GREENHOUSE GAS PROTOCOL

Scope 3 Technical Working Group Meeting

Group A
Meeting 3
Inventory quality reporting options

December 5th, 2024

WORLD RESOURCES INSTITUTE

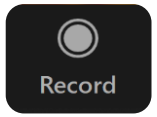
World Business Council for Sustainable Development

Agenda

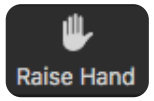
- Attendance and housekeeping (5 min)
- Recap of previous meeting (10 min)
- Uncertainty (15 min)
- Option development presentation (15 min)
- Break (5 min)
- Discussion of the options (60 min)
- Polling (5 min)
- Next steps (5 min)

Housekeeping

Welcome and Meeting information

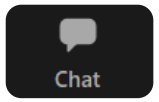


This meeting is recorded.



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

Recap of previous meeting

Managing data quality

Data quality and calculation methods was one of the most commonly cited issues in the stakeholder feedback. The emphasis is largely on two main points: improving the quality of the data and the inventory with prescriptiveness on one side maintaining calculation flexibility and accessibility on the other

	Prescriptiveness	Flexibility
Accounting/ quantification	Establish new requirements on what data/methods are allowed vs not allowed for scope 3 inventories	Maintain flexibility on what inventory quality/data/methods can be used, with guidance on recommended approaches
Reporting	Reporting requirements to ensure transparency (status quo), with additional options to improve transparency of data quality (options 1, 2, 3 below)	N/A

Starting from the perspective of reporting, the main question is how to improve the presentation of inventory quality and whether the inventory quality meets the objective(s).

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Group A: Inventory quality – scope of work

1. Identifying what scope 3 inventories are used for
   - Clarifying the relationship between data quality and various inventory objectives
2. Define how to more effectively present / communicate inventory's quality
   - Consider additional requirements to enhance the usability and transparency of scope 3 inventories
3. Address how to define the inventory quality based on the input data
   - Consider developing more prescriptive allocation rules
   - Consider developing a hierarchy of data and/or calculation methods
   - Consider additional guidance on the transfer of data across the value chain and integrating of product level data into scope 3 calculations
4. Consider whether and how to restrict inventory quality
   - Consider constrains or minimum requirements to inventory quality
   - Consider requirement to improve inventory data quality improvements over time
   - Consider requirement to perform hotspot analysis

For the detailed scope of work, refer to the standard revision process as detailed in section 5 of the Scope 3 SDP.

Follow-up from meeting#2

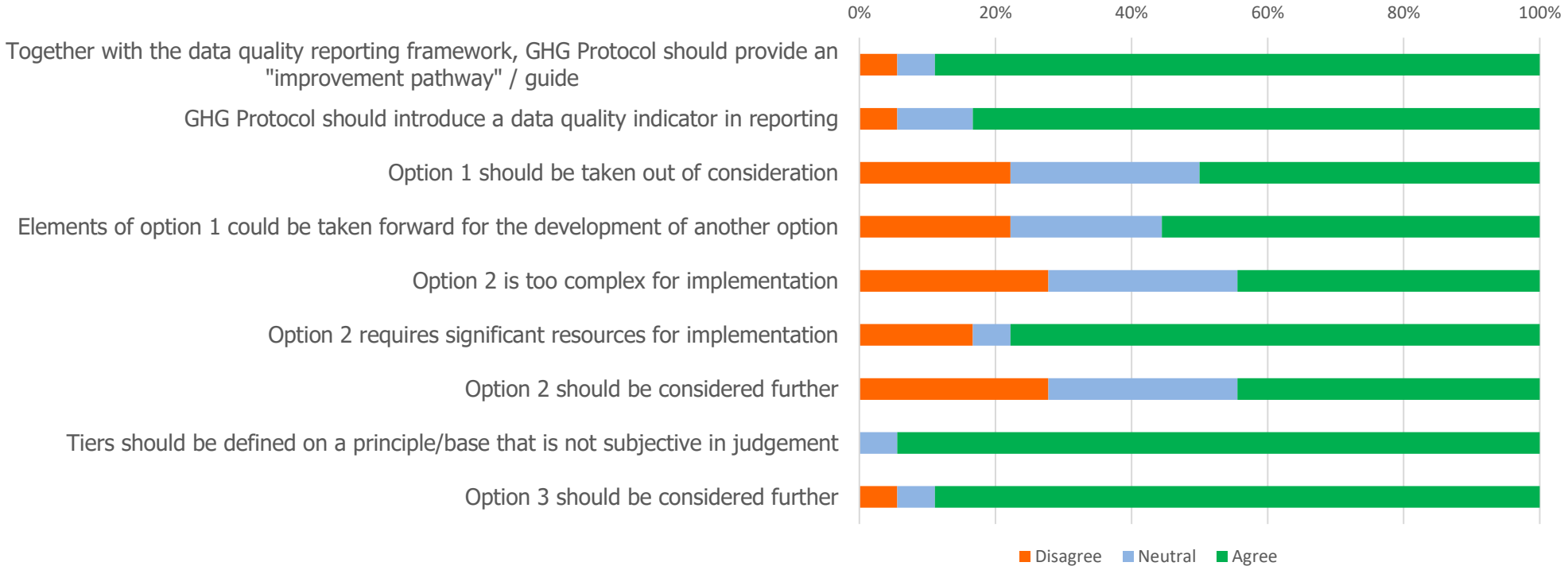
Three options were initially under consideration. Another approach was raised during the meeting.

