series D revisions to-date (15 min)
- Cat. 8) Amortization of embodied emissions (30 min)
- Cat. 2) Amortization of unamortized embodied emissions (30 min)
- Cat. 11) Sold product annualized performance metric
- Cat. 4/9, 6 and 7, 14, 15, 16) READ ONLY
- Next steps (5 min)

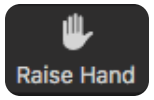
(Draft; for discussion)

Housekeeping and decision-making criteria

Welcome and Meeting information

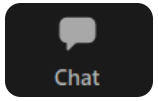


This meeting is recorded.



Please mute yourself by default and unmute when speaking

Please use the Raise Hand function to speak during the call.



You can also use the chat function in the main control.

Recording, slides, and meeting minutes will be shared after the call.

Housekeeping

- TWG members should **not disclose any confidential information** of their employers, related to products, contracts, strategy, financials, compliance, etc.

- In TWG meetings, **Chatham House Rule** applies:
  - "When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed."

- **Compliance and integrity** are key to maintaining the credibility of the GHG Protocol
  - Specifically, all participants need to follow the **conflict-of-interest policy**
  - **Anti-trust rules** have to be followed; please avoid any discussion of competitively sensitive topics*

* Such as pricing, discounts, resale, price maintenance or costs; bid strategies including bid rigging; group boycotts; allocation of customers or markets; output decisions; and future capacity additions or reductions

Decision-Making Criteria

- Evaluating options: Describe pros and cons of each option relative to each criterion. Qualitatively assess the degree to which an option is aligned with each criterion through a green (most aligned), yellow (mixed alignment), orange (least aligned) ranking system. Some criteria may be not applicable for a given topic; if so, mark N/A.
- Comparing options: The aim is to advance approaches that ideally meet all decision criteria (i.e. maximize pros and minimize cons against all criteria). If options present tradeoffs between criteria, the hierarchy should be generally followed, such that, for example, scientific integrity is not compromised at the expense of other criteria, while aiming to find solutions that meet all criteria.

Illustrative example	Option A: Name	Option B: Name	Option C: Name
1A. Scientific integrity	• Pros • Cons	• Pros • Cons	• Pros • Cons
1B. GHG accounting and reporting principles	• Pros • Cons	• Pros • Cons	• Pros • Cons
2A. Support decision making that drives ambitious global climate action	• Pros • Cons	• Pros • Cons	• Pros • Cons
2B. Support programs based on GHG Protocol and uses of GHG data	• Pros • Cons	• Pros • Cons	• Pros • Cons
3. Feasibility to implement	• Pros • Cons	• Pros • Cons	• Pros • Cons

Note: This is a summary version. For further details, refer to the full decision-making criteria included in the annex to the Governance Overview, available at https://ghgprotocol.org/our-governance.

(Draft; for discussion)

Timeline for Phase 2

Full Scope 3 TWG Meetings

Meeting #	Date	Time	Topic
1	*Aug 28*		• *Category-specific boundaries & optionality*
2	*Sep 18*		• *Category-specific boundaries & optionality (continued)*
3	Oct 9	9-11 AM ET	• A1. Disaggregation (cross-harmonization with CS TWG and other editorial revisions) • Category-specific boundaries & optionality (continued) • NEW: Category 10/11 boundaries, justified exclusions, and emission factor guidance
4	Oct 30	9-11 AM ET	• Category-specific boundaries/optionality and Category 10/11 boundaries (continued) • **Possibly**: Introduce breakouts to develop quantification and/or EF requirements
5	Nov 20	**4-6 PM ET**	• Category-specific boundaries/optionality and Category 10/11 boundaries (continued) • **Possibly**: Introduce breakouts to develop quantification and/or EF requirements
6	Dec 11	9-11 AM ET	• Category-specific quantification requirements and guidance (Cat. 2, 15, etc.) • Category-specific EF requirements and guidance (Cat. 4/9, 6, 7, and 5/12) • Category-specific classification and emission factors (Cat. 1, 2, 3, 8/13)

* This is not a TWG meeting; it is the Secretariat's meeting with the ISB to present proposed revisions from the TWG

Full Scope 3 TWG Meetings (Year 2026)

Meeting #	Date TBC	Time	Topic
7	January	9-11 AM ET	Performance tracking (possibly review base year and target setting)
8	February	**4-6 PM ET**	TBD
9	March	9-11 AM ET	TBD
10	March	9-11 AM ET	TBD
11	April	**4-6 PM ET**	TBD
12	May	9-11 AM ET	TBD

* This is not a TWG meeting; it is the Secretariat's meeting with the ISB to present proposed revisions from the TWG

(Draft; for discussion)

A1. Disaggregation by specificity

A1. Disaggregation by specificity (tiers)

The A1 revision was discussed in:

- **ISB** meeting (July 28th) – ISB members generally agreed with the proposal; most members supported it with edits
- **Corporate Standard Subgroup 3** (CS3) meeting (October 7th)

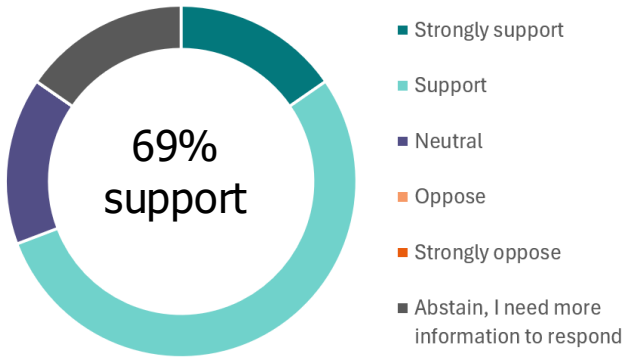
New revisions will be now illustrated and polled after the meeting (the non-extendable deadline to complete the survey is Monday **October 13th 4 pm ET**):

- A1a. – Additional category proposed by CS3
- A1b. – Editorial changes to the names of the tiers
- A1c. – Limit disaggregation to some categories
- A1d. – Extend disaggregation to sub-categories

Corporate Standard TWG Subgroup 3 poll results: Disaggregated reporting based on data quality

