

Scope 3 Technical Working Group Meeting

Working draft, do not cite

Full TWG

Phase 2, Meeting 10

Processing (cat 10) and use of sold products (cat 11) minimum boundary consideration and quantification methods

March 19th, 2026

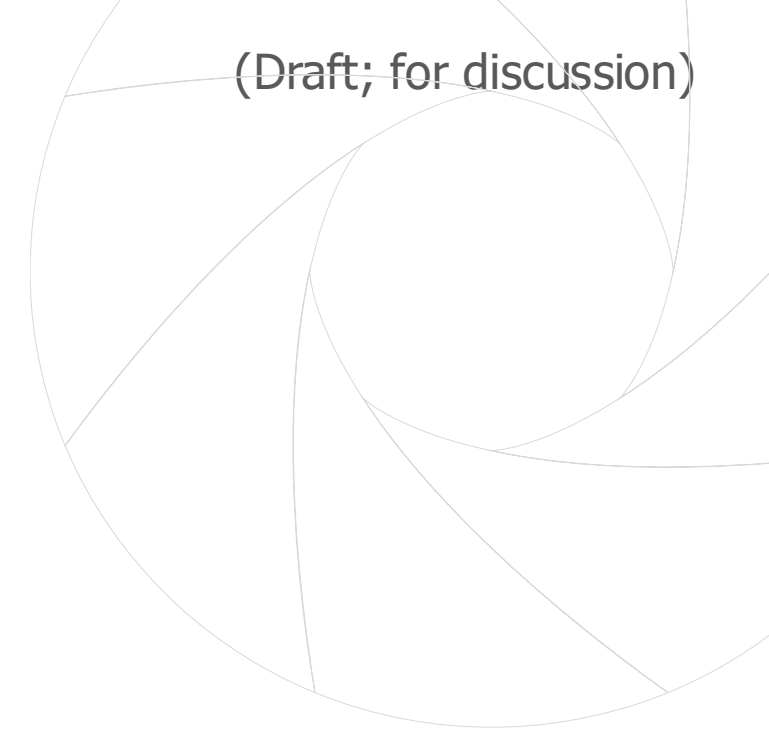
Agenda

- Housekeeping and timeline (5 mins)
- Option for category 11 classification (20 mins)
- Proposed option for category 10 classification (10 mins)
- Quantification methodologies for category 11:
 - Lifetime emissions and/or annualized approaches (1 hr)
 - Allowable emission factors (for lifetime approaches) (15 mins)
- Update from ISB meeting (5 mins)
- Next steps (5 mins)

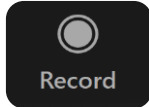
(Draft; for discussion)

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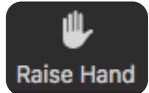
Housekeeping and decision-making criteria



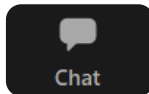
Welcome and Meeting information



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*
- Maintain a respectful approach to communicating by:
 - Assuming positive intent; making space for different perspectives; and defaulting to curiosity

* 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.

<i>Illustrative example</i>	Option A: Name	Option B: Name	Option C: Name
1A. Scientific integrity	<ul style="list-style-type: none"> • Pros • Cons 	<ul style="list-style-type: none"> • Pros • Cons 	<ul style="list-style-type: none"> • Pros • Cons
1B. GHG accounting and reporting principles	<ul style="list-style-type: none"> • Pros • Cons 	<ul style="list-style-type: none"> • Pros • Cons 	<ul style="list-style-type: none"> • Pros • Cons
2A. Support decision making that drives ambitious global climate action	<ul style="list-style-type: none"> • Pros • Cons 	<ul style="list-style-type: none"> • Pros • Cons 	<ul style="list-style-type: none"> • Pros • Cons
2B. Support programs based on GHG Protocol and uses of GHG data	<ul style="list-style-type: none"> • Pros • Cons 	<ul style="list-style-type: none"> • Pros • Cons 	<ul style="list-style-type: none"> • Pros • Cons
3. Feasibility to implement	<ul style="list-style-type: none"> • Pros • Cons 	<ul style="list-style-type: none"> • Pros • Cons 	<ul style="list-style-type: none"> • Pros • Cons

2026 workplan

(Draft; for discussion)

A decorative graphic in the top right corner consisting of several overlapping, thin-lined circles of varying sizes, creating a complex, geometric pattern.

Full Scope 3 TWG Meetings - 2026

Meeting #	Date	Time	Topic
7	Jan 15	9-11 AM ET	• EOY Survey review & Phase 2 (2026) SoW and Timeline review
8	Feb 5	9-11 AM ET	• Phase 1 review, Category 10/11 considerations
9	Feb 26	9-11 AM ET	• Phase 1 survey review, Category 10/11 considerations
<i>ISB Meeting</i>	<i>Mar 12</i>	<i>n/a</i>	• <i>Approval of Phase 1 Revisions to-date and/or Progress Update for public disclosure</i>
10	Mar 19	9-11 AM ET	• Category 10/11 (continued)
11	Apr 9	9-11 AM ET	• Category 10/11 (continued)
12	Apr 30	9-11 AM ET	• Circularity, recycling, second-hand, and waste incineration
13	May 21	9-11 AM ET	• Circularity (continued)
14	Jun 11	9-11 AM ET	• Circularity (continued)
<i>ISB Meeting</i>	<i>Jun 29</i>	<i>n/a</i>	• <i>Review and Approval of Phase 2 Revisions</i>
15	Jul 2	9-11 AM ET	• Review Draft text and/or ISB comments
16	July 23	9-11 AM ET	• Review Draft text and/or ISB comments (continued)

Target deadline for public consultation: **October 20th, 2025** *

(Draft; for discussion)

E1. Minimum boundary requirements for categories 10 and 11

Items for consideration under E1

Reference	Topic
E1.1	Consider definitions of direct use-phase and indirect use-phase (Cat 11)
E1.2	Consider definitions of processing vs use of products
E1.3	Optionality of indirect use-phase emissions in required scope (Cat 11)
E1.4	Inclusion of cradle-to-gate (well-to-tank) emissions for fuels/energy
E1.5	Explicit inclusion of cradle-to-gate emissions for capital goods
E1.6	Accounting for indirect energy loss in systems
E1.7	Accounting for non-physical products and services
E1.8	Boundary treatment for product with multiple uses, or diverse customer bases

(Draft; for discussion)

E1.1 - Definitions of direct and indirect use-phase emissions (Cat 11 only)

E1.1 | Summary of discussions in TWG

- Current definitions make sense definitionally, but are **more difficult to understand when applied in real-world scenarios**
- **There are gaps in the coverage of the current definitions** (e.g., for fugitive emissions and for many digital products*) due to the definitions being tied implicitly to energy use or the intentional release of GHGs
- The **concept of control of influence would shift interpretations towards functional causality**. This approach would ensure relevant emission sources are accounted for but could represent over-inclusion, the continuation of subjective boundaries, and inconsistent application.
- Strong signal that **component-level allocation** needs to be addressed**. Current definitions don't adequately account for components to energy-consuming systems.
- Suggestion that **it may not be possible for the GHGP to create a single universal definition**, and sector-specific examples would be needed. Could also call on sector-specific guidance to provide more bespoke interpretation.
- **Appetite for a deeper conceptual reconsideration of the definitions** (also moving away from the repeated use of 'direct' and 'indirect' terminology may be advisable). Separate subgroup set to discuss what alternative approaches could be developed, such as qualifying decision trees like:
 - Does the product directly use energy
 - Does the product enable energy consumption but does not use energy itself
 - Is the product integral to the product function