Option 1: Improved implementation of current reporting requirements	**Option 2: Data quality scoring**	**Option 3: Disaggregated reporting based on quality**	**Quantitative uncertainty assessment**
Feedback: - High added effort - Low added use value Poll during meeting A.2: - Not supported for further consideration by any members	Feedback: - High added effort - Subjectivity Poll during meeting A.2: - Supported for further consideration by 5 members (out of 19)	Feedback: - Could increase interpretability - Subject to the tiers' definition Poll during meeting A.2: - Supported for further consideration by 12 members (out of 19)	Feedback: - Some members recommended including uncertainty assessment in consideration Poll during meeting A.2: - N/A

* For full meeting minutes refer to file: Scope 3 TWG - Group A - Meeting#2 - 20241114

Further development of the Options

Results of the pre-meeting poll: General*

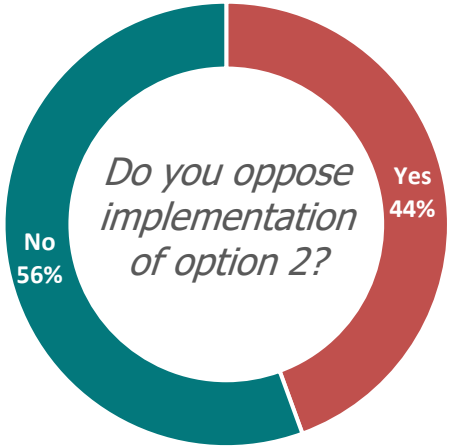


Elements of option 1 cited for potential use further:

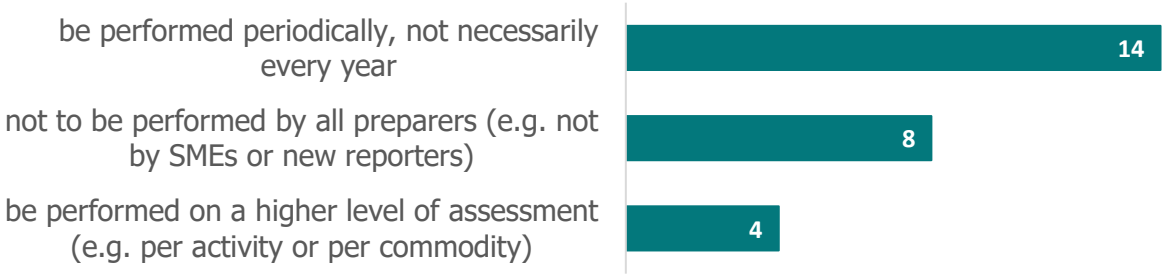
- Simplicity and practicality
- Updated, and clearer template, e.g. with a breakdown by aspects and expanded excluded activities
- Clarifications and harmonization of required information
- Per activity breakdown
- Engagement and dialogue with reporting frameworks on harmonization of requirements

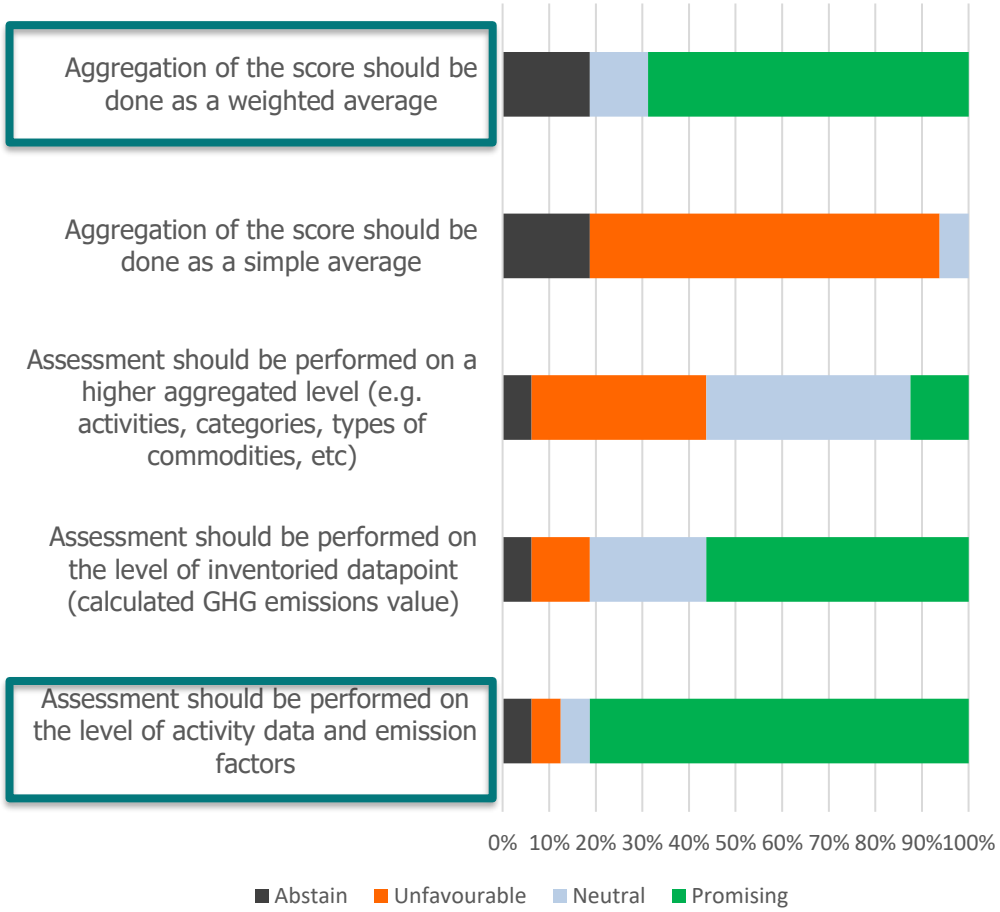
*based on 18 responses. One TWG member answered twice, the latest answer was included