Scope 3 TWG proposal

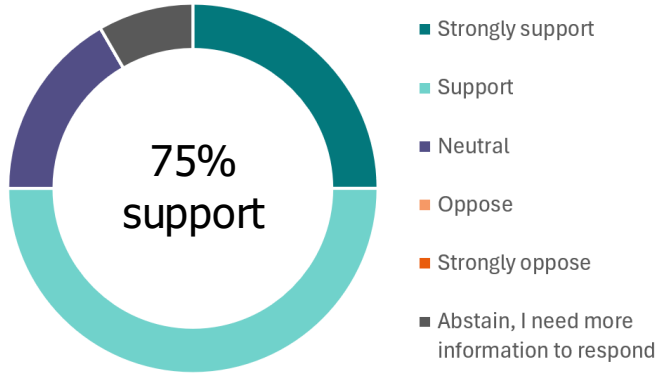
Majority support for **the Scope 3 TWG proposal** to disaggregate reporting by data specificity **for scope 3 reporting.**



13 responses

Extending to scope 1

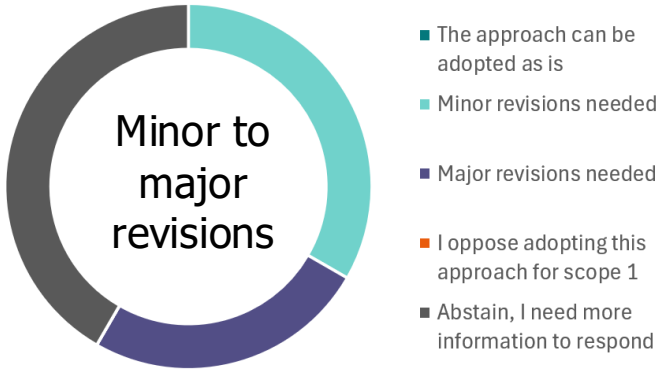
Majority support for extending the Scope 3 TWG proposal to **scope 1**



12 responses

Revisions needed

Majority agreement that **minor to major revisions** are needed to extend the Scope 3 TWG proposal to scope 1



12 responses

Take-aways:

General support for disaggregated reporting using data quality tiers approach, but revisions are needed

Proposal from Corporate Standard TWG Subgroup 3

Proposal:

Add a new "measured" tier to recognize higher measured quality data

Measured tier = Quantitative data obtained directly from monitoring or measurement of processes at a facility or activity level

How it would work:

- New "measured" tier would be separated out from the current "specific" tier
- Includes direct measurement, measured carbon content of fuel, measured energy content, etc.

Alignment with ISO:

- "Measured" tier aligns with ISO definition of primary data
- ISO primary data = *"quantified value of a process or an activity obtained from a direct measurement or a calculation based on direct measurements"* – ISO 14064-1:2018

Proposal	Tier names	Pros	Cons
Modified Scope 3 TWG proposal	• Measured / Tier 4 • Specific / Tier 3 • Non-specific / Tier 2 • Spend-based / Tier 1 • Unknown/unclassified	• Better aligned with direct emissions programs* • Recognizes higher quality data in scope 1 • Alignment with ISO primary data and measured tier	• Additional tier adds complexity • Tiers are not perfectly aligned with direct emissions program tiers

**See Appendix for more details on data quality tiers in direct emissions programs (e.g., EPA GHGRP, EU ETS, IPCC)*

Proposed approach: Data quality tiers using modified Scope 3 TWG proposal for scope 1 data

Activity types	Measured OR Tier 4	Specific OR Tier 3	Non-specific OR Tier 2	EEIO/Spend-based OR Tier 1
Stationary combustion	• Direct measurement • Energy content of fuel • Carbon content of fuel	• Volume/weight of fuel • Fuel-specific EFs	• Estimated fuel consumption • Industry average emission factors	• EEIO / Spend-based emission factors
Mobile combustion	• Direct measurement • Energy content of fuel • Carbon content of fuel	• Volume/weight of fuel • Fuel-specific EFs	• Distance traveled • Industry average emission factors	• EEIO / Spend-based emission factors
Process emissions	• Direct measurement	• Measured in physical units • Modeled in chemical or physical modeling	• Volume/weight of material produced • Industry average emission factors	• EEIO / Spend-based emission factors
Fugitive emissions	• Direct measurement • Mass balance method	• Volume of refrigerant leaked • Weight of fertilizer • Volume of waste treated • Specific EFs	• Industry average emission factors • Average leak rate by HVAC type • Number of animals	• EEIO / Spend-based emission factors

Orange text indicates the changes in the modified tiers approach

Note: This table is intended to be a starting point for discussion. It combines activity data, emission factors, and methods.

Case study: Classification into data quality tiers

Option A: Scope 3 TWG proposal

		Emission factor		
		Emissions calculated from carbon content	**Diesel emission factor**	**Spend-based emission factor** for diesel truck
Activity data	**Carbon content and volume** of diesel*	Specific	Specific	EEIO/spend-based
	Volume of diesel	Specific	Specific	EEIO/spend-based
	Distance traveled by truck	Non-specific+	Non-specific+	EEIO/spend-based
	USD spent on diesel	Non-specific	Non-specific	EEIO/spend-based

Option B: Modified Scope 3 TWG proposal

		Emission factor		
		Emissions calculated from carbon content	**Diesel emission factor**	**Spend-based emission factor** for diesel truck
Activity data	**Carbon content and volume** of diesel*	Measured	Specific	EEIO/spend-based
	Volume of diesel	Specific	Specific	EEIO/spend-based
	Distance traveled by truck	Non-specific+	Non-specific+	EEIO/spend-based
	USD spent on diesel	Non-specific	Non-specific	EEIO/spend-based

**Assumes carbon content is measurement of actual fuel being consumed (not an average factor)*
+Distance traveled emission factors for CH_4 and N_2O would be considered "specific" for mobile combustion

A1. Disaggregation by specificity (tiers) – Survey's content

- **A1a**. – **Additional category proposed by CS3**
  - Rationale: see slides before. The new tier ("Measured") will allow to use the same disaggregation framework for all the Scopes; the new tier is also aligned to the ISO definition of "Primary data"
  - Proposal to be polled:
    - Add a new tier ("Measured")

