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Exposure draft of *SRS 505: Emissions*

19 April 2016

Comments to be received by 17 July 2016

The G4 Guidelines are being transitioned to a set of modular Sustainability Reporting Standards (GRI Standards). This exposure draft of *SRS 505: Emissions* is published by the Global Sustainability Standards Board (GSSB), the independent standard-setting body of GRI. This draft is published for comment only and may change based on public feedback before its official release.

Any interested party can submit comments on this draft by 17 July 2016. Comments should be submitted in writing, and only comments in English will be considered. Please refer to the Transition to Standards website [here](#) for additional information and a link to the online consultation platform.

Comments are to be submitted via the online platform if possible. In exceptional cases, if comments cannot be submitted online, they can be sent to standards@globalreporting.org.

All comments received will be considered a matter of public record. Comments will be made available on the GRI website along with the name of the individual or organization that submitted the comment, the country, and constituency group.

This exposure draft of *SRS 505: Emissions* contains the Emissions Aspect from the G4 Guidelines along with guidance from the G4 Implementation Manual. Key changes are highlighted within comment boxes throughout this draft, and the location of original G4 text is provided as below:

- G4 RPSD = Text has been sourced from the [G4 Guidelines – Reporting Principles and Standard Disclosures](#)
- G4 IM = Text has been sourced from the [G4 Guidelines – Implementation Manual](#)

A summary of the key changes related to this Standard is provided in an [Annex](#).

For more information, or to view and download the full set of GRI Standards exposure drafts, visit the [Transition to Standards website](#).

Explanatory memorandum

This explanatory memorandum sets out the objectives of the Transition to Standards, the significant proposals contained within this exposure draft of *SRS 505: Emissions*, and a summary of the GSSB's involvement and views on the development of this draft.

Objectives for the Transition to Standards

The following objectives were considered during the development of this exposure draft:

- devising a modular format that allows the Standards to be updated independently when the need arises and that facilitates continuous improvement
- ensuring minimal disruption of G4 disclosure requirements and their methodologies
- preserving the Reporting Principles and the focus on materiality
- clarifying certain G4 concepts and disclosures that are not clearly understood by users, based on available G4 FAQs and GSSB input
- clarifying what is required, versus what is recommended or what is just guidance
- reducing unnecessary duplication of content
- making individual elements of G4 easier to find
- allowing for flexibility in reporting options and formats

In addition, the transition to Standards offers an opportunity to increase the overall user-friendliness and the technical quality and robustness of the Standards.

Significant proposals and changes in *SRS 505: Emissions*

This draft Standard incorporates the disclosures and guidance from the Emissions Aspect in the G4 Guidelines and Implementation Manual. This content has been revised and restructured in line with the project objectives set out above. Notable changes in this draft Standard are summarized below:

- A new 'Background context' section has been developed in the Introduction, which includes a description of the topic. This content is based on the text from the 'Relevance' sections in G4 but has been revised to update the content and align it with authoritative intergovernmental instruments, where applicable.
- Throughout the draft Standard, there are clear distinctions between requirements (denoted using 'shall'), recommendations (denoted using 'should') and guidance, which is identified with a specific background color. These changes are consistent with standard-setting practice and will make it more clear for users which content is required in each Standard. For an overview of G4 guidance text that has been included as reporting requirements or recommendations in this draft Standard, see the [Annex](#).
- The methodology for reporting Scope 2 GHG emissions has been updated. Disclosure 505-2 has been updated to align with changes to the GHG Protocol Scope 2 Guidance, published in January 2015 by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD). The updated Scope 2 Guidance asks organizations to provide two distinct Scope 2 values: a location-based and a market-based value. These are calculated with different emissions factors that vary according to how the organization

obtained the energy associated with those emissions. This change will ensure that this GRI Standard remains consistent with the GHG Protocol.

- Content from the Overall Aspect of G4 has been included in this draft Standard as guidance. This guidance refers to reporting expenditures for emissions. The Overall Aspect of G4 is proposed to be discontinued and its content relocated to relevant GRI Standards.
- The G4 Aspect-specific management approach guidance related to reporting on GHG emission offsets has been included as reporting requirements in this draft Standard.

Additional detail on these proposals can be found in the background document on the Transition to Standards, available on the [online consultation platform here](#).

GSSB's involvement and views on the development of this draft

The GSSB discussed the development of *SRS 505: Emissions* at its meetings on 3-5th November 2015, 4th February 2016, and 5-7th April 2016. Minutes and live recordings of these meetings are available on the [GSSB website here](#).

For the Transition to Standards, the full GSSB membership oversaw the development of the draft Standards; no additional Project Working Groups were appointed. Therefore the views of the GSSB on the development of this draft Standard are reflected in the summary of main proposals above and in the public exposure draft itself, which was approved by the GSSB for public exposure on 5-7th April 2016. Meeting minutes and a full recording of the meeting can be accessed on the [GSSB website here](#).

Exposure draft for

1 Sustainability Reporting Standard 505:
2 Emissions 2016

Exposure draft for comment only

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23 Introduction

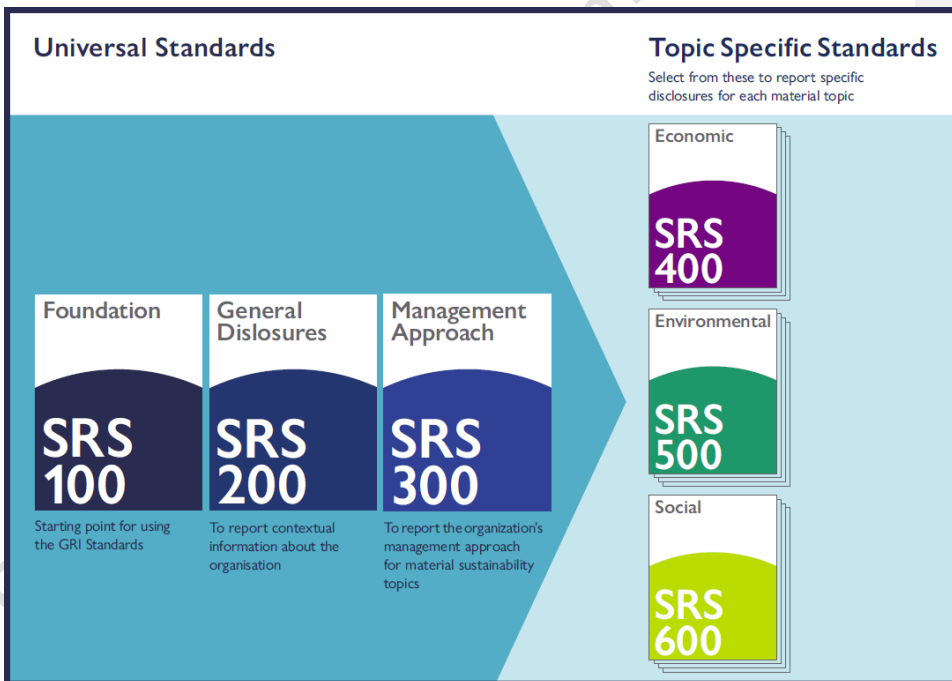
24 A. Overview of the GRI Sustainability Reporting Standards

25 The GRI Sustainability Reporting Standards (GRI Standards) are designed to be used by
26 organizations to report about their impacts on the economy, the environment, and society.

27 The GRI Standards are structured as a set of interrelated standards. They are intended to be
28 used together to help an organization prepare a sustainability report which is based on the
29 Reporting Principles and focuses on material topics. This ensures that the organization provides
30 a complete picture of its impacts along with enough contextual information to understand these
31 impacts and how they are managed.

32 Organizations can also choose to use individual GRI Standards or their content to report on
33 specific sustainability information.

34 Figure 1 Overview of the set of GRI Standards



35 The GRI Standards are divided into six series.

Series	Description
100: Foundation	<i>SRS 101: Foundation</i> is the starting point for using the set of GRI Standards. It is required to be complied with by any organization making a claim that its sustainability report has been prepared in accordance with the GRI Standards. <i>SRS 101</i> outlines the process to be followed in order to prepare a sustainability report using the GRI Standards. It also sets out the Reporting Principles for defining report content and quality, and specifies the different claims that an organization can make about its use of the GRI Standards.
200: General disclosures	<i>SRS 201: General disclosures</i> is used to report contextual information about an organization and its sustainability reporting practices. This includes information about an organization's profile, strategy, ethics and integrity, governance, stakeholder engagement practices, and reporting process.
300: Management approach	<i>SRS 301: Management approach</i> is used to report information about how an organization manages its material topics. This Standard is designed to be used together with each material topic, including those covered by the topic-specific Standards (series 400, 500, and 600), as well as other material topics identified by an organization. Applying <i>SRS 301</i> with each material topic allows an organization to provide a narrative description about how it manages the material topics and related impacts; this is in addition to reporting topic-specific disclosures.
400, 500, and 600: topic-specific Standards	The 400, 500, and 600 series are topic-specific Standards, which are used to report information on economic, environmental, and social topics (e.g., 'Water' or 'Indirect economic impacts'). To prepare a report in accordance with the GRI Standards, an organization applies the Reporting Principles for defining report content from <i>SRS 101: Foundation</i> to identify its material economic, environmental, and social topics. These material topics form the basis for the sustainability report and determine which of the topic-specific Standards will need to be used.