Results of the pre-meeting poll: Option 2*



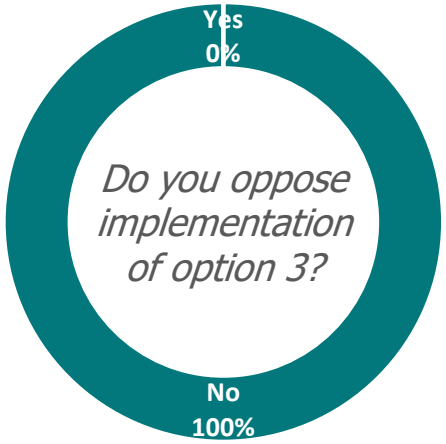
If implemented, data scoring should be allowed to...

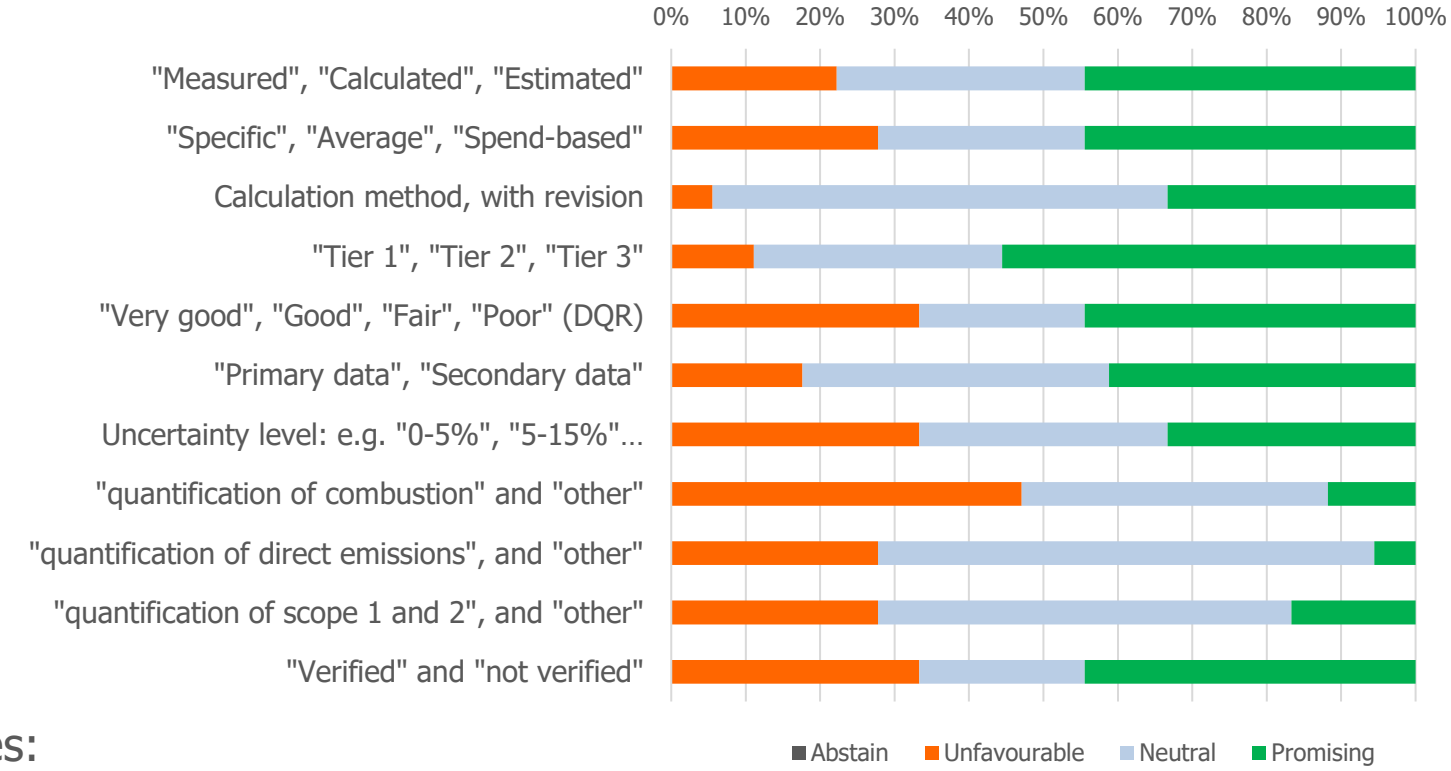




*based on total 18 responses, with 2 members not responding to the configuration questions. One TWG member answered twice, the latest answer was included