- **A1b**. – **Editorial changes to the names of the tiers**
  - Rationale: "Non-specific" tier includes emissions calculated by using good proxy of activity data and emission factors gathered from reliable external databases. The actual denomination has a slightly negative nuance; moreover, said tier might not be clearly distinguishable from "Unknown/unclassified".
  - Proposals to be polled:
    - Change "Non-specific" to "Partially specific
    - Change "Unknown/unclassified" to "Unclassified"

New proposal for disaggregation by tiers

- If both A1a. and A1b. are approved by TWG:

Current proposal
Specific
Non-specific
EEIO / Spend-based
Unknown / unclassified

NEW proposal
Measured
Specific
Partially specific
EEIO / Spend-based
Unclassified

A1. Disaggregation by specificity (tiers) – Survey's content

- **A1c**. – **Limit disaggregation to some Scope 3 categories**
  - Rationale: Limit required disaggregation to some categories may address the feasibility concerns raised by some ISB members. Disaggregation seems to be more feasible and meaningful for upstream categories and for investments (cat. 15). There is a need to clarify whether require disaggregation also for cat. 16 "Facilitated emissions" (mostly optional) or not.

  - Proposal to be polled: Require disaggregation ("shall") by specificity for:
    - all Scope 3 categories (1-16)
    - categories 1-15 ("should" for cat. 16)
    - upstream categories (1-8) and cat. 15 ("should" for cat. 9-14 and 16)
    - only upstream categories ("should" for cat. 9-16)

- **A1d**. – **Extend disaggregation ("shall") to sub-categories and to optional boundary**
  - Rationale: There is a need to clarify whether disaggregation shall also be required for Scope 3 sub-categories and for optional boundary. The Secreteriat would exclude requiring disaggregation for both optional/required and categories/sub-categories because too complex.

  - Proposal to be polled: Require disaggregation ("shall") for:
    - only for Scope 3 categories and required boundary ("may" for sub-categories and optional boundary)
    - Scope 3 categories and sub-categories ("may" for optional boundaries)
    - Scope 3 categories both required and optional ("may" for sub-categories)

(Draft; for discussion)

Cross-cutting Series D revisions considered to-date

Summary of Series D revisions considered to-date

1. Require cradle-to-grave EFs for fuels (across all categories)
2. Required/optional inclusion of to capital goods (allocated) used for category activities
3. Optional boundary emissions across all categories (excluding category 10 and 11)

Require cradle-to-grave EFs for fuels (across all categories)

Category	Revision (REQUIRED)	Notes
Category 1, 2, and 3	n/a	Should it be stated here as well?
Category 4, 9 Category 5, 12 Category 6 Category 7 Category 8 Category 10 Category 11 Category 13	"All upstream (cradle-to-gate) emissions of fuels and/or energy used by…" • [D4.3][D9.3] "… transportation and distribution providers." • [D5.2][D12.2] "… waste handlers." • [D6.5] "… transportation carries" • [D7.3] "… during employee commuting or remote work (the latter, if not included in category 1)." • [D8.3] "… leased assets." • [D10.3] "… customers." • [D11.3] "… end users." • [D13.3] "… lessees in leased assets."	
Category 14 and 15	n/a	Implied as it's required for investees

Optional inclusion of to capital goods used for category activities

"All upstream (cradle-to-gate) emissions associated with manufacturing or constructing capital goods used in/to…"

Category	REQUIRED	OPTIONAL	Notes
Cat. 1, 2	n/a	[D1.2] "… production of goods and services… " [D2.3] "… capital goods… "	
Cat. 3	n/a	(a) [D3.4] "… purchased fuels" (b) [D3.4] "… fuels consumed in the generation of purchased energy" and/or [D3.5] "… to generate purchased electricity or other forms of purchased energy" (c) [D3.4] "… fuels lost or consumed in a T&D system" and/or [D3.5] "… to generate electricity or other forms of energy lost or consumed in a T&D system" (d) [D3.5] "… to generate electricity or other forms of energy sold to end users"	
Cat. 4, 9 Cat. 5, 12 Cat. 6 Cat. 7	n/a	[D4.4] "… transportation and distribution" [D5.3][D12.2] "… waste handling" [D6.6] "… business travel" [D7.4] "… employees for commuting"	
Cat. 10, 11	n/a	Not considered	
Cat. 14, 15	n/a	n/a	

Required/optional inclusion of to capital goods used for category activities

Category	REQUIRED	OPTIONAL	Notes
Cat. 8	[D8.5] "Lessees **shall** report the upstream (cradle-to-gate) emissions* associated with manufacturing or constructing a leased asset(s) on an amortized basis, in proportion to the lessees' use of the leased asset (e.g., 100% if the lessee has full use, or a fraction if the lessee has partial use, e.g., in the case of multi-tenant leases)."	n/a	Lessees **shall** account for the leased asset manufacture or construction (amortized basis)
Cat. 13	[D13.4] "All emissions associated with manufacturing or constructing the leased assets (including vehicles, facilities, machinery, and other dedicated infrastructure), if not already included in category 2."	[D13.4] Footnote: "For ground leases (of land), the lessor **should** account for the life cycle emissions associated with construction or improvements financed by the lessee (in the year that said emissions occur)." **	Lessors will already have accounted for the leased asset manufacture or construction in **category 2**

* As defined in proposed revision D2.3 for Category 2. ** Because the lessor does not construct nor own the asset, therefore it may not be possible to require the inclusion; however, the lessor's income from the lessee is often tied to said lessee's construction of assets on the land.

Dedicated infrastructure

- Issue:
  - Infrastructure is a capital good in economic terms (i.e., a long-lived, man-made assets, e.g., roads, bridges, power grids, railways, pipelines, data centers, water systems)
    - These assets enable production, transport, and communication (etc.) by value chain partners
  - However, many if not most infrastructure is *not* owned nor controlled by value chain partners
    - In financial accounting, a company can only capitalize assets they own or control
- Proposed solution:
  - Set the boundary for including infrastructure that is *not* owned by value chain partners as: infrastructure that is solely for (dedicated to) a value-chain partner's category-specific activities
  - Companies that own or operate (control) infrastructure *do* treat is as capital goods *

- Definition:
  - "Any and all infrastructure, the manufacture or construction and use of which, is solely for (dedicated to) the category-specific activity(ies). For the avoidance of doubt, infrastructure that is owned by a value chain partner is considered a capital good(s), the use of which shall be allocated, if included."

