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## Item 26 – Transition to GRI Standards

### *Mock-up of Sustainability Reporting Standard 19: Emissions*

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<b>Meeting</b>	3-5 November 2015, Amsterdam
<b>Project</b>	Transition to GRI Standards
<b>Description</b>	As part of the move to become a standard setter, the Global Sustainability Standards Board (GSSB) has decided that the G4 Guidelines need to be transitioned to Sustainability Reporting Standards (GRI Standards). This paper presents the mock-up of Sustainability Reporting Standard 19: Emissions, formerly the G4 Emissions Aspect.

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This document has been prepared by the GRI Standards Division. It is provided as a convenience to observers at meetings of the Global Sustainability Standards Board (GSSB), to assist them in following the Board's discussion. It does not represent an official position of the GSSB. Board positions are set out in the GRI Sustainability Reporting Standards. The GSSB is the independent standard-setting body of GRI. For more information visit [www.globalreporting.org](http://www.globalreporting.org).

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# 7 Clean version

## 8 *About this version*

9 This section presents a clean version of Sustainability Reporting Standard 19: Emissions, formerly the G4  
10 Emissions Aspect.

11 For an overview of the changes applied, see the ‘Summary of changes’ on page 28 of this paper. This  
12 summary is to be read in conjunction with Item 18 – Transition to GRI Standards – Proposals and mock-  
13 ups in development, available for download on the GRI website ([www.globalreporting.org](http://www.globalreporting.org)).

14 New text in the mock-ups is a work-in-progress, and will continue to evolve. It is not a final proposal for  
15 wording. Instead, it is intended to convey the type of information that users will need. It is also a place to  
16 ‘trial’ different terms and formulations.

17 Decisions about the text, and firm proposals for it, will be made during the forthcoming phase of editorial  
18 review. This will include decisions on the tone of voice to be used in the GRI Standards, and the preferred  
19 ways to construct sentences and express ideas.

20 The use of verbs in the GRI Standards will also be covered during the editorial review. In G4, verbs such  
21 as ‘can’, ‘may’ or ‘might’ are used interchangeably. In keeping with standard-setting practice, these verbs  
22 will be given fixed meanings in the GRI Standards. Each mock-up has a section where the proposed  
23 meanings are explained.

24 In the mock-ups, these meanings have not yet been applied throughout the original G4 text. The editorial  
25 review will include an assessment of the intended meaning behind each verb used interchangeably in G4,  
26 and any repercussions that might arise from changing it.

27 The mock-ups use the standard GRI branding. The GRI Standards will have distinct branding, design and  
28 layout, including visuals and infographics.

## 29 *GSSB decisions*

### 30 **Status of additional disclosure requirements contained within G4 guidance**

31 The GSSB is asked to decide whether the Aspect-specific DMA guidance (see line numbers 230-231)  
32 should be mandatory or optional for this GRI Standard. If it is optional, it can be either presented within  
33 this GRI Standard (using formulations such as ‘organizations are encouraged to disclose...’) or in a separate  
34 guidance document.

35 Sustainability Reporting Standard 19:  
36 Emissions: [Publication Year]

# 37 Summary information for users of this GRI 38 Standard

39 This Sustainability Reporting Standard (GRI Standard) is issued by the Global Sustainability Standards Board  
40 (GSSB). It is part of the set of GRI Sustainability Reporting Standards, or SRSs.

41 The GSSB is an independent operating entity within GRI. It has responsibility for setting globally-accepted  
42 sustainability reporting standards, according to a formally-defined due process, exclusively in the public  
43 interest.

44 The GSSB also develops materials to support and improve the use of the SRSs. This includes Guidance  
45 publications, FAQ documents and Interpretations, with the latter also developed according to due process.  
46 As a component of the due process, Basis for Conclusions documents are created for each GRI Standard.

47 The SRSs are designed to be used by organizations for compiling and reporting sustainability information<sup>1</sup>.  
48 The SRSs:

- 49 • set out disclosure requirements for sustainability information
- 50 • specify Reporting Principles, methods and practices to adhere to when formulating the disclosures

51 The SRSs are suitable for use by organizations of any size, type, sector or geographical location.

## 52 **Using the SRSs in conjunction**

53 Each GRI Standard in the set of SRSs has been designed to be used in conjunction with others. The exact  
54 combination of SRSs to be used by an organization depends on whether the organization is:

- 55 • preparing a report 'in accordance' with the SRSs, or
- 56 • making use of individual SRSs to report on a particular topic or topics

57 This GRI Standard is used in conjunction with the following SRSs, which are necessary for its application:

- 58 • SRS 1: Conceptual Framework
- 59 • SRS 2: Content Principles
- 60 • SRS 3: Quality Principles
- 61 • SRS 9-1: Management Approach Narrative
- 62 • SRS 9-2: Management Approach Indicators

63 SRS 1: Conceptual Framework gives essential information on using the SRSs. SRS 2: Content Principles  
64 and SRS 3: Quality Principles set out the Reporting Principles which underpin the practice of sustainability  
65 reporting, guiding choices on which information to report and how. Therefore, organizations are required  
66 to be familiar with SRS 1, SRS 2 and SRS 3 before using any other GRI Standard.

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<sup>1</sup> Where the term 'sustainability' is used in the SRSs, it is intended to be understood as sustainable development. See the World Commission on Environment and Development. Our Common Future. Oxford: Oxford University Press, 1987, p.43.

67 Complete information on the combined use of SRSs is given in SRS 1: Conceptual Framework.

## 68 **The types of disclosure required when using this GRI Standard**

69 For every material sustainability topic, organizations are to report:

- 70 • their management approach for that topic
- 71 • the topic-specific Indicators presented in the GRI Standard for that topic

72 Therefore, organizations are to provide three types of disclosure:

### 73 *Management approach narrative*

74 This is reported using SRS 9-1: Management Approach Narrative.

75 The management approach narrative is an explanation of how an organization manages impacts and stakeholder concerns regarding a topic.

77 The disclosure requirements for the management approach narrative, set out in SRS 9-1, are not topic-specific and are designed to be applicable to different sustainability topics. Therefore, SRS 9-1 is used in conjunction with each topic-specific GRI Standard, in order to provide the management approach narrative for the topic in question.

81 Any additional topic-specific requirements for the management approach narrative are set out in the GRI Standard for that topic, in the section called Management Approach. When such topic-specific information is required, it is to be incorporated into the management approach narrative reported using SRS 9-1.

### 84 *Management approach Indicators*

85 These are reported using SRS 9-2: Management Approach Indicators.

86 The management approach Indicators reveal the extent to which an organization has implemented its management approach.

88 The management approach Indicators set out in SRS 9-2 are not topic-specific, and are designed to be applicable to different sustainability topics. Therefore, SRS 9-2 is used in conjunction with each topic-specific GRI Standard, in order to provide information on the extent to which an organization has implemented its management approach for that topic.

### 92 *Topic-specific Indicators*

93 These are presented in the section called Indicators in each topic-specific GRI Standard.

94 All text in a GRI Standard has equal authority.

95 Disclosure requirements in this GRI Standard are presented in **bold** font. Each disclosure requirement  
96 also has a unique identifier (e.g., SRS19-1, SRS19-2).

97 The specified methods and practices for formulating each disclosure are presented in regular font,  
98 following the disclosure requirements. Methods and practices that apply to all the Indicators in a GRI  
99 Standard are presented at the start of the Indicators section.

100 The verbs used in the text have the following meanings:

101 Can = Capability: a particular scenario or course of action is achievable or applicable.

102 May = Permission: a particular scenario or course of action is permitted when using the GRI Standard.

103 Might = Possibility: a particular scenario or course of action is possible.

104 Should = Recommendation: a particular scenario or course of action is recommended and encouraged.

105 Where a term is defined in the Terms and Definitions section of a GRI Standard, organizations are to  
106 adhere to that definition.

107 Where a document is referenced without its date of publication, the reference applies to the most recent  
108 edition.

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# 118 Purpose

119 1 This GRI Standard sets out disclosure requirements on the topic of emissions. It specifies the  
120 methods and practices for formulating the disclosures, and gives background information to aid  
121 understanding of the topic.

122 2 Emissions are substances discharged into the air from a source. This GRI Standard specifies  
123 disclosure requirements on greenhouse gas (GHG) emissions, ozone-depleting substances (ODS),  
124 NO<sub>x</sub>, SO<sub>x</sub>, and other significant air emissions.

## 125 Greenhouse gas (GHG) emissions

126 3 The disclosures on GHG emissions in this GRI Standard are based on the reporting requirements  
127 of the 'GHG Protocol Corporate Accounting and Reporting Standard' and the 'GHG Protocol  
128 Corporate Value Chain (Scope 3) Accounting and Reporting Standard' provided by the World  
129 Resources Institute (WRI) and the World Business Council for Sustainable Development  
130 (WBCSD).

131 4 The GHG Protocol includes a classification of GHG emissions called 'Scope' – Scope 1, Scope 2  
132 and Scope 3. This classification is defined in the Terms and Definitions section of this GRI Standard.

133 5 This GRI Standard covers the GHGs covered by the UN 'Kyoto Protocol' and the WRI and  
134 WBCSD 'GHG Protocol Corporate Accounting and Reporting Standard':

- 135 (a) Carbon dioxide (CO<sub>2</sub>)
- 136 (b) Methane (CH<sub>4</sub>)
- 137 (c) Nitrous oxide (N<sub>2</sub>O)
- 138 (d) Hydrofluorocarbons (HFCs)
- 139 (e) Perfluorocarbons (PFCs)
- 140 (f) Sulphur hexafluoride (SF<sub>6</sub>)
- 141 (g) Nitrogen trifluoride (NF<sub>3</sub>)

142 6 GHG emissions are a major contributor to climate change and are governed by the UN 'United  
143 Nations Framework Convention on Climate Change' and the subsequent UN 'Kyoto Protocol'.  
144 Some GHGs, including methane (CH<sub>4</sub>), are also air pollutants that have significant adverse impacts  
145 on ecosystems, air quality, agriculture, and human and animal health.

146 7 As a result, different national and international regulations and incentive systems (such as tradable  
147 emission permits) aim to control the volume, and reward the reduction of GHG emissions. The  
148 combined information from an organization's disclosures on direct and indirect emissions  
149 indicates its costs in taxation or trading systems, and provides insight into its carbon footprint.

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

151 8 The ozone layer filters out most of the sun's biologically harmful ultraviolet (UV-B) radiation.  
152 Observed and projected ozone depletion due to ODS generates worldwide concern. The UNEP  
153 'Montreal Protocol on Substances that Deplete the Ozone Layer' regulates the phase-out of ODS  
154 internationally.

155 **NO<sub>x</sub>, SO<sub>x</sub>, and other significant air emissions**

156 9 Air pollutants have adverse effects on climate, ecosystems, air quality, habitats, agriculture, and  
157 human and animal health. Deterioration of air quality, acidification, forest degradation, and public  
158 health concerns have led to local and international regulations to control air emissions. Reductions  
159 in regulated pollutants lead to improved health conditions for workers and neighboring  
160 communities. Reductions, or performance beyond compliance, can enhance relations with affected  
161 communities and workers, and the ability to maintain or expand operations. In regions with  
162 emission caps, the volume of emissions also has direct cost implications.

# 163 Terms and Definitions

## 164 **Base year**

165 10 A historical datum (such as a year) against which an organization's energy consumption is tracked  
166 over time.

## 167 **Baseline**

168 11 A starting point used for comparisons.

169 12 NOTE: For Indicators SRS16-4, SRS16-5 and SRS19-5, baseline is the projected energy  
170 consumption in the absence of any energy reduction activity.

## 171 **Carbon dioxide equivalent**

172 13 CO<sub>2</sub> (carbon dioxide) equivalent is the universal unit of measurement used to compare the  
173 emissions from various GHGs based on their global warming potential (GWP). The CO<sub>2</sub>  
174 equivalent for a gas is determined by multiplying the metric tons of the gas by the associated GWP.

## 175 **CFC-11 equivalent**

176 14 CFC-11 equivalent is a measure used to compare various substances based on their relative ozone  
177 depletion potential. The reference level of 1 is the potential of CFC-11 and CFC-12 to cause  
178 ozone depletion.

## 179 **Direct GHG emissions (Scope 1)**

180 15 Emissions from operations that are owned or controlled by the organization.

181 16 Direct (Scope 1) GHG emissions come from sources (physical units or processes that release  
182 GHG into the atmosphere) that are owned or controlled by the organization.

## 183 **Energy indirect (Scope 2) GHG emissions**

184 17 Emissions that result from the generation of purchased or acquired electricity, heating, cooling,  
185 and steam consumed by the organization.

## 186 **GHG reductions**

187 18 A decrease in GHG emissions or an increase in removal or storage of GHGs from the  
188 atmosphere, relative to baseline emissions. Primary effects will result in GHG reductions, as will  
189 some secondary effects. An initiative's total GHG reductions are quantified as the sum of its  
190 associated primary effect(s) and any significant secondary effects (which may involve decreases or  
191 countervailing increases in GHG emissions).

192 **Global warming potential (GWP)**

193 19 GWP values describe the radiative forcing impact of one unit of a given GHG relative to one unit  
194 of carbon dioxide over a given period of time. GWP values convert GHG emissions data for non-  
195 CO<sub>2</sub> gases into units of CO<sub>2</sub> equivalent.

196 **Ozone-depleting substance (ODS)**

197 20 Any substance with an ozone depletion potential (ODP) greater than 0 that can deplete the  
198 stratospheric ozone layer. Most ODS are controlled under the UNEP 'Montreal Protocol on  
199 Substances that Deplete the Ozone Layer' and its amendments, and include CFCs, HCFCs, halons,  
200 and methyl bromide.

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

202 21 Other indirect GHG emissions are all indirect emissions (not included in Scope 2) that occur  
203 outside of the organization, including both upstream and downstream emissions.