Results of the pre-meeting poll: Option 3*



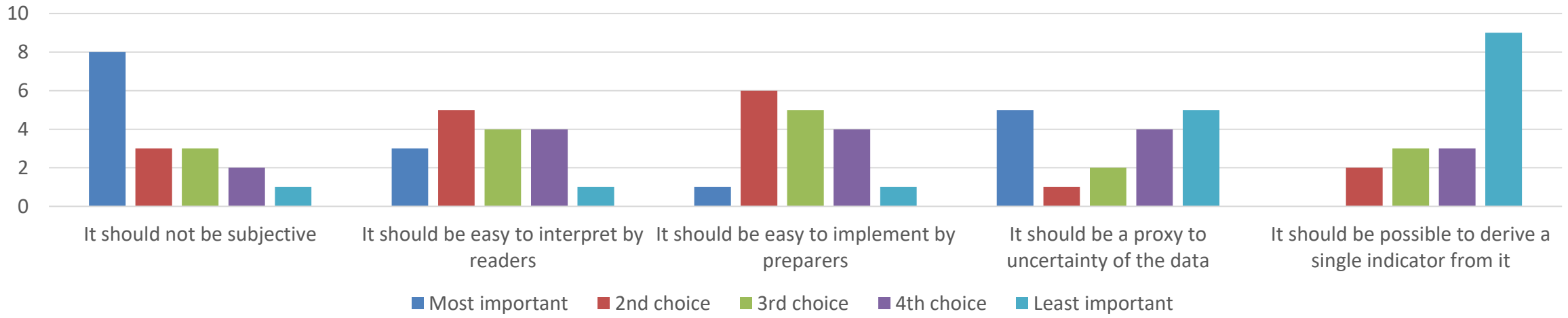


Additional suggested differentiation principles:

- Standard deviation (GSD)
- Transparency (if data can be reviewed by the user)
- Proportion of primary / supplier-specific data

*based on 18 responses. One TWG member answered twice, the latest answer was included

Results of the pre-meeting poll: Solution qualities*



Additional qualities mentioned:

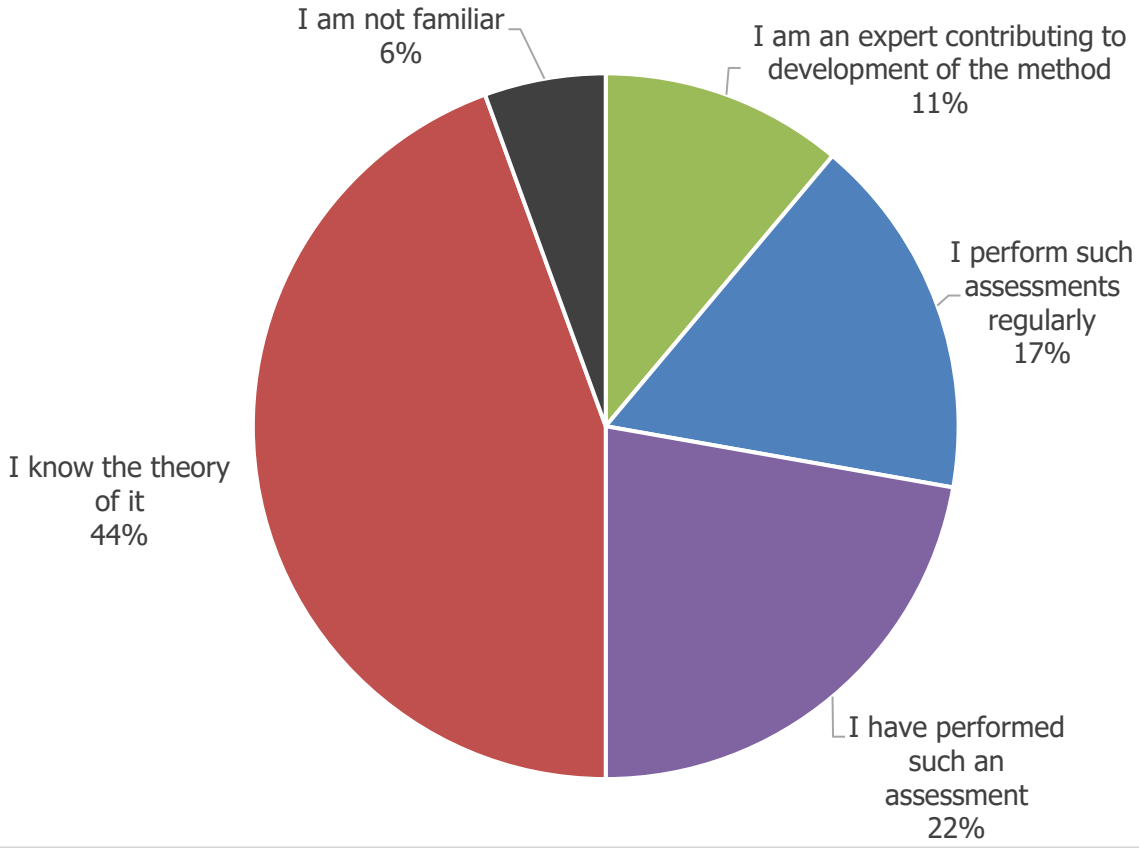
- It should differentiate [and structure] the accuracy: e.g. the higher the tier, the more accurate is the data
- If should differentiate data with different levels of documentation
- It should support change/ decarbonization
- It should be scalable across organizations of different sizes
- It should reflect sector-specific relevance
- It should facilitate data roll-up along the value chain
- It should reflect quantitative uncertainty as a number
- It should be aligned [possible to combine?] with other frameworks and standards
- It should cover most of the potential sources of uncertainty

*based on 18 responses. One TWG member answered twice, the latest answer was included