* Given that they would capitalize said infrastructure as capital goods.

(Draft; for discussion)

Category 8
Amortization of embodied emissions of of leased assets

Summary of proposed amortization rules

- **Category 8**
  - [D8.5] Lessees **shall** report the upstream (cradle-to-gate) emissions associated with manufacturing or constructing a leased asset(s) **amortized**, in proportion to the lessees' use of the leased asset
    - *This corresponds with Option 1 of Appendix B*
- **Category 13**
  - n/a (see Category 2 below)
- **Category 2**
  - [D2.4][D2.5]
    - Reporting companies **shall** report **total** upstream (cradle-to-gate) emissions of capital goods
    - Reporting companies **may** report **amortized** emissions (as a metric alongside their inventory) *
- **Other categories:**
  - The optional inclusion of capital goods used in the various categories activities (slide XXX) * directly or indirectly necessitates that amortizations be quantified to allocate upstream (cradle-to-gate) emissions from manufacturing/constructing capital goods per expected unit of output over the lifespan of use **

* Slide XXX: [D1.2] "… production of goods and services…", [D2.3] "… manufacture or construction of capital goods…", [D3.4] "… purchased fuels…", [D3.5] "… to generate purchased electricity or other forms of energy…", [D4.4] "… transportation and distribution…", [D5.3][D12.2] "… waste handling…", [D6.6] "… business travel", [D7.4] "… employees for commuting…" ** E.g., the emissions from constructing a solar PV array is allocated per *projected* kWh generated over the lifespan of operation

Justification for including embodied emissions of leased assets (Cat. 8)

- The embodied emissions of leased assets (including buildings, vehicles, and other equipment) is well understood to account for a sizeable fraction of the lifetime emissions of the leased asset
- Examples
  - Buildings (especially high-rise):
    - "While the average share of embodied GHG emissions from buildings… is approximately 20–25% of life cycle GHG emissions, this figure escalates to 45–50% for highly energy-efficient buildings and surpasses 90% in extreme cases." *
    - Embodied emissions increases significantly with taller buildings **
  - Market of leased office/industrial space
    - Anchor tenants (lessees) are often critical for the financing and initiation of large-scale developments
    - Primary market data on property statistics isn't widely available, but some estimate that >66% of companies that occupy office/industrial space do so via leasing or renting
  - ICE vehicles vs. EVs
    - Embodied emissions of Polestar 2 (EV) versus Volve XC40 (ICE) was 85% higher due to the battery pack

* Meta-analysis of 650 LCA case studies (https://doi.org/10.1016/j.apenergy.2019.114107). ** https://doi.org/10.1080/09613218.2018.1479927.

Category 2
Amortization of remaining unamortized emissions of capital goods

Embodied emissions of capital goods amortized, including second-hand

- **Proposed revision [D2.4]:**
  - "The (1) total remaining unamortized emissions of purchased second-hand (or used) capital goods **shall** be accounted for in the year that the capital good is purchased; and (2) amortized and accounted for on a pro-rata (straight-line) basis, reflecting both (a) the expected useful life of the capital good and (b) the years of use prior to purchase. *
  - Companies **shall** determine the expected useful life of a capital good using recognized accounting standards (e.g., GAAP, IFRS, or jurisdictional equivalents) or their own best estimate, provided it is reasonable, supportable, and consistent with internal depreciation practices used for financial reporting. Useful life assumptions **shall not** be shorter than those applied in the reporting company's audited financial accounts for the same or similar assets.
  - If a capital good remains in use beyond its expected useful life and its embodied emissions have been fully amortized, the annual allocation (amortization) **shall** be zero for those years."

* "For example, if (a) the upstream (cradle-to-gate) emissions associated with manufacturing a vehicle is 10 tCO2e, (b) the expected lifespan of the vehicle is ten (10) years, and (c) the vehicle was purchased second-hand after three (3) years of use by the original purchaser—then the reporting company (as the second-hand purchaser) would account for 7 tCO2e emissions in scope 3 category 2 for said purchased second-hand vehicle. For example, if (a) the upstream (cradle-to-gate) emissions associated with constructing a building is 10,000 tCO2e, (b) the expected lifespan of the building is fifty (50) years, and (c) the building was purchased from the original owner after ten (10) years of use by the original owner—then the reporting company (as the second-hand purchaser) shall account for 8,000 tCO2e emissions in scope 3 category 2 for said purchased second-hand building."

* https://www.mordorintelligence.com/industry-reports/used-construction-equipment-market

Second-hand (used) capital goods

- **Proposed definitions [D2.4]:**
  - **Remaining unamortized emissions**: The portion of embodied emissions (refer to definition below) associated with a capital good or long-lived asset that has not yet been allocated (through amortization) over its expected useful life (as defined by the reporting company); in other words, the remaining balance of embodied emissions to be recognized in future reporting periods.
  - **Embodied emissions**: All upstream (cradle-to-gate) GHG emissions from raw material extraction, manufacturing, transport, installation, and capitalized repair and maintenance of capital goods, as well as waste handling of associated upstream activities. These emissions may occur at any point over the lifespan of a capital good. For the avoidance of doubt, non-capitalized activities and operational activities (e.g., use-phase energy consumption) are excluded from embodied emissions.