E1.1 | Alternative approach

- Much feedback proposed extending the boundaries like how LCA system boundaries are drawn
- The below framework aims to reflect system boundary logic in a more codified manner
- Under this approach, emissions that occur after a product is sold (category 11) and prior to end-of-life treatment (category 12) can be categorized broadly as per below:

Category	Emission type	Description	Suggested allocation approach
10	Processing	NO CHANGE (As per category 10)	Physical
11 (Direct)	Core operation	Emissions (i) released directly by or (ii) associated with energy consumed by the sold product while performing its <i>intended function</i> *	• N/A OR Not allowed **
11 (Indirect)	Dependent operation	Emissions (i) released directly by or (ii) associated with energy consumed by other products which is required for the sold product to perform its intended function or achieve its documented performance.	<ul style="list-style-type: none"> • Physical for tangible products • Economic or physical for intangible products • (Calculations to include energy loss in denominator)
	Ancillary operation	Emissions from other products that occur during product use but are not required for the sold product to perform its intended function.	
16	Facilitated activities	Emissions from activities that are enabled by the sold product but are not part of the operation of the sold product	• N/A (no method(s) provided in Cat. 16)

* Definition of the term, intended function, includes...

** All core operation emissions reported unallocated if relevant

E1.1 | Example 1

- **Product:** Additives to gasoline
- **Intended function:** Enhance the performance of gasoline in engines (e.g., improve combustion efficiency, reduce unburned fuel amounts)
- **Product use phase begins when** the gasoline is combustion in an engine

Emission source	Emission type	Notes
Blending of additive with gasoline	Processing	<ul style="list-style-type: none"> • Occurs before the intended use
Gasoline distribution to fuel forecourts	Processing	<ul style="list-style-type: none"> • Occurs before the intended use
GHGs released directly by the additive during fuel combustion	Core	<ul style="list-style-type: none"> • If the additive itself is burned and produces CO₂ or other GHGs during oxidation. • If this is not relevant, no core operation emissions are reported
Fuel combustion in the engine	Dependent	<ul style="list-style-type: none"> • Fuel combustion is required for the product to perform its intended function. • Emissions allocated based on physical allocation (e.g., est. concentration in fuel)
Engine controlling electronics	Ancillary	<ul style="list-style-type: none"> • Not necessary for the intended function of the product, but may consume additional ancillary energy (if it is powered independently from the original engine)

E1.1 | Example 2

- **Product:** A web-based platform and app for ordering 'grocery boxes' with suggested recipes
- **Intended function:** Provides users access to set of features and tools on-demand, with cloud storage of data
- **Product use phase:** Begins when user creates an account (i.e., when app-specific data storage begins)

Emission source	Emission type	Notes
Data storage of user data in third-party cloud system	Dependent	<ul style="list-style-type: none"> • Note that if the reporting company purchases the cloud storage (likely), these emissions would already be accounted for category 1 and can be excluded. • The storage of data is fundamental to the intended function of the product
Network transfers between servers and user hardware	Dependent	<ul style="list-style-type: none"> • The transfer of data on demand to users is fundamental to the intended function of the product
Computation / memory requirements on user laptop needing to use the platform	Core	<ul style="list-style-type: none"> • The computational and memory demands of the platform itself is energy that is consumed by the product (it could be argued that the hardware consumes the energy, not the software, which is why there are explicit clauses for digital products in the drafted rules)
Background energy requirements of the user's hardware (or the server)	Ancillary	<ul style="list-style-type: none"> • Background energy on a server or end-user device (e.g., fans, operating system updates, non-platform apps running in parallel) is not required for the web-based platform to function
Cooking of the groceries	Facilitated	<ul style="list-style-type: none"> • The app enables the cooking of the food, but it is not a part of the product function itself.

E1.1 | Example 3

- **Product:** Cookery pots and pans
- **Intended function:** Safely conduct heat for cooking food
- **Product use phase begins when:** The pot/pan is first used for cooking food

Emission source	Emission type	Notes
Energy to heat pot and pans	Dependent	<ul style="list-style-type: none"> • To be used as intended, the pots and pans need to be heated. • External energy is required for this.
Energy from cleaning pots and pans	Ancillary	<ul style="list-style-type: none"> • Part of usual care and maintenance of the sold product but not fundamentally required for the primary function of the pan.

E1.1 | Pause to consider optionality (E1.3)

- Whilst the definition of **core** operation and **facilitated** activities are clear, the distinction between **dependent** and **ancillary** operation may be somewhat ambiguous
- As with original definitions, there are 'edge cases' (e.g., vehicle tires) which may lead to incomparable reporting if interpretations vary
- Further work could be undertaken to advance this classification, but it is worth pausing to consider

Indicative view



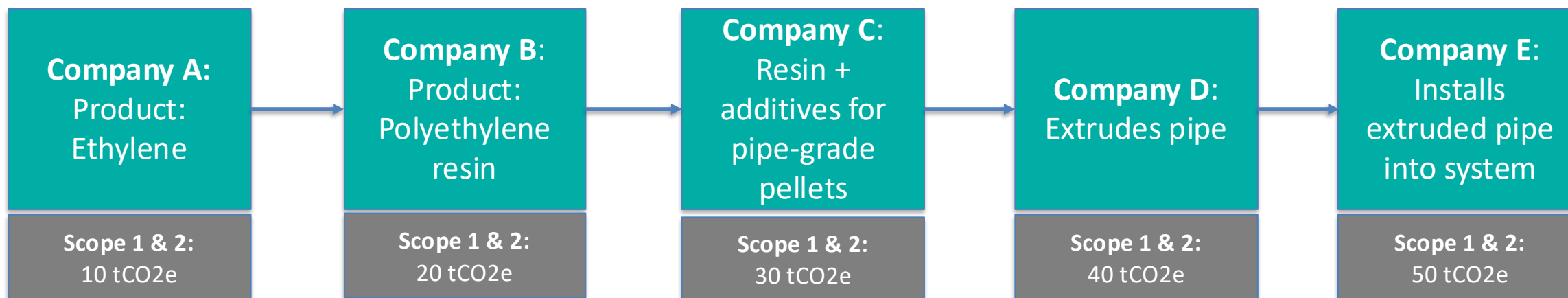
If 'edge case' issues can be resolved as far as possible, would the TWG support **requiring** ("shall") the reporting of **dependent** and/or **ancillary** operation emissions?

Note: If the answer is that they should remain **optional**, then defining robust rules to differentiate dependent/ancillary operation is not fundamentally needed – instead, it essentially becomes **guidance** to help readers understand the different types of use-phase emissions they could ("may") account for

(Draft; for discussion)

E1.2 – Definitions of processing vs use of products

E1.2 | Recap



- **For company A's ethylene product, where should the processing end, and use-phase begin?**
 - After installation at company E is in a final, complex product?
 - After company D as at that point is it a product in its own right?
 - After company C, the output product already has its desired properties (i.e., its mechanical properties, durability, chemical resistance)
 - After company B, is the intention of the ethylene feedstock for it to be polymerized
 - *Note: The Scope 3 Standard (2011) does not define "processing" or "use" at the moment.*

E1.2 | Summary of discussions in TWG (5th Feb)

- Broad agreement that there is **ambiguity in the boundary between processing and use of sold products** that ought to be resolved.
- The definition of processing is very broad and currently **strictly implies every manufacturing stage until end user (but interpretation of end use might vary!)**. An option that could be considered is the removal of 'inclusion' in the definition of intermediate products*
- Suggestion that it **may not be possible for the GHGP to create a single universal definition**, and sector-specific examples would be needed. Could also call on sector-specific guidance to provide more bespoke interpretation.
- Question marks remain over the **usefulness of estimating emissions for this category**, for the majority of users, in identifying decarbonization levers.
 - Examples do include encouraging the adoption of chemical formulations that don't release GHGs during processing, encouraging intermediate products that require less energy, and promoting co-development of processes with customers that reduce emissions
- **Suggestions to improve relevance by limiting modelling requirements to reflect influence** a reporting company can have (e.g., limitation to emissions from counterparties only, or known downstream use)

* Intermediate products are products that require **further processing, transformation, or inclusion** in another product before use [...] and therefore result in emissions from processing subsequent to sale by the reporting company and before use by the end consumer

E1.2 | Option to define processing and use of products

- Currently there is no definition of 'processing' or 'use' of products in the *Scope 3 Standard*.
- **Proposed definitions for discussion:**
 - **Processing:** "Any physical or chemical transformation, assembly, or incorporation of a product (e.g., an intermediate product) into another product (i.e., a final product) that occurs prior to the final product performing its intended function (see: **product use**). Products undergoing processing are typically intermediate products, but may include recycling, repair, repackaging, reworking, and/or quality testing a final product."
 - **Product use:** "A product is considered to be in use when it is operated/applied by a user to perform its **intended function**, including cases where the product is *consumed, emitted, or transformed* as part of performing its intended function."
 - **Intended function:** "The **primary service, outcome, or purpose** that a product is designed to achieve when applied or operated as intended by a user. The intended function is determined by a combination of design, technical specifications, documented purpose, or performance guarantees, *independent* of how the product is ultimately used."
- Practically speaking, this is intended to mean that:
 1. Intermediate products that are intended to be consumed to enable the production of a final product begin use phase earlier than the current standard strictly suggests (e.g., where suppliers aren't involved in specification design of a final product)
 2. Intermediate products that are intended to be integrated and whose functional properties aren't used until it is part of a final product continue to include all manufacturing stages in category 10 (e.g., where suppliers are involved in specification design for a final product and so are selling a product which intentionally influences the final product's performance)

E1.2 | Example polyethylene resin

- **Product:** Polyethylene resin
- **Intended function:** To be transformed into shaped plastic products that provide structural material properties (e.g., strength, flexibility) in manufactured plastic goods
- **Product use phase begins when** it is transformed into a shaped plastic product. In this case, the processing stage is considered the use phase of the product. Emissions may be reported in either category 10 or 11 (preferably 10)

Emission source	Emission type	Notes
Energy used to melt PE pellets during plastic extrusion and/or use of injection molding machines	Processing	It is in the process of being transformed into a shaped plastic product, so still classed as processing
Other facility overhead processes (e.g., lighting, HVAC)	Processing	Any associated scope 1 and 2 emissions with processing are included in current definitions
Any eventual downstream use of plastics made using the PE resin	Facilitated activities	After the transformation is completed, any further use is beyond the 'use-phase' of the product and could be considered facilitated

E1.2 | Classification

- Conceptually speaking, processing emissions can be categorized in a couple of ways:
 - **Option 1:**
 - **Counterparty processing:** Processing activities at the immediate downstream counterparty (direct customers)
 - **Other processing:** Processing activities occurring further downstream of the reporting company's counterparty.
 - **Option 2:**
 - **Known or reasonably estimable processing:** Processing activities that are known to the reporting company, or are reasonably estimable
 - **Other processing:** Processing activities that are not known or reasonably estimable

Discussion point



In either case, should **all processing emissions** be required?
If not, which option is preferable?

Note: Companies with complex downstream processing supply chains can still opt to exclude emissions (outside of the 5% exclusion threshold) as long as they disclose this with justification

E1.2 | Decision-making criteria

<i>Criteria</i>	Require all processing emissions	Option 4b: Require counterparts only	Require known downstream only
1A. Scientific integrity	Pros: Emissions are fully accounted for	Pros: Reported emissions are more likely to be supported with primary data Cons: Ignoring emissions outside of counterparty chain may be significant	Pros: Focusses on verifiable emissions only Cons: Excludes some emissions, which may also be significant
1B. GHG accounting and reporting principles	Pros: Best level of completeness Cons: Potentially reduced relevance of reporting. Accuracy of further downstream processes may be questionable	Pros: Improves transparency and accountability. Cons: Completeness and relevance may suffer	Pros: Potentially improves relevance; reduces need for uncertain assumptions Cons: Completeness is reduced, may disincentivize value chain engagement; comparability also reduced
2A. Support decision making that drives ambitious global climate action	Pros: Likely that decarbonization actions are still identified through quantification and reporting Cons: Outputs may be less sensitive to action adoption. May be harder to identify said actions	Pros: Incentivizes and focusses actions on actors where influence is highest Cons: Mitigation opportunities may be missed	Pros: Ensures emissions reported can inform decision making Cons: Could understate total emissions, limiting mitigation signals
2B. Support programs based on GHG Protocol and uses of GHG data	Pros: Aligns with current practice, so no changes required to downstream programs or use of data	Pros: Data more readily verifiable Cons: Reduces interoperability but most standards rely on GHGP definitions	Pros: Provide more transparent boundaries Cons: May require updates to downstream programs
3. Feasibility to implement	Pros: Already implemented in many cases Cons: Does not support companies with complex supply chains in reporting	Pros: Straightforward to track and report	Pros: Not too burdensome for known use Cons: The scope of reasonably estimable may be hard to establish

(Draft; for discussion)

E2. Quantification methodologies for durable products

Stakeholder Feedback

- Several stakeholders reported that **depreciating, amortizing, and/or annualizing emissions** from products (particularly more durable products) **would make reporting more comparable year-to-year**, help establish sensible baselines, and create more meaningful key performance indicators.
- A straight-line stock-based amortization approach was suggested, although more complex approaches may be possible (e.g., those that account for changes in product use through time). Such a method would require estimate the number of sold products current in circulation (prior to end-of-life) in each reporting year.
- Others suggested that some products (such as software) would be better assessed through a **usage-data method**, as an alternative annualization approach. In this case, real-time measurements of product use can be used to generate reporting year data, and also update base year and previous year calculations.

Current requirements on lifetime vs. amortized emissions

- **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 products:**
 - “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 guidance on reporting of historic and future scope 3 emissions

- **11.2 Optional information (p. 122)**
 - “Historic scope 3 emissions that have previously occurred, reported separately from future scope 3 emissions expected to occur as a result of the reporting company’s activities in the reporting year (e.g., from Waste generated in operations, Use of sold products, End-of-life treatment of sold products)”
- **11.3 Reporting guidance (p. 124)**
 - “Optional reporting: Historic scope 3 emissions that have previously occurred, reported separately from future scope 3 emissions expected to occur as a result of the reporting company’s activities in the reporting year
 - Emissions reported for category 5 (Waste generated in operations), category 11 (Use of sold products), and category 12 (End-of-life treatment of sold products) should not be interpreted to mean that emissions have already occurred, but rather that the reported emissions are expected to occur as a result of activities that occurred in the reporting year.
 - Companies may separately report historic emissions (that have already occurred) from future emissions (that have not yet occurred) in order to avoid misinterpretation by stakeholders”

(Draft; for discussion)

E2.1 and E2.2 Consider the inclusion of stock-based and usage-based approaches

E2.1 and E2.2 | Current approach

- Account for and report:
 - All downstream (“total expected lifetime”) emissions in the year that a product is sold
 - This is a **cumulative** approach (all forward-year emissions are reported in the year a product is sold)
 - All projected forward-year emissions, if any, are reported (**ex-post**)
- The above mirrors Category 1
 - All upstream (cradle-to-gate) emissions of purchased products is reported in the year of purchase
 - All upstream emissions have already occurred (**ex-ante**)
- Combining Category 11 and Category 1 **does** mirror the full life cycle approach taken for PCFs

E2.1 and E2.2 | Stock-based and usage-based approaches

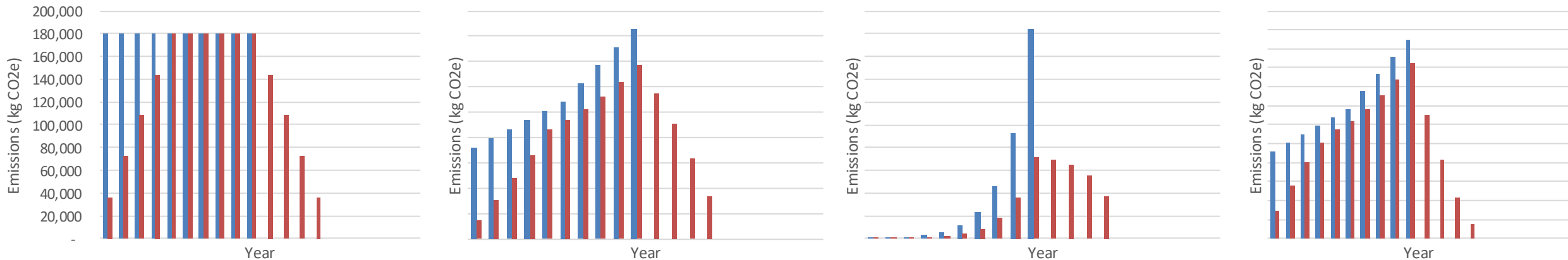
- **Stock-based approach:**
 - Emissions from the use of products in circulation in the reporting year (i.e., **stock-based approach**).
 - Includes use of products sold in that year AND products sold in previous years if they are expected to remain in use or be used in the reporting year
 - Companies could use *present-year* emission factors and assumptions to calculate category 11
 - This could support the use of more reliable assumptions (**secondary data**) to estimate category 11
- **Usage-based approach:**
 - Essentially, this is the stock-based approach using **primary data**
 - For example, (e.g., through software traffic statistics, telemetry information, tracking through the internet-of-things)
- Combining Category 11 and Category 1 would ***not*** mirror the full life cycle approach taken for PCFs (which includes all upstream cradle-to-gate emissions in the year that products are purchased)

E2.1 and E2.2 | Comparison (continued)

- For each approach, the following statements articulate what a company **reports**:

Current approach	Stock-based approach
<p>All forward-year use-stage emissions attributable to or associated with a sold product, are estimated and reported in the year that the product is sold.</p>	<p>All forward-year use-stage emissions attributable to or associated with a sold product, are estimated and reported in the year(s) that the product is in use.</p>

- As shown below, holding all assumptions the same (e.g., lifespan, usage-rates, emission factors, etc.), a company using either approach would report the **same** cumulative **multi-year** category 11 emissions:



Refer to the spreadsheet comparing the cases.

■ Current approach ■ Stock-based approach

E2.1 and E2.2 | Comparison of current vs. stock-based approach

- In the simplest case
 - On an **annual basis**, both approaches will yield the *same* or *similar* results (in most years)
 - Over a **multi-year period**, both approaches yield the *same* results (*in aggregate*) (only, reported in different years)
 - A spreadsheet comparing the cases is provided alongside the pre-read
- More complex approaches will cause differences in outputs:
 - **Linear stock-based approaches** are simplest to implement but require tracking unit sales and units in circulation
 - **Non-linear stock-based approaches** require sophisticated modelling using parameters (e.g., with usage rate changes over time, scrappage/retirement rates of existing stock, energy efficiency changes over time)
 - Such modelling is not common in some sectors already (e.g., road transport stock modelling)
- There are positives and trade-offs to both approaches:
 - The **current approach** could penalize actions that extend the useful lifetime of a product (e.g., durability), but is simpler and more sensitive to product design improvements (that reduce emissions) in the year introduced/implemented
 - The **stock-based approach** supports using more reliable parameter assumptions, but may be less sensitive to product design improvements (that reduce emissions) as the impact may take years to 'show up' in reported data, and the implications for data records when a company closes or ends business (e.g., files Chapter 11) is unclear (would reporting simply discontinue)
- Regardless of the method:
 - Both approaches rely on similar parameter assumptions
 - Only per unit metrics show product performance (adjusting for unit sales increases/decreases and durability, etc.)

E2.1 and E2.2 | Implication of stock-based approach on category 12

- If a stock-based (and possibly also usage-based) approach is used for category 11 (and potentially 10), then should similar annualized approaches be used for end-of-life treatment?
- EoL treatment is usually calculated using default secondary emission factors rather than primary emission factors. These emission factors represent **many years of emissions**. The Secretariat knows of no **annualized** emission factors available in the public domain for waste treatment
 - **An annualized approach for category 12 may be infeasible or very difficult to schedule.**
- If a stock-based approach is allowed for category 11 then this risks creating confusing reporting structures if some downstream emissions for sold products represent multiple years of emissions (i.e., category 12)
- Options for category 12 approaches are:
 - Expected EoL emissions of **sold products** reported in the year they are sold (current approach); or
 - Expected EoL emissions of **products taken out of circulation** reported in the year this happens

E2.1 and E2.2 | Decision-making criteria

<i>Criteria</i>	Current approach	Stock-based approach
1A. Scientific integrity	<ul style="list-style-type: none"> Pros: Accounts for lasting emissions impact of a company's activity in a given year Cons: Less physically grounded as emissions are not accounted in the year they are emitted; doesn't easily allow the use of measured usage statistics (i.e., higher quality data) 	<ul style="list-style-type: none"> Pros: More scientific as emissions are accounted in the year they are emitted; more readily allows usage-based; models used to estimate in-year emissions more likely to use appropriate emission factors
1B. GHG accounting and reporting principles	<ul style="list-style-type: none"> Pros: Transparent, complete, consistent, and relevant Cons: Potentially less accurate as assumptions need to be made on changing externalities (e.g., grid decarbonization) 	<ul style="list-style-type: none"> Pros: Similarly transparent, complete, consistent, accurate (relying on more reliable parameter assumptions), and relevant
2A. Support decision making that drives ambitious global climate action	<ul style="list-style-type: none"> Pros: Shifting product portfolio is reflected immediately; re-baselining would be easier Cons: Durable products disincentivized 	<ul style="list-style-type: none"> Pros: Durable products disincentivized to a lesser extent (possibly incentivized); encourages good practice tracking of product use characteristics and engaging with product lifespan Cons: Companies would not see the benefit of changing their products design; Re-baselining would be challenging
2B. Support programs based on GHG Protocol and uses of GHG data	<ul style="list-style-type: none"> Pros: Harmonizes with other standards and with the <i>Product Standard</i> 	<ul style="list-style-type: none"> Cons: Would not harmonize with other standards nor with the <i>Product Standard</i>
3. Feasibility to implement	<ul style="list-style-type: none"> Pros: No hassle maintaining records Cons: Sometimes difficult to estimate 	<ul style="list-style-type: none"> Cons: More complicated to collect emissions data and maintain records, especially for acquired companies

E2.1 and E2.2 | Potential options*

Option	Description
#1 Parallel reporting	<p><u>Shall use current approach; Shall use stock-based approach</u> (i.e., two (dual) GHG inventories)</p> <ul style="list-style-type: none"> - Note that parallel reporting may create problems for downstream programs such as target setting or disclosure frameworks - Parallel reporting may be prohibitively complicated alongside multi-statement reporting**
#2 Current approach	<p><u>Shall use current approach; [Shall/should/may] use stock-based approach for performance metric</u></p> <ul style="list-style-type: none"> - Keeps consistent approach with current standard. - Recognizes the potential benefits of a stock-based approach
#3 Stock-based approach	<p><u>Shall use stock-based approach; [Shall/should/may] use current approach for performance metric</u></p> <ul style="list-style-type: none"> - Uses the method that is more annually grounded - Causes some initial turbulence with downstream programs - Recognizes the benefits of improving environmental lifetime performance through metrics
#4 Optionality	<p><u>Allow either approach</u> – only one shall be used for reporting</p> <ul style="list-style-type: none"> - Maximizes flexibility - Hampers comparability and potential consistency

* In these options, we consider a usage-based approach as a type of stock-based approach

** Multi-statement reporting is being considered by the AMI TWG (e.g., physical, contractual, and consequential statements)

(Draft; for discussion)

E3. Future-year emission factor restrictions

E3 | Problem statement

- Models of **lifetime emissions in category 11 for sold products** may use emission factors which are not yet based on actual measurements (i.e. future-year emission factors of grid decarbonization)
 - I.e., models may try to account for higher % of renewables in energy generation mix in future
 - Other fuels available via networks (e.g., gasoline, diesel, natural gas) may also have reduced fossil carbon content in future years
- The *Scope 3 Standard* remains silent on whether “future-year emission factors” [shall/should/may] be used for the calculations. This revision seeks to define what rules (if any) should exist in the updated Scope 3 Standard
- Relying on the stock-based approach previously presented (E2) would in large part resolve this issue as companies would be able to use the same (in-year) or trailing-year grid electricity emission factors (like is currently done for scope 2 emissions)

E3 | Availability of future-year emission factors

- **Electricity emission factors** for future years are not readily available as they are most related to a national government's energy policy and is likely to have been derived in the development of Nationally Determined Contribution plans submitted to the UNFCCC
 - IEA energy projections (paywalled and CO₂ only)
 - EnerData (provides only 5-year time horizons on a regional basis, not country-specific)
 - **No model will account for exports/imports between transmission networks**
- While companies could develop forward-year schedules, this would hamper in incomparability
- **It is, therefore, infeasible to require the use of future-year emission factors**

Discussion point



Should the use of future-year factors be

1. Encouraged ("should")
2. Allowed ("may")
3. Disallowed ("shall not")

E3 | Decision-making criteria

<i>Criteria</i>	Explicitly <u>allow</u> future-year emission factors (with restrictions)	Explicitly <u>disallow</u> future-year emission factors
1A. Scientific integrity	<ul style="list-style-type: none"> • Pros: Potentially allows a more representative view of the emissions associated with sold products, particularly more durable ones • Cons: Without supporting emission factor sources, calculations are likely inaccurate and won't represent the actual emissions of sold products. 	<ul style="list-style-type: none"> • Pros: Emission factors are more grounded in physical reality and aren't based on assumptions of externalities • Cons: Does not give the opportunity to allow a more representative view of emissions associated with sold products
1B. GHG accounting and reporting principles	<ul style="list-style-type: none"> • Pros: Potentially makes reporting more relevant • Cons: Reporting likely to be inaccurate, inconsistent, and without secondary EF sources publicly available, incomparable 	<ul style="list-style-type: none"> • Pros: Ensures consistency of approach, comparability, and transparency • Cons: Knowingly misrepresents future emissions and compromises accuracy
2A. Support decision making that drives ambitious global climate action	<ul style="list-style-type: none"> • Pros: May encourage electrification of products, even when products are sold to regions with high electricity carbon intensities • Cons: Poor quality modelling may disguise genuine environmental impacts that companies should mitigate 	<ul style="list-style-type: none"> • Pros: Encourages reporting companies take their own action rather than relying on externalities • Cons: Does not encourage electrification of products in areas with rapidly changing grid intensities
2B. Support programs based on GHG Protocol and uses of GHG data	<ul style="list-style-type: none"> • Pros: No change, this approach is the status quo 	<ul style="list-style-type: none"> • Pros: Brings comparability to data. Easier for assurers to verify data • Cons: Some baselines may need revising
3. Feasibility to implement	<ul style="list-style-type: none"> • Pros: Not easy to source emission factors, but this is the status quo so wouldn't require shifts in modelling 	<ul style="list-style-type: none"> • Pros: Much easier to do, probably aligns with general approach for most anyway

(Draft; for discussion)

Next Steps

Next steps

- GHG Protocol Secretariat:
 - Distribute the Recording
 - Distribute Meeting Minutes and the Feedback Form
 - Distribute a survey on the options and considerations for 3.10 and 3.11 so far
- Next meeting:
 - **April 9th Meeting #9 at 9 - 11 AM ET**

Thank you!

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(Draft; for discussion)

Appendix A.

Category 10 and 11 issues

(Draft; for discussion)

E1.6 Inclusion of emissions from mechanical energy loss

E1.6 | Existing guidance

- The Scope 3 Standard and Technical Guidance do not explicitly explain how to account for energy losses
- Instead, energy losses are **implicitly included** for products that have category 10 or 11 emissions. It is assumed that activity data includes energy losses within a broader system.
 - e.g., the energy of the fuel required for a vehicle's engine over its lifetime includes energy that is harnessed and then lost
 - *Cat 10: Technical Guidance (pg. 107): Companies may use either of two methods: Site-specific method, which involves determining the amount of fuel and electricity used [...] by the third-party; Average-data method, which involves estimating emissions [...] based on average secondary data, such as average emissions per process or per product*
- The Secretariat notes that physical allocation methods are advised (*pg. 93 Scope 3 Standard*), which implies that energy consumption (which would include energy losses) would be allocated to individual components in a manner that is proportional to physical properties, should allocation be unavoidable.

E1.6 | Examples of energy loss

1. Electric motor bearings:

- Component manufacturer produces bearings used in electric motors
- The downstream system is an industrial electric motor driving a pump
- Friction in bearings contributes to energy losses
 - Current guidance suggests 1) no direct use-phase emissions and 2) no indirect use-phase emissions (as the bearing does not indirectly require energy during use)
- **Should the bearing manufacturer account for a portion of use-phase energy loss?**

2. Insulation materials:

- Manufacturer produces insulation used industrial equipment
- The downstream system is industrial equipment
- Inefficiencies in the insulation increases the energy demand for that equipment
 - As with #1, there are no direct- and no indirect use-phase emissions in current guidance
- **Should the insulation manufacturer account for a portion of use-phase energy loss?**

E1.6 | Summary of discussions in TWG (5th Feb)

- In the development of the SBTi Automotive Net Zero Standard, the working group defined four categories of impact, including mass-based impacts, direct electrical consumers, and powertrain components. Varying operating conditions for components gives major complexity in estimating emissions.
 - The SBTi working group spent substantial time on this issue without clear resolution
 - Current thinking is to limit the inclusion of emissions in target-setting to the manufacturer of the whole parts (e.g., drivetrain). Drivetrain components would not need to allocate emissions as a part of the target-setting disclosures
- The discussions on energy loss and allocation to components can drift into avoided emissions discussions, which should be considered separately as a part of the AMI workstream
- **The issue is inherently tied to the outcomes of E1.1** (the definitions of direct-use and indirect-use phase, or any alternative system). Definitional clarity in that revision could resolve this issue

E1.6 | Two separate issues to resolve

- a) What should the rules be for components that are responsible for energy loss but are not components that directly or indirectly consume energy?**
- i. The energy losses in a system are usually not easily estimable. Energy is usually measured holistically and isn't broken down between useful energy and energy that is wasted due to individual components
 - ii. Potentially encourages more energy efficient components, but introduces risks of inaccurate modelling, inconsistency, and incomparability between reporting companies.
- b) What should the allocation rules be for components to systems that directly or indirectly consume energy?**
- i. In the development of the SBTi automotive net-zero standard, approaches were considered but rolled back to only incorporate allocation amongst components to a vehicle's drivetrain[?].
 - Keeping the scope to be physically based allows for the continued recommendation of physical allocation in system like this
 - ii. Should the GHGP Scope 3 Standard do something similar: limit allocation and emissions accounting for components which are part of the energy consuming part of a system? Does this work in all cases?

E1.6a | Potential options* *for mechanical energy losses*

- **1) Maintain existing approach**
 - Accept implicit treatment is not causing material differences in inventory results and doesn't go against the principles of the GHG Protocol
- **2) Clarifying energy losses are included and shall not be separately quantified**
 - Similar to do nothing, but acknowledge the data that is used includes energy losses.
 - Explicitly allow exclusion for component manufacturers that wouldn't otherwise have processing or use emissions.
 - Require that the final product producer accounts for this energy lost
- **3) Clarifying energy losses are included, and may also be reported separated in reporting**
 - Recognize that activity data and emission factors already tend to implicitly include this
 - Suggest that component manufacturers should include emissions if deemed significant
- **4) New requirement**
 - Explicit required inclusion rules for all components in a system where energy loss occurs.

* The options and preliminary comparisons herein are not designed to be final, complete, or all-encompassing. Note the current options are designed around the existing definitions in E1.1 (direct use-phase and indirect use-phase). The options may need to be reconsidered if this changes.

Decision-making criteria for E1.6a

<i>Criteria</i>	Option 1: Do nothing	Option 2: Included, no separate quantification	Option 3: Included, may be separated in reporting	Option 4: New requirement (broaden scope to all components)
1A. Scientific integrity	<p>Pros: Activity data and emission factors implicitly include this information; Avoids artificial separation</p> <p>Cons: Does not address cases where components are responsible for energy losses</p>	<p>Pros: Reflects physical reality that losses are embedded in energy consumptions; avoids artificial separation</p> <p>Cons: Does not address cases where components are responsible for energy losses</p>	<p>Pros: Acknowledges losses can be material and component specific</p> <p>Cons: Encourages widespread adoption of allocation methods; risk of inconsistent accounting choices</p>	<p>Pros: Treats energy losses as an explicit causal outcome</p> <p>Cons: Risks overstating precision, without any improvement in accuracy; requires significant allocation and assumptions</p>
1B. GHG accounting and reporting principles	<p>Pros: Preserves consistency, avoids risks of double counting</p> <p>Cons: Leaves ambiguity unaddressed, potentially impacting transparency; Potential incomplete accounting for some</p>	<p>Pros: Preserves consistency, avoids risks of double counting. Addresses ambiguity</p> <p>Cons: Potential incomplete accounting for some</p>	<p>Pros: Preserves consistency of required scope. Addresses ambiguity. Improves relevance for some</p> <p>Cons: Increased risk of double counting</p>	<p>Pros: Maximizes completeness; addresses ambiguity, improves relevance</p> <p>Cons: Increased risk of double counting or inaccurate reporting</p>
2A. Support decision making that drives ambitious global climate action	<p>Pros: Focusses attention on system-wide emissions</p> <p>Cons: May under-communicate role of loss-reducing actions</p>	<p>Pros: Retains focus on system-wide emissions</p> <p>Cons: Provides limited signal for efficiency-improving measures</p>	<p>Pros: Provides more granular insight into decarb opportunities</p> <p>Cons: May incentivize modelling with limited actual materiality</p>	<p>Pros: Provides clearer signal to improve energy efficiency in parts</p> <p>Cons: Risks incentivizing modelling burden over action for most</p>
2B. Support programs based on GHG Protocol and uses of GHG data	<p>Pros: Remains fully interoperable</p> <p>Cons:</p>	<p>Pros: Remains fully interoperable</p> <p>Cons:</p>	<p>Pros: Flexible approach allows for interoperability to be retained</p> <p>Cons: Harder for downstream programs to standardize treatment</p>	<p>Pros:</p> <p>Cons: Diverges with existing calculation frameworks, harder for downstream programs to standardize</p>
3. Feasibility to implement	<p>Pros: No burden; no transition impact; Accessible for all reporters</p>	<p>Pros: Low burden, no new data requirements</p>	<p>Pros: Optional reporting means that this infeasibility can be navigated</p> <p>Cons: High modelling and data burden, requires judgement on materiality and attribution.</p>	<p>Cons: High burden for modelling and data collection</p>

E1.6b | Potential options* *allocation to components of complex products*

1. Maintain existing approach

- Accept implicit treatment is not causing material differences in inventory results and doesn't go against the principles of the GHG Protocol. Could provide examples and consider examples that are in the current *Technical Standard* to improve consistency of interpretation

2. Allocate emissions to functional parts to energy consuming/converting systems within complex products

- *e.g., "Manufacturers of intermediate products that are processed into complex products with multiple energy consuming/converting systems **shall** determine direct use emissions when the component forms a functional part of any relevant energy converting/consuming system" [related to options #2 and #3 in E1.1]*
- If allocation is unavoidable, any intermediate products covered by this clause **should** be allocated using a physical allocation approach, where the system boundary is the relevant energy consuming/converting system.

3. Neither of these options (please provide comments in the survey explaining why these options are unsuited, as necessary)

- If this is the case, the Secretariat will call on proposals from the TWG

Decision-making criteria for E1.6b

<i>Criteria</i>	Option 1: Maintain existing	Option 2: Require reporting for functional components to energy consuming /converting systems
1A. Scientific integrity	<p>Pros: Maintains established framework. Targeted fixes addresses known gaps</p> <p>Cons: Doesn't fully align with lifecycle science. Doesn't resolve conceptual limitations</p>	<p>Pros: Better reflects causality within engineered systems. Reduces artificial attribution of all use-phase emission to final assembler</p> <p>Cons: Requires robust allocation methodologies for components.</p>
1B. GHG accounting and reporting principles	<p>Pros: Maintains consistency and comparability</p> <p>Cons: Known completeness/relevance issues remain unresolved.</p>	<p>Pros: Improves relevance and transparency by making implicit assumptions explicit</p> <p>Cons: Attribution / allocation rules may be inconsistently or inaccurately applied</p>
2A. Support decision making that drives ambitious global climate action	<p>Pros: Preserves continuity for target-setting and transition planning.</p> <p>Cons: Doesn't reflect causal relationship with emissions</p>	<p>Pros: Creates incentives for component manufacturers to improve energy efficiency</p> <p>Cons: ROI will be limited for many, given modelling burden and level of influence</p>
2B. Support programs based on GHG Protocol and uses of GHG data	<p>Pros: Strong interoperability</p> <p>Cons: Locks in non-optimal reporting structure for category 11</p>	<p>Pros: Enables downstream policy or target-setting frameworks to treat components more consistently</p> <p>Cons: May require redesign of targets, disclosure rules, and tools</p>
3. Feasibility to implement	<p>Pros: highly feasible. Targeted fixes will be consistent with definitional intent and affect few.</p>	<p>Pros: Conceptually intuitive for engineers, builds on system-based allocation models</p> <p>Cons: Increased modelling burden, component end-uses are often varied.</p>

(Draft; for discussion)

E1.7 Accounting for non-physical products or services

E1.7 | Original feedback under consideration

- Category 11 definitions lend themselves to physical products more cleanly than non-physical products
- Since publication in 2011, there has been a major shift in the amount of software products available and their uses in intermediate and final user applications
- **Key feedback themes:**
 - Ambiguity regarding how downstream emissions attributable to powering consumer devices that operate software services should be allocated
 - Some noted that whilst “web-based software” imply inclusion, it is not given clear methodological direction
 - Unclear attribution when software components contribute to a complex systems can be allocated based on a physical allocation basis (or if they should be)

E1.7 | Existing guidance

- A product is defined as “any good or service” (*Scope 3 Standard, pg. 140*)
- Both category 10 and 11, therefore, both implicitly includes any good or service sold by a reporting company:
 - Table 5.4 *Scope 3 Standard* category descriptions:
 - **Processing of sold products:** Processing of intermediate products sold in the reporting year by downstream companies
 - **Use of sold products:** End use of goods and services sold by the reporting company in the reporting year
- Current rules lean towards physical goods, however. E.g., for cat 11:
 - **Direct use-phase emissions** are defined as emissions from products that directly consume energy (fuels or electricity) during use; Fuels and feedstocks; Greenhouse gases and products that contain or form greenhouse gases that are emitted during use (*pg. 155 Technical Guidance*)
 - **Indirect use-phase emissions** includes emissions from products that indirectly consume energy (fuels or electricity) during use (*Table 5.8 Scope 3 Standard*)
- **Importantly, “web-based software” is provided as an example of a product with direct use-phase emissions** (*Table 5.8 Scope 3 Standard*)

E1.7 | Examples of non-physical products

1. Web-based software

- Reporting company: Software provider (web application)
- Energy consumption occurs in:
 - Use of user devices (phones and laptops); Data centers; Network infrastructure (storage, network, compute)
- **Observed ambiguities:**
 - The software itself does not consume energy. Energy is only consumed indirectly.
 - Existing guidance does not present allocation rules, or indicate if incremental and background energy use should be distinguished

2. Catering services providing ingredients for customer cooking

- Reporting company: catering service provider
- Energy consumption occurs in:
 - Fuels used to cook the food that has been provided by the catering service (if outside of the control of the company)
 - Quite a clear definition for these services (i.e., neatly fit as indirect use-phase emissions or facilitated activities in category 16)

E1.7 | Emissions accounting in software

- There is **no standardized approach for quantifying the environmental impact of digital products**. Several standards or guidance methodologies exist, but aren't consistent in approach and aren't well suited for AI systems.
 - Some guidance exists – the Secretariat will share these method papers, and other resources after this meeting:
 - Greenpixie cloud emissions methodology
 - GeSI ICT guidance (already linked to on the GHG Protocol website)
 - ITU-T L. 1410
- Energy accounting in software in the current standard implies only the direct use-phase emissions should be included.
- This may not include energy being consumed (and other emissions) associated with:
 - **Data storage** (e.g., storing data in cooled server rooms will require continuous energy input). *May be fully accounted for in category 1 (Purchased goods and services)*
 - **Transfers of data over networks** (the utilization of data networks requires energy – the amount of energy can vary depending on the network utilization at a point in time) *May be fully accounted for in category 1 (Purchased goods and services)*
 - **Computation** (e.g., the CPU/GPU operations on an end-users computer for downloadable software, or energy consumed per AI token, or per FLOP, to actually perform the calculations necessary). AI workloads dramatically increase computation energy and may require separate more detailed methods.
- Which, if any, are included in our current definitions of direct use-phase and indirect use-phase emissions [after E1.1 considerations]

E1.7 | Discussion points

- **Does the definition of direct use-phase and/or indirect-use phase need to be adjusted to better accommodate digital products?**
 - If so, how? Separate definitions?
 - Are practitioners interpreting 'web-based software' (*Table 5.4 Scope 3 Standard*) as an example of a product with direct use-phase emissions correctly?
 - Are there other types of digital products (e.g., telecoms)?
 - How should freemium models common in digital products be accounted. Currently the definition is 'sold' products
- **How should the Scope 3 Standard integrate methodologies for digital products?** Should there be guidance in the Scope 3 Standard? Or reference to third-party standards/guidance
- **What constitutes required 'use-phase' emissions of digital products or other services?**
 - Which elements of the digital system should emissions accounting include?
 - All of storage, network transfers, and compute?
 - Or some combination of the above (if not already included in a reporting company's category 1)?
 - To what extent do we anticipate double-counting with purchased goods/services. How can this be avoided?

E1.7 | Potential options*

- 1. Maintain (with minor edits) existing definitions and provide more sector-specific guidance**
 - Address emissions accounting through example boxes + guidance only. Encourage the use of sector-specific guidance instead
 - Creates a call-to-action for sector-specific guidance to establish robust rules for digital accounting
- 2. Refer digital users explicitly to third-party guidance, with recommendations to use those methodologies**
 - Recognizing that the GHG Protocol Secretariat doesn't necessarily have the resources to develop sector guidance for digital products, and reduces operational burden to ensure the Scope 3 Standard remains up-to-date with a quickly evolving sector
 - Examples may include referring to ICT Sector Guidance (GESI); Greenpixie cloud methodology, ITU-T L.1410 (11/2024)
- 3. Create separate reporting structure for digital products and treat it as a subcategory** (*In the same way that employee commuting distinguishes between physical commuting and telecommuting*). Rules would then:
 - Define emission source types (likely storage, network, and compute)
 - Define the modality [should/shall/may] for emissions to be included for each of these types
 - Define the types of products that are subject to these rules, and any exceptions
 - Consider alternative quantification methods (e.g., annualized reporting) in parallel later on (as a part of E.2 which considers category-wide quantification methods)
 - Refer other non-physical products to category 16 (as many would be facilitated activities)
- 4. Neither of these options** (please provide comments explaining why these options are unsuited in the survey)
 - **If this is the favored case in the survey results, the Secretariat will call on proposals from the TWG**

E1.7 | Decision-making criteria

<i>Illustrative example</i>	Option 1: Existing definitions	Option 2: Alternative and separate reporting structure for digital products
1A. Scientific integrity	<p>Pros: Maintains established framework.</p> <p>Cons: Doesn't establish robust accounting principles for digital solutions</p>	<p>Pros: Builds accounting principles that are more in line with the way digital products are developed and the sources of emissions from their use</p> <p>Cons:</p>
1B. GHG accounting and reporting principles	<p>Pros: Maintains reporting structures</p> <p>Cons: Interpretability of rules may lead to issues with consistency in reporting</p>	<p>Pros: Creates easier interpretation and distinction for digital products (accuracy, relevance, completeness, transparency all improved)</p> <p>Cons:</p>
2A. Support decision making that drives ambitious global climate action	<p>Pros:</p> <p>Cons: Provides clearer framework for building and showing the impact of actions</p>	<p>Pros: Provides clearer framework for building and showing the impact of actions</p> <p>Cons: Creates reporting structures that may require data that is difficult to influence</p>
2B. Support programs based on GHG Protocol and uses of GHG data	<p>Pros: Strong interoperability</p> <p>Cons: Creates new structures that are untested at a widespread corporate level</p>	<p>Pros:</p> <p>Cons: New structure within category 11 would need integrating into other standards and calculation frameworks</p>
3. Feasibility to implement	<p>Pros: Highly feasible, but doesn't resolve difficulties in interpretation for digital products.</p>	<p>Pros: Aligns better with the way digital products are developed</p> <p>Cons: Modelling may be complex and availability of data to create numbers (e.g., emission factors) are not widely available from secondary database sources</p>

(Draft; for discussion)

E4. Best practice guidance for forecast modeling

E4 | Problem statement

- Modelling of lifetime emissions that extend into future years uses often lacks guidance and allows the use of untested or low quality assumptions, which brings the potential for inaccurate, inconsistent, and incomparable reporting.
- Examples include having to estimate the usage of products through time, the expected lifetime of the product, patterns in user behavior etc.
- Should the GHGP provide specific guidance on the best practices for modelling future emissions (for the modelling of the use phase of products and any other projection modelling that is needed).

(Draft; for discussion)

E5. Additional guidance for allocating emissions to components of complex products (see also E1.6)

E5 | Problem statement

- Should this not be addressed in the E1 suite, this is a placeholder to ensure the allocation for components to wider systems is considered.
- Consideration, if not already covered, will focus on:
 - What allocation rules to require or recommend.
 - Whether the recommended rules change depending on the type of component considered

(Draft; for discussion)

E6. Category 11 metrics

E6 | Problem statement

- The use phase of products can bring a number of options for additional reporting of performance metrics, that do not otherwise get expressed in the reporting of Scope 3.
- Such as:
 - Emissions intensity per unit of product sold
 - Rates of refurbishment/recycling for products
 - Emissions for a stock-based approach, per unit of product in circulation
- This revision considers whether any metrics need to be explicitly required or recommended as additional reporting metrics

Should the Scope 3 Standard require metrics?

- To support effective category 11 emissions disclosure:
 - Consider **requiring** current and/or **adding further** sold product metrics for disclosure
- Current Scope 3 Standard metrics language:
 - Box 5.7 (Scope 3 Standard, p. 50)
 - Lifetime emissions per product, corporate average emissions (kg CO₂e/km)
 - *Non-emissions metrics: fuel economy (e.g., km per liter)*
 - Box 5.8 (Scope 3 Standard, p. 50)
 - Annual emissions per product, emissions per kilometer driven, emissions per functional unit)
 - *Non-emissions metrics: energy efficiency per product*

Should the Scope 3 Standard require metrics? (continued)

Scope 3 Standard (p. 122)

Section: “Optional reporting: Information on product performance”

“To provide appropriate context related to category 11 (Use of sold products), a public GHG emissions report should include, when applicable, the following additional information:

- Product performance indicators and intensity metrics (e.g., average GHG intensity of sold products, average energy efficiency of sold products, average emissions per hour of use, average fuel efficiency of sold vehicles, average emissions per kilometer driven, GHG intensity of sold fuels, average emissions per functional unit, etc.)
- Annual emissions from the use of sold products (i.e., emissions that occur in a single year from products sold in the reporting year)
- Average lifetime/durability of sold products
- The methodologies and assumptions used to calculate product performance indicators and intensity metrics
- The percentage of sold products that are compliant with standards, regulations, and certifications, where applicable
- A statement explaining why emissions from category 11 (Use of sold products) have increased or decreased over time
- Any sold products not included in the inventory, with justification for their exclusion
- Other relevant information”

Should the Scope 3 Standard require metrics? (continued)

- Questions:
 1. Should any of the metrics (currently defined in the Standard) be required
 2. Should any additional metrics be added (required or optional)
 3. Optionality: Should the disclosure of metrics be required or optional?
- Note: Metrics for a company's entire (Scope 1, 2, and 3, and/or multiple scope 3 categories) will be discussed next year when discussing performance tracking

Potential outcomes

- Consider adding a per unit (sold product) metric as a part of disclosure:
 - 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]
- Consider adding a metric as a part of disclosure on the proportion of emissions that are believed to occur in the reporting year
 - This would be an additional metric (rather than a change to the corporate inventory)
 - Recommend such metric be reported
 - Allows the expression of annualized data alongside cumulative data, ensuring recalculation of existing scope 3 baselines isn't necessary

(Draft; for discussion)

Appendix B:

Upcoming system allocation / circularity

Items for consideration for system allocation / circularity

- Several respondents suggested that the GHGP needs new or updated rules for emissions attributable to activities associated with circular production and consumption.
- The GHGP **currently recommends the recycled content method** (*Technical Standard p78-79*). Feedback suggests that this rule does not sufficiently encourage circularity
- Topics to be discussed in this package of work will include (exact topics to be refined by Secretariat):

Reference	
TBD	Consider whether the existing Scope 3 Standard (and GHGP) should revise its current guidance on system allocation
TBD	Consider whether recommended/required methods should apply to different cases
TBD	Consider which methods to recommend/require including: - Recycled content, polluter pays, 50/50, variable proportion, double count, others
TBD	Consider whether the GHGP should require the methods agreed upon, or provide guidance to identify the appropriate method for a reporting company
TBD	Consider additional reporting metrics to require/recommend to further encourage circularity