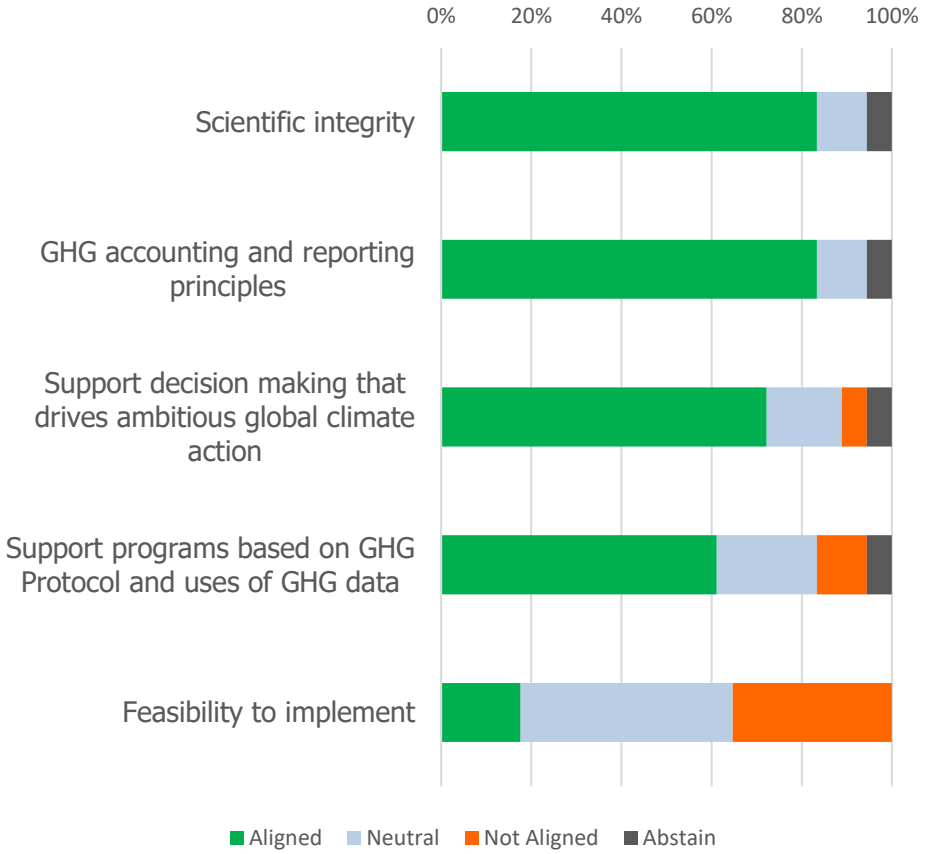
Uncertainty analysis

Results of the pre-meeting poll

How familiar are you with quantitative uncertainty assessment?



Decision-making criteria assessment



*based on 18 responses. One TWG member answered twice, the latest answer was included

Uncertainty

- Uncertainty assessment **can** be used within the GHG inventory process as a tool for guiding data quality improvements, as well as a tool for reporting uncertainty results.
- Companies **should** identify and track key uncertainty sources throughout the inventory process and iteratively check whether the confidence level of the results is adequate for the company's business goals.
- Companies **may** choose a qualitative and/or quantitative approach to uncertainty assessment. Quantitative uncertainty assessment can provide more robust results than a qualitative assessment and better assist companies in prioritizing data improvement efforts on the sources that contribute most to uncertainty

- Microsoft Word - Quantitative Uncertainty Guidance_final.docx
- Uncertainty Calculation Tool.xlsx

Disclaimer: the materials are not considered as a required configuration, but as an example of an existing guidance.

Practice of quantitative uncertainty analysis

The practice of quantitative uncertainty analysis in scope 3 accounting and reporting will be presented.

Option 3 development

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Configurations of Option 3: Disaggregated reporting based on quality

The following Tiers differentiation principles were considered in the materials & the poll

Principle	Tiers	Pros	Cons
Quantification method	Measured, Calculated, Estimated	Easy to interpret; proxy to accuracy	Fuzzy to define what is calculated vs estimated, and how it is reflective of accuracy (subjective)
Calculation method	Specific, Average, Spend-based	Easy to interpret; familiar to users; proxy to accuracy	Specificity does not always reflect quality and accuracy
Calculation method	Tbd	Potentially easy to interpret; potentially proxy to accuracy	Needs thorough reconsideration and development; potentially not familiar to users
Tiers of accuracy	Tier 1, 2, 3	Proxy to accuracy	Not easy to interpret; Learning curve for practitioners
Data quality rating	Very good, Good, Fair, Poor	Familiar to (some) users, proxy to accuracy	Subjective, not easy to interpret, large efforts to implement
Data source	Primary, Secondary	Easy to interpret, used by preparers	Does not always reflect quality and accuracy
Uncertainty level	e.g. 0-5%, 5-15%, 15-30%	Reflective of accuracy, easy to interpret	High effort to implement
Combustion measure	Derived from quantification of direct emissions by emitter, Other	Proxy to accuracy	Might be confusing
Direct emissions measure	derived from quantification of direct emissions by emitter, and Other	Proxy to accuracy	Quantification of direct emissions may be conducted on lower quality level
Scope 1 and 2 measure	derived from quantification of scope 1 and 2 by emitter, and Other	Proxy to accuracy	Quantification of direct emissions may be conducted on lower quality level; confusion in LB/MB scope 2
Verification level	Verified, Not verified	Higher confidence in avoiding errors	Not reflective of accuracy

Option 3: Configuration definition

- Each of the differentiation principle options have pros and cons.
- An alignment among TWG member is achieves on the characteristics of a desirable solution: a system that reflects accuracy of reported data, can be applied objectively and unambiguously and is easy to interpret and feasible to implement.
- The Secretariat proposes a combination of the tiers differentiation principles, with tiers that reflect growing accuracy of reported data:
    - Utilize the correlation between calculation methods and data accuracy: in the general split approach
    - Create boundaries to minimize wrongful reporting across tiers: limit the applicability of calculation methods if they either (i) do not reflect or (ii) risk not reflecting or satisfying the desired level of accuracy
    - Connect with quantitative uncertainty assessment, allowing for migration between the tiers based on assessed uncertainty
    - Use nomenclature that provides a clearer interpretation of the inventory