* https://www.mordorintelligence.com/industry-reports/used-construction-equipment-market?utm_source=chatgpt.com

Second-hand (used) capital goods

- See previous slide regarding justification for including embodied emissions of leased asset (Cat. 8)
- Regarding second-hand (used) capital goods and turnover rates:
  - Data on turn-over rates of commercial/industrial buildings is not widely available
    - However, it is the case that buildings are often constructed by a developer, sold to a property owner, and often resold to another property owner(s)
  - Used construction equipment is a $125BN+ market growing rapidly *
  - Many companies lease equipment/vehicles and the lessors may and do sell said equipment/vehicles second-hand at the end of the lease period(s)

* https://www.mordorintelligence.com/industry-reports/used-construction-equipment-market?utm_source=chatgpt.com

(Draft; for discussion)

Category 11
Sold product annualization

Lifetime vs. amortized (or annual) emissions: current requirements

- **Capital goods**:
  - "[…] companies **should not depreciate, discount, or amortize** the emissions from the production of capital goods over time. Instead companies should account for the total cradle-to-gate emissions of purchased capital goods in the year of acquisition, the same way the company accounts for emissions from other purchased products in category 1." (Box 5.4, p. 39)
- **Sold product**:
  - "Because the scope 3 inventory accounts for total lifetime emissions of sold products, companies that produce more durable products with longer lifetimes could appear to be penalized because, as product lifetimes increase, scope 3 emissions increase, assuming all else is constant. **To reduce the potential for emissions data to be misinterpreted, companies should also report relevant information such as product lifetimes and emissions intensity metrics to demonstrate product performance over time. Relevant emissions intensity metrics may include annual emissions per product, energy efficiency per product, emissions per hour of use, emissions per kilometer driven, emissions per functional unit, etc.**" (Box 5.8, p. 49)

Current approach: activity-driven boundary delineation for Cat. 11

- Account for and report:
  - All downstream ("total expected lifetime" emissions in the year that a product is sold (the activity)

- This mirrors Category 1
  - All upstream (cradle-to-gate) emissions of goods and services purchased by company

- Combining Category 11 and Category 1
  - This yields the full life cycle (cradle-to-grave) emissions of the company's activities
    - This is a company-perspective
    - Not product-perspective

Alternative approach: emissions-driven boundary delineation for Cat. 11

- Account for and report:
  - All 'in-year' emissions of all products in circulation

- This *may not* mirror Category 1
  - All upstream (cradle-to-gate) emissions of goods and services purchased by company

- Combining Category 11 and Category 1
  - Possibly results in a *proxy* for the full life cycle (cradle-to-grave) emissions of the company's activities (see Appendix D)
    - This is partially a company-perspective (Category 1); and
    - Partially a product-perspective (Category 11)

Comparison of current vs. alternative approach

- Observation:
  - Cumulative vs. annualized – generally shows about the same total year-over-year
    - Emission-driven approach is a proxy for the lifetime emissions of sold products
    - Activity-driven approach is less of a proxy for the lifetime emissions of sold products (despite estimation uncertainty)
  - The impact of changing product design, not selling high-carbon products, or changing the portfolio of sold products would ***not*** be clear or apparent for the emissions-driven approach
    - It ***would*** be clear and apparent using the current (activity-driven) approach
  - Regardless of the method:
    - Only per unit (i.e., per sold product) metrics effectively show potential efficiency gains (e.g., from durable products)

- Refer to Appendix D for examples

Decision-making criteria

- **Option 1: Activity drive** – Report emissions (gate to grave, including future emissions) from all product sales occurring in the reporting year (e.g., sales for cat. 11)
- **Option 2: Emissions driven** – Report emissions occurring in the reporting year resulting from product sales that occurred in previous years

Illustrative example	**Option 1: Activity-driven**	**Option 2: Emissions-driven**
1A. Scientific integrity	• Pros • Cons	• Pros: More scientific as emissions are accounted in the year they are emitted • Cons
1B. GHG accounting and reporting principles	• Pros: More transparent and understandable by stakeholders • Cons	• Pros • Cons
2A. Support decision making that drives ambitious global climate action	• Pros: Shifting product portfolio is reflected immediately • Cons: Durable products disincentivized	• Pros • Cons: Companies would not see the benefit of changing their products design. Durable products disincentivized
2B. Support programs based on GHG Protocol and uses of GHG data	• Pros • Cons	• Pros • Cons
3. Feasibility to implement	• Pros: More feasible • Cons	• Pros • Cons: More complicated

Potential outcomes

- Consider adding a per unit (sold product) metric disclosure requirement
  - This would add an **additional metric** (rather than a change to the corporate inventory)
  - Require such metric to be reported
  - First proxy metric calculation method:
    - Total Company(Scope 1, Scope 2, and Scope 3: Category 1 tCO2e + Amortized Category 2 tCO2e + Category 3 + 4 + 5 + 6 + 7 + 8 (using amortized leased asset construction tCO2e) + 9 + 10 + 11 + 12)
      - Divided by [Total unit product sold]
        - » = tCO2e/Total unit product sold
    - Exclude Category 14, 15, 17
      - Franchisors can and should report the weighted-average # of their franchisees
  - Second proxy metric calculation method:
    - Sub-total (using product allocation rules) Company(Scope 1, Scope 2, and Scope 3 Category 1 through 12) divided [Sub-total unit product sold]

Potential outcomes

- First proxy metric calculation method:
  - Total Company(Scope 1, Scope 2, and Scope 3: Category 1 tCO2e + Amortized Category 2 tCO2e + Category 3 + 4 + 5 + 6 + 7 + 8 (using amortized leased asset construction tCO2e) + 9 + 10 + 11 + 12)
    - Divided by [Total unit product sold]
      - = tCO2e/Total unit product sold
  - Exclude Category 14, 15, 17
    - Franchisors can and should report the weighted-average # of their franchisees
- Second proxy metric calculation method:
  - Sub-total (using product allocation rules) Company(Scope 1, Scope 2, and Scope 3 Category 1 through 12) divided [Sub-total unit product sold]

Category 4/9

Refer to revision [D4.6] for options and Meeting 02 slides from Sept. 19

- This topic will not be discussed in this meeting
- Members are welcome to provide input asynchronously and a survey vote will be distributed on this

- *For reference, the options considered included: **
  - ***Option 1: No change***
    - *Cat. 4) Purchased goods and services (Tier 1 to Gate) and Purchased T&D (upstream or downstream)*
    - *Cat. 9) Downstream T&D that is not purchased by company*
  - ***Option 2: Purchase principle***
    - *Cat. 4) "Purchased T&D services" ONLY*
    - *Cat. 9) "Unpaid T&D services" ONLY*
  - ***Option 3: Gate principle***
    - *Cat. 4) All upstream T&D activities are gate-defined based on or relative to the reporting company's sold product(s), including T&D activities purchased or not.*
    - *Cat. 9) All downstream T&D activities are gate-defined based on or relative to the reporting company's sold product(s), including T&D activities purchased or not.*

* Other options intentionally excluded; refer to Meeting 02 slides from September 19

Category 6 and 7

Business travel includes accommodation for employees

- *Description [D6.1]*
  - *Transportation of employees – NO CHANGE*
- Description revision [D6.2]
  - The following was added: "Accommodation services (e.g., hotel nights) purchased by a reporting company for its employees (e.g., hotels, short-term rentals, etc.)."
- Required boundary revision [D6.4]
  - The following was added: "The upstream (cradle-to-gate) emissions attributable to accommodation (e.g., hotel nights, short-term rental, etc.)"