36 *B. Responsibility for this Standard*

37 This Standard is issued by the Global Sustainability Standards Board (GSSB). It is part of the set
38 of GRI Sustainability Reporting Standards (GRI Standards). The GSSB is an independent
39 standard-setting body created by GRI. It has responsibility for setting globally-accepted
40 sustainability reporting standards, according to a due process. More information on the GSSB's
41 due process can be found here:

42 <https://www.globalreporting.org/information/about-gri/governance-bodies/Global-Sustainability-Standard-Board/Pages/default.aspx>
43

44 Any feedback or comments on the GRI Standards can be submitted to
45 standards@globalreporting.org for the consideration of the GSSB.

46 *C. Scope*

47 SRS 505: Emissions sets out reporting requirements on the topic of emissions into the air,
48 including greenhouse gas (GHG) emissions, ozone-depleting substances (ODS), nitrogen oxides
49 (NO_x), sulfur oxides (SO_x), and other significant air emissions. It is part of the series of GRI
50 Standards designed to elicit information about specific environmental topics.

51 This Standard applies to any reporting organization that has identified the topic of emissions as
52 material, and wishes to report on its impacts related to this topic.

53 SRS 505 can be used by an organization of any size, type, sector, or geographic location.

54 *D. Using this Standard*

55 Requirements, recommendations, and guidance

56 Throughout the GRI Standards, specific terms are used to signify requirements,
57 recommendations, and guidance.

- 58 • **Requirements:** These are mandatory instructions and are denoted using '**shall**.' These
59 can include process or methodology requirements, as well as disclosure requirements
60 (i.e., information to be reported). Requirements are to be considered in the context of
61 recommendations and guidance.
- 62 • **Recommendations:** These are cases where a particular course of action is
63 encouraged or recommended, but not required. They are denoted using '**should**.'
- 64 • **Guidance:** These sections include background context and examples to help
65 organizations better understand the requirements. They also describe possible,
66 achievable, or allowed scenarios for reporting information; these are signified using
67 '**can**'. A different background color denotes 'Guidance' sections throughout the GRI
68 Standards. Guidance is not required, but organizations are encouraged to consult the
69 'Guidance' sections.

70 A reporting organization is required to comply with all relevant requirements in order to claim
71 that its report has been prepared in accordance with the GRI Standards. See Table 2 of SRS 101:
72 *Foundation* for more information. It is not necessary to comply with recommendations or
73 guidance in order to make an 'in accordance' claim.

74 *E. Normative references*

75 The documents below are required to be used together for the application of this Standard. For
76 documents with a date given, only the listed version applies. For undated references, the latest
77 version of the document applies.

- 78 SRS 101: *Foundation*
- 79 SRS 301: *Management approach*
- 80 GRI Standards *Glossary of terms*

81 *F. Effective date*

82 SRS 505: Emissions is effective for all reports published on or after 1 January 2018. Earlier
83 adoption of this Standard is encouraged.

84 *G. Background context*

85 In the context of the GRI Standards, the environmental dimension of sustainability concerns an
86 organization's impacts on living and non-living natural systems, including land, air, water and
87 ecosystems.

88 SRS 505 addresses emissions into air, which are the discharge of substances from a source into
89 the atmosphere. Types of emissions include: greenhouse gas (GHG), ozone-depleting substances
90 (ODS), nitrogen oxides (NO_x) and sulfur oxides (SO_x), among other significant air emissions.

91 **GHG emissions**

92 GHG emissions are a major contributor to climate change and are governed by the United
93 Nations (UN) 'Framework Convention on Climate Change' and the subsequent UN 'Kyoto
94 Protocol'.

95 This Standard covers the following GHGs:

- 96 • Carbon dioxide (CO₂)
- 97 • Methane (CH₄)
- 98 • Nitrous oxide (N₂O)
- 99 • Hydrofluorocarbons (HFCs)
- 100 • Perfluorocarbons (PFCs)
- 101 • Sulphur hexafluoride (SF₆)
- 102 • Nitrogen trifluoride (NF₃)

103 Some GHGs, including methane, are also air pollutants that have significant adverse impacts on
104 ecosystems, air quality, agriculture, and human and animal health.

105 As a result, different national and international regulations and incentive systems, such as
106 emissions trading, aim to control the volume and reward the reduction of GHG emissions.

107 The disclosure requirements for GHG emissions in this Standard are based on the reporting
108 requirements of the 'GHG Protocol Corporate Accounting and Reporting Standard' ('GHG
109 Protocol Corporate Standard') and the 'GHG Protocol Corporate Value Chain (Scope 3)
110 Accounting and Reporting Standard' ('GHG Protocol Corporate Value Chain Standard'). These
111 two standards are part of the GHG Protocol developed by the World Resources Institute
112 (WRI) and the World Business Council on Sustainable Development (WBCSD).

113 The GHG Protocol has established a classification of GHG emissions called 'Scope': Scope 1,
114 Scope 2 and Scope 3. The GHG emissions standard published by the International Organization
115 for Standardization (ISO), 'ISO 14064', represents these classifications of Scope with the
116 following terms:

- 117 • Direct GHG emissions = Scope 1

Commented [SD1]: Type of change: Clarification
[Clarifying topic descriptions]

Sources:

- G4 RPSD pp. 52, 57
- G4 IM pp. 84, 105, 107, 110, 112, 116, 118, 119, 252

- 118 • Energy indirect GHG emissions = Scope 2
 119 • Other indirect GHG emissions = Scope 3

120 In this Standard, these terms are combined in the following way, as defined in the GRI Standards
 121 Glossary of terms:

- 122 • Direct (Scope 1) GHG emissions
 123 • Energy indirect (Scope 2) GHG emissions
 124 • Other indirect (Scope 3) GHG emissions

125 **Ozone-depleting substances (ODS)**

126 The ozone layer filters out most of the sun's biologically harmful ultraviolet (UV-B) radiation.
 127 Observed and projected ozone depletion due to ODS generates worldwide concern. The UN
 128 Environment Programme (UNEP) 'Montreal Protocol on Substances that Deplete the Ozone
 129 Layer' ('Montreal Protocol') regulates the phase-out of ODS internationally.

130 **Nitrogen oxides (NO_x), sulfur oxides (SO_x) and other significant air emissions**

131 Pollutants such as NO_x and SO_x have adverse effects on climate, ecosystems, air quality,
 132 habitats, agriculture, and human and animal health. Deterioration of air quality, acidification,
 133 forest degradation and public health concerns have led to local and international regulations to
 134 control emissions of these pollutants.

135 Reductions in the emission of regulated pollutants lead to improved health conditions for
 136 workers and local communities and can enhance relations with affected stakeholders. In regions
 137 with emission caps, the volume of emissions also has direct cost implications.

138 Other significant air emissions include, for example, persistent organic pollutants or particulate
 139 matter, as well as air emissions that are regulated under international conventions and/or
 140 national laws or regulations, including those listed on an organization's environmental permits.

141 **SRS 505: Emissions**

142 *1. Management approach disclosures*

143 **Reporting requirements**

144 I.1 The reporting organization shall report its management approach for emissions as
145 specified in *SRS 301: Management approach*.

146 I.2 When reporting on GHG emissions targets, the reporting organization shall explain
147 whether offsets were used to meet the targets, including the type, amount, criteria or
148 scheme of which the offsets are part.

149 **Guidance 1.1 and 1.2**

150 Reporting on the management approach, as well as completing topic-specific disclosures for all material
151 topics, is required for any organization that wishes to make a claim of being in accordance with the GRI
152 Standards. The management approach is a narrative explanation of how an organization manages the topic,
153 associated impacts, and stakeholders' reasonable expectations and interests.

154 This Standard is therefore designed to be used together with *SRS 301: Management approach* in order to
155 provide a full disclosure of an organization's impacts for a given topic. SRS 301 specifies how to report on
156 an organization's management approach and what information to include.

157 Specific guidance for reporting on the management approach related to emissions:

158 When reporting its management approach for emissions, the organization can also:

- 159 • explain whether it is subject to any country, regional, or industry-level emissions regulations and
160 policies. Additionally, it can provide examples of these regulations and policies; and/or
- 161 • disclose expenditures on treatment of emissions (such as expenditures for filters, agents) and for the
162 purchase and use of emissions certificates.

163

Commented [SD2]: Type of change: Change in instructive verb
Original wording:
In addition to using the DMA Guidance for reporting on targets, when reporting on GHG emissions targets, **identify** whether offsets are used to meet the target. **Specify** the type, amount, criteria or scheme of which they are part.
Source: G4 IM p. 106

Commented [SD3]: Type of change: Clarification
Guidance added to explain the new structure.

Commented [SD4]: Source: G4 IM pp. 106, 135

Commented [SD5]: Type of change: Change in location
Source: G4 IM p. 135

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164 **2. Topic-specific disclosures**

165 **Direct (Scope I) GHG emissions**

166 **Guidance**

167 Direct (Scope I) GHG emissions can come from the following sources owned or controlled by the
168 reporting organization:

- 169 • Generation of electricity, heating, cooling and steam. These emissions result from combustion of fuels
170 in stationary sources, such as boilers, furnaces, and turbines – and from other combustion processes
171 such as flaring;
- 172 • Physical or chemical processing. Most of these emissions result from the manufacturing or processing
173 of chemicals and materials, such as cement, steel, aluminum, ammonia, and waste processing;
- 174 • Transportation of materials, products, waste, workers, and passengers. These emissions result from
175 the combustion of fuels in mobile combustion sources owned or controlled by the organization, such
176 as trucks, trains, ships, airplanes, buses, and cars; and/or
- 177 • Fugitive emissions. These are emissions that are not physically controlled but result from intentional
178 or unintentional releases of GHGs. These can include equipment leaks from joints, seals, packing, and
179 gaskets; methane emissions (for example, from coal mines) and venting; HFC emissions from
180 refrigeration and air conditioning equipment; and methane leakages (for example, from gas transport).

181 Further details and guidance are available in the 'GHG Protocol Corporate Standard'. See also references
182 2, 3, 4, 14, 15 and 20 in the References section.

183 **Reporting requirements**

184 2.1 The reporting organization shall report the following information for Disclosure 505-1:

Disclosure 505-1
<p>a. Gross direct (Scope I) GHG emissions in metric tons of CO₂ equivalent.</p> <p>b. Gases included in the calculation; whether CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃, or all.</p> <p>c. Biogenic CO₂ emissions in metric tons of CO₂ equivalent.</p> <p>d. Base year for the calculation, if applicable, including:</p> <ul style="list-style-type: none"> i. the rationale for choosing it; ii. emissions in the base year; and iii. the context for any significant changes in emissions that triggered recalculations of base year emissions. <p>e. Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source.</p> <p>f. Consolidation approach for emissions; whether equity share, financial control, or operational control.</p> <p>g. Standards, methodologies, assumptions, and calculation tools used.</p>

Commented [SD6]: Source: G4 IM pp. 107-108

Commented [SD7]: Type of change: Employee/ worker review
Original wording: employees

Commented [SD8]: Source: G4 RPSD p. 57

Commented [SD9]: Type of change: Change in instructive verb
Original wording: Organizations are expected to report standards, methodologies, and assumptions used to calculate and measure emissions, with a reference to the calculation tools used.
Source: G4 IM p. 108

185 2.2 When compiling the information specified in Disclosure 505-I, the reporting organization
 186 shall:

187 2.2.1 **exclude** any GHG trades from the calculation of gross direct (Scope I) GHG
 188 emissions; and

189 2.2.2 **report** biogenic emissions of CO₂ from the combustion or biodegradation of
 190 biomass separately from the gross direct (Scope I) GHG emissions. **Exclude**
 191 biogenic emissions of other types of GHG (such as CH₄ and N₂O), and biogenic
 192 emissions of CO₂ that occur in the life cycle of biomass other than from
 193 combustion or biodegradation (such as GHG emissions from processing or
 194 transporting biomass).

Commented [SD10]: Type of change: Change in instructive verb
Original wording:
Exclude any GHG trades
 Source: G4 IM p. 108

Commented [SD11]: Type of change: Change in instructive verb
Original wording:
 Organizations may report biogenic CO₂ emissions; however, such emissions **are reported** separately ...
 Source: G4 IM p. 108

Commented [SD12]: Type of change: Change in instructive verb
Original wording:
 Organizations may report biogenic CO₂ emissions; however, such emissions **are reported** separately...
 Source: G4 IM p. 108

Commented [SD13]: Source: G4 IM pp. 107-108

195 **Guidance 2.1 and 2.2**

196 Direct (Scope I) GHG emissions include, but are not limited to, the CO₂ emissions from the fuel
 197 consumption as specified in Disclosure 502-I of SRS 502: Energy.

198 GHG trades can include purchases, sales, or transfers of offsets or allowances.

199 Methodologies used to calculate the direct (Scope I) GHG emissions can include:

- 200 • direct measurements of the material consumed to create energy (such as coal or gas, or losses from
 201 cooling systems calculated via amounts refilled) converted to GHG emissions in metric tons of CO₂
 202 equivalent;
- 203 • mass balance calculations;
- 204 • calculations based on site-specific data, such as for fuel composition analysis;
- 205 • calculations based on published criteria, such as emission factors and GWP rates;
- 206 • direct measurements of GHG emissions, such as continuous online analyzers; and
- 207 • estimations. If estimations are used due to a lack of default figures, the reporting organization needs
 208 to indicate the basis and assumptions on which figures were estimated.

209 For recalculations of prior year emissions, the organization can follow the approach in the 'GHG Protocol
 210 Corporate Standard'.

211 The chosen emission factors can originate from mandatory reporting requirements, voluntary reporting
 212 frameworks, or industry groups.

213 Estimates of GWP rates change over time as scientific research develops. GWP rates from the *Second*
 214 *Assessment Report* of the Intergovernmental Panel on Climate Change (IPCC) are used as the basis for
 215 international negotiations under the 'Kyoto Protocol'. Thus, such rates can be used for disclosing GHG
 216 emissions where it does not conflict with national or regional reporting requirements. The organization
 217 can also use the latest GWP rates from the most recent IPCC assessment report.

218 The organization can combine Disclosure 505-I with Disclosures 505-2 (energy indirect/Scope 2 GHG
 219 emissions) and 505-3 (other indirect/Scope 3 GHG emissions) to disclose total GHG emissions.

220 **Reporting recommendations**

221 2.3 When compiling the information specified in Disclosure 505-I, the reporting organization
 222 should:

223 2.3.1 **apply** emission factors and GWP rates consistently for the data disclosed;

Commented [SD14]: Type of change: Change in instructive verb
Original wording:
 When possible, organizations **apply** emission factors and GWP rates consistently ...
 Source: G4 IM p. 108

- 224 2.3.2 use the GWP rates from the IPCC assessment reports based on a 100-year
- 225 timeframe;
- 226 2.3.3 select a consistent approach for consolidating direct (Scope 1) and energy
- 227 indirect (Scope 2) GHG emissions, choosing from the equity share, financial
- 228 control, or operational control methods outlined in the 'GHG Protocol
- 229 Corporate Standard';
- 230 2.3.4 describe its approach to selecting the standards and methodologies used, if it is
- 231 subject to different ones; and,
- 232 2.3.5 where it aids transparency or comparability over time, provide a breakdown of
- 233 the direct (Scope 1) GHG emissions by:
- 234 2.3.5.1 business unit or facility;
- 235 2.3.5.2 country;
- 236 2.3.5.3 type of source (stationary combustion, process, fugitive); and/or
- 237 2.3.5.4 type of activity.

Commented [SD15]: Type of change: Change in instructive verb
 Original wording:
 Organizations use the factors for the 100-year time span.
 Source: G4 IM p. 108

Commented [SD16]: Type of change: Change in instructive verb
 Original wording:
 Select a consistent consolidation approach for emissions ...Organizations select the equity share, financial control, or operational control methods
 Source: G4 IM p. 108

Commented [SD17]: Type of change: Change in instructive verb
 Original wording:
 Organizations may further disaggregate direct (Scope 1) GHG emissions data where this aids transparency or comparability over time.
 Source: G4 IM p. 108

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238 **Energy indirect (Scope 2) GHG emissions**

239 **Guidance**
 240 Energy indirect (Scope 2) GHG emissions include, but are not limited to, the CO₂ emissions from the
 241 generation of purchased or acquired electricity, heating, cooling, and steam consumed by the reporting
 242 organization – disclosed as specified in Disclosure 502-1 of SRS 502: Energy. For many organizations, the
 243 energy indirect (Scope 2) GHG emissions that result from the generation of purchased electricity can be
 244 much greater than their direct (Scope 1) GHG emissions.

245 Further details and guidance are available in the ‘GHG Protocol Corporate Standard’. Details on the
 246 location-based and market-based methods are available in the WRI and WBCSD ‘GHG Protocol Scope 2
 247 Guidance. An amendment to the GHG Protocol Corporate Standard’ (‘GHG Protocol Scope 2
 248 Guidance’). See also references 2, 3, 4, 14, 15, and 19 in the References section.

249 **Reporting requirements**

250 2.4 The reporting organization shall report the following information for Disclosure 505-2:

Disclosure 505-2	
a.	Gross location-based energy indirect (Scope 2) GHG emissions in metric tons of CO ₂ equivalent.
b.	If applicable, gross market-based energy indirect (Scope 2) GHG emissions in metric tons of CO ₂ equivalent.
c.	Gases included in the calculation; whether CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , NF ₃ , or all.
d.	Base year for the calculation, if applicable, including: <ul style="list-style-type: none"> i. the rationale for choosing it; ii. emissions in the base year; and iii. the context for any significant changes in emissions that triggered recalculations of base year emissions.
e.	Source of the emission factors and the GWP rates used, or a reference to the GWP source.
f.	Consolidation approach for emissions; whether equity share, financial control, or operational control.
g.	Standards, methodologies, assumptions, and calculation tools used.

251 2.5 When compiling the information specified in Disclosure 505-2, the reporting organization
 252 shall:

253 2.5.1 **exclude** any GHG trades from the calculation of gross energy indirect (Scope 2)
 254 GHG emissions;

255 2.5.2 **exclude** other indirect (Scope 3) GHG emissions that are disclosed as specified
 256 in Disclosure 505-3;

Commented [SD18]: Source: G4 IM pp. 110-111

Commented [SD19]: Type of change: Other (content update)
 Source: GHG Protocol Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard.

Commented [SD20]: Source: G4 RPSD p. 58

Commented [SD21]: Type of change: Other (content update)
 Source: GHG Protocol Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard.

Commented [SD22]: Type of change: Change in instructive verb
Original wording:
 Organizations **are expected to report** standards, methodologies, and assumptions
 Source: G4 IM p. 110

Commented [SD23]: Type of change: Change in instructive verb
Original wording:
Exclude any GHG trades, such as purchases, sales, or transfers of offsets or allowances.
 Source: G4 IM p. 110

Commented [SD24]: Type of change: Change in instructive verb
Original wording:
Exclude other indirect (Scope 3) emissions...
 Source: G4 IM p. 110

257 2.5.3 account and report energy indirect (Scope 2) GHG emissions based on the
 258 location-based method, if it has operations in markets without product or
 259 supplier-specific data; and

Commented [SD25]: Type of change: Other (content update)
 Source: GHG Protocol Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard.

260 2.5.4 account and report energy indirect (Scope 2) GHG emissions based on both the
 261 location-based and market-based methods, if it has operations in markets
 262 providing product or supplier-specific data in the form of contractual
 263 instruments.

Commented [SD26]: Type of change: Other (content update)
 Source: GHG Protocol Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard.

264 **Guidance 2.4 and 2.5**

Commented [SD27]: Source: G4 IM pp. 110-111

265 A location-based method reflects the average GHG emissions intensity of grids on which energy
 266 consumption occurs, using mostly grid-average emission factor data. A market-based method reflects
 267 emissions from electricity that the reporting organization has purposefully chosen (or its lack of choice). It
 268 derives emission factors from contractual instruments, which include any type of contract between two
 269 parties for the sale and purchase of energy bundled with attributes about the energy generation, or for
 270 unbundled attribute claims.

271 The market-based method calculation also includes the use of a residual mix, if organizations do not have
 272 specified emissions-intensity from their contractual instruments. This helps prevent double counting
 273 between consumers' market-based method figures. If a residual mix is unavailable, organizations can
 274 disclose this and use grid-average emission factors as a proxy (which can mean that the location-based and
 275 market-based are the same number until information on the residual mix is available).

276 Organizations can apply the GHG Protocol Scope 2 Quality Criteria to ensure that contractual
 277 instruments convey GHG emission rate claims and to prevent double counting.

Commented [SD28]: Type of change: Other (content update)
 Source: GHG Protocol Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard.

278 GHG trades can include purchases, sales, or transfers of offsets or allowances.

279 For recalculations of prior year emissions, the organization can follow the approach in the 'GHG Protocol
 280 Corporate Standard'.

281 The chosen emission factors can originate from mandatory reporting requirements, voluntary reporting
 282 frameworks, or industry groups.

283 Estimates of GWP rates change over time as scientific research develops. GWP rates from the *Second*
 284 *Assessment Report* of the IPCC are used as the basis for international negotiations under the 'Kyoto
 285 Protocol'. Thus, such rates can be used for disclosing GHG emissions where it does not conflict with
 286 national or regional reporting requirements. The organization can also use the latest GWP rates from the
 287 most recent IPCC assessment report.

288 The organization can combine Disclosure 505-2 with Disclosures 505-1 (direct/Scope 1 GHG emissions)
 289 and 505-3 (other indirect/Scope 3 GHG emissions) to disclose total GHG emissions.

290 **Reporting recommendations**

291 2.6 When compiling the information specified in Disclosure 505-2, the reporting organization
 292 should:

Commented [SD29]: Type of change: Change in instructive verb
Original wording:
 When possible, organizations **apply** emission factors and GWP rates consistently ...
 Source: G4 IM p. 111

293 2.6.1 **apply** emission factors and GWP rates consistently for the data disclosed;

Commented [SD30]: Type of change: Change in instructive verb
Original wording:
 Organizations **use** the factors
 Source: G4 IM p. 111

294 2.6.2 **use** the GWP rates from the IPCC assessment reports based on a 100-year
 295 timeframe;

296 2.6.3 **select** a consistent approach for consolidating direct (Scope 1) and energy
 297 indirect (Scope 2) GHG emissions, choosing from the equity share, financial
 298 control, or operational control methods outlined in the 'GHG Protocol
 299 Corporate Standard';

Commented [SD31]: Type of change: Change in instructive verb
Original wording:
Select a consistent consolidation approach ... Organizations **may select** the equity share, financial control, or operational control methods ...
 Source: G4 IM p. 110

- 300 2.6.4 describe its approach to selecting the standards and methodologies used, if it is
- 301 subject to different ones; and,
- 302 2.6.5 where it aids transparency or comparability over time, **provide** a breakdown of
- 303 the energy indirect (Scope 2) GHG emissions by:
- 304 2.6.5.1 business unit or facility;
- 305 2.6.5.2 country;
- 306 2.6.5.3 type of source (electricity, heating, cooling, and steam); and/or
- 307 2.6.5.4 type of activity.

Commented [SD32]: Type of change: Change in instructive verb
Original wording:
Organizations **may** further disaggregate energy indirect (Scope 2) GHG emissions data ...
Source: G4 IM p. 111

Exposure draft for comment only

308 **Other indirect (Scope 3) GHG emissions**

309 **Guidance**

310 Other indirect (Scope 3) GHG emissions are a consequence of the reporting organization’s activities, but
 311 occur from sources not owned or controlled by the organization. Other indirect (Scope 3) GHG
 312 emissions include both upstream and downstream emissions. Some examples of Scope 3 activities include
 313 extracting and producing purchased materials; transporting purchased fuels in vehicles not owned or
 314 controlled by the organization; and the end use of products and services.

315 Other indirect emissions can also come from the decomposing of the organization’s waste. Process-
 316 related emissions during the manufacture of purchased goods and fugitive emissions in facilities not owned
 317 by the organization can also produce indirect emissions.

318 For some organizations, GHG emissions that result from energy consumption outside of the organization
 319 can be much greater than their direct (Scope 1) or energy indirect (Scope 2) GHG emissions.

320 Further details and guidance are available in the ‘GHG Protocol Corporate Value Chain Standard’. See
 321 also references 1, 2, 3, 4, 14, 16, 18 and 20 in the References section.

322 **Reporting requirements**

323 2.7 The reporting organization shall report the following information for Disclosure 505-3:

Disclosure 505-3	
a.	Other indirect (Scope 3) GHG emissions in metric tons of CO ₂ equivalent.
b.	Gases included in the calculation; whether CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , NF ₃ , or all.
c.	Biogenic CO ₂ emissions in metric tons of CO ₂ equivalent.
d.	Other indirect (Scope 3) GHG emissions categories and activities included in the calculation.
e.	Base year for the calculation, if applicable, including: <ul style="list-style-type: none"> i. the rationale for choosing it; ii. emissions in the base year; and iii. the context for any significant changes in emissions that triggered recalculations of base year emissions.
f.	Source of the emission factors and the GWP rates used, or a reference to the GWP source.
g.	Standards, methodologies, assumptions, and calculation tools used.

324 2.8 When compiling the information specified in Disclosure 505-3, the reporting organization
 325 shall:

326 2.8.1 **exclude** any GHG trades from the calculation of gross other indirect (Scope 3)
 327 GHG emissions;

328 2.8.2 **exclude** energy indirect (Scope 2) GHG emissions from this disclosure. Energy
 329 indirect (Scope 2) GHG emissions are disclosed as specified in Disclosure 505-2;
 330 and

Commented [SD33]: Source: G4 IM pp. 112-114

Commented [SD34]: Source: G4 RPSD p. 58

Commented [SD35]: Type of change: Change in instructive verb
 Original wording: Organizations **are expected to report** standards, methodologies, and assumptions used ...
 Source: G4 IM p. 113

Commented [SD36]: Type of change: Change in instructive verb
 Original wording: **Exclude** any GHG trades, such as purchases, sales, or transfers of offsets or allowances.
 Source: G4 IM p. 112

Commented [SD37]: Type of change: Change in instructive verb
 Original wording: **Report** gross other indirect (Scope 3) GHG emissions in metric tons of CO₂ equivalent ...
 Source: G4 IM p. 112

331 2.8.3 report biogenic emissions of CO₂ from the combustion or biodegradation of
 332 biomass that occur in its value chain separately from the gross other indirect
 333 (Scope 3) GHG emissions. Exclude biogenic emissions of other types of GHG
 334 (such as CH₄ and N₂O), and biogenic emissions of CO₂ that occur in the life
 335 cycle of biomass other than from combustion or biodegradation (such as GHG
 336 emissions from processing or transporting biomass).

Commented [SD38]: Type of change: Change in instructive verb
 Original wording:
 Organizations may report biogenic CO₂ emissions; however, such emissions are expected to be reported separately ...
 Source: G4 IM p. 113

Commented [SD39]: Type of change: Change in instructive verb
 Original wording:
 Such emissions are expected to be reported separately
 Source: G4 IM p. 113

337 **Reporting recommendations**

338 2.9 When compiling the information specified in Disclosure 505-3, the reporting organization
 339 should:

340 2.9.1 apply emission factors and GWP rates consistently for the data disclosed;

Commented [SD40]: Type of change: Change in instructive verb
 Original wording:
 Where possible, organizations are expected to apply emission factors and GWP rates consistently
 Source: G4 IM p. 113

341 2.9.2 use the GWP rates from the IPCC assessment reports based on a 100-year
 342 timeframe;

343 2.9.3 describe its approach to selecting the standards and methodologies used, if it is
 344 subject to different ones;

345 2.9.4 list other indirect (Scope 3) GHG emissions, with a breakdown by upstream and
 346 downstream categories and activities; and,

Commented [SD41]: Type of change: Change in instructive verb
 Original wording:
 organizations may disaggregate data by the following categories and activities:
 Source: G4 IM p. 113

347 2.9.5 where it aids transparency or comparability over time, provide a breakdown of
 348 the other indirect (Scope 3) GHG emissions by:

Commented [SD42]: Type of change: Change in instructive verb
 Original wording:
 Organizations may further disaggregate other indirect (Scope 3) emissions data ...
 Source: G4 IM p. 113

349 2.9.5.1 business unit or facility;

350 2.9.5.2 country;

351 2.9.5.3 type of source; and/or

352 2.9.5.4 type of activity.

353 **Guidance 2.7, 2.8 and 2.9**

Commented [SD43]: Source: G4 IM pp. 112-114

354 The reporting organization can identify other indirect (Scope 3) GHG emissions by assessing which of its
 355 activities' emissions:

- 356 • contribute significantly to the organization's total anticipated other indirect (Scope 3) GHG emissions;
- 357 • offer potential for reductions the organization can undertake or influence;
- 358 • contribute to climate change-related risks, such as financial, regulatory, supply chain, product and
 359 customer, litigation, and reputational risks;
- 360 • are deemed material by stakeholders, such as customers, suppliers, investors, or civil society;
- 361 • result from outsourced activities previously performed in-house, or that are typically performed in-
 362 house by other organizations in the same sector;
- 363 • have been identified as significant for the organization's sector; and/or
- 364 • meet any additional criteria for determining relevance, developed by the organization or by
 365 organizations in its sector.

366 The organization can combine Disclosure 505-3 with Disclosures 505-1 (direct/Scope 1 GHG emissions)
 367 and 505-2 (energy indirect/Scope 2 GHG emissions) to disclose total GHG emissions.

368 GHG trades can include purchases, sales, or transfers of offsets or allowances.

369 For recalculations of prior year emissions, the organization can follow the approach in the 'GHG Protocol
370 Corporate Value Chain Standard'.

371 The chosen emission factors can originate from mandatory reporting requirements, voluntary reporting
372 frameworks, or industry groups.

373 Estimates of GWP rates change over time as scientific research develops. GWP rates from the *Second*
374 *Assessment Report* of the IPCC are used as the basis for international negotiations under the 'Kyoto
375 Protocol'. Thus, such rates can be used for disclosing GHG emissions where it does not conflict with
376 national or regional reporting requirements. The organization can also use the latest GWP rates from the
377 most recent IPCC assessment report.

378 The organization can use the upstream and downstream emissions categories and activities from the
379 'GHG Protocol Corporate Value Chain Standard':

380 **Upstream categories**

- 381 1. Purchased goods and services
- 382 2. Capital goods
- 383 3. Fuel- and energy-related activities (not included in Scope 1 or Scope 2)
- 384 4. Upstream transportation and distribution
- 385 5. Waste generated in operations
- 386 6. Business travel
- 387 7. Employee commuting
- 388 8. Upstream leased assets
- 389 Other upstream

390 **Downstream categories**

- 391 9. Transportation and distribution of sold products
- 392 10. Processing of sold products
- 393 11. Use of sold products
- 394 12. End-of-life treatment of sold products
- 395 13. Downstream leased assets
- 396 14. Franchises
- 397 15. Investments
- 398 Other downstream

399 For each of these categories and activities, the organization can provide a figure in CO₂ equivalent or
400 explain why certain data are not included.

401 **GHG emissions intensity**

402 **Guidance**

403 Intensity ratios define GHG emissions in the context of an organization-specific metric.
 404 GHG emissions intensity expresses the amount of GHG emissions per unit of activity, output, or any
 405 other organization-specific metric. Many organizations track environmental performance with intensity
 406 ratios. Intensity ratios are often called normalized environmental impact data.
 407 In combination with the reporting organization's absolute GHG emissions, reported in Disclosures 505-1,
 408 505-2, and 505-3, GHG emissions intensity helps to contextualize the organization's efficiency, including in
 409 relation to other organizations.
 410 See references 2, 15 and 20 in the References section.

Commented [SD44]: Source: G4 IM p. 115

411 **Reporting requirements**

412 2.10 The reporting organization shall report the following information for Disclosure 505-4:

Commented [SD45]: Source: G4 RPSD p. 58

Disclosure 505-4
a. GHG emissions intensity ratio for the reporting organization. b. Organization-specific metric (the denominator) chosen to calculate the ratio. c. Types of GHG emission included in the intensity ratio; whether direct (Scope 1), energy indirect (Scope 2), or other indirect (Scope 3). d. Gases included in the calculation; whether CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , NF ₃ , or all.

413 2.11 When compiling the information specified in Disclosure 505-4, the reporting organization
 414 shall:

415 2.11.1 calculate the ratio by dividing the absolute GHG emissions (the numerator) by
 416 the organization-specific metric (the denominator); and,

Commented [SD46]: Type of change: Change in instructive verb
 Original wording:
 Intensity is calculated by dividing the absolute emissions ...
 Source: G4 IM p. 115

417 2.11.2 if reporting an intensity ratio for other indirect (Scope 3) GHG emissions,
 418 report this intensity ratio separately from the intensity ratios for direct (Scope
 419 1) and energy indirect (Scope 2) emissions.

Commented [SD47]: Type of change: Change in instructive verb
 Original wording:
 Organizations may report the other indirect (Scope 3) GHG emissions intensity ratio with this Indicator; however, this ratio is expected to be presented separately
 Source: G4 IM p. 115

420 **Guidance 2.10 and 2.11**

421 Intensity ratios can be provided for, among others:

- 422 • products (such as metric tons of CO₂ emissions per unit produced);
- 423 • services (such as metric tons of CO₂ emissions per function or per service); and
- 424 • sales (such as metric tons of CO₂ emissions per sales).

425 Organization-specific metrics (denominators) can include:

- 426 • units of product;
- 427 • production volume (such as metric tons, liters, MWh);
- 428 • size (such as m² floor space);

Commented [SD48]: Source: G4 IM p. 115

- 429 • number of full-time employees; and
 - 430 • monetary units (such as revenue, sales).
- 431 The reporting organization can report an intensity ratio for direct (Scope 1) and energy indirect (Scope 2)
- 432 GHG emissions combined, using the figures reported in Disclosures 505-1 and 505-2.
- 433 The organization can report the other indirect (Scope 3) GHG emissions intensity ratio with this
- 434 disclosure. However, this ratio is expected to be presented separately, and not combined with the direct
- 435 (Scope 1) and energy indirect (Scope 2) intensity ratios.

436 **Reporting recommendations**

- 437 2.12 When compiling the information specified in Disclosure 505-4, the reporting organization
- 438 should, where it aids transparency or comparability over time, provide a breakdown of
- 439 the GHG emissions intensity ratio by:
- 440 2.12.1 business unit or facility;
 - 441 2.12.2 country;
 - 442 2.12.3 type of source; and/or
 - 443 2.12.4 type of activity.

Commented [SD49]: Type of change: Change in instructive verb
 Original wording:
 Organizations may report several GHG emissions intensity ratios ...
 Source: G4 IM p. 115

Exposure draft for comment only

444 **Reduction of GHG emissions**

445 **Reporting requirements**

446 2.13 The reporting organization shall report the following information for Disclosure 505-5:

Commented [SD50]: Source: G4 RPSD p. 59

Disclosure 505-5	
a.	GHG emissions reduced as a direct result of reduction initiatives, in metric tons of CO ₂ equivalent.
b.	Gases included in the calculation; whether CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , NF ₃ , or all.
c.	Base year or baseline, including the rationale for choosing it.
d.	Scopes in which reductions took place; whether direct (Scope 1), energy indirect (Scope 2), or other indirect (Scope 3).
e.	Standards, methodologies, assumptions, and calculation tools used.

447 2.14 When compiling the information specified in Disclosure 505-5, the reporting organization shall:

Commented [SD51]: Type of change: Change in instructive verb
 Original wording: Organizations **are expected to report** standards, methodologies, and assumptions used ...
 Source: G4 IM p. 116

448 2.14.1 **exclude** reductions resulting from reduced production capacity or outsourcing;

Commented [SD52]: Type of change: Change in instructive verb
 Original wording: Reductions in emissions that result from reduced production capacity or outsourcing **are not included**
 Source: G4 IM p. 116

449 2.14.2 **use** the inventory or project method to account for reductions;

450 2.14.3 **calculate** an initiative's total reductions of GHG emissions as the sum of its associated primary effects and any significant secondary effects;

Commented [SD53]: Type of change: Change in instructive verb
 Original wording: Organizations **may choose to use** either ...
 Source: G4 IM p. 116

451 2.14.4 if reporting two or more Scope types, **report** the reductions for each separately;
 452 and

453 2.14.5 **report** reductions from offsets separately.

Commented [SD54]: Type of change: Change in instructive verb
 Original wording: An initiative's total GHG reductions **are quantified** as the sum of its associated primary effect(s) ...
 Source: G4 IM p. 248

456 **Guidance 2.13 and 2.14**

457 The reporting organization can prioritize disclosing reduction initiatives implemented in the reporting period, and that have the potential to contribute significantly to reductions. Reduction initiatives and their targets can be described in the management approach for this topic.

458

459

460 Reduction initiatives can include:

- 461 • process redesign;
- 462 • conversion and retrofitting of equipment;
- 463 • fuel switching;
- 464 • changes in **behavior**; and
- 465 • offsets.

466 The inventory method compares reductions to a base year. The project method compares reductions to a baseline. Further details on these methods are available in the 'GHG Protocol Corporate Value Chain' and the WRI and WBCSD 'GHG Protocol for Project Accounting'.

467

468

Commented [SD55]: Type of change: Change in instructive verb
 Original wording: **Report** the GHG emissions reductions separately...
 Source: G4 IM p. 116

Commented [SD56]: Type of change: Change in instructive verb
 Original wording: Reductions from offsets **should** be reported separately from other reductions.
 Source: G4 IM p. 116

Commented [SD57]: Source: G4 IM p. 116

Commented [SD58]: Type of change: Employee/worker review
 Original wording: employee behavior

469 Primary effects are the elements or activities designed to reduce GHG emissions, such as carbon storage.
470 Secondary effects are smaller, unintended consequences of a reduction initiative, including changes to
471 production or manufacture which result in changes to GHG emissions elsewhere.

472 The organization can report reductions disaggregated by initiatives or groups of initiatives.

473 This disclosure can be used in combination with Disclosures 505-1, 505-2, and 505-3 of this Standard to
474 monitor the reduction of GHG emissions with reference to the organization's targets, or to regulations
475 and trading systems at international or national level.

476 See references 2, 14, 15, 16, 17 and 20 in the References section.

477 **Reporting recommendations**

478 2.15 When compiling the information specified in Disclosure 505-5, the reporting organization
479 should:

480 2.15.1 describe its approach to selecting the standards and methodologies used, if it is
481 subject to different ones.

Commented [SD59]: Type of change: Change in location
Source: G4 IM p. 248

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482 Emissions of ozone-depleting substances (ODS)

483 **Guidance**

484 Measuring ODS production, imports, and exports helps to indicate how the reporting organization
 485 complies with legislation. This is particularly relevant if the organization produces or uses ODS in its
 486 processes, products and services and is subject to phase-out commitments. Results on ODS phase-out
 487 help to indicate the organization’s position in any markets affected by regulation on ODS.

488 This disclosure covers the substances included in Annexes A, B, C, and E of the ‘Montreal Protocol’ as
 489 well as any other ODS produced, imported, or exported by an organization.

490 See references 3, 4, 10 and 11 in the References section.

Commented [SD60]: Source: G4 IM p. 118

491 Reporting requirements

492 2.16 The reporting organization shall report the following information for Disclosure 505-6:

Commented [SD61]: Source: G4 RPSD p. 59

Disclosure 505-6

a. ODS in metric tons of CFC-11 (trichlorofluoromethane) equivalent for each of the following:

- i. Produced
- ii. Imported
- iii. Exported

b. Substances included in the calculation.

c. Source of the emission factors used.

d. Standards, methodologies, assumptions, and calculation tools used.

Commented [SD62]: Type of change: Clarification
 Three separate figures for ODS produced, imported and exported are to be reported.
 Source: G4 RPSD p. 59

Commented [SD63]: Type of change: Change in instructive verb
 Original wording:
 Organizations are expected to report standards, methodologies, and assumptions used ...
 Source: G4 IM p. 118

493 2.17 When compiling the information specified in Disclosure 505-6, the reporting organization
 494 shall:

495 2.17.1 calculate the production of ODS as the amount of ODS produced, minus the
 496 amount destroyed by approved technologies, and minus the amount entirely
 497 used as feedstock in the manufacture of other chemicals; and

Commented [SD64]: Type of change: Change in instructive verb
 Original wording:
 Calculate the production of ODS ...
 Source: G4 IM p. 118

$$\begin{array}{r}
 \text{Production of ODS} \\
 = \\
 \text{ODS produced} \\
 - \\
 \text{ODS destroyed by approved technologies} \\
 - \\
 \text{ODS entirely used as feedstock in the manufacture of other} \\
 \text{chemicals}
 \end{array}$$

506 2.17.2 exclude ODS recycled and reused.

Commented [SD65]: Type of change: Change in instructive verb
 Original wording:
 Exclude ODS recycled and reused.
 Source: G4 IM p. 118

507 **Guidance 2.16 and 2.17**

508 The reporting organization can report separate or combined data for the substances included in the
 509 calculation.

Commented [SD66]: Source: G4 IM p. 118

510 **Reporting recommendations**

511 2.18 When compiling the information specified in Disclosure 505-6, the reporting organization
512 should:

513 2.18.1 describe its approach to selecting the standards and methodologies used, if it is
514 subject to different ones; and,

515 2.18.2 where it aids transparency or comparability over time, provide a breakdown of
516 the ODS data by:

517 2.18.2.1 business unit or facility;

518 2.18.2.2 country;

519 2.18.2.3 type of source; and/or

520 2.18.2.4 type of activity.

Commented [SD67]: Type of change: Change in instructive verb
Original wording:
Organizations **may** further disaggregate ODS data where this aids transparency or comparability over time.
Source: G4 IM p. 118

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521 Nitrogen oxides (NO_x), sulfur oxides (SO_x), and other significant air
 522 emissions

523 **Guidance**

524 See references 5, 6, 7, 8 and 12 in the References section.

525 **Reporting requirements**

526 2.19 The reporting organization shall report the following information for Disclosure 505-7:

Commented [SD68]: Source: G4 RPSD p. 59

Disclosure 505-7

- a. Significant air emissions, in kilograms or multiples, for each of the following:
 - i. NO_x
 - ii. SO_x
 - iii. Persistent organic pollutants (POP)
 - iv. Volatile organic compounds (VOC)
 - v. Hazardous air pollutants (HAP)
 - vi. Particulate matter (PM)
 - vii. Other standard categories of air emissions identified in relevant regulations
- b. Source of the emission factors used.
- c. Standards, methodologies, assumptions, and calculation tools used.

527 2.20 When compiling the information specified in Disclosure 505-7, the reporting organization
 528 shall select one of the following approaches for calculating significant air emissions:

Commented [SD69]: Type of change: Change in instructive verb
 Original wording: Organizations are expected to report standards ...
 Source: G4 IM p. 119

529 2.20.1 Direct measurement of emissions (such as online analyzers);

Commented [SD70]: Type of change: Change in instructive verb
 Original wording: indicate the methodology used ...:
 Source: G4 IM p. 119

530 2.20.2 Calculation based on site-specific data;

531 2.20.3 Calculation based on published emission factors; or

532 2.20.4 Estimation. If estimations are used due to a lack of default figures, the
 533 organization shall indicate the basis on which figures were estimated.

Commented [SD71]: Type of change: Change in instructive verb
 Original wording: (if estimations are used due to a lack of default figures, indicate the basis on which figures were estimated)
 Source: G4 IM p. 119

534 **Reporting recommendations**

535 2.21 When compiling the information specified in Disclosure 505-7, the reporting organization
 536 should:

537 2.21.1 describe its approach to selecting the standards and methodologies used, if it is
 538 subject to different ones; and,

539 2.21.2 where it aids transparency or comparability over time, provide a breakdown of
 540 the air emissions data by:

Commented [SD72]: Type of change: Change in instructive verb
 Original wording: Organizations may further disaggregate air emissions data...
 Source: G4 IM p. 119

541 2.21.2.1 business unit or facility;

- 542 2.21.2.2 country;
- 543 2.21.2.3 type of source; and/or
- 544 2.21.2.4 type of activity.

Exposure draft for comment only

545

References

546 The following documents informed the development of this Standard and can improve
547 understanding of this Standard.

548 **Authoritative intergovernmental instruments:**

- 549 1. Intergovernmental Panel on Climate Change (IPCC), *Climate Change 1995: The Science of*
550 *Climate Change, Contribution of Working Group I to the Second Assessment Report of the*
551 *Intergovernmental Panel on Climate Change*, 1995.
- 552 2. Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical*
553 *Science Basis, Contribution of Working Group I to the Fourth Assessment Report of the*
554 *Intergovernmental Panel on Climate Change*, 2007.
- 555 3. United Nations Economic Commission for Europe (UNECE) Convention, 'Geneva
556 Protocol concerning the Control of Emissions of Volatile Organic Compounds or their
557 Transboundary Fluxes', 1991.
- 558 4. United Nations Economic Commission for Europe (UNECE) Convention, 'Gothenburg
559 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone', 1999.
- 560 5. United Nations Economic Commission for Europe (UNECE) Convention, 'Helsinki
561 Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes', 1985.
- 562 6. United Nations Economic Commission for Europe (UNECE) Convention, 'Sofia Protocol
563 concerning the Control of Emissions of Nitrogen Oxides or their Transboundary
564 Fluxes', 1988.
- 565 7. United Nations Environment Programme (UNEP) and World Meteorological
566 Organization (WMO), *Integrated Assessment of Black Carbon and Tropospheric Ozone*,
567 2011.
- 568 8. United Nations Environment Programme (UNEP), 'Montreal Protocol on Substances
569 that Deplete the Ozone Layer', 1987.
- 570 9. United Nations Environment Programme (UNEP), *Standards and Codes of Practice to*
571 *Eliminate Dependency on Halons - Handbook of Good Practices in the Halon Sector*, 2001.
- 572 10. United Nations Environment Programme (UNEP) Convention, 'Stockholm Convention
573 on Persistent Organic Pollutants (POPs)', Annex A, B, and C, 2009.
- 574 11. United Nations (UN) Framework Convention, 'United Nations Framework Convention
575 on Climate Change', 1992.
- 576 12. United Nations (UN) Protocol, 'Kyoto Protocol to the United Nations Framework
577 Convention on Climate Change', 1997.

578 **Other relevant references:**

- 579 13. Carbon Disclosure Project (CDP), *Investor CDP Information Request*, updated annually.

- 580 14. World Resources Institute (WRI) and World Business Council for Sustainable
581 Development (WBCSD), 'GHG Protocol Corporate Accounting and Reporting
582 Standard', Revised Edition, 2004.
- 583 15. World Resources Institute (WRI) and World Business Council for Sustainable
584 Development (WBCSD), 'GHG Protocol Corporate Value Chain (Scope 3) Accounting
585 and Reporting Standard', 2011.
- 586 16. World Resources Institute (WRI) and World Business Council for Sustainable
587 Development (WBCSD), 'GHG Protocol for Project Accounting', 2005.
- 588 17. World Resources Institute (WRI) and World Business Council for Sustainable
589 Development (WBCSD), 'GHG Protocol Product Life Cycle Accounting and Reporting
590 Standard', 2011.
- 591 18. World Resources Institute (WRI) and World Business Council for Sustainable
592 Development (WBCSD), 'GHG Protocol Scope 2 Guidance. An amendment to the
593 GHG Protocol Corporate Standard', 2015.
- 594 19. World Resources Institute (WRI) and World Business Council for Sustainable
595 Development (WBCSD), 'Greenhouse Gas Protocol Accounting Notes, No. 1,
596 Accounting and Reporting Standard Amendment', 2012.

Commented [SD74]:

Type of change: Other (updated content)
Source: GHG Protocol Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard.

597 Annex I. Summary of key changes for SRS 505: Emissions

598 This Annex summarizes the key changes found in *SRS 505: Emissions*. The following types of change might apply to this Standard:

- 599 • Change in location
- 600 • Clarification – changes or additions to text to improve clarity
- 601 • Employee/worker terminology revision
- 602 • Changes to instructive verbs – to clarify the intent of guidance text that comes from the G4 Implementation Manual
- 603 • Deleted text – the text is duplicated, unnecessary or obsolete
- 604 • Other

605 These types of change are listed in the tables below and highlighted within comment boxes throughout this Standard. Minor editorial changes are not
606 indicated.

607 A detailed overview of changes applied globally throughout the GRI Standards is available [here](#).

608 The content sourced from the G4 Guidelines can be identified using the following legend:

609 Legend

610 G4 RPSD = Text has been sourced from the [G4 Guidelines – Reporting Principles and Standard Disclosures](#)

611 G4 IM = Text has been sourced from the [G4 Guidelines – Implementation Manual](#)

Changes in location, clarifications, employee/worker terminology, and other				
SRS clause number	SRS section	Type of change	Description or rationale	Source of original G4 text
N/A	Introduction G	Clarification	Clarifying topic descriptions.	G4 RPSD p. 57 G4 IM pp. 105, 107, 110, 112, 116, 118, 119, 252
Guidance 1.1 and 1.2	Management approach disclosures	Clarification	Guidance added to explain the new structure.	N/A
Guidance 1.1 and 1.2	Management approach disclosures	Change in location	Relevant content from Indicator G4-EN31 (Overall Aspect) has been incorporated into this draft Standard as guidance. The Overall Aspect of G4 is proposed to be discontinued and its content relocated to relevant GRI Standards.	G4 IM p. 135
Guidance	Direct (Scope 1) GHG emissions	Employee/worker terminology revision	'employee' changed to 'worker'.	G4 IM p. 107
Guidance 2.4 2.5.3 2.5.4 Guidance 2.4 and 2.5	Energy indirect (Scope 2) GHG emissions References	Other	Content update. The reporting requirements and Guidance for Energy indirect (Scope 2) GHG emissions have been updated to align with changes to the GHG Protocol Scope 2 Guidance, published in January 2015. The updated Scope 2 Guidance asks organizations to provide two distinct Scope 2 values: a location-based and a market-based value. These are calculated with different emissions	N/A

Changes in location, clarifications, employee/worker terminology, and other				
SRS clause number	SRS section	Type of change	Description or rationale	Source of original G4 text
			factors that vary according to how the organization obtained the energy associated with those emissions. Source: GHG Protocol Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard.	
Guidance 2.13 and 2.14	Reduction of GHG emissions	Employee/worker terminology revision	Reference to 'employee' deleted.	G4 IM p. 116
Guidance 2.13 and 2.14	Reduction of GHG emissions	Change in location	The following guidance is based on the definition of GHG reductions from G4: Primary effects are the elements or activities designed to reduce GHG emissions, such as carbon storage. Secondary effects are smaller, unintended consequences of a reduction initiative, including changes to production or manufacture which result in changes to GHG emissions elsewhere.	G4 IM p. 248
2.16	Emissions of ozone-depleting substances (ODS)	Clarification	Three separate figures for ODS produced, imported and exported are to be reported.	G4 RPSD p. 59

Changes to instructive verbs				
To clarify the intent of guidance text that comes from the G4 Implementation Manual				
SRS clause number	SRS section	SRS wording	Original G4 text	Source of original G4 text
1.2	Management approach disclosures	When reporting on GHG emissions targets, the reporting organization shall explain whether offsets were used to meet the targets, including the type, amount, criteria or scheme of which the offsets are part.	In addition to using the DMA Guidance for reporting on targets, when reporting on GHG emissions targets, identify whether offsets are used to meet the target. Specify the type, amount, criteria or scheme of which they are part.	G4 IM p. 106
2.1, 2.4, 2.7, 2.13, 2.16, 2.19	Direct (Scope 1) GHG emissions [and other sections as indicated by clause numbers]	The reporting organization shall report: standards, methodologies, assumptions, and calculation tools used.	Organizations are expected to report standards, methodologies, and assumptions used to calculate and measure emissions, with a reference to the calculation tools used.	G4 IM p. 108, 110, 113, 116, 118 and 119
2.2.1	Direct (Scope 1) GHG emissions	The reporting organization shall: exclude any GHG trades from the calculation of gross direct (Scope 1) GHG emissions;	Exclude any GHG trades, such as purchases, sales, or transfers of offsets or allowances.	G4 IM p. 108
2.5.1	Energy indirect (Scope 2) GHG emissions	The reporting organization shall: exclude any GHG trades from the calculation of gross energy indirect (Scope 2) GHG emissions;		G4 IM p. 110
2.8.1	Other indirect (Scope 3) GHG emissions	The reporting organization shall: exclude any GHG trades from the calculation of gross other indirect (Scope 3) GHG emissions;		G4 IM p. 112

Changes to instructive verbs				
To clarify the intent of guidance text that comes from the G4 Implementation Manual				
SRS clause number	SRS section	SRS wording	Original G4 text	Source of original G4 text
2.2.2	Direct (Scope 1) GHG emissions	The reporting organization shall: report biogenic emissions of CO ₂ from the combustion or biodegradation of biomass separately from the gross direct (Scope 1) GHG emissions.	Organizations may report biogenic CO ₂ emissions; however, such emissions are reported separately and not added to the total direct (Scope 1) GHG emissions.	G4 IM p. 108
2.8.3	Other indirect (Scope 3) GHG emissions	The reporting organization shall: report biogenic emissions of CO ₂ from the combustion or biodegradation of biomass that occur in its value chain separately from the gross other indirect (Scope 3) GHG emissions.	Organizations may report biogenic CO ₂ emissions; however, such emissions are expected to be reported separately and not added to the total other indirect (Scope 3) emissions.	G4 IM p. 113
2.2.2	Direct (Scope 1) GHG emissions	The reporting organization shall: exclude biogenic emissions of other types of GHG (such as CH ₄ and N ₂ O), and biogenic emissions of CO ₂ that occur in the life cycle of biomass other than from combustion or biodegradation (such as GHG emissions from processing or transporting biomass).	Organizations may report biogenic CO ₂ emissions; however, such emissions are reported separately and not added to the total direct (Scope 1) GHG emissions. These emissions refer to CO ₂ emissions from combustion or biodegradation of biomass only, not to emissions of any other GHGs (such as CH ₄ and N ₂ O), or to any GHG emissions that occur in the life cycle of biomass other than from combustion or biodegradation (such as GHG emissions from processing or transporting biomass).	G4 IM p. 108
2.8.3	Other indirect (Scope 3) GHG emissions		Organizations may report biogenic CO ₂ emissions; however, such emissions are expected to be reported separately and not added to the total other indirect (Scope 3) emissions. These emissions refer to CO ₂ emissions from combustion or biodegradation of biomass	G4 IM p. 113

Changes to instructive verbs				
To clarify the intent of guidance text that comes from the G4 Implementation Manual				
SRS clause number	SRS section	SRS wording	Original G4 text	Source of original G4 text
			only, not to emissions of any other GHGs (such as CH ₄ and N ₂ O), or to any GHG emissions that occur in the life cycle of biomass other than from combustion or biodegradation (such as GHG emissions from processing or transporting biomass).	
2.3.1	Direct (Scope 1) GHG emissions	The reporting organization should: apply emission factors and GWP rates consistently for the data disclosed;	When possible, organizations apply emission factors and GWP rates consistently for the data reported under the Emissions Aspect.	G4 IM p. 108
2.6.1	Energy indirect (Scope 2) GHG emissions			G4 IM p. 111
2.9.1	Other indirect (Scope 3) GHG emissions		Where possible, organizations are expected to apply emission factors and GWP rates consistently for the data reported under the Emissions Aspect.	G4 IM p. 113
2.3.2	Direct (Scope 1) GHG emissions	The reporting organization should: use the GWP rates from the IPCC assessment reports based on a 100-year timeframe;	Organizations use the factors for the 100-year time span.	G4 IM p. 108
2.6.2	Energy indirect (Scope 2) GHG emissions			G4 IM p. 111

Changes to instructive verbs				
To clarify the intent of guidance text that comes from the G4 Implementation Manual				
SRS clause number	SRS section	SRS wording	Original G4 text	Source of original G4 text
2.3.3	Direct (Scope 1) GHG emissions	The reporting organization should: select a consistent approach for consolidating direct (Scope 1) and energy indirect (Scope 2) GHG emissions, choosing from the equity share, financial control, or operational control methods outlined in the 'GHG Protocol Corporate Standard';	Select a consistent consolidation approach for emissions, and apply it to calculate the gross direct (Scope 1) GHG emissions. When possible, select an approach that is consistent with the approach used in Indicator G4-EN16. Organizations select the equity share, financial control, or operational control methods outlined in the WRI and WBCSD 'GHG Protocol Corporate Accounting and Reporting Standard'.	G4 IM p. 108
2.6.3	Energy indirect (Scope 2) GHG emissions		Select a consistent consolidation approach for emissions, and apply it to calculate the gross energy indirect (Scope 2) GHG emissions. When possible, select an approach that is consistent with the approach used in Indicator G4-EN15. Organizations may select the equity share, financial control, or operational control methods outlined in the WRI and WBCSD 'GHG Protocol Corporate Accounting and Reporting Standard'.	G4 IM p. 110
2.3.5	Direct (Scope 1) GHG emissions	The reporting organization should: where it aids transparency or comparability over time, provide a breakdown of the direct (Scope 1) GHG emissions by:	Organizations may further disaggregate direct (Scope 1) GHG emissions data where this aids transparency or comparability over time.	G4 IM p. 108
2.6.5	Energy indirect (Scope 2) GHG emissions	The reporting organization should:	Organizations may further disaggregate energy indirect (Scope 2) GHG emissions data where this aids transparency or comparability over time.	G4 IM p. 111

Changes to instructive verbs				
To clarify the intent of guidance text that comes from the G4 Implementation Manual				
SRS clause number	SRS section	SRS wording	Original G4 text	Source of original G4 text
		where it aids transparency or comparability over time, provide a breakdown of the energy indirect (Scope 2) GHG emissions by:		
2.9.5	Other indirect (Scope 3) GHG emissions	The reporting organization should: where it aids transparency or comparability over time, provide a breakdown of the other indirect (Scope 3) GHG emissions by:	Organizations may further disaggregate other indirect (Scope 3) emissions data where this aids transparency or comparability over time.	G4 IM p. 113
2.12	GHG emissions intensity	The reporting organization should: where it aids transparency or comparability over time, provide a breakdown of the GHG emissions intensity ratio by:	Organizations may report several GHG emissions intensity ratios where this aids transparency or comparability.	G4 IM p. 115
2.18.2	Emissions of ozone-depleting substances (ODS)	The reporting organization should: where it aids transparency or comparability over time, provide a breakdown of the ODS data by:	Organizations may further disaggregate ODS data where this aids transparency or comparability over time.	G4 IM p. 118
2.21.2	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	The reporting organization should: where it aids transparency or comparability over time, provide a breakdown of the air emissions data by:	Organizations may further disaggregate air emissions data where this aids transparency or comparability over time.	G4 IM p. 119

Changes to instructive verbs				
To clarify the intent of guidance text that comes from the G4 Implementation Manual				
SRS clause number	SRS section	SRS wording	Original G4 text	Source of original G4 text
2.5.2	Energy indirect (Scope 2) GHG emissions	The reporting organization shall: exclude other indirect (Scope 3) GHG emissions that are disclosed as specified in Disclosure 505-3;	Exclude other indirect (Scope 3) emissions. These other indirect (Scope 3) emissions are reported in Indicator G4-EN17.	G4 IM p. 110
2.8.2	Other indirect (Scope 3) GHG emissions	The reporting organization shall: exclude energy indirect (Scope 2) GHG emissions from this disclosure. Energy indirect (Scope 2) GHG emissions are disclosed as specified in Disclosure 505-2;	Report gross other indirect (Scope 3) GHG emissions in metric tons of CO ₂ equivalent, excluding indirect emissions from the generation of purchased or acquired electricity, heating, cooling, and steam consumed by the organization (these indirect emissions are reported in Indicator G4-EN16).	G4 IM p. 112
2.9.4	Other indirect (Scope 3) GHG emissions	The reporting organization should: list other indirect (Scope 3) GHG emissions, with a breakdown by upstream and downstream categories and activities;	When reporting emissions for this Indicator, organizations may disaggregate data by the following categories and activities:	G4 IM p. 113
2.11.1	GHG emissions intensity	The reporting organization shall: calculate the ratio by dividing the absolute GHG emissions (the numerator) by the organization-specific metric (the denominator);	Intensity is calculated by dividing the absolute emissions (the numerator) by an organization-specific metric (the denominator).	G4 IM p. 115
2.11.2	GHG emissions intensity	The reporting organization shall: if reporting an intensity ratio for other indirect (Scope 3) GHG emissions, report this intensity ratio separately from the intensity ratios for direct (Scope 1) and energy indirect (Scope 2) emissions.	Organizations may report the other indirect (Scope 3) GHG emissions intensity ratio with this Indicator; however, this ratio is expected to be presented separately, and not combined with the direct (Scope 1) or energy indirect (Scope 2) intensity ratios.	G4 IM p. 115

Changes to instructive verbs				
To clarify the intent of guidance text that comes from the G4 Implementation Manual				
SRS clause number	SRS section	SRS wording	Original G4 text	Source of original G4 text
2.14.1	Reduction of GHG emissions	The reporting organization shall: exclude reductions resulting from reduced production capacity or outsourcing;	Reductions in emissions that result from reduced production capacity or outsourcing are not included in this Indicator.	G4 IM p. 116
2.14.2	Reduction of GHG emissions	The reporting organization shall: use the inventory or project method to account for reductions;	Organizations may choose to use either inventory or project method for accounting for emissions reductions.	G4 IM p. 116
2.14.3	Reduction of GHG emissions	The reporting organization shall: calculate an initiative's total reductions of GHG emissions as the sum of its associated primary effects and any significant secondary effects;	An initiative's total GHG reductions are quantified as the sum of its associated primary effect(s) and any significant secondary effects (which may involve decreases or countervailing increases in GHG emissions).	G4 IM p. 248
2.14.4	Reduction of GHG emissions	The reporting organization shall: if reporting two or more Scope types, report the reductions for each separately;	Report the GHG emissions reductions separately for direct (Scope 1), energy indirect (Scope 2), and other indirect (Scope 3) emissions.	G4 IM p. 116
2.14.5	Reduction of GHG emissions	The reporting organization shall: report reductions from offsets separately.	Reductions from offsets should be reported separately from other reductions.	G4 IM p. 116
2.17.1	Emissions of ozone-depleting substances (ODS)	The reporting organization shall: calculate the production of ODS as the amount of ODS produced, minus the amount destroyed by approved	Calculate the production of ODS as the amount of ODS produced, minus the amount destroyed by approved technologies and minus the amount entirely used as feedstock in the manufacture of other chemicals.	G4 IM p. 118

Changes to instructive verbs				
To clarify the intent of guidance text that comes from the G4 Implementation Manual				
SRS clause number	SRS section	SRS wording	Original G4 text	Source of original G4 text
		technologies, and minus the amount entirely used as feedstock in the manufacture of other chemicals;		
2.17.2	Emissions of ozone-depleting substances (ODS)	The reporting organization shall: exclude ODS recycled and reused.	Exclude ODS recycled and reused.	G4 IM p. 118
2.20	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	The reporting organization shall select one of the following approaches for calculating significant air emissions:	Since calculating certain air emissions (such as NO _x) requires complex quantification efforts, indicate the methodology used for calculations, selecting one of the following approaches:	G4 IM p. 119
2.20.4	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	If estimations are used due to a lack of default figures, the organization shall indicate the basis on which figures were estimated.	(if estimations are used due to a lack of default figures, indicate the basis on which figures were estimated)	G4 IM p. 119

EXPOSURE

Deleted text	
Deleted text	Source of original G4 text
<i>[The reference from the G4 Implementation Manual has been deleted]</i>	G4 IM p. 114, 237
British Standards Institution (BSI), Assessing the Life-Cycle Greenhouse Gas Emissions of Goods and Services PAS 2050, 2011.	

Exposure draft for comment