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Option 3: Tiers definition proposal

1. Define **measured** as:
    1. Direct measurement of emissions
    2. Calculations based on measured activity data and high-certainty emission factor. Emission factor is deemed of high certainty if its uncertainty range is (e.g., <5% in a set IPCC AR)
        - TWG assigns high certainty to some types of EF, e.g. fuel-specific combustion emission factors.
        - Entities may also use other high certainty emission factors, if they are identified in a verified study (e.g.. if an LCA study includes an uncertainty analysis showing <5% uncertainty)
2. Define **calculated** as:

    A calculated footprint that is based
        - Activity data: measured or modelled for the actual activity
        - Emission factor: primary or secondary emission factor for the activity in consideration and either of [good] time/technology/geography representativity, or with a certainty (e.g.) ϵ[5%; 20%]
3. Define **estimated** as:

    Any calculation that used an assumption, extrapolation, scenario, or an emission factor that is a proxy or below the quality specified in "calculation"

    (tentative) Hotspot: screening methods, including industry-average data, environmentally extended input output data (see box 7.1), proxy data, or rough estimates place for spend-based?

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Configurations of Option 3: Disaggregated reporting based on quality

The following Tiers differentiation principles were considered in the materials & the poll

Principle	Tiers	Pros	Cons
Quantification method	Measured, Calculated, Estimated	Easy to interpret; proxy to accuracy	Fuzzy to define what is calculated vs estimated, and how it is reflective of accuracy (subjective)
Calculation method	Specific, Average, Spend-based	Easy to interpret; familiar to users; proxy to accuracy	Specificity does not always reflect quality and accuracy
Calculation method	Tbd	Potentially easy to interpret; potentially proxy to accuracy	Needs thorough reconsideration and development; potentially not familiar to users
Tiers of accuracy	Tier 1, 2, 3	Proxy to accuracy	Not easy to interpret; Learning curve for practitioners
Data quality rating	Very good, Good, Fair, Poor	Familiar to (some) users, proxy to accuracy	Subjective, not easy to interpret, large efforts to implement
Data source	Primary, Secondary	Easy to interpret, used by preparers	Does not always reflect quality and accuracy
Uncertainty level	e.g. 0-5%, 5-15%, 15-30%	Reflective of accuracy, easy to interpret	High effort to implement
Combustion measure	Derived from quantification of direct emissions by emitter, Other	Proxy to accuracy	Might be confusing
Direct emissions measure	derived from quantification of direct emissions by emitter, and Other	Proxy to accuracy	Quantification of direct emissions may be conducted on lower quality level
Scope 1 and 2 measure	derived from quantification of scope 1 and 2 by emitter, and Other	Proxy to accuracy	Quantification of direct emissions may be conducted on lower quality level; confusion in LB/MB scope 2
Verification level	Verified, Not verified	Higher confidence in avoiding errors	Not reflective of accuracy

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Option 3: Further details to develop

1. Measured
   - What are emission factors of high certainty?
   - Which uncertainty range (percentage) would qualify as measured?
2. Calculated
   - What types of modelling are acceptable for activity data
   - Where does the boundary between good enough and not good enough lie?
     - Consider data quality parameters
     - Consider verification
     - Consider uncertainty
     - How do allocation procedures play into the quality
     - How does primary/secondary data considerations should be considered
     - How to define the required granularity?
3. Estimated
   - Bounds of estimation are very broad: is there a need for further split? E.g. split of spend-based methods?
   - Does hot spot analysis belong here, or as a separate "tier"?

In the follow-up meetings, the TWG would work on these definitions while considering different data types

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How this would look like in the report

Preparers would be expected to:

1. Quantify inventory datapoints
2. Classify each datapoints into "Measured", "Calculated" or "Estimated" based on the Scope 3 Standard Guidance

Category	GHG emissions, tCO2eq
Category 1. Purchased goods and services	***1000***
Measured	200
Calculated	700
Estimated	100
Category 2. Capital goods	***500***
Measured	0
Calculated	200
Estimated	300
…..	
TOTAL	***15500***
Measured	2500
Calculated	11500
Estimated	1500

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Pros and cons (additional to those identified for Option 3 in general)

Decision making criteria	Pros	Cons
Scientific integrity	Connection to quantified uncertainty	Pre-assignment by the TWG would bear subjectivity of the TWG members opinion
GHG accounting and reporting principles	Promotes transparency; incentivizes accuracy; easier to navigate relevance	
Support decision making that drives ambitious global climate action	Given the public disclosure of the quality of reporting, one may expect public pressure to seek higher quality data at least for most significant activities Potential to build up an indicator and / or improvement path	
Support programs based on GHG Protocol and uses of data	Nomenclature is somewhat easier to interpret Operable with majority of frameworks	Not interoperable with DQR frameworks (PACT, PCAF, LCA)
Feasibility to implement	Easy to onboard with maintaining current accounting	Learning curve

Discussion

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Prompts

1. Do you generally agree with the approach?
2. What would you change to improve this option?
3. Can we make this option objective?
4. What are additional pros and cons of the proposed configuration?

Next Steps

Next steps

- GHG Protocol Secretariat:
  - Distribute the recording and feedback form (by Dec 6)
  - Distribute the poll if needed (by Dec 12)
  - Prepare and distribute minutes of the meeting (by Dec 12)
- TWG members:
  - Vote in the poll, if distributed (by Dec 19)
  - Provide feedback (by Jan 1)

Next meeting on January 9th 6AM PT/ 9AM ET / 3PM CET / 22PM CHN / 1AM AET

- GHG Protocol Secretariat:
  - Distribute the materials (by Jan 2)

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Thank you!