- Definition of employee [D6.3]
  - "**Employee**: An individual directly employed by the reporting company (or by entities it owns, operates, or leases) under an employment contract and/or compensated (salary, wages, or benefits) by the reporting company."

Employees excludes paid non-employees and external stakeholders

- "Employee" is narrowly defined (see previous slide)
  - Business travel (and accommodation) (Category 6) *only* applies to employees
  - Employee commuting (and remote work) (Category 7) *only* applies to employees

- Any and all business travel, accommodation, and/or commuting by paid non-employees or external stakeholders **shall** and **may**, respectively, be accounted for as a purchased good/service (Category 1)
  - Business travel by consultants paid directly, reimbursed, included in the contract
  - Accommodation of consultants paid directly, reimbursed, included in the contract
  - Transport of paid non-employees to and from facilitates owned and operated by the reporting company
  - Operation of remote worksites used by paid non-employees

- Proposed definition:
  - "**Paid non-employee**: An individual who performs work for the reporting company but who is not employed by it, and who is compensated either directly (as an independent contractor or consultant) or indirectly (through payment to a third-party vendor, agency, or service provider)."

External stakeholder is defined but not itemized anywhere

- Proposed definition:
  - "**External stakeholder**: An individual engaged in activities connected to the reporting company's facilities, operations, or value chain who is not compensated by the reporting company, excluding customers. This includes employees of tenants, lessees, joint venture partners, upstream value chain partners that are not Tier 1, peer companies, industry associations, researchers, regulators, or community stakeholders."

- Consideration for review asynchronously or via a survey:
  - Consider specifying that companies may include business travel by, accommodation of, commuting by, and remote work of external stakeholders in Category 1
  - This optional boundary would be recommended ("should") if relevant (broadly defined)

Category 14

Quantification guidance for non-exclusive franchise models

- Proposed quantification guidance for non-exclusive franchise models:
  - "Franchisor engaged in non-exclusive franchise models **shall** account for **proportional** scope 1, scope 2, scope 3 emissions of the franchisor. Franchisee emissions **may** be allocated to each franchisor in proportion to the amount of income generated from or through the franchisee (economic allocation); alternatively, franchisors **may** use another allocation method (e.g., mass or volume of product sold) to allocate franchisee emissions between franchisors. For the avoidance of doubt, the proportional emissions accounted for by each franchisor **should** amount to total (100%) franchisee scope 1, scope 2, and scope 3 emissions."

Category 15

Commodities

- Refer to revisions [D15.5], [D15.6], [D15.7], [D15.8], [D15.9], and [D15.10]

- Note on the cradle-to-gate emissions boundary for commodities:
  - Revision [D5.10] is proposing that: "Companies shall account for the upstream (cradle-to-gate) emissions of all commodities purchased and sold in the reporting year and accounted for in Category 14, like is required for Category 1 (purchased goods and services)."
  - This is consistent with the boundary revisions applied to investees which requires the inclusion of investee scope 3 emissions by *investors*
    - The proposed boundary revision by the Scope 3 TWG now includes cradle-to-gate emissions in category 15 for all investments (equity, debt, etc.)
  - Therefore, using a cradle-to-gate emissions boundary for commodities is consistent with the required boundary for Category 15 as a whole

Category 16

(16.4) Licensing and (16.5) Distributors of fuel and energy

- [D16.1] Licensing (excluding franchising) is itemized as a facilitated activity
- [D16.6] Companies **may** account for emissions from licensing activities
  - Differentiation of franchising vs. licensing:
    - Footnote: "For the avoidance of doubt, a franchise is a specific form of license agreement that includes (a) brand use, (b) system control, and (c) ongoing support and/or fees. A license, by contrast, grants permission to use intellectual property (e.g., a trademark, patent, or copyrighted material) without the level of business control typical of a franchise. Companies **shall** apply applicable accounting and regulatory requirements established by local standard setters to determine whether an agreement is that of a franchise or license. Where an agreement involves the elements of a franchise (i.e., brand use, system control, and ongoing support and/or fees), it **shall** be treated as a franchise agreement and the related emissions **shall** be accounted for in Category 14."
- [D16.1] Distribution of fuel/energy (not purchased by reporting company) itemized as a facilitated activity
- The full life cycle emissions of distributed [D16.4] Fuel and [D16.5] Energy **shall** be reported
  - Loss of fuels shall be accounted for as scope 1; Loss of energy shall be accounted for as category 3

(Draft; for discussion)

Next Steps

Next steps

- GHG Protocol Secretariat:
  - Distribute the Recording
  - Distribute Meeting Minutes and the Feedback Form

- Next meeting:
  - October 9th – **Meeting 3** at 9-11 AM EST

GREENHOUSE GAS PROTOCOL

Thank you!

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Appendix A. Disaggregation

Tiers comparison: Scope 3 TWG approach and direct emissions programs

(Draft; for discussion)

Based on specificity of the data:

Scope 3 TWG proposal*	EPA GHGRP: Stationary combustion	IPCC: National Guidelines for GHG Inventories	EU ETS: Stationary installations Emission factors
Specific	**Tier 4**: CEMS	**Tier 3:** Local activity data and technology-specific emissions factors, or activity-specific emissions data (e.g., direct measurement)	NA for emission factors
	Tier 3: Fuel-specific data		**Tier 3**: One of the following: (a) Determination of emission factor in accordance with relevant provisions (b) Empirical correlation from 2b with limit to uncertainty
			Tier 2b: Emission factors for the fuel derived based on one of the following: (a) Density measurement (oils, gases) (b) Net calorific value (coal)
Non-specific	**Tier 2**: Mix of default and fuel-specific data	**Tier 2:** Local activity data, with conversion factors sourced from national statistics	**Tier 2a**: Country-specific emissions factors for the respective fuel/material
	Tier 1: Default values to calculate CO_2 mass emissions	**Tier 1:** Activity data and emission factors from national statistics and industry averages	**Tier 1**: One of the following: (a) Standard factors provided (b) Other constant values in accordance with points
EEIO/ spend-based			
Unknown/ unclassified			