204 **GHG emissions scope**

205 22 Scope is a classification of the operational boundaries where GHG emissions occur. Scope  
206 classifies whether GHG emissions are created by the organization itself, or are created by other  
207 related organizations, for example, electricity suppliers or haulage companies, as follows:

208 23 Direct (Scope 1) emissions from operations that are owned or controlled by the organization

209 24 Energy Indirect (Scope 2) emissions result from the generation of purchased or acquired  
210 electricity, heating, cooling, and steam consumed within the organization

211 25 Other Indirect (Scope 3) emissions are all indirect emissions (not included in Scope 2) that occur  
212 outside of the organization, including both upstream and downstream emissions

213 26 Scopes 1, 2, and 3 of the GHG Protocol align with ISO 14064 definitions and the Indicators as  
214 follows:

215 (a) Scope 1 = direct GHG emissions (SRS19-1)

216 (b) Scope 2 = energy indirect GHG emissions (SRS19-2)

217 (c) Scope 3 = other indirect GHG emissions (SRS19-3)

218 27 The GHG Protocol prescribes reporting direct (Scope 1) emissions and energy indirect (Scope 2)  
219 emissions. Reporting other indirect (Scope 3) emissions is optional. The WRI and WBCSD 'GHG  
220 Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard' prescribes  
221 reporting other indirect (Scope 3) emissions.

222 **Significant air emissions**

223 28 Air emissions that are regulated under international conventions and/or national laws or  
224 regulations, including those listed on environmental permits for the organization's operations.

# 225 Management Approach

- 226 29 Organizations are to use this GRI Standard in conjunction with SRS 9-1: Management Approach  
227 Narrative and SRS 9-2: Management Approach Indicators.
- 228 30 When using SRS 9-1 to report the management approach narrative, organizations are to  
229 incorporate the following additional information:
- 230 (a) When reporting on GHG emissions targets, identify whether offsets are used to meet the  
231 target. Specify the type, amount, criteria or scheme of which they are part.

## 232 Indicators

233 31 When reporting the Indicators for emissions of GHGs and ODS, organizations apply emission  
234 factors and GWP rates consistently for the data reported. Emission factors may originate from  
235 mandatory reporting requirements, voluntary reporting frameworks, or be developed by industry  
236 groups. Estimates of GWPs change over time as scientific research develops. Organizations may  
237 use the GWPs from Assessment Reports from the Intergovernmental Panel on Climate Change  
238 (IPCC). As the GWPs from the IPCC Second Assessment Report are used as the basis for  
239 international negotiations under the UN 'Kyoto Protocol', such rates may be used for disclosing  
240 GHG emissions where it does not conflict with national or regional reporting requirements.  
241 Organizations may also use the latest GWPs from the most recent IPCC Assessment Report.  
242 GWPs are expressed over a number of different time frames within the IPCC Assessment  
243 Reports. Organizations use the factors for the 100-year time span.

### 244 *Greenhouse gas (GHG) emissions*

#### 245 SRS19-1 DIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE 1)

246 (a) Report gross direct (Scope 1) GHG emissions in metric tons of CO<sub>2</sub>  
247 equivalent, independent of any GHG trades, such as purchases, sales, or  
248 transfers of offsets or allowances.

249 (b) Report gases included in the calculation (whether CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs,  
250 PFCs, SF<sub>6</sub>, NF<sub>3</sub>, or all).

251 (c) Report biogenic CO<sub>2</sub> emissions in metric tons of CO<sub>2</sub> equivalent separately  
252 from the gross direct (Scope 1) GHG emissions.

253 (d) Report the chosen base year, the rationale for choosing the base year,  
254 emissions in the base year, and the context for any significant changes in  
255 emissions that triggered recalculations of base year emissions.

256 (e) Report standards, methodologies, and assumptions used.

257 (f) Report the source of the emission factors used and the global warming  
258 potential (GWP) rates used or a reference to the GWP source.

259 (g) Report the chosen consolidation approach for emissions (equity share,  
260 financial control, operational control).

261 32 Direct (Scope 1) GHG emissions include, but are not limited to, the CO<sub>2</sub> emissions  
262 from the fuel consumption reported in Indicator G4-EN3.

263 33 This Indicator can be used in combination with Indicators SRS19-2 (energy indirect  
264 Scope 2 emissions) and SRS19-3 (other indirect Scope 3 emissions) to report total  
265 GHG emissions.

- 266 34 Direct (Scope 1) GHG emissions from sources owned or controlled by the  
267 organization include:
- 268 (a) Generation of electricity, heating, cooling and steam. These emissions result  
269 from combustion of fuels in stationary sources (such as boilers, furnaces,  
270 turbines) and from other combustion processes such as flaring
- 271 (b) Physical or chemical processing. Most of these emissions result from the  
272 manufacturing or processing of chemicals and materials (such as cement, steel,  
273 aluminum, ammonia, and waste processing)
- 274 (c) Transportation of materials, products, waste, employees, and passengers. These  
275 emissions result from the combustion of fuels in mobile combustion sources  
276 owned or controlled by the organization (such as trucks, trains, ships, airplanes,  
277 buses, cars)
- 278 (d) Fugitive Emissions. These emissions result from intentional or unintentional  
279 releases, such as equipment leaks from joints, seals, packing, and gaskets;  
280 methane emissions from coal mines and venting; hydrofluorocarbon (HFC)  
281 emissions from refrigeration and air conditioning equipment; and methane  
282 leakages from gas transport
- 283 35 Reference the calculation tools used. Organizations subject to different standards and  
284 methodologies should describe the approach to selecting them.
- 285 36 Select a consistent consolidation approach for emissions, and apply it to calculate the  
286 gross direct (Scope 1) GHG emissions. When possible, select an approach that is  
287 consistent with the approach used in Indicator SRS19-2. Organizations select the  
288 equity share, financial control, or operational control methods outlined in the WRI  
289 and WBCSD 'GHG Protocol Corporate Accounting and Reporting Standard'.
- 290 37 For recalculations of prior year emissions, organizations can follow the approach in  
291 the WRI and WBCSD 'GHG Protocol Corporate Accounting and Reporting  
292 Standard'.
- 293 38 Organizations may report biogenic CO<sub>2</sub> emissions; however, such emissions are  
294 reported separately and not added to the total direct (Scope 1) GHG emissions.  
295 These emissions refer to CO<sub>2</sub> emissions from combustion or biodegradation of  
296 biomass only, not to emissions of any other GHGs (such as CH<sub>4</sub> and N<sub>2</sub>O), or to any  
297 GHG emissions that occur in the life cycle of biomass other than from combustion  
298 or biodegradation (such as GHG emissions from processing or transporting biomass).
- 299 39 Methodologies used to calculate the emissions may include:
- 300 (a) Direct measurement of energy source consumed (coal, gas) or losses (refills)  
301 of cooling systems and conversion to GHG (CO<sub>2</sub> equivalents)
- 302 (b) Mass balance calculations
- 303 (c) Calculation based on site-specific data (such as for fuel composition analysis)

- 304 (d) Calculation based on published criteria (emissions factors and GWPs)
- 305 (e) Estimations. If estimations are used due to a lack of default figures, the
- 306 organization indicates the basis and assumptions on which figures were
- 307 estimated
- 308 (f) Direct measurement of the GHG (such as continuous online analyzers)
- 309 40 Organizations can further disaggregate direct (Scope 1) GHG emissions data where
- 310 this aids transparency or comparability over time. For example, they can disaggregate
- 311 data by:
- 312 (a) Business unit or facility
- 313 (b) Country
- 314 (c) Source type (stationary combustion, process, fugitive)
- 315 (d) Activity type
- 316 41 Further details and guidance for this Indicator are available in the WRI and WBCSD
- 317 'GHG Protocol Corporate Accounting and Reporting Standard' and in documents
- 318 from the IPCC.

319 **SRS19-2 ENERGY INDIRECT GREENHOUSE GAS (GHG) EMISSIONS**  
 320 **(SCOPE 2)**

- 321 (a) **Report gross energy indirect (Scope 2) GHG emissions in metric tons of**
- 322 **CO<sub>2</sub> equivalent, independent of any GHG trades, such as purchases, sales,**
- 323 **or transfers of offsets or allowances.**
- 324 (b) **Report gases included in the calculation, if available.**
- 325 (c) **Report the chosen base year, the rationale for choosing the base year,**
- 326 **emissions in the base year, and the context for any significant changes in**
- 327 **emissions that triggered recalculations of base year emissions.**
- 328 (d) **Report standards, methodologies, and assumptions used.**
- 329 (e) **Report the source of the emission factors used and the global warming**
- 330 **potential (GWP) rates used or a reference to the GWP source, if available.**
- 331 (f) **Report the chosen consolidation approach for emissions (equity share,**
- 332 **financial control, operational control).**
- 333 42 An organization's energy indirect (Scope 2) GHG emissions result from the
- 334 generation of the electricity, heating, cooling, and steam which it purchased from
- 335 other organizations for its own consumption.

- 336 43 For many organizations the energy indirect (Scope 2) GHG emissions that result from  
 337 the generation of purchased electricity are much greater than their direct GHG  
 338 emissions.
- 339 44 This Indicator can be used in combination with Indicators SRS19-1 (Scope 1  
 340 emissions) and SRS19-3 (Scope 3 emissions) to report total GHG emissions.
- 341 45 Exclude other indirect (Scope 3) emissions. Other indirect (Scope 3) emissions are  
 342 reported in Indicator SRS19-3.
- 343 46 Select a consistent consolidation approach for emissions, and apply it to calculate the  
 344 gross energy indirect (Scope 2) GHG emissions. When possible, select an approach  
 345 that is consistent with the approach used in Indicator SRS19-1. Organizations may  
 346 select the equity share, financial control, or operational control methods outlined in  
 347 the WRI and WBCSD 'GHG Protocol Corporate Accounting and Reporting  
 348 Standard'.
- 349 47 Reference the calculation tools used. Organizations subject to different standards and  
 350 methodologies should describe the approach to selecting them.
- 351 48 Organizations can further disaggregate energy indirect (Scope 2) GHG emissions data  
 352 where this aids transparency or comparability over time. For example, they can  
 353 disaggregate data by:
- 354 (a) Business unit or facility
  - 355 (b) Country
  - 356 (c) Source type (electricity, heating, cooling, and steam)
  - 357 (d) Activity type
- 358 49 For recalculations of prior year emissions, organizations can follow the approach in  
 359 the WRI and WBCSD 'GHG Protocol Corporate Accounting and Reporting  
 360 Standard'.

- 361 **SRS19-3 OTHER INDIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE**  
 362 **3)**
- 363 (a) **Report gross other indirect (Scope 3) GHG emissions in metric tons of**  
 364 **CO<sub>2</sub> equivalent, excluding indirect emissions from the generation of**  
 365 **purchased or acquired electricity, heating, cooling, and steam consumed**  
 366 **by the organization (these indirect emissions are reported in Indicator**  
 367 **SRS19-2). Exclude any GHG trades, such as purchases, sales, or transfers**  
 368 **of offsets or allowances.**
  - 369 (b) **Report gases included in the calculation, if available.**
  - 370 (c) **Report biogenic CO<sub>2</sub> emissions in metric tons of CO<sub>2</sub> equivalent separately**  
 371 **from the gross other indirect (Scope 3) GHG emissions.**

- 372 (d) Report other indirect (Scope 3) emissions categories and activities  
373 included in the calculation.
- 374 (e) Report the chosen base year, the rationale for choosing the base year,  
375 emissions in the base year, and the context for any significant changes in  
376 emissions that triggered recalculations of base year emissions.
- 377 (f) Report standards, methodologies, and assumptions used.
- 378 (g) Report the source of the emission factors used and the global warming  
379 potential (GWP) rates used or a reference to the GWP source, if available.
- 380 50 For some organizations, GHG emissions from outside of the organization, or resulting  
381 from the use of their products, are much greater than their direct (Scope 1) GHG  
382 emissions or energy indirect (Scope 2) GHG emissions.
- 383 51 Other indirect (Scope 3) emissions are a consequence of the activities of the  
384 organization, but occur from sources not owned or controlled by the organization.  
385 Some examples of Scope 3 activities are the extraction and production of purchased  
386 materials; the transportation of purchased fuels in vehicles not owned or controlled  
387 by the organization; and the end use of products and services.
- 388 52 This Indicator can be used in combination with Indicators SRS19-1 (Scope 1  
389 emissions) and SRS19-2 (Scope 2 emissions) to report total GHG emissions.
- 390 53 Identify the indirect emissions that occur outside of the organization that are not  
391 reported under Indicator SRS19-2. This includes both upstream and downstream  
392 emissions. Indirect emissions might also come from the organization's waste  
393 decomposing processes, process-related emissions during the manufacturing of  
394 purchased goods, and fugitive emissions in facilities not owned or controlled by the  
395 organization.
- 396 54 Assess which of the organization's activities cause indirect emissions, and calculate  
397 the amounts involved.
- 398 55 When deciding the relevance of these activities, consider whether the activity's  
399 emissions:
- 400 (a) Contribute significantly to the organization's total anticipated Scope 3 emissions
- 401 (b) Offer potential for reductions that could be undertaken or influenced by the  
402 organization
- 403 (c) Contribute to the organization's exposure to climate change- related risks such  
404 as financial, regulatory, supply chain, product and customer, litigation, and  
405 reputational risks
- 406 (d) Are deemed material by key stakeholders (such as customers, suppliers,  
407 investors, or civil society)

- 408 (e) Result from outsourced activities which were previously performed in-house,  
 409 or activities that are typically performed in-house by other organizations in the  
 410 same sector
- 411 (f) Have been identified as significant in sector-specific guidance
- 412 (g) Meet any additional criteria for determining relevance, developed by the  
 413 organization or by organizations in its sector
- 414 56 When reporting emissions for this Indicator, organizations may disaggregate data by  
 415 the following categories and activities:
- 416 **Upstream**
- 417 1. Purchased goods and services
- 418 2. Capital goods
- 419 3. Fuel- and energy-related activities (those that are not included in Scope 1 or  
 420 Scope 2 emissions)
- 421 4. Upstream transportation and distribution
- 422 5. Waste generated in operations
- 423 6. Business travel
- 424 7. Employee commuting
- 425 8. Upstream leased assets
- 426 Other upstream
- 427 **Downstream**
- 428 9. Downstream transportation and distribution
- 429 10. Processing of sold products
- 430 11. Use of sold products
- 431 12. End of life treatment of sold products
- 432 13. Downstream leased assets
- 433 14. Franchises
- 434 15. Investments
- 435 Other downstream
- 436 57 For each category and activity above, provide a figure in CO<sub>2</sub> equivalent or an  
 437 explanation of why certain data are not included.
- 438 58 The upstream/downstream categories and activities including their numbering  
 439 correspond to the categories and activities documented in the WRI and WBCSD

440 'GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting  
 441 Standard'. The numbering has been maintained consistent for the ease of reference  
 442 between G4 and the WRI and WBCSD 'GHG Protocol Corporate Value Chain  
 443 (Scope 3) Accounting and Reporting Standard'.