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Back-up

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Calculation methods (1)

The *Scope 3 Standard* specifies two quantification methods:

- Direct measurement
- Calculation

Table [7.1] Quantification methods

Quantification method	*Description*	*Relevant data types*
Direct measurement	Quantification of GHG emissions using direct monitoring, mass balance or stoichiometry **GHG = Emissions Data x GWP**	Direct emissions data
Calculation	Quantification of GHG emissions by multiplying activity data by an emission factor **GHG = Activity Data x Emission Factor x GWP**	Activity data Emission factors

Table [7.2] Examples of activity data and emission factors

Examples of activity data	*Examples of emission factors*
• Liters of fuel consumed	• kg CO_2 emitted per liter of fuel consumed
• Kilowatt-hours of electricity consumed	• kg CO_2 emitted per kWh of electricity consumed
• Kilograms of material consumed	• kg PFC emitted per kg of material consumed
• Kilometers of distance traveled	• t CO_2 emitted per kilometer traveled
• Hours of time operated	• kg SF_6 emitted per hour of time operated
• Square meters of area occupied	• g N_2O emitted per square meter of area
• Kilograms of waste generated	• g CH_4 emitted per kg of waste generated
• Kilograms of product sold	• kg HFC emitted per kg of product sold
• Quantity of money spent	• kg CO_2 emitted per unit of currency spent

Calculation methods (2)

Multiple calculation methods and formulas are itemized in the *Technical Guidance for Calculating Scope 3 Emissions*, for each scope 3 category, ranked in order of specificity. It includes guidance for emission factor selection. Appendix D (p. 162-182) of the *Technical Guidance* aggregates the formulae possible/listed for use by category.

Category	Calculation methods				
	Method 1	**Method 2**	**Method 3**	**Method 4**	**Method 5**
Category 1	Supplier-specific	Hybrid	Average-data	Spend-based	
Category 2	Supplier-specific	Hybrid[1]	Average-data	Spend-based	
Category 3	Supplier-specific	Average-data			
Category 4	Fuel-based	Site-specific	Distance-based	Average-data	Spend-based
Category 5	Supplier-specific	Waste-type-specific	Average-data		
Category 6	Fuel-based	Distance-based	Spend-based		
Category 7	Fuel-based	Distance-based	Average-data		
Category 8	Asset-specific	Lessor-specific	Average-data		
Category 9	Fuel-based	Site-specific	Distance-based	Average-data	Spend-based
Category 10	Site-specific	Average-data			
Category 11	Fuel-/electricity-based	Fuels/Feed-stocks	Contained/forming	Average-data	
Category 12	Waste-type-specific				
Category 13	Asset-specific	Lessee-specific	Average-data		
Category 14	Franchise-specific	Average-data			
Category 15	Investment-specific	Project-specific	Average-data		

The *Technical Guidance* provides decision trees to select calculation methods. Calculation methods are prioritized based on the specificity of data inputs. The suggested trees application are subject to adequate quality of the data.

Data quality indicators

When choosing data sources, companies should seek the highest quality (most representative) data available and reasonably obtainable. Data quality is defined by:

- Technology representativeness
- Time representativeness
- Geography representativeness
- Completeness
- Reliability

Examples of data quality indicators are provided in the guidance in box 7.2 of the Standard (on the right).

Box 1.1. of the *Technical guidance* highlights that data specificity does not necessarily leads to accuracy.

Score	Representativeness to the activity in terms of:				
	Technology	Time	Geography	Completeness	Reliability
Very good	Data generated using the same technology	Data with less than 3 years of difference	Data from the same area	Data from all relevant sites over an adequate time period to even out normal fluctuations	Verified[3] data based on measurements[4]
Good	Data generated using a similar but different technology	Data with less than 6 years of difference	Data from a similar area	Data from more than 50 percent of sites for an adequate time period to even out normal fluctuations	Verified data partly based on assumptions or non-verified data based on measurements
Fair	Data generated using a different technology	Data with less than 10 years of difference	Data from a different area	Data from less than 50 percent of sites for an adequate time period to even out normal fluctuations or more than 50 percent of sites but for a shorter time period	Non-verified data partly based on assumptions, or a qualified estimate (e.g. by a sector expert)
Poor	Data where technology is unknown	Data with more than 10 years of difference or the age of the data are unknown	Data from an area that is unknown	Data from less than 50 percent of sites for shorter time period or representativeness is unknown	Non-qualified estimate

Adapted from B.P. Weidema and M.S. Wesnaes, "Data quality management for life cycle inventories – an example of using data quality indicators," Journal of Cleaner Production 4 no. 3-4 (1996): 167-174.