Based on uncertainty:

EU ETS: Stationary installations Direct measurement	EU ETS: Stationary installations Fuel or material quantity: *Combustion of fuels* ***example****
Tier 4: ±2.5%	**Tier 4**: ±1.5%
Tier 3: ±5%	**Tier 3**: ±2.5%
Tier 2: ±7.5%	**Tier 2**: ±5%
Tier 1: ±10%	**Tier 1**: ±7.5%

*Number of tiers and % uncertainty values vary by fuel and material

(Draft; for discussion)

Appendix B. Amortization options for Category 8

Cat. 8) Option 1. Lessee to report leased asset construction amortized

- **Issue:**
  - Lessees have no calculation method to quantify emissions from constructing leased assets
- **Proposed solution (Option 1): Amortization**
  - Require that lessees account for **proportionate upstream (cradle-to-gate) emissions** associated with leased assets (including buildings, machines, equipment, etc.)
- Example:
  - A building that incurred 10,000 tCO2e during construction with a 50-year expected useful life; and a lessee that rents 25% of the rentable square footage (RSF) for a 10-year lease in the period year 30-40 of the building's useful life would account for leased asset emissions as follows:
    - 10,000 tCO2e / 50 years = 200 tCO2e per year (amortized emissions from construction)
    - 200 tCO2e x 25% = 50 tCO2e amortized emissions allocable to the lessee (tenant)
- **Appendix C**
  - See Appendix C for an example and proposed calculation method for amortizing capital improvements
  - Appendix C is not for discussion in this meeting
  - Specific text will be reviewed subject to time or asynchronously (via comments file or a survey)

Cat. 8) Option 2. Lessee to report leased asset construction upfront (Cat. 8)

- **Proposed solution (Option 2): Upfront**
  - Account for **proportionate upstream (cradle-to-gate) emissions** associated with constructing or manufacturing the leased asset **upfront** in the year that the lease starts
- Example:
  - Lessee rents 25% of the RSF of a building for a 10-year lease; the building has an expected lifespan of 50 years; construction caused 10,000 tCO2e; the lessee could report either:
    - **Proportionate emissions, Upfront** (i.e., 50 tCO2e x 10 years = 500 tCO2e in year 1); **OR**
    - **Proportionate emissions, Amortized** (i.e., 50 tCO2e per year for 10 years) (see previous slide)
- Pros:
  - This option could be simpler (feasibility)
  - It could let companies control forward-year emissions (e.g., record all emissions in year 1 to achieve greater reduction versus a year 0 or year 1 baseline)
  - Capital improvements could likewise be recorded in the year they are performed

Cat. 8) Option 3. Lessee to report either amortized or upfront (Cat. 8)

- Option 3:
  - Let companies (lessees) report emissions either (Option 1) amortized **OR** (Option 2) upfront

- Cons:
  - The optionality may result in widely varying emission reported by companies that lease assets (possibly negatively impacting accounting and reporting principles)
- Pros:
  - This improves feasibility

Appendix C.
Amortization examples

Landlords to amortize emissions of additional capital activities (continued)

- **Issue:**
  - Landlords often incur capital expenses (e.g., repair & maintenance, tenant improvements, and other activities) **during** a tenant's (lessee's) occupation of a space
    - These activities are capital goods with varying depreciation schedules and effective years of use
    - Some impact all lessees (e.g., lobby renovations)
    - Some are dedicated (e.g., tenant improvements)
  - Lessees have no calculation method to quantify emissions of capital expenses *during* a lease
- **Proposed solution:**
  - Require that landlords effectively 'capitalize' said emissions from on-going capital expenses
    - I.e., add them to the upstream (cradle-to-gate) emissions of the capital good ***annually***
    - E.g., a landlord constructs a building using 10,000 tCO2e and incurs 250 tCO2e R&M in year 2
      - This would result in 10,250 tCO2e to be amortized in year 3 onwards *
      - The capital improvement may have a different lifespan of use
  - The landlord may use useful lifespan in accordance with its financial accounting practices; or rely on estimates **
  - Require that tenants (lessees) account for all upstream (cradle-to-gate) emissions ***to date***
    - E.g., tenant with 25% RSF would in year 2 account for 50 tCO2e amortized emissions ***
    - E.g., tenant would in year 3 account for 50 tCO2e plus 6.25 tCO2e = 56.25 tCO2e amortized emissions ^
      - 10,000 tCO2e / 50 years = 200 tCO2e per year x 25% = 50 tCO2e allocation to the lessee (tenant)
      - 250 tCO2e / 10 years = 25 tCO2e per year x 25% = 6.25 tCO2e allocation to lessee (tenant)

* For example, if a new HVAC repair is expected to have a 10-year lifespan of use, then the 250 tCO2e would be 25 tCO2e amortized. ** Subject to disclosure. *** 10,000 tCO2e / 50 years = 200 tCO2e. ^ For shared capital improvements

Amortization of building

- Landlord constructs building in year 0 causing 10,000 tCO2e with an expected useful life of 50 years
- Tenant rents 25% of rentable square footage (RSF) in year 3 for a 10-year lease

Index year	0	1	2	3	4	5	6	7	8	9	10
Year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Landlord											
Construction (Category 2)	**10,000**										
Years of use	50										
Amortization		200	200	200	200	200	200	200	200	200	200
Total Amortization		200	200	200	200	200	200	200	200	200	200
Tenant											
Lease period (years)	10										
Tenants % rentable sq. foot	25%										
Start year	2027										
End year	2036										
% RSF			25%	25%	25%	25%	25%	25%	25%	25%	25%
Leased asset (Category 8)			**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**

Amortization of building

- Landlord performs (common space) capital improvements causing 250 tCO2e with a useful life of 10 years*

Index year	0	1	2	3	4	5	6	7	8	9	10
Year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Landlord											
Construction (Category 2)	**10,000**										
Years of use	50										
Amortization		200	200	200	200	200	200	200	200	200	200
Capital improvement (Category 2)			**250**								
Years of use			10								
Amortization				25	25	25	25	25	25	25	25
Total Amortization		200	200	225	225	225	225	225	225	225	225
Tenant											
Lease period (years)	10										
Tenants % rentable sq. foot	25%										
Start year	2027										
End year	2036										
% RSF			25%	25%	25%	25%	25%	25%	25%	25%	25%
Leased asset (Category 8)			**50**	**56.25**	**56.25**	**56.25**	**56.25**	**56.25**	**56.25**	**56.25**	**56.25**

* For example, if a new HVAC repair is expected to have a 10-year lifespan of use, then the 250 tCO2e would be 25 tCO2e amortized.