444 59 Organizations may report biogenic CO<sub>2</sub> emissions; however, such emissions are  
 445 expected to be reported separately and not added to the total other indirect (Scope  
 446 3) emissions. These emissions refer to CO<sub>2</sub> emissions from combustion or  
 447 biodegradation of biomass only, not to emissions of any other GHGs (such as CH<sub>4</sub>  
 448 and N<sub>2</sub>O), or to any GHG emissions that occur in the life cycle of biomass other than  
 449 from combustion or biodegradation (such as GHG emissions from processing or  
 450 transporting biomass).

451 60 Organizations can further disaggregate other indirect (Scope 3) emissions data where  
 452 this aids transparency or comparability over time. For example, they can disaggregate  
 453 data by:

454 (a) Business unit or facility  
 455 (b) Country  
 456 (c) Source type  
 457 (d) Activity type

458 61 For recalculations of prior year emissions, organizations can follow the approach in  
 459 the WRI and WBCSD 'GHG Protocol Corporate Value Chain (Scope 3) Accounting  
 460 and Reporting Standard'.

461 62 Reference the calculation tools used. Organizations subject to different standards and  
 462 methodologies should describe the approach to selecting them.

463 63 Further details on the compilation of this Indicator are available in the WRI and  
 464 WBCSD 'GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting  
 465 Standard'.

466 **SRS19-4 GREENHOUSE GAS (GHG) EMISSIONS INTENSITY**

- 467 (a) **Report the GHG emissions intensity ratio.**
- 468 (b) **Report the organization-specific metric (the ratio denominator) chosen to**  
 469 **calculate the ratio.**
- 470 (c) **Report the types of GHG emissions included in the intensity ratio: direct**  
 471 **(Scope 1), energy indirect (Scope 2), other indirect (Scope 3).**
- 472 (d) **Report gases included in the calculation.**
- 473 64 Intensity ratio defines an organization's GHG emissions in the context of an  
 474 organization-specific metric.

- 475 65 GHG emissions intensity expresses the GHG emissions per unit of activity, output,  
 476 or any other organization-specific metric. Many organizations track environmental  
 477 performance with intensity ratios. Intensity ratios are often called normalized  
 478 environmental impact data.
- 479 66 Intensity ratios can include but are not limited to:
- 480 (a) Product emission intensity (such as metric tons of CO<sub>2</sub> emissions per unit  
 481 produced)
  - 482 (b) Service intensity (such as metric tons of CO<sub>2</sub> emissions per function or per  
 483 service)
  - 484 (c) Sales intensity (such as metric tons of CO<sub>2</sub> emissions per sales)
- 485 67 In combination with an organization's absolute GHG emissions, disclosed in Indicators  
 486 SRS19-1, SRS-19-2, and SRS19-3, GHG emissions intensity helps to contextualize the  
 487 organization's efficiency, including in relation to other organizations.
- 488 68 Select an appropriate ratio denominator to represent the per-unit output, activity, or  
 489 any other organization-specific metric. This can include but is not limited to:
- 490 (a) Units of product
  - 491 (b) Production volume (metric ton, liter, MWh)
  - 492 (c) Size (m<sup>2</sup> floor space)
  - 493 (d) Number of full-time employees
  - 494 (e) Monetary units (revenue, sales)
- 495 69 Organizations can report several GHG emissions intensity ratios where this aids  
 496 transparency or comparability. For example, they may calculate separate ratios by:
- 497 (a) Business unit or facility
  - 498 (b) Country
  - 499 (c) Source type
  - 500 (d) Activity type
- 501 70 Intensity is calculated by dividing the absolute emissions (the numerator) by the  
 502 organization-specific metric (the denominator).
- 503 71 If reporting combined direct (Scope 1) and indirect (Scope 2) intensity ratios, add  
 504 together the figures reported in Indicators SRS19-1 and SRS19-2 to determine the  
 505 total absolute amount of GHG emissions. Alternatively, use the GHG emissions  
 506 figures reported in Indicators SRS19-1 and SRS19-2 separately.

507 72 Organizations may report the other indirect (Scope 3) GHG emissions intensity ratio  
508 with this Indicator; however, this ratio is expected to be presented separately, and  
509 not combined with the direct (Scope 1) or energy indirect (Scope 2) intensity ratios.

## 510 SRS19-5 REDUCTION OF GREENHOUSE GAS (GHG) EMISSIONS

511 (a) Report the amount of GHG emissions reductions achieved as a direct  
512 result of initiatives to reduce emissions, in metric tons of CO<sub>2</sub> equivalent.

513 (b) Report gases included in the calculation (whether CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs,  
514 PFCs, SF<sub>6</sub>, NF<sub>3</sub>, or all).

515 (c) Report the chosen base year or baseline and the rationale for choosing it.

516 (d) Report standards, methodologies, and assumptions used.

517 (e) Report whether the reductions in GHG emissions occurred in direct  
518 (Scope 1), energy indirect (Scope 2), other indirect (Scope 3) emissions.

519 73 This Indicator can be used in combination with Indicators SRS19-1, SRS19-2, and  
520 SRS19-3 to monitor the reduction of GHG emissions with reference to the  
521 organization's targets, or to regulations and trading systems at international or  
522 national levels.

523 74 Initiatives can include but are not limited to:

524 (a) Process redesign

525 (b) Conversion and retrofitting of equipment

526 (c) Fuel switching

527 (d) Changes in employee behavior

528 (e) Offsets

529 75 Organizations with many initiatives for reducing GHG emissions may prioritize  
530 reporting the initiatives that were implemented in the reporting period, and that have  
531 the potential to contribute significantly to reducing emissions. Initiatives and their  
532 reduction targets may be described in the management approach for the Emissions  
533 topic.

534 76 Organizations may choose to report reductions disaggregated by initiatives or groups  
535 of initiatives.

536 77 Report the GHG emissions reductions separately for direct (Scope 1), energy indirect  
537 (Scope 2), and other indirect (Scope 3) emissions. Reductions in emissions that result  
538 from reduced production capacity or outsourcing are not included in this Indicator.

539 78 Reductions from offsets should be reported separately from other reductions.

- 540 79 Organizations may choose to use either inventory or project method for accounting  
 541 for emissions reductions. Inventory method compares emissions reductions to a base  
 542 year while project method compares emissions reductions to a baseline. Further  
 543 details on the inventory and project reduction accounting methods are available in  
 544 the WRI and WBCSD ‘GHG Protocol Corporate Value Chain (Scope 3) Accounting  
 545 and Reporting Standard’ and WRI and WBCSD ‘GHG Protocol for Project  
 546 Accounting’.
- 547 80 Reference the calculation tools used. Organizations subject to different standards and  
 548 methodologies should describe the approach to selecting them.

## 549 *Ozone-depleting substances (ODS) emissions*

### 550 SRS19-6 EMISSIONS OF OZONE-DEPLETING SUBSTANCES (ODS)

- 551 (a) **Report production, imports, and exports of ODS in metric tons of CFC-11**  
 552 **equivalent.**
- 553 (b) **Report substances included in the calculation.**
- 554 (c) **Report standards, methodologies, and assumptions used.**
- 555 (d) **Report the source of the emission factors used.**
- 556 81 Measuring ODS production, imports, and exports enables an assessment of how well  
 557 an organization complies with legislation and manages its risks. This is particularly  
 558 relevant for organizations that produce or use ODS in their processes, products and  
 559 services and must now transition to new technologies to comply with phase-out  
 560 commitments. The organization’s results on ODS phase-out help to indicate its level  
 561 of technology leadership, and its competitive position in markets for products and  
 562 services affected by ODS rules.
- 563 82 This Indicator covers the production, import, and export of substances covered in  
 564 Annexes A, B, C, and E of the UNEP ‘Montreal Protocol on Substances that Deplete  
 565 the Ozone Layer’ as well as any other ODS produced, imported, or exported by the  
 566 organization.
- 567 83 Calculate the production of ODS as the amount of ODS produced, minus the amount  
 568 destroyed by approved technologies and minus the amount entirely used as feedstock  
 569 in the manufacture of other chemicals. Exclude ODS recycled and reused.
- 570 84 Organizations can further disaggregate ODS data where this aids transparency or  
 571 comparability over time. For example, they may disaggregate data by:
- 572 (a) Business unit or facility
- 573 (b) Country
- 574 (c) Source type

- 575 (d) Activity type
- 576 85 Organizations may report ODS data for the relevant substances separately or  
577 together.
- 578 86 Reference the calculation tools used. Organizations subject to different standards and  
579 methodologies should describe the approach to selecting them.

580 *NO<sub>x</sub>, SO<sub>x</sub>, and other significant air emissions*

581 **SRS19-7 NO<sub>x</sub>, SO<sub>x</sub>, AND OTHER SIGNIFICANT AIR EMISSIONS**

- 582 (a) **Report the amount of significant air emissions, in kilograms or multiples**  
583 **for each of the following:**
- 584 (i) **NO<sub>x</sub>**
- 585 (ii) **SO<sub>x</sub>**
- 586 (iii) **Persistent organic pollutants (POP)**
- 587 (iv) **Volatile organic compounds (VOC)**
- 588 (v) **Hazardous air pollutants (HAP)**
- 589 (vi) **Particulate matter (PM)**
- 590 (vii) **Other standard categories of air emissions identified in relevant**  
591 **regulations**
- 592 (b) **Report standards, methodologies, and assumptions used.**
- 593 (c) **Report the source of the emission factors used.**
- 594 87 Reference the calculation tools used. Organizations subject to different standards and  
595 methodologies should describe the approach to selecting them. Since calculating  
596 certain air emissions (such as NO<sub>x</sub>) requires complex quantification efforts, indicate  
597 the methodology used for calculations, selecting one of the following approaches:
- 598 (a) Direct measurement of emissions (such as online analyzers)
- 599 (b) Calculation based on site-specific data
- 600 (c) Calculation based on published emission factors
- 601 (d) Estimation (if estimations are used due to a lack of default figures, indicate the  
602 basis on which figures were estimated)
- 603 88 Organizations can further disaggregate air emissions data where this aids transparency  
604 or comparability over time. For example, they may disaggregate data by:
- 605 (a) Business unit or facility

- 606 (b) Country
- 607 (c) Source type
- 608 (d) Activity type

## References

- 610 89 The following documents informed the development of this GRI Standard. Organizations are  
 611 encouraged to be familiar with these documents, as they can improve understanding of the  
 612 disclosure requirements.
- 613 (a) British Standards Institution (BSI), *Assessing the Life-Cycle Greenhouse Gas Emissions of Goods*  
 614 *and Services PAS 2050*, 2011.
- 615 (b) Carbon Disclosure Project (CDP), *Investor CDP Information Request*, updated annually.
- 616 (c) Intergovernmental Panel on Climate Change (IPCC), *Climate Change 1995: The Science of*  
 617 *Climate Change, Contribution of Working Group I to the Second Assessment Report of the*  
 618 *Intergovernmental Panel on Climate Change*, 1995.
- 619 (d) Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science*  
 620 *Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental*  
 621 *Panel on Climate Change*, 2007.
- 622 (e) United Nations Economic Commission for Europe (UNECE) Convention, ‘Geneva Protocol  
 623 concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary  
 624 Fluxes’, 1991.
- 625 (f) United Nations Economic Commission for Europe (UNECE) Convention, ‘Gothenburg  
 626 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone’, 1999.
- 627 (g) United Nations Economic Commission for Europe (UNECE) Convention, ‘Helsinki Protocol  
 628 on the Reduction of Sulphur Emissions or their Transboundary Fluxes’, 1985.
- 629 (h) United Nations Economic Commission for Europe (UNECE) Convention, ‘Sofia Protocol  
 630 concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes’,  
 631 1988.
- 632 (i) United Nations Environment Programme (UNEP) Convention, ‘Stockholm Convention on  
 633 Persistent Organic Pollutants (POPs)’, Annex A, B, and C, 2009.
- 634 (j) United Nations Environment Programme (UNEP), ‘Montreal Protocol on Substances that  
 635 Deplete the Ozone Layer’, 1987.
- 636 (k) United Nations Environment Programme (UNEP), *Standards and Codes of Practice to Eliminate*  
 637 *Dependency on Halons - Handbook of Good Practices in the Halon Sector*, 2001.
- 638 (l) United Nations Environment Programme (UNEP) and World Meteorological Organization  
 639 (WMO), *Integrated Assessment of Black Carbon and Tropospheric Ozone*, 2011.
- 640 (m) United Nations (UN) Framework Convention, ‘United Nations Framework Convention on  
 641 Climate Change’, 1992.

- 642 (n) United Nations (UN) Protocol, 'Kyoto Protocol to the United Nations Framework  
643 Convention on Climate Change', 1997.
- 644 (o) World Resources Institute (WRI) and World Business Council for Sustainable Development  
645 (WBCSD), 'GHG Protocol Corporate Accounting and Reporting Standard', Revised Edition,  
646 2004.
- 647 (p) World Resources Institute (WRI) and World Business Council for Sustainable Development  
648 (WBCSD), 'GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting  
649 Standard', 2011.
- 650 (q) World Resources Institute (WRI) and World Business Council for Sustainable Development  
651 (WBCSD), 'GHG Protocol for Project Accounting', 2005.
- 652 (r) World Resources Institute (WRI) and World Business Council for Sustainable Development  
653 (WBCSD), 'GHG Protocol Product Life Cycle Accounting and Reporting Standard', 2011.
- 654 (s) World Resources Institute (WRI) and World Business Council for Sustainable Development  
655 (WBCSD), 'Greenhouse Gas Protocol Accounting Notes, No. 1, Accounting and Reporting  
656 Standard Amendment', 2012.

## 657 Tracked version

### 658 *About this version*

659 This section presents a tracked version of Sustainability Reporting Standard 19: Emissions, formerly the  
660 G4 Emissions Aspect.

661 It includes a summary of the changes applied. This summary is to be read in conjunction with Item 18 –  
662 Transition to GRI Standards – Proposals and mock-ups in development, available for download on the  
663 GRI website ([www.globalreporting.org](http://www.globalreporting.org)).

664 New text in the mock-ups is a work-in-progress, and will continue to evolve. It is not a final proposal for  
665 wording. Instead, it is intended to convey the type of information that users will need. It is also a place to  
666 ‘trial’ different terms and formulations.

667 Decisions about the text, and firm proposals for it, will be made during the forthcoming phase of editorial  
668 review. This will include decisions on the tone of voice to be used in the GRI Standards, and the preferred  
669 ways to construct sentences and express ideas.

670 The use of verbs in the GRI Standards will also be covered during the editorial review. In G4, verbs such  
671 as ‘can’, ‘may’ or ‘might’ are used interchangeably. In keeping with standard-setting practice, these verbs  
672 will be given fixed meanings in the GRI Standards. Each mock-up has a section where the proposed  
673 meanings are explained.

674 In the mock-ups, these meanings have not yet been applied throughout the original G4 text. The editorial  
675 review will include an assessment of the intended meaning behind each verb used interchangeably in G4,  
676 and any repercussions that might arise from changing it.

677 The mock-ups use the standard GRI branding. The GRI Standards will have distinct branding, design and  
678 layout, including visuals and infographics.

### 679 *Summary of changes*

#### 680 **Formatting legend**

681 **Blue underlined:** New, amended or combined text (i.e., several G4 texts remade into one)

682 **Regular text:** Existing text or text that has been moved

683 **Red strike through:** Text deleted permanently

684 **Regular strike through:** Text deleted from its G4 location and moved elsewhere

#### 685 **Relocating G4 content**

- 686 • Guidance text from Indicators G4-EN15 (see line numbers 969-984 and 992-994), G4-EN16 (see  
687 line numbers 1098-1106 and 1112-1114), G4-EN17 (see line numbers 1192-1195, 1204-1207 and  
688 1211-1220), G4-EN19 (see line numbers 1397-1400), G4-EN20 (see line numbers 1462-1464),

- 689 and G4-EN21 (see line numbers 1523-1529) has been relocated to the 'Purpose' section of this  
 690 GRI Standard, and repurposed to develop a description of this topic (see line numbers 802-865)  
 691 • Guidance text that applies to multiple Indicators has been relocated to the introduction of the  
 692 'Indicators' section of this GRI Standard (see line numbers 939-948). This text was previously  
 693 found under Indicators G4-EN15 (see line numbers 1046-1055), G4-EN16 (see line numbers  
 694 1141-1150) and G4-EN17 (see line numbers 1284-1293)  
 695 • A definition of 'GHG emissions scope' has been created (see line numbers 907-923) using existing  
 696 text found in the 'Introduction' section of the Emissions Aspect (see line numbers 819-834)  
 697 • Definitions have been consolidated in the section 'Terms and Definitions'  
 698 • References have been consolidated in the section 'References'

699 **Eliminating the unnecessary duplication of G4 content**

- 700 • Duplicated content has been deleted from the definition of 'direct GHG emissions (Scope 1)' (see  
 701 line numbers 886-887), and from Indicators G4-EN15 (see line numbers 985-986, 1011-1015,  
 702 1022-1023 and 1030), G4-EN16 (see line numbers 1116-1117, 1120-1122, 1128-1129 and 1130-  
 703 1131), G4-EN17 (see line numbers 1277-1278 and 1281-1282), G4-EN18 (see line numbers 1339-  
 704 1340), G4-EN19 (see line numbers 1405 and 1426-1427), G4-EN20 (see line numbers 1475 and  
 705 1486-1487), and G4-EN21 (see line numbers 1533-1538)

706 **Removing unnecessary G4 guidance**

- 707 • Section headings from guidance text have been removed ('GUIDANCE', 'Relevance',  
 708 'Compilation', 'Definitions', 'Documentation sources', 'References')  
 709 • Content from 'Documentation sources' sections has been deleted  
 710 • Guidance text of questionable relevance for a standard has been deleted from Indicator G4-EN17  
 711 (see line numbers 1198-1199). Guidance text that states the obvious about the relevance of  
 712 Indicator G4-EN21 (see line numbers 1530-1531) has been deleted

713 **Grouping G4 disclosure requirements that deal with widely-applicable processes**

- 714 • The Aspect-specific DMA that deals with widely-applicable processes (see line numbers 933-934)  
 715 has been relocated to SRS 9-I Management Approach Narrative

716 **Updating G4 content**

- 717 • References to G4 disclosure requirements have been updated

718 ~~Aspect: Emissions~~

719 Sustainability Reporting Standard 19:  
720 Emissions: [Publication Year]

# 721 Summary information for users of this GRI 722 Standard

723 [This Sustainability Reporting Standard \(GRI Standard\) is issued by the Global Sustainability Standards Board](#)  
724 [\(GSSB\). It is part of the set of GRI Sustainability Reporting Standards, or SRSs.](#)

725 [The GSSB is an independent operating entity within GRI. It has responsibility for setting globally-accepted](#)  
726 [sustainability reporting standards, according to a formally-defined due process, exclusively in the public](#)  
727 [interest.](#)

728 [The GSSB also develops materials to support and improve the use of the SRSs. This includes Guidance](#)  
729 [publications, FAQ documents and Interpretations, with the latter also developed according to due process.](#)  
730 [As a component of the due process, Basis for Conclusions documents are created for each GRI Standard.](#)

731 [The SRSs are designed to be used by organizations for compiling and reporting sustainability information<sup>2</sup>.](#)  
732 [The SRSs:](#)

- 733 [• set out disclosure requirements for sustainability information](#)
- 734 [• specify Reporting Principles, methods and practices to adhere to when formulating the disclosures](#)

735 [The SRSs are suitable for use by organizations of any size, type, sector or geographical location.](#)

## 736 **Using the SRSs in conjunction**

737 [Each GRI Standard in the set of SRSs has been designed to be used in conjunction with others. The exact](#)  
738 [combination of SRSs to be used by an organization depends on whether the organization is:](#)

- 739 [• preparing a report 'in accordance' with the SRSs, or](#)
- 740 [• making use of individual SRSs to report on a particular topic or topics](#)

741 [This GRI Standard is used in conjunction with the following SRSs, which are necessary for its application:](#)

- 742 [• SRS 1: Conceptual Framework](#)
- 743 [• SRS 2: Content Principles](#)
- 744 [• SRS 3: Quality Principles](#)
- 745 [• SRS 9-1: Management Approach Narrative](#)
- 746 [• SRS 9-2: Management Approach Indicators](#)

747 [SRS 1: Conceptual Framework gives essential information on using the SRSs. SRS 2: Content Principles](#)  
748 [and SRS 3: Quality Principles set out the Reporting Principles which underpin the practice of sustainability](#)  
749 [reporting, guiding choices on which information to report and how. Therefore, organizations are required](#)  
750 [to be familiar with SRS 1, SRS 2 and SRS 3 before using any other GRI Standard.](#)

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<sup>2</sup> Where the term 'sustainability' is used in the SRSs, it is intended to be understood as sustainable development. See the World Commission on Environment and Development, *Our Common Future*. Oxford: Oxford University Press, 1987, p.43.

751 [Complete information on the combined use of SRSs is given in SRS 1: Conceptual Framework.](#)

752 **[The types of disclosure required when using this GRI Standard](#)**

753 [For every material sustainability topic, organizations are to report:](#)

- 754 [• their management approach for that topic](#)
- 755 [• the topic-specific Indicators presented in the GRI Standard for that topic](#)

756 [Therefore, organizations are to provide three types of disclosure:](#)

757 [\*Management approach narrative\*](#)

758 [This is reported using SRS 9-1: Management Approach Narrative.](#)

759 [The management approach narrative is an explanation of how an organization manages impacts and stakeholder concerns regarding a topic.](#)

761 [The disclosure requirements for the management approach narrative, set out in SRS 9-1, are not topic-specific and are designed to be applicable to different sustainability topics. Therefore, SRS 9-1 is used in conjunction with each topic-specific GRI Standard, in order to provide the management approach narrative for the topic in question.](#)

765 [Any additional topic-specific requirements for the management approach narrative are set out in the GRI Standard for that topic, in the section called Management Approach. When such topic-specific information is required, it is to be incorporated into the management approach narrative reported using SRS 9-1.](#)

768 [\*Management approach Indicators\*](#)

769 [These are reported using SRS 9-2: Management Approach Indicators.](#)

770 [The management approach Indicators reveal the extent to which an organization has implemented its management approach.](#)

772 [The management approach Indicators set out in SRS 9-2 are not topic-specific, and are designed to be applicable to different sustainability topics. Therefore, SRS 9-2 is used in conjunction with each topic-specific GRI Standard, in order to provide information on the extent to which an organization has implemented its management approach for that topic.](#)

776 [\*Topic-specific Indicators\*](#)

777 [These are presented in the section called Indicators in each topic-specific GRI Standard.](#)

778 All text in a GRI Standard has equal authority.

779 Disclosure requirements in this GRI Standard are presented in **bold** font. Each disclosure requirement  
780 also has a unique identifier (e.g., SRS19-1, SRS19-2).

781 The specified methods and practices for formulating each disclosure are presented in regular font,  
782 following the disclosure requirements. Methods and practices that apply to all the Indicators in a GRI  
783 Standard are presented at the start of the Indicators section.

784 The verbs used in the text have the following meanings:

785 Can = Capability: a particular scenario or course of action is achievable or applicable.

786 May = Permission: a particular scenario or course of action is permitted when using the GRI Standard.

787 Might = Possibility: a particular scenario or course of action is possible.

788 Should = Recommendation: a particular scenario or course of action is recommended and encouraged.

789 Where a term is defined in the Terms and Definitions section of a GRI Standard, organizations are to  
790 adhere to that definition.

791 Where a document is referenced without its date of publication, the reference applies to the most recent  
792 edition.

793 **Contents**

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798 Greenhouse gas (GHG) emissions .....40

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800 NO<sub>x</sub>, SO<sub>x</sub>, and other significant air emissions .....55

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# 802 Purpose

803 This GRI Standard sets out disclosure requirements on the topic of emissions. It specifies the methods  
804 and practices for formulating the disclosures, and gives background information to aid understanding of  
805 the topic.

806 ~~Emissions are substances discharged into the air from a source. In the Guidelines, the Emissions Aspect~~  
807 ~~includes Indicators on~~ This GRI Standard specifies disclosure requirements on greenhouse gas (GHG)  
808 emissions, ~~as well as~~ ozone-depleting substances (ODS), NO<sub>x</sub>, SO<sub>x</sub>, and other significant air emissions.

## 809 Greenhouse gas (GHG) emissions

810 ~~Reporting of GHG emissions is based on the reporting requirements of the WRI and WBCSD 'GHG~~  
811 ~~Protocol Corporate Accounting and Reporting Standard' (GHG Protocol). The disclosures on GHG~~  
812 ~~emissions in this GRI Standard are~~ In the Guidelines, the reporting of GHG emissions is based on the  
813 reporting requirements of the 'GHG Protocol Corporate Accounting and Reporting Standard'<sup>130</sup> and the  
814 'GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard' provided by the  
815 World Resources Institute (WRI) and the World Business Council for Sustainable Development  
816 (WBCSD).

817 The GHG Protocol includes a classification of GHG emissions called 'Scope' – Scope 1, Scope 2 and Scope  
818 3. This classification is defined in the Terms and Definitions section of this GRI Standard.

819 ~~Scope is a classification of the operational boundaries where GHG emissions occur. Scope classifies~~  
820 ~~whether GHG emissions are created by the organization itself, or are created by other related~~  
821 ~~organizations, for example, electricity suppliers or haulage companies, as follows:~~

- 822 ● ~~Direct (Scope 1) emissions from operations that are owned or controlled by the organization~~
- 823 ● ~~Energy Indirect (Scope 2) emissions result from the generation of purchased or acquired~~  
824 ~~electricity, heating, cooling, and steam consumed within the organization~~
- 825 ● ~~Other Indirect (Scope 3) emissions are all indirect emissions (not included in Scope 2) that occur~~  
826 ~~outside of the organization, including both upstream and downstream emissions~~

827 ~~Scopes 1, 2, and 3 of the GHG Protocol align with ISO 14064 definitions and the GRI Indicators as follows:~~

- 828 ● ~~Scope 1 – direct GHG emissions (GRI Indicator G4-EN15)~~
- 829 ● ~~Scope 2 – energy indirect GHG emissions (GRI Indicator G4-EN16)~~
- 830 ● ~~Scope 3 – other indirect GHG emissions (GRI Indicator G4-EN17)~~

831 ~~The GHG Protocol prescribes reporting direct (Scope 1) emissions and energy indirect (Scope 2)~~  
832 ~~emissions. Reporting other indirect (Scope 3) emissions is optional. The WRI and WBCSD 'GHG Protocol~~  
833 ~~Corporate Value Chain (Scope 3) Accounting and Reporting Standard' prescribes reporting other indirect~~  
834 ~~(Scope 3) emissions.~~

835 This ~~Indicator~~ GRI Standard covers ~~the disclosure of the direct (Scope 1) GHG emissions, in CO<sub>2</sub>~~  
836 ~~equivalents, of~~ the GHGs covered by the UN 'Kyoto Protocol' and the WRI and WBCSD 'GHG Protocol  
837 Corporate Accounting and Reporting Standard':

- 838 • Carbon dioxide (CO<sub>2</sub>)
- 839 • Methane (CH<sub>4</sub>)
- 840 • Nitrous oxide (N<sub>2</sub>O)
- 841 • Hydrofluorocarbons (HFCs)
- 842 • Perfluorocarbons (PFCs)
- 843 • Sulphur hexafluoride (SF<sub>6</sub>)
- 844 • Nitrogen trifluoride (NF<sub>3</sub>)

845 GHG emissions are a major contributor to climate change and are governed by the UN 'United Nations  
846 Framework Convention on Climate Change'<sup>100</sup> and the subsequent UN 'Kyoto Protocol'. Some GHGs,  
847 including methane (CH<sub>4</sub>), are also air pollutants that have significant adverse impacts on ecosystems, air  
848 quality, agriculture, and human and animal health.

849 As a result, different national and international regulations and incentive systems (such as tradable emission  
850 permits) aim to control the volume, and reward the reduction of GHG emissions. ~~The combination~~ The  
851 combined information from an organization's disclosures of ~~n~~ direct and indirect emissions ~~provides~~  
852 ~~insights into the~~ indicates its costs ~~in~~ implications of taxation or trading systems, ~~and~~ It also provides insight  
853 into ~~an organization's~~ sits carbon footprint ~~and environmental performance~~.

#### 854 Ozone-depleting substances (ODS)

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

#### 858 NO<sub>x</sub>, SO<sub>x</sub>, and other significant air emissions

859 Air pollutants have adverse effects on climate, ecosystems, air quality, habitats, agriculture, and human and  
860 animal health. Deterioration of air quality, acidification, forest degradation, and public health concerns  
861 have led to local and international regulations to control air emissions. Reductions in regulated pollutants  
862 lead to improved health conditions for workers and neighboring communities. Reductions, or  
863 performance beyond compliance, can enhance relations with affected communities and workers, and the  
864 ability to maintain or expand operations. In regions with emission caps, the volume of emissions also has  
865 direct cost implications.

## 866 Terms and Definitions

### 867 **Base year**

868 A historical datum (such as a year) against which an organization's energy consumption is tracked over  
869 time.

### 870 **Baseline**

871 A starting point used for comparisons.

872 **NOTE:** For Indicators ~~G4-EN6SRSI6-4~~, ~~G4-EN7SRSI6-5~~ and ~~G4-EN19SRSI9-5~~, baseline is the projected  
873 energy consumption in the absence of any energy reduction activity.

### 874 **Carbon dioxide equivalent**

875 CO<sub>2</sub> (carbon dioxide) equivalent is the universal unit of measurement used to compare the emissions  
876 from various GHGs based on their global warming potential (GWP). The CO<sub>2</sub> equivalent for a gas is  
877 determined by multiplying the metric tons of the gas by the associated GWP.

### 878 **CFC-II equivalent**

879 CFC-II equivalent is a measure used to compare various substances based on their relative ozone  
880 depletion potential. The reference level of 1 is the potential of CFC-11 and CFC-12 to cause ozone  
881 depletion.

### 882 **Direct GHG emissions (Scope 1)**

883 Emissions from operations that are owned or controlled by the organization.

884 Direct (Scope 1) GHG emissions come from sources (physical units or processes that release GHG into  
885 the atmosphere) that are owned or controlled by the organization.

886 ~~Direct (Scope 1) GHG emissions include, but are not limited to, the CO<sub>2</sub> emissions from the fuel~~  
887 ~~consumption reported in Indicator G4-EN3.~~

### 888 **Energy indirect (Scope 2) GHG emissions**

889 Emissions that result from the generation of purchased or acquired electricity, heating, cooling, and steam  
890 consumed by the organization.

### 891 **GHG reductions**

892 A decrease in GHG emissions or an increase in removal or storage of GHGs from the atmosphere, relative  
893 to baseline emissions. Primary effects will result in GHG reductions, as will some secondary effects. An  
894 initiative's total GHG reductions are quantified as the sum of its associated primary effect(s) and any  
895 significant secondary effects (which may involve decreases or countervailing increases in GHG emissions).

896 **Global warming potential (GWP)**

897 GWP values describe the radiative forcing impact of one unit of a given GHG relative to one unit of carbon  
898 dioxide over a given period of time. GWP values convert GHG emissions data for non-CO<sub>2</sub> gases into  
899 units of CO<sub>2</sub> equivalent.

900 **Ozone-depleting substance (ODS)**

901 Any substance with an ozone depletion potential (ODP) greater than 0 that can deplete the stratospheric  
902 ozone layer. Most ODS are controlled under the UNEP 'Montreal Protocol on Substances that Deplete  
903 the Ozone Layer'<sup>120</sup> and its amendments, and include CFCs, HCFCs, halons, and methyl bromide.

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

905 Other indirect GHG emissions are all indirect emissions (not included in Scope 2) that occur outside of  
906 the organization, including both upstream and downstream emissions.

907 **GHG emissions scope**

908 Scope is a classification of the operational boundaries where GHG emissions occur. Scope classifies  
909 whether GHG emissions are created by the organization itself, or are created by other related  
910 organizations, for example, electricity suppliers or haulage companies, as follows:

- 911 • Direct (Scope 1) emissions from operations that are owned or controlled by the organization
- 912 • Energy Indirect (Scope 2) emissions result from the generation of purchased or acquired  
913 electricity, heating, cooling, and steam consumed within the organization
- 914 • Other Indirect (Scope 3) emissions are all indirect emissions (not included in Scope 2) that occur  
915 outside of the organization, including both upstream and downstream emissions

916 Scopes 1, 2, and 3 of the GHG Protocol align with ISO 14064 definitions and the ~~GRI~~ Indicators as follows:

- 917 • Scope 1 = direct GHG emissions (~~GRI Indicator G4-EN15~~[SRS19-1](#))
- 918 • Scope 2 = energy indirect GHG emissions (~~GRI Indicator G4-EN16~~[SRS19-2](#))
- 919 • Scope 3 = other indirect GHG emissions (~~GRI Indicator G4-EN17~~[SRS19-3](#))

920 The GHG Protocol prescribes reporting direct (Scope 1) emissions and energy indirect (Scope 2)  
921 emissions. Reporting other indirect (Scope 3) emissions is optional. The WRI and WBCSD 'GHG Protocol  
922 Corporate Value Chain (Scope 3) Accounting and Reporting Standard' prescribes reporting other indirect  
923 (Scope 3) emissions.

924 **Significant air emissions**

925 Air emissions that are regulated under international conventions and/or national laws or regulations,  
926 including those listed on environmental permits for the organization's operations.

# 927 Management Approach

928 [Organizations are to use this GRI Standard in conjunction with SRS 9-1: Management Approach Narrative](#)  
929 [and SRS 9-2: Management Approach Indicators.](#)

930 [When using SRS 9-1 to report the management approach narrative, organizations are to incorporate the](#)  
931 [following additional information:](#)

## 932 **Aspect-specific Guidance for G4-DMA-b**

933 Explain whether the organization is subject to any country, regional, or industry regulations and policies  
934 for emissions. Provide examples of such regulations and policies.

935 ~~In addition to using the DMA Guidance for reporting on targets, w~~hen reporting on GHG emissions  
936 targets, identify whether offsets are used to meet the target. Specify the type, amount, criteria or scheme  
937 of which they are part.

# 938 Indicators

939 When [reporting the Indicators for emissions of GHGs and ODS](#), ~~possible~~, organizations apply emission  
940 factors and GWP rates consistently for the data reported ~~under the Emissions Aspect~~. Emission factors  
941 may originate from mandatory reporting requirements, voluntary reporting frameworks, or be developed  
942 by industry groups. Estimates of GWPs change over time as scientific research develops. Organizations  
943 may use the GWPs from *Assessment Reports* from the Intergovernmental Panel on Climate Change (IPCC).  
944 As the GWPs from the IPCC *Second Assessment Report* are used as the basis for international negotiations  
945 under the UN 'Kyoto Protocol', such rates may be used for disclosing GHG emissions where it does not  
946 conflict with national or regional reporting requirements. Organizations may also use the latest GWPs  
947 from the most recent IPCC *Assessment Report*. GWPs are expressed over a number of different time  
948 frames within the IPCC *Assessment Reports*. Organizations use the factors for the 100-year time span.

## 949 *Greenhouse gas (GHG) emissions*

### 950 [SRS19-IG4-EN15](#)

#### 951 DIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE 1)

- 952 a. Report gross direct (Scope 1) GHG emissions in metric tons of CO<sub>2</sub> equivalent,  
953 independent of any GHG trades, such as purchases, sales, or transfers of offsets or  
954 allowances.
- 955 b. Report gases included in the calculation (whether CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>,  
956 NF<sub>3</sub>, or all).
- 957 c. Report biogenic CO<sub>2</sub> emissions in metric tons of CO<sub>2</sub> equivalent separately from the  
958 gross direct (Scope 1) GHG emissions.
- 959 d. Report the chosen base year, the rationale for choosing the base year, emissions in  
960 the base year, and the context for any significant changes in emissions that triggered  
961 recalculations of base year emissions.
- 962 e. Report standards, methodologies, and assumptions used.
- 963 f. Report the source of the emission factors used and the global warming potential  
964 (GWP) rates used or a reference to the GWP source.
- 965 g. Report the chosen consolidation approach for emissions (equity share, financial  
966 control, operational control).

#### 967 **GUIDANCE**

##### 968 **Relevance**

969 This Indicator covers the disclosure of the direct (Scope 1) GHG emissions, in CO<sub>2</sub> equivalents, of the  
970 GHGs covered by the UN 'Kyoto Protocol' and the WRI and WBCSD 'GHG Protocol Corporate  
971 Accounting and Reporting Standard':

- 972 • Carbon dioxide (CO<sub>2</sub>)  
973 • Methane (CH<sub>4</sub>)

- 974 • Nitrous oxide (N<sub>2</sub>O)
- 975 • Hydrofluorocarbons (HFCs)
- 976 • Perfluorocarbons (PFCs)
- 977 • Sulphur hexafluoride (SF<sub>6</sub>)
- 978 • Nitrogen trifluoride (NF<sub>3</sub>)

979 GHG emissions are a major contributor to climate change and are governed by the UN 'United Nations  
 980 Framework Convention on Climate Change'<sup>100</sup> and the subsequent UN 'Kyoto Protocol'. Some GHGs,  
 981 including methane (CH<sub>4</sub>), are also air pollutants that have significant adverse impacts on ecosystems, air  
 982 quality, agriculture, and human and animal health. As a result, different national and international  
 983 regulations and incentive systems (such as tradable emission permits) aim to control the volume, and  
 984 reward the reduction of GHG emissions.

985 ~~Direct (Scope 1) GHG emissions come from sources (physical units or processes that release GHG into~~  
 986 ~~the atmosphere) that are owned or controlled by the organization.~~

987 Direct (Scope 1) GHG emissions include, but are not limited to, the CO<sub>2</sub> emissions from the fuel  
 988 consumption reported in Indicator G4-EN3.

989 This Indicator ~~may~~can be used in combination with Indicators ~~G4-EN6~~[SRS19-2](#) (energy indirect Scope 2  
 990 emissions) and ~~G4-EN7~~[SRS19-3](#) (other indirect Scope 3 emissions) to report ~~an organization's~~total GHG  
 991 emissions.

992 ~~The combination of direct and indirect emissions provides insights into the cost implications of taxation~~  
 993 ~~or trading systems. It also provides insight into an organization's carbon footprint and environmental~~  
 994 ~~performance.~~

995 **Compilation**

996 ~~Identify d~~[Direct \(Scope 1\) GHG](#) emissions ~~of GHGs~~ from sources owned or controlled by the  
 997 organization; ~~including:~~

- 998 • Generation of electricity, heating, cooling and steam. These emissions result from combustion of  
 999 fuels in stationary sources (such as boilers, furnaces, turbines) and from other combustion  
 1000 processes such as flaring
- 1001 • Physical or chemical processing. Most of these emissions result from the manufacturing or  
 1002 processing of chemicals and materials (such as cement, steel, aluminum, ammonia, and waste  
 1003 processing)
- 1004 • Transportation of materials, products, waste, employees, and passengers. These emissions result  
 1005 from the combustion of fuels in mobile combustion sources owned or controlled by the  
 1006 organization (such as trucks, trains, ships, airplanes, buses, cars)
- 1007 • Fugitive Emissions. These emissions result from intentional or unintentional releases, such as  
 1008 equipment leaks from joints, seals, packing, and gaskets; methane emissions from coal mines and  
 1009 venting; hydrofluorocarbon (HFC) emissions from refrigeration and air conditioning equipment;  
 1010 and methane leakages from gas transport

1011 ~~Using the sources identified, calculate the organization's gross direct GHG emissions using relevant GWP~~  
 1012 ~~rates, in CO<sub>2</sub> equivalents, during the reporting period. Exclude any GHG trades, such as purchases, sales,~~  
 1013 ~~or transfers of offsets or allowances.~~

1014 ~~Organizations are expected to report standards, methodologies, and assumptions used to calculate and~~  
1015 ~~measure emissions, with a r~~Reference to the calculation tools used. Organizations subject to different  
1016 standards and methodologies should describe the approach to selecting them.

1017 Select a consistent consolidation approach for emissions, and apply it to calculate the gross direct (Scope  
1018 I) GHG emissions. When possible, select an approach that is consistent with the approach used in  
1019 Indicator ~~G4-EN16~~[SRS19-2](#). Organizations select the equity share, financial control, or operational control  
1020 methods outlined in the WRI and WBCSD 'GHG Protocol Corporate Accounting and Reporting  
1021 Standard'.

1022 ~~Select and identify the base year for which emissions data are available, and identify the reasons for~~  
1023 ~~selecting that particular year.~~ For recalculations of prior year emissions, organizations [may can](#) follow the  
1024 approach in the WRI and WBCSD 'GHG Protocol Corporate Accounting and Reporting Standard'.

1025 Organizations may report biogenic CO<sub>2</sub> emissions; however, such emissions are reported separately and  
1026 not added to the total direct (Scope I) GHG emissions. These emissions refer to CO<sub>2</sub> emissions from  
1027 combustion or biodegradation of biomass only, not to emissions of any other GHGs (such as CH<sub>4</sub> and  
1028 N<sub>2</sub>O), or to any GHG emissions that occur in the life cycle of biomass other than from combustion or  
1029 biodegradation (such as GHG emissions from processing or transporting biomass).

1030 ~~Information on offsets may be reported in the DMA for the Emissions Aspect.~~

1031 Methodologies used to calculate the emissions may include:

- 1032 • Direct measurement of energy source consumed (coal, gas) or losses (refills) of cooling systems  
1033 and conversion to GHG (CO<sub>2</sub> equivalents)
- 1034 • Mass balance calculations
- 1035 • Calculation based on site-specific data (such as for fuel composition analysis)
- 1036 • Calculation based on published criteria (emissions factors and GWPs)
- 1037 • Estimations. If estimations are used due to a lack of default figures, the organization indicates the  
1038 basis and assumptions on which figures were estimated
- 1039 • Direct measurement of the GHG (such as continuous online analyzers)

1040 Organizations [may can](#) further disaggregate direct (Scope I) GHG emissions data where this aids  
1041 transparency or comparability over time. For example, they [may can](#) disaggregate data by:

- 1042 • Business unit or facility
- 1043 • Country
- 1044 • Source type (stationary combustion, process, fugitive)
- 1045 • Activity type

1046 ~~When possible, organizations apply emission factors and GWP rates consistently for the data reported~~  
1047 ~~under the Emissions Aspect. Emission factors may originate from mandatory reporting requirements,~~  
1048 ~~voluntary reporting frameworks, or be developed by industry groups. Estimates of GWPs change over~~  
1049 ~~time as scientific research develops. Organizations may use the GWPs from Assessment Reports from the~~  
1050 ~~Intergovernmental Panel on Climate Change (IPCC). As the GWPs from the IPCC Second Assessment~~  
1051 ~~Report are used as the basis for international negotiations under the UN 'Kyoto Protocol', such rates may~~  
1052 ~~be used for disclosing GHG emissions where it does not conflict with national or regional reporting~~  
1053 ~~requirements. Organizations may also use the latest GWPs from the most recent IPCC Assessment Report.~~

1054 ~~GWPs are expressed over a number of different time frames within the IPCC Assessment Reports.~~  
1055 ~~Organizations use the factors for the 100-year time span.~~

1056 Further details and guidance for this Indicator are available in the WRI and WBCSD ‘GHG Protocol  
1057 Corporate Accounting and Reporting Standard’ and in documents from the IPCC.

### 1058 **Definitions**

1059 ~~See Glossary in Implementation Manual, p. 244~~

- 1060 ● ~~Base year~~
- 1061 ● ~~Carbon dioxide equivalent~~
- 1062 ● ~~Direct GHG emissions (Scope 1)~~
- 1063 ● ~~Global warming potential (GWP)~~

### 1064 **Documentation sources**

1065 ~~Potential sources of information on direct (Scope 1) GHG emissions include part of the data reported in~~  
1066 ~~Indicator G4-EN3.~~

### 1067 **References**

- 1068 ● ~~Carbon Disclosure Project (CDP), *Investor CDP Information Request*, updated annually.~~
- 1069 ● ~~Intergovernmental Panel on Climate Change (IPCC), *Climate Change 1995: The Science of Climate*~~  
1070 ~~*Change, Contribution of Working Group I to the Second Assessment Report of the Intergovernmental*~~  
1071 ~~*Panel on Climate Change, 1995.*~~
- 1072 ● ~~Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science*~~  
1073 ~~*Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel*~~  
1074 ~~*on Climate Change, 2007.*~~
- 1075 ● ~~United Nations (UN) Protocol, ‘Kyoto Protocol to the United Nations Framework Convention~~  
1076 ~~on Climate Change’, 1997.~~
- 1077 ● ~~World Resources Institute (WRI) and World Business Council for Sustainable Development~~  
1078 ~~(WBCSD), ‘GHG Protocol Corporate Accounting and Reporting Standard’, Revised Edition, 2004.~~
- 1079 ● ~~World Resources Institute (WRI) and World Business Council for Sustainable Development~~  
1080 ~~(WBCSD), ‘Greenhouse Gas Protocol Accounting Notes, No. 1, Accounting and Reporting~~  
1081 ~~Standard Amendment’, 2012.~~

## 1082 **SRS19-2G4-EN16**

### 1083 **ENERGY INDIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE 2)**

- 1084 a. **Report gross energy indirect (Scope 2) GHG emissions in metric tons of CO<sub>2</sub>**  
1085 **equivalent, independent of any GHG trades, such as purchases, sales, or transfers of**  
1086 **offsets or allowances.**
- 1087 b. **Report gases included in the calculation, if available.**
- 1088 c. **Report the chosen base year, the rationale for choosing the base year, emissions in**  
1089 **the base year, and the context for any significant changes in emissions that triggered**  
1090 **recalculations of base year emissions.**
- 1091 d. **Report standards, methodologies, and assumptions used.**

- 1092 e. Report the source of the emission factors used and the global warming potential
- 1093 (GWP) rates used or a reference to the GWP source, if available.
- 1094 f. Report the chosen consolidation approach for emissions (equity share, financial
- 1095 control, operational control).

1096 **GUIDANCE**

1097 **Relevance**

1098 This Indicator covers the disclosure of energy indirect (Scope 2) GHG emissions, in CO<sub>2</sub>-equivalents, of  
 1099 the GHGs covered by the UN 'Kyoto Protocol' and the WRI and WBCSD 'GHG Protocol Corporate  
 1100 Accounting and Reporting Standard'.

1101 GHG emissions are a major contributor to climate change and are governed by the UN 'United Nations  
 1102 Framework Convention on Climate Change'<sup>100</sup> and the subsequent UN 'Kyoto Protocol'. Some GHGs,  
 1103 including methane (CH<sub>4</sub>), are also air pollutants that have significant adverse impacts on ecosystems, air  
 1104 quality, agriculture, and human and animal health. As a result, different national and international  
 1105 regulations and incentive systems (such as tradable emission permits) aim to control the volume, and  
 1106 reward the reduction of GHG emissions.

1107 An organization's energy indirect (Scope 2) GHG emissions result from the generation of the electricity,  
 1108 heating, cooling, and steam which it purchased from other organizations for its own consumption.

1109 For many organizations the energy indirect (Scope 2) GHG emissions that result from the generation of  
 1110 purchased electricity are much greater than their direct GHG emissions.

1111 This Indicator ~~may can~~ be used in combination with Indicators ~~G4-EN15~~[SRS19-1](#) (Scope 1 emissions) and  
 1112 ~~G4-EN17~~[SRS19-3](#) (Scope 3 emissions) to report ~~an organization's~~ total GHG emissions. The combination  
 1113 of direct and indirect emissions provides insights into the cost implications of taxation or trading systems.  
 1114 It also provides insight into an organization's environmental footprint and performance.

1115 **Compilation**

1116 ~~Identify indirect emissions of GHGs that result from the generation of the electricity, heating, cooling, and~~  
 1117 ~~steam which is purchased or acquired for own consumption by the organization.~~

1118 Exclude other indirect (Scope 3) emissions. ~~These other~~ indirect (Scope 3) emissions are reported in  
 1119 Indicator ~~G4-EN17~~[SRS19-3](#).

1120 ~~Calculate the gross energy indirect GHG emissions that result from the generation of purchased~~  
 1121 ~~electricity, heating, cooling, and steam. Exclude any GHG trades, such as purchases, sales, or transfers of~~  
 1122 ~~offsets or allowances.~~

1123 Select a consistent consolidation approach for emissions, and apply it to calculate the gross energy indirect  
 1124 (Scope 2) GHG emissions. When possible, select an approach that is consistent with the approach used  
 1125 in Indicator ~~G4-EN15~~[SRS19-1](#). Organizations may select the equity share, financial control, or operational  
 1126 control methods outlined in the WRI and WBCSD 'GHG Protocol Corporate Accounting and Reporting  
 1127 Standard'.

1128 ~~Select and report a base year for which emissions data are available, and specify the reasons for selecting~~  
 1129 ~~that particular year.~~

1130 ~~Organizations are expected to report standards, methodologies, and assumptions used to calculate and~~  
1131 ~~measure emissions, with a r~~Reference to the calculation tools used. Organizations subject to different  
1132 standards and methodologies should describe the approach to selecting them.

1133 Organizations ~~may~~can further disaggregate energy indirect (Scope 2) GHG emissions data where this aids  
1134 transparency or comparability over time. For example, they ~~may~~can disaggregate data by:

- 1135 • Business unit or facility
- 1136 • Country
- 1137 • Source type (electricity, heating, cooling, and steam)
- 1138 • Activity type

1139 For recalculations of prior year emissions, organizations ~~may~~can follow the approach in the WRI and  
1140 WBCSD 'GHG Protocol Corporate Accounting and Reporting Standard'.

1141 ~~When possible, organizations apply emission factors and GWP rates consistently for the data reported~~  
1142 ~~under the Emissions Aspect. Emission factors may originate from mandatory reporting requirements,~~  
1143 ~~voluntary reporting frameworks, or be developed by industry groups. Estimates of GWPs change over~~  
1144 ~~time as scientific research develops. Organizations may use the GWPs from Assessment Reports from the~~  
1145 ~~Intergovernmental Panel on Climate Change (IPCC). As the GWPs from the Second Assessment Report are~~  
1146 ~~used as the basis for international negotiations under the UN 'Kyoto Protocol', such rates may be used~~  
1147 ~~for disclosing GHG emissions where it does not conflict with national or regional reporting requirements.~~  
1148 ~~Organizations may also use the latest GWPs from the most recent IPCC Assessment Report. GWPs are~~  
1149 ~~expressed over a number of different time frames within the IPCC Assessment Reports. Organizations use~~  
1150 ~~the factors for the 100-year time span.~~

## 1151 **Definitions**

1152 ~~See Glossary in Implementation Manual, p. 244~~

- 1153 • ~~Base year~~
- 1154 • ~~Carbon dioxide equivalent~~
- 1155 • ~~Energy indirect (Scope 2) GHG emissions~~
- 1156 • ~~Global warming potential (GWP)~~

## 1157 **Documentation sources**

1158 ~~Potential sources of information on energy indirect (Scope 2) emissions include electricity, heating,~~  
1159 ~~cooling, and steam consumption reported in Indicator G4-EN3.~~

## 1160 **References**

- 1161 • ~~Carbon Disclosure Project (CDP), *Investor CDP Information Request*, updated annually.~~
- 1162 • ~~Intergovernmental Panel on Climate Change (IPCC), *Climate Change 1995: The Science of Climate*~~  
1163 ~~*Change, Contribution of Working Group I to the Second Assessment Report of the Intergovernmental*~~  
1164 ~~*Panel on Climate Change, 1995.*~~
- 1165 • ~~Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science*~~  
1166 ~~*Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel*~~  
1167 ~~*on Climate Change, 2007.*~~

- 1168 ~~• United Nations (UN) Protocol, 'Kyoto Protocol to the United Nations Framework Convention~~
- 1169 ~~on Climate Change', 1997.~~
- 1170 ~~• World Resources Institute (WRI) and World Business Council for Sustainable Development~~
- 1171 ~~(WBCSD), 'GHG Protocol Corporate Accounting and Reporting Standard', Revised Edition, 2004~~

## SRS19-3G4-EN17

### OTHER INDIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE 3)

- 1174 a. Report gross other indirect (Scope 3) GHG emissions in metric tons of CO<sub>2</sub>
- 1175 equivalent, excluding indirect emissions from the generation of purchased or
- 1176 acquired electricity, heating, cooling, and steam consumed by the organization (these
- 1177 indirect emissions are reported in Indicator ~~SRS19-2G4-EN16~~). Exclude any GHG
- 1178 trades, such as purchases, sales, or transfers of offsets or allowances.
- 1179 b. Report gases included in the calculation, if available.
- 1180 c. Report biogenic CO<sub>2</sub> emissions in metric tons of CO<sub>2</sub> equivalent separately from the
- 1181 gross other indirect (Scope 3) GHG emissions.
- 1182 d. Report other indirect (Scope 3) emissions categories and activities included in the
- 1183 calculation.
- 1184 e. Report the chosen base year, the rationale for choosing the base year, emissions in
- 1185 the base year, and the context for any significant changes in emissions that triggered
- 1186 recalculations of base year emissions.
- 1187 f. Report standards, methodologies, and assumptions used.
- 1188 g. Report the source of the emission factors used and the global warming potential
- 1189 (GWP) rates used or a reference to the GWP source, if available.

### **GUIDANCE**

#### **Relevance**

1192 GHG emissions are a major contributor to climate change and are governed by the UN 'United Nations  
1193 Framework Convention on Climate Change'<sup>100</sup> and the subsequent UN 'Kyoto Protocol'. Some GHGs,  
1194 including methane (CH<sub>4</sub>), are also air pollutants that have significant adverse impacts on ecosystems, air  
1195 quality, agriculture, and human and animal health.

1196 For some organizations, GHG emissions from outside of the organization, or resulting from the use of  
1197 their products, are much greater than their direct (Scope 1) GHG emissions or energy indirect (Scope 2)  
1198 GHG emissions. ~~Measuring and communicating efforts to reduce other indirect (Scope 3) emissions can~~  
1199 ~~demonstrate leadership in combating climate change.~~

1200 Other indirect (Scope 3) emissions are a consequence of the activities of the organization, but occur from  
1201 sources not owned or controlled by the organization. Some examples of Scope 3 activities are the  
1202 extraction and production of purchased materials; the transportation of purchased fuels in vehicles not  
1203 owned or controlled by the organization; and the end use of products and services.

1204 In the Guidelines, the reporting of GHG emissions is based on the reporting requirements of the 'GHG  
1205 Protocol Corporate Accounting and Reporting Standard'<sup>130</sup> and the 'GHG Protocol Corporate Value  
1206 Chain (Scope 3) Accounting and Reporting Standard' provided by the World Resources Institute (WRI)  
1207 and the World Business Council for Sustainable Development (WBCSD).

1208 This Indicator ~~may can~~ be used in combination with Indicators ~~G4-EN15~~[SRS19-1](#) (Scope 1 emissions) and  
1209 ~~G4-EN16~~[SRS19-2](#) (Scope 2 emissions) to report ~~an organization's~~ total GHG emissions.

## 1210 **Compilation**

1211 This Indicator ~~covers the disclosure of the other indirect (Scope 3) emissions, in CO<sub>2</sub> equivalents, of the~~  
1212 ~~GHGs covered by the UN 'Kyoto Protocol' and the WRI and WBCSD 'GHG Protocol Corporate~~  
1213 ~~Accounting and Reporting Standard'<sup>1+30</sup>:~~

- 1214 ● ~~Carbon dioxide (CO<sub>2</sub>)~~
- 1215 ● ~~Methane (CH<sub>4</sub>)~~
- 1216 ● ~~Nitrous oxide (N<sub>2</sub>O)~~
- 1217 ● ~~Hydrofluorocarbons (HFCs)~~
- 1218 ● ~~Perfluorocarbons (PFCs)~~
- 1219 ● ~~Sulphur hexafluoride (SF<sub>6</sub>)~~
- 1220 ● ~~Nitrogen trifluoride (NF<sub>3</sub>)~~

1221 Identify the indirect emissions that occur outside of the organization that are not reported under Indicator  
1222 ~~G4-EN16~~[SRS19-2](#). This includes both upstream and downstream emissions. Indirect emissions ~~may~~[might](#)  
1223 also come from the organization's waste decomposing processes, process-related emissions during the  
1224 manufacturing of purchased goods, and fugitive emissions in facilities not owned or controlled by the  
1225 organization.

1226 Assess which of the organization's activities cause indirect emissions, and calculate the amounts involved.

1227 When deciding the relevance of these activities, consider whether the activity's emissions:

- 1228 ● Contribute significantly to the organization's total anticipated Scope 3 emissions
- 1229 ● Offer potential for reductions that could be undertaken or influenced by the organization
- 1230 ● Contribute to the organization's exposure to climate change- related risks such as financial,  
1231 regulatory, supply chain, product and customer, litigation, and reputational risks
- 1232 ● Are deemed material by key stakeholders (such as customers, suppliers, investors, or civil society)
- 1233 ● Result from outsourced activities which were previously performed in-house, or activities that  
1234 are typically performed in-house by other organizations in the same sector
- 1235 ● Have been identified as significant in sector-specific guidance
- 1236 ● Meet any additional criteria for determining relevance, developed by the organization or by  
1237 organizations in its sector

1238 When reporting emissions for this Indicator, organizations may disaggregate data by the following  
1239 categories and activities:

## 1240 **Upstream**

- 1241 1. Purchased goods and services
- 1242 2. Capital goods
- 1243 3. Fuel- and energy-related activities (those that are not included in Scope 1 or Scope 2 emissions)
- 1244 4. Upstream transportation and distribution
- 1245 5. Waste generated in operations
- 1246 6. Business travel

- I247 7. Employee commuting
- I248 8. Upstream leased assets
- I249 Other upstream

I250 **Downstream**

- I251 9. Downstream transportation and distribution
- I252 10. Processing of sold products
- I253 11. Use of sold products
- I254 12. End of life treatment of sold products
- I255 13. Downstream leased assets
- I256 14. Franchises
- I257 15. Investments
- I258 Other downstream

I259 For each category and activity above, provide a figure in CO<sub>2</sub> equivalent or an explanation of why certain  
I260 data are not included.

I261 The upstream/downstream categories and activities including their numbering correspond to the  
I262 categories and activities documented in the WRI and WBCSD ‘GHG Protocol Corporate Value Chain  
I263 (Scope 3) Accounting and Reporting Standard’. The numbering has been maintained consistent for the  
I264 ease of reference between G4 and the WRI and WBCSD ‘GHG Protocol Corporate Value Chain (Scope  
I265 3) Accounting and Reporting Standard’.

I266 Organizations may report biogenic CO<sub>2</sub> emissions; however, such emissions are expected to be reported  
I267 separately and not added to the total other indirect (Scope 3) emissions. These emissions refer to CO<sub>2</sub>  
I268 emissions from combustion or biodegradation of biomass only, not to emissions of any other GHGs (such  
I269 as CH<sub>4</sub> and N<sub>2</sub>O), or to any GHG emissions that occur in the life cycle of biomass other than from  
I270 combustion or biodegradation (such as GHG emissions from processing or transporting biomass).

I271 Organizations [may can](#) further disaggregate other indirect (Scope 3) emissions data where this aids  
I272 transparency or comparability over time. For example, they [may can](#) disaggregate data by:

- I273 • Business unit or facility
- I274 • Country
- I275 • Source type
- I276 • Activity type

~~I277 Organizations are expected to choose and report a base year for which emissions data are available, and  
I278 specify their reasons for choosing that particular year.~~ For recalculations of prior year emissions,  
I279 organizations [may can](#) follow the approach in the WRI and WBCSD ‘GHG Protocol Corporate Value  
I280 Chain (Scope 3) Accounting and Reporting Standard’.

~~I281 Organizations are expected to report standards, methodologies, and assumptions used to calculate and  
I282 measure emissions, with a r~~Reference ~~to~~ the calculation tools used. Organizations subject to different  
I283 standards and methodologies should describe the approach to selecting them.

~~I284 Where possible, organizations are expected to apply emission factors and GWP rates consistently for the  
I285 data reported under the Emissions Aspect. Emission factors may originate from mandatory reporting~~

1286 requirements, voluntary reporting frameworks, or be developed by industry groups. Estimates of GWPs  
1287 change over time as scientific research develops. Organizations may use the GWPs from *Assessment*  
1288 *Reports* from the Intergovernmental Panel on Climate Change (IPCC). As the GWPs from the *Second*  
1289 *Assessment Report* are used as the basis for international negotiations under the UN 'Kyoto Protocol', such  
1290 rates may be used for disclosing GHG emissions where it does not conflict with national or regional  
1291 reporting requirements. Organizations may also use the latest GWPs from the most recent IPCC  
1292 *Assessment Report*. GWPs are expressed over a number of different time frames within the IPCC  
1293 *Assessment Reports*. Organizations should use the factors for the 100-year time span.

1294 Further details on the compilation of this Indicator are available in the WRI and WBCSD 'GHG Protocol  
1295 Corporate Value Chain (Scope 3) Accounting and Reporting Standard'.

## 1296 **Definitions**

1297 *See Glossary in Implementation Manual, p. 244*

- 1298 ● Base year
- 1299 ● Carbon dioxide equivalent
- 1300 ● Global warming potential (GWP)
- 1301 ● Other indirect GHG emissions (Scope 3)

## 1302 **Documentation sources**

1303 *Potential sources of information on other indirect (Scope 3) emissions include the energy consumption*  
1304 *outside of the organization reported in Indicator G4-EN4. Other potential sources of information include*  
1305 *those provided by external suppliers of products and services. For certain types of indirect emissions such*  
1306 *as business travel, the organization may need to combine its own records with data from external sources*  
1307 *to arrive at an estimate.*

## 1308 **References**

- 1309 ● British Standards Institution (BSI), *Assessing the Life Cycle Greenhouse Gas Emissions of Goods and*  
1310 *Services PAS 2050*, 2011.
- 1311 ● Carbon Disclosure Project (CDP), *Investor CDP Information Request*, updated annually.
- 1312 ● Intergovernmental Panel on Climate Change (IPCC), *Climate Change 1995: The Science of Climate*  
1313 *Change, Contribution of Working Group I to the Second Assessment Report of the Intergovernmental*  
1314 *Panel on Climate Change*, 1995.
- 1315 ● Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science*  
1316 *Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel*  
1317 *on Climate Change*, 2007.
- 1318 ● United Nations (UN) Protocol, 'Kyoto Protocol to the United Nations Framework Convention  
1319 on Climate Change', 1997.
- 1320 ● World Resources Institute (WRI) and World Business Council for Sustainable Development  
1321 (WBCSD), 'GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard',  
1322 2011.
- 1323 ● World Resources Institute (WRI) and World Business Council for Sustainable Development  
1324 (WBCSD), 'GHG Protocol Product Life Cycle Accounting and Reporting Standard', 2011.

1325 • ~~World Resources Institute (WRI) and World Business Council for Sustainable Development~~  
1326 ~~(WBCSD), 'Greenhouse Gas Protocol Accounting Notes, No. 1, Accounting and Reporting~~  
1327 ~~Standard Amendment', 2012.~~

## 1328 ~~SRS19-4~~**G4-EN18**

### 1329 GREENHOUSE GAS (GHG) EMISSIONS INTENSITY

- 1330 a. Report the GHG emissions intensity ratio.
- 1331 b. Report the organization-specific metric (the ratio denominator) chosen to calculate
- 1332 the ratio.
- 1333 c. Report the types of GHG emissions included in the intensity ratio: direct (Scope 1),
- 1334 energy indirect (Scope 2), other indirect (Scope 3).
- 1335 d. Report gases included in the calculation.

### 1336 **GUIDANCE**

#### 1337 **Relevance**

1338 Intensity ratio defines an organization's GHG emissions in the context of an organization-specific metric.  
1339 ~~Intensity is calculated by dividing the absolute emissions (the numerator) by an organization-specific metric~~  
1340 ~~(the denominator).~~

1341 GHG emissions intensity expresses the GHG emissions per unit of activity, output, or any other  
1342 organization-specific metric. Many organizations track environmental performance with intensity ratios.  
1343 Intensity ratios are often called normalized environmental impact data.

1344 Intensity ratios ~~may~~**can** include but are not limited to:

- 1345 • Product emission intensity (such as metric tons of CO<sub>2</sub> emissions per unit produced)
- 1346 • Service intensity (such as metric tons of CO<sub>2</sub> emissions per function or per service)
- 1347 • Sales intensity (such as metric tons of CO<sub>2</sub> emissions per sales)

1348 In combination with an organization's absolute GHG emissions, disclosed in Indicators ~~G4-EN15~~**SRS19-1**,  
1349 ~~G4-EN16~~**SRS-19-2**, and ~~G4-EN17~~**SRS19-3**, GHG emissions intensity helps to contextualize the  
1350 organization's efficiency, including in relation to other organizations.

#### 1351 **Compilation**

1352 Select an appropriate ratio denominator to represent the per-unit output, activity, or any other  
1353 organization-specific metric. This ~~may~~**can** include but is not limited to:

- 1354 • Units of product
- 1355 • Production volume (metric ton, liter, MWh)
- 1356 • Size (m<sup>2</sup> floor space)
- 1357 • Number of full-time employees
- 1358 • Monetary units (revenue, sales)

1359 Organizations ~~may~~**can** report several GHG emissions intensity ratios where this aids transparency or  
1360 comparability. For example, they may calculate separate ratios by:

- 1361 • Business unit or facility
- 1362 • Country
- 1363 • Source type
- 1364 • Activity type

1365 Intensity is calculated by dividing the absolute emissions (the numerator) by the organization-specific  
1366 metric (the denominator).

1367 If reporting combined direct (Scope 1) and indirect (Scope 2) intensity ratios, add together the figures  
1368 reported in Indicators [G4-EN15SRS19-1](#) and [G4-EN16SRS19-2](#) to determine the total absolute amount  
1369 of GHG emissions. Alternatively, use the GHG emissions figures reported in Indicators [G4-EN15SRS19-](#)  
1370 [1](#) and [G4-EN16SRS19-2](#) separately.

1371 Organizations may report the other indirect (Scope 3) GHG emissions intensity ratio with this Indicator;  
1372 however, this ratio is expected to be presented separately, and not combined with the direct (Scope 1)  
1373 or energy indirect (Scope 2) intensity ratios.

#### 1374 **Documentation sources**

1375 ~~Potential sources of information for the numerator include invoices, measurements or calculations, or~~  
1376 ~~estimations. Potential sources of information for the denominator include sector and country level~~  
1377 ~~guidance on GHG emissions reporting.~~

#### 1378 **References**

- 1379 • ~~Carbon Disclosure Project (CDP), *Investor CDP Information Request*, updated annually.~~
- 1380 • ~~World Resources Institute (WRI) and World Business Council for Sustainable Development~~  
1381 ~~(WBCSD), ‘GHG Protocol Corporate Accounting and Reporting Standard’, Revised Edition, 2004.~~
- 1382 • ~~World Resources Institute (WRI) and World Business Council for Sustainable Development~~  
1383 ~~(WBCSD), ‘Greenhouse Gas Protocol Accounting Notes, No. 1, Accounting and Reporting~~  
1384 ~~Standard Amendment’, 2012.~~

### 1385 [SRS19-5](#)~~G4-EN19~~

## 1386 REDUCTION OF GREENHOUSE GAS (GHG) EMISSIONS

- 1387 a. Report the amount of **GHG** emissions reductions achieved as a direct result of  
1388 initiatives to reduce emissions, in metric tons of CO<sub>2</sub> equivalent.
- 1389 b. Report gases included in the calculation (whether CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>,  
1390 NF<sub>3</sub>, or all).
- 1391 c. Report the chosen base year or baseline and the rationale for choosing it.
- 1392 d. Report standards, methodologies, and assumptions used.
- 1393 e. Report whether the reductions in **GHG** emissions occurred in direct (Scope 1),  
1394 energy indirect (Scope 2), other indirect (Scope 3) emissions.

#### 1395 **GUIDANCE**

#### 1396 **Relevance**

1397 GHG emissions are a major contributor to climate change and are governed by the UN ‘United Nations  
1398 Framework Convention on Climate Change’<sup>100</sup> and the subsequent UN ‘Kyoto Protocol’. As a result,  
1399 different national and international regulations and incentive systems (such as tradable emission permits)  
1400 aim to control the volume, and reward the reduction of GHG emissions.

1401 This Indicator ~~may~~ can be used in combination with Indicators ~~G4-EN15~~ SRS19-1, ~~G4-EN16~~ SRS19-2, and  
1402 ~~G4-EN17~~ SRS19-3 to monitor the reduction of GHG emissions with reference to the organization’s  
1403 targets, or to regulations and trading systems at international or national levels.

#### 1404 **Compilation**

1405 ~~Identify initiatives that have been implemented which have reduced the generation of GHG emissions.~~

1406 Initiatives ~~may~~ can include but are not limited to:

- 1407 • Process redesign
- 1408 • Conversion and retrofitting of equipment
- 1409 • Fuel switching
- 1410 • Changes in employee behavior
- 1411 • Offsets

1412 Organizations with many initiatives for reducing GHG emissions may prioritize reporting the initiatives  
1413 that were implemented in the reporting period, and that have the potential to contribute significantly to  
1414 reducing emissions. Initiatives and their reduction targets may be described in the ~~DMA~~ management  
1415 approach for the Emissions ~~Aspect~~ topic.

1416 Organizations may choose to report reductions disaggregated by initiatives or groups of initiatives.

1417 Report the GHG emissions reductions separately for direct (Scope 1), energy indirect (Scope 2), and  
1418 other indirect (Scope 3) emissions. Reductions in emissions that result from reduced production capacity  
1419 or outsourcing are not included in this Indicator.

1420 Reductions from offsets should be reported separately from other reductions.

1421 Organizations may choose to use either inventory or project method for accounting for emissions  
1422 reductions. Inventory method compares emissions reductions to a base year while project method  
1423 compares emissions reductions to a baseline. Further details on the inventory and project reduction  
1424 accounting methods are available in the WRI and WBCSD ‘GHG Protocol Corporate Value Chain (Scope  
1425 3) Accounting and Reporting Standard’ and WRI and WBCSD ‘GHG Protocol for Project Accounting’.

1426 ~~Organizations are expected to report standards, methodologies, and assumptions used to calculate and~~  
1427 ~~measure reduction of GHG emissions, with a r~~ eference ~~to~~ the calculation tools used. Organizations  
1428 subject to different standards and methodologies should describe the approach to selecting them.

#### 1429 **Definitions**

1430 ~~See Glossary in Implementation Manual, p. 244~~

- 1431 • ~~Base year~~
- 1432 • ~~Baseline~~
- 1433 • ~~GHG reductions~~

1434 **Documentation sources**

1435 ~~Potential information sources include the data reported in Indicators G4-EN15, G4-EN16, and G4-EN17,~~  
1436 ~~from emissions measurements, from estimates, or calculated from accounting data. Information on~~  
1437 ~~initiatives is likely to be maintained by the parties responsible for environmental management, such as~~  
1438 ~~energy or facilities managers.~~

1439 **References**

- 1440 ~~• Carbon Disclosure Project (CDP), *Investor CDP Information Request*, updated annually.~~
- 1441 ~~• United Nations (UN) Protocol, 'Kyoto Protocol to the United Nations Framework Convention~~  
1442 ~~on Climate Change', 1997.~~
- 1443 ~~• World Resources Institute (WRI) and World Business Council for Sustainable Development~~  
1444 ~~(WBCSD), 'GHG Protocol Corporate Accounting and Reporting Standard', Revised Edition, 2004.~~
- 1445 ~~• World Resources Institute (WRI) and World Business Council for Sustainable Development~~  
1446 ~~(WBCSD), 'GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard',~~  
1447 ~~2011.~~
- 1448 ~~• World Resources Institute (WRI) and World Business Council for Sustainable Development~~  
1449 ~~(WBCSD), 'GHG Protocol for Project Accounting', 2005.~~
- 1450 ~~• World Resources Institute (WRI) and World Business Council for Sustainable Development~~  
1451 ~~(WBCSD), 'Greenhouse Gas Protocol Accounting Notes, No. 1, Accounting and Reporting~~  
1452 ~~Standard Amendment', 2012.~~

1453 *Ozone-depleting substances (ODS) emissions*

1454 **SRS19-6G4-EN20**

1455 **EMISSIONS OF OZONE-DEPLETING SUBSTANCES (ODS)**

- 1456 a. Report production, imports, and exports of ODS in metric tons of CFC-11 equivalent.
- 1457 b. Report substances included in the calculation.
- 1458 c. Report standards, methodologies, and assumptions used.
- 1459 d. Report the source of the emission factors used.

1460 **GUIDANCE**

1461 **Relevance**

1462 The ozone layer filters out most of the sun's biologically harmful ultraviolet (UV-B) radiation. Observed  
1463 and projected ozone depletion due to ODS generates worldwide concern. The UNEP 'Montreal Protocol  
1464 on Substances that Deplete the Ozone Layer' regulates the phase-out of ODS internationally.

1465 Measuring ODS production, imports, and exports enables an assessment of how well an organization  
1466 complies with legislation and manages its risks. This is particularly relevant for organizations that produce  
1467 or use ODS in their processes, products and services and must now transition to new technologies to  
1468 comply with phase-out commitments. The organization's results on ODS phase-out help to indicate its  
1469 level of technology leadership, and its competitive position in markets for products and services affected  
1470 by ODS rules.

1471 **Compilation**

1472 This Indicator covers the production, import, and export of substances covered in Annexes A, B, C, and  
1473 E of the UNEP 'Montreal Protocol on Substances that Deplete the Ozone Layer' as well as any other ODS  
1474 produced, imported, or exported by the organization.

1475 ~~Identify ODS produced, imported, or exported by the organization.~~

1476 Calculate the production of ODS as the amount of ODS produced, minus the amount destroyed by  
1477 approved technologies and minus the amount entirely used as feedstock in the manufacture of other  
1478 chemicals. Exclude ODS recycled and reused.

1479 Organizations ~~may~~can further disaggregate ODS data where this aids transparency or comparability over  
1480 time. For example, they may disaggregate data by:

- 1481 • Business unit or facility
- 1482 • Country
- 1483 • Source type
- 1484 • Activity type

1485 Organizations may report ODS data for the relevant substances separately or together.

1486 ~~Organizations are expected to report standards, methodologies, and assumptions used to calculate and~~  
1487 ~~measure ODS data, with a r~~Reference ~~to~~ the calculation tools used. Organizations subject to different  
1488 standards and methodologies should describe the approach to selecting them.

1489 **Definitions**

1490 ~~See Glossary in Implementation Manual, p. 244~~

- 1491 • ~~CFC-II equivalent~~
- 1492 • ~~Ozone-depleting substance (ODS)~~

1493 **Documentation sources**

1494 ~~Potential sources of information include emissions measurements, calculations from accounting data and~~  
1495 ~~defaults, or estimations.~~

1496 **References**

- 1497 • ~~Intergovernmental Panel on Climate Change (IPCC), *Climate Change 1995: The Science of Climate*~~  
1498 ~~*Change, Contribution of Working Group I to the Second Assessment Report of the Intergovernmental*~~  
1499 ~~*Panel on Climate Change, 1995.*~~
- 1500 • ~~Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science*~~  
1501 ~~*Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel*~~  
1502 ~~*on Climate Change, 2007.*~~
- 1503 • ~~United Nations Environment Programme (UNEP), 'Montreal Protocol on Substances that Deplete~~  
1504 ~~the Ozone Layer', 1987.~~
- 1505 • ~~United Nations Environment Programme (UNEP), *Standards and Codes of Practice to Eliminate*~~  
1506 ~~*Dependency on Halons Handbook of Good Practices in the Halon Sector, 2001.*~~

1507 *NO<sub>x</sub>, SO<sub>x</sub>, and other significant air emissions*

1508 ~~SRS19-7G4-EN21~~

1509 **NO<sub>x</sub>, SO<sub>x</sub>, AND OTHER SIGNIFICANT AIR EMISSIONS**

- 1510 a. Report the amount of significant air emissions, in kilograms or multiples for each of  
1511 the following:
- 1512 • NO<sub>x</sub>
  - 1513 • SO<sub>x</sub>
  - 1514 • Persistent organic pollutants (POP)
  - 1515 • Volatile organic compounds (VOC)
  - 1516 • Hazardous air pollutants (HAP)
  - 1517 • Particulate matter (PM)
  - 1518 • Other standard categories of air emissions identified in relevant regulations
- 1519 b. Report standards, methodologies, and assumptions used.
- 1520 c. Report the source of the emission factors used.

1521 **GUIDANCE**

1522 **Relevance**

1523 ~~Air pollutants have adverse effects on climate, ecosystems, air quality, habitats, agriculture, and human and~~  
1524 ~~animal health. Deterioration of air quality, acidification, forest degradation, and public health concerns~~  
1525 ~~have led to local and international regulations to control air emissions. Reductions in regulated pollutants~~  
1526 ~~lead to improved health conditions for workers and neighboring communities. Reductions, or~~  
1527 ~~performance beyond compliance, can enhance relations with affected communities and workers, and the~~  
1528 ~~ability to maintain or expand operations. In regions with emission caps, the volume of emissions also has~~  
1529 ~~direct cost implications.~~

1530 ~~This Indicator can also measure the scale of the organization's air emissions and demonstrate the relative~~  
1531 ~~size and importance of these emissions compared with those of other organizations.~~

1532 **Compilation**

1533 ~~Identify significant air pollutants emitted by the organization and sources of significant air emissions release~~  
1534 ~~to the environment.~~

1535 ~~Using the air pollutants and their sources identified above, calculate the amount of significant air emissions~~  
1536 ~~released to the environment.~~

1537 ~~Organizations are expected to report standards, methodologies, and assumptions used to calculate and~~  
1538 ~~measure air emissions, with a r~~Reference ~~to~~ the calculation tools used. Organizations subject to different  
1539 standards and methodologies should describe the approach to selecting them. Since calculating certain air  
1540 emissions (such as NO<sub>x</sub>) requires complex quantification efforts, indicate the methodology used for  
1541 calculations, selecting one of the following approaches:

- 1542 • Direct measurement of emissions (such as online analyzers)
- 1543 • Calculation based on site-specific data

- 1544 • Calculation based on published emission factors
- 1545 • Estimation (if estimations are used due to a lack of default figures, indicate the basis on which
- 1546 figures were estimated)

1547 Organizations ~~may~~[can](#) further disaggregate air emissions data where this aids transparency or  
1548 comparability over time. For example, they may disaggregate data by:

- 1549 • Business unit or facility
- 1550 • Country
- 1551 • Source type
- 1552 • Activity type

### 1553 **Definitions**

1554 ~~See Glossary in Implementation Manual, p. 244~~

- 1555 • ~~Significant air emissions~~

### 1556 **Documentation sources**

1557 ~~Potential sources of information include emissions measurements, calculations from accounting data and~~  
1558 ~~defaults, or estimations.~~

### 1559 **References**

- 1560 • ~~United Nations Economic Commission for Europe (UNECE) Convention, ‘Geneva Protocol~~  
1561 ~~concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary~~  
1562 ~~Fluxes’, 1991.~~
- 1563 • ~~United Nations Economic Commission for Europe (UNECE) Convention, ‘Gothenburg Protocol~~  
1564 ~~to Abate Acidification, Eutrophication and Ground-level Ozone’, 1999.~~
- 1565 • ~~United Nations Economic Commission for Europe (UNECE) Convention, ‘Helsinki Protocol on~~  
1566 ~~the Reduction of Sulphur Emissions or their Transboundary Fluxes’, 1985.~~
- 1567 • ~~United Nations Economic Commission for Europe (UNECE) Convention, ‘Sofia Protocol~~  
1568 ~~concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes’, 1988.~~
- 1569 • ~~United Nations Environment Programme (UNEP) Convention, ‘Stockholm Convention on~~  
1570 ~~Persistent Organic Pollutants (POPs), Annex A, B, and C, 2009.~~

1571

# References

1572 [The following documents informed the development of this GRI Standard. Organizations are encouraged](#)  
1573 [to be familiar with these documents, as they can improve understanding of the disclosure requirements.](#)

- 1574 • British Standards Institution (BSI), *Assessing the Life-Cycle Greenhouse Gas Emissions of Goods and*  
1575 *Services PAS 2050*, 2011.
- 1576 • Carbon Disclosure Project (CDP), *Investor CDP Information Request*, updated annually.
- 1577 • Intergovernmental Panel on Climate Change (IPCC), *Climate Change 1995: The Science of Climate*  
1578 *Change, Contribution of Working Group I to the Second Assessment Report of the Intergovernmental*  
1579 *Panel on Climate Change*, 1995.
- 1580 • Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science*  
1581 *Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel*  
1582 *on Climate Change*, 2007.
- 1583 • United Nations Economic Commission for Europe (UNECE) Convention, ‘Geneva Protocol  
1584 concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary  
1585 Fluxes’, 1991.
- 1586 • United Nations Economic Commission for Europe (UNECE) Convention, ‘Gothenburg Protocol  
1587 to Abate Acidification, Eutrophication and Ground-level Ozone’, 1999.
- 1588 • United Nations Economic Commission for Europe (UNECE) Convention, ‘Helsinki