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Reporting requirements

1. **Required information**
   a. A list of scope 3 categories and activities included in the inventory
   b. A list of scope 3 categories or activities excluded from the inventory with justification(s) for their exclusion
   c. For each scope 3 category, a description of the types and sources of data, including activity data, emission factors and GWP values, used to calculate emissions, and a description of the data quality of reported emissions data
   d. For each scope 3 category, a description of the methodologies, allocation methods, and assumptions used to calculate scope 3 emissions
   e. For each scope 3 category, the percentage of emissions calculated using data obtained from suppliers or other value chain partners
2. **Optional information**
   a. Relevant disaggregation of the emissions data
   b. Emissions from scope 3 activities not included in the list of scope 3 categories, reported separately
   c. Qualitative information about emission sources not quantified
   d. Quantitative assessments of data quality
   e. Information on inventory uncertainty (e.g., information on the causes and magnitude of uncertainties in emission estimates) and an outline of policies in place to improve inventory quality

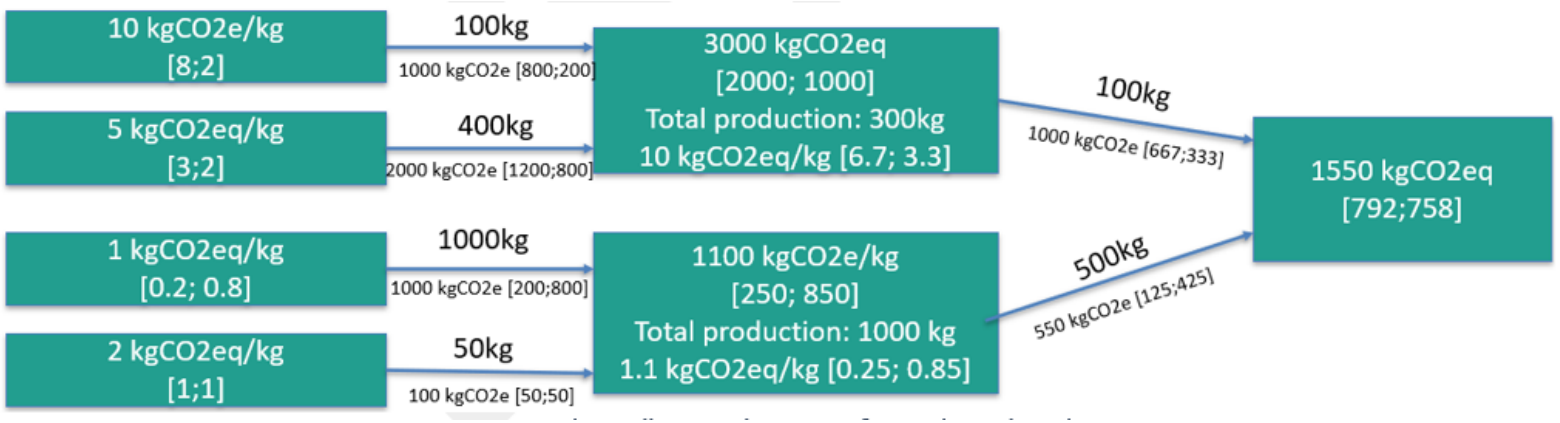
Implications of the option 3 for further considerations

Prescriptive accounting options

- Impose a minimum or maximum share of the inventory that shall be accounted on a certain tier
- Requirement to increase or decrease the share of inventory reported on a certain tier over time

Data transfer

Supplier specific data request and consequent transfer needs to be relayed in the respective updated format, with the disaggregation of the data by quality



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Meeting the objectives of reporting (preliminary assessment)

Objective	Option A: Improved implementation of current GHG Protocol requirements	Option B: Data quality scoring	Option C: Disaggregated reporting based on quality
Provide information on whether the inventory quality is fit for the intended use	Low to medium: Qualitatively, possibly not enough	Medium: Quantitative, subjective	Medium to high: quantitative
Provide information on the certainty of the reported emissions (indication of emissions size)	Low: Qualitatively and indirect, as an interpretation of the provided information	Medium: Quantitative, subjective	Medium to high: quantitative
Provide information on reliability of the inventory / category point as a basis for planning actions	Low to medium: Qualitatively, possibly not enough	Medium to high	Medium to high: quantitative
Provide information on reliability/certainty of achieved emission reductions / increases	Low: Qualitatively and indirect, as an interpretation of the provided information, needs a more rigorous tracking through the years of reporting	Medium to high, assuming consistency in scoring	Medium to high: quantitative, may be confusing with moving from one category to another
Evaluating the organization's stewardship and transparency efforts	Medium: Qualitative	High: Quantitative	High: Quantitative

See the full preliminary assessment in Sections 6 and 7 of the Discussion Paper A.1 Inventory Quality

Decision-making criteria (preliminary assessment)

Criteria	Option A: Improved implementation of current GHG Protocol requirements	Option B: Data quality scoring	Option C: Disaggregated reporting based on quality
Scientific integrity	Largely NA Enhancing transparency in preparation for inventory calculation and in calculation and reporting (pre- and per-activity: script, visual control)	Largely NA Evidence from LCA on data scoring Intrinsic limitations to score assigning	Largely NA Some evidence from pro-forma financial reporting
GHG accounting and reporting principles	Expected to enhance transparency Indirect influence on other principles	Expected to enhance transparency Indirect influence on other principles	Expected to enhance transparency Indirect influence on other principles
Support decision making that drives ambitious global climate action	Low to medium (open for interpretation)	Medium (subjective pre-interpretation)	Medium to high (specific input)
Support programs based on GHG Protocol and uses of data	Pro: High interoperability (fits all) Con: Low to medium support to user (generic input for own interpretation)	Pro: Medium to high interoperability (doesn't fit those with different scoring) Con: Low to medium support to user (Subjective interpretation done by others)	Pro: Medium to high support to users (specific input for own interpretation) Con: Low interoperability (not incorporated in current frameworks) but could be incorporated
Feasibility to implement	Easy and accessible	High difficulty and low accessibility	Generally accessible, may pose difficulties in data aggregation and transfer in introduction stage

See the full preliminary assessment in Sections 6 and 7 of the Discussion Paper A.1 Inventory Quality