Amortization of building

- Landlord performs (common space) capital improvements causing 250 tCO2e with a useful life of 10 years*

Index year	0	1	2	3	4	5	6	7	8	9	10
Year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Landlord											
Construction (Category 2)	**10,000**										
Years of use	50										
Amortization		200	200	200	200	200	200	200	200	200	200
Tenant improvement (Category 2)			**250**								
Years of use			10								
Amortization				25	25	25	25	25	25	25	25
Total Amortization		200	200	225	225	225	225	225	225	225	225
Tenant											
Lease period (years)	10										
Tenants % rentable sq. foot	25%										
Start year	2027										
End year	2036										
% RSF			25%	25%	25%	25%	25%	25%	25%	25%	25%
Leased asset (Category 8)			**50.00**	**75.00**	**75.00**	**75.00**	**75.00**	**75.00**	**75.00**	**75.00**	**75.00**

* For example, if a new HVAC repair is expected to have a 10-year lifespan of use, then the 250 tCO2e would be 25 tCO2e amortized.

Implications of operational v. financial control on capital improvements

- Operational control
  - Tenant improvements = operated by tenant (category 2)
  - Tenant would account for it in category 2
  - Landlord would account of it in category 13 (if not included in Landlord's category 2)

- Financial control
  - Tenant improvement = financial owned (capitalized by) landlord (category 2)
  - Tenant would account for it in category 8
  - Landlord would account for it in category 2

Appendix D.
Category 11 examples

All company-level reporting approaches don't show efficiency gain

- A. Cumulative annualized company emissions (only Cat. 11 annualized) – current Standard approach
- B. Annualized product-level metric – only this metric shows the efficiency gain
- C. Partially annualized company reporting approach
- D. Fully annualized company reporting approach

- Show assumptions for vacuum
  - Vacuum A. 5 years of use
  - Vacuum B. 10 years of use
  - Vacuum C. 15 years of use
  - Vacuum D. 20 years of use
  - Vacuum E. 25 years of use

B. Cumulative company emissions (current Standard approach)

Corporate Carbon Foorptin (CCF): **Partially annualized** Category 11 emissions					
Year	1	2	3	4	5
Category 1 (tCO2e) - cumulative	1.00	1.00	1.00	1.00	1.00
Category 11 (tCO2e) - cumulative	1.25	2.50	3.75	5.00	6.25
Vaccum A	1.25	0.00	0.00	0.00	0.00
Vaccum B		2.50	0.00	0.00	0.00
Vaccum C			3.75	0.00	0.00
Vaccum D				5.00	0.00
Vaccum E					6.25
Total - cumulative	**2.25**	**3.50**	**4.75**	**6.00**	**7.25**
Per sold unit (tCO2e) *	***2.25***	***1.75***	***1.58***	***2.00***	***2.42***
% yoy	n/a	-22%	-10%	26%	21%

A. Annualized product-level metric

Product Carbon Footprint (PCF): **Annualized**					
Sold product	Vaccum A	Vaccum B	Vaccum C	Vaccum D	Vaccum E
Category 1 (tCO2e) - annualized	0.20	0.10	0.07	0.05	0.04
Category 11 (tCO2e) - annualized	0.25	0.25	0.25	0.25	0.25
Total cradle-to-grave (tCO2e) - annualized	**0.45**	**0.35**	**0.32**	**0.30**	**0.29**
Per sold unit (tCO2e) *	***0.45***	***0.35***	***0.32***	***0.30***	***0.29***
% yoy	n/a	-22%	-10%	-5%	-3%

C. Partially annualized company reporting approach

Corporate Carbon Foorptin (CCF): **Partially annualized** Category 11 emissions					
Year	1	2	3	4	5
Category 1 (tCO2e) - cumulative	1.00	1.00	1.00	1.00	1.00
Category 11 (tCO2e) - annualized	0.25	0.50	0.75	1.00	1.25
Vaccum A	0.25	0.25	0.25	0.25	0.25
Vaccum B		0.25	0.25	0.25	0.25
Vaccum C			0.25	0.25	0.25
Vaccum D				0.25	0.25
Vaccum E					0.25
Total - partially annualized	**1.25**	**1.50**	**1.75**	**2.00**	**2.25**
Per sold unit (tCO2e) *	***1.25***	***0.75***	***0.58***	***0.67***	***0.75***
% yoy	n/a	-40%	-22%	14%	13%

D. Fully annualized company reporting approach

Corporate Carbon Foorptin (CCF): **Fully annualized** Category 11 emissions (upfront)					
Year	1	2	3	4	5
Category 1 (tCO2e) - annualized	0.20	0.30	0.37	0.42	0.46
Vaccum A	0.20	0.20	0.20	0.20	0.20
Vaccum B		0.10	0.10	0.10	0.10
Vaccum C			0.07	0.07	0.07
Vaccum D				0.05	0.05
Vaccum E					0.04
Category 11 (tCO2e) - annualized	0.25	0.50	0.75	1.00	1.25
Vaccum A	0.25	0.25	0.25	0.25	0.25
Vaccum B		0.25	0.25	0.25	0.25
Vaccum C			0.25	0.25	0.25
Vaccum D				0.25	0.25
Vaccum E					0.25
Total - fully annualized	**0.45**	**0.80**	**1.12**	**1.42**	**1.71**
Per sold unit (tCO2e)	***0.45***	***0.40***	***0.37***	***0.47***	***0.57***
% yoy	n/a	-11%	-7%	27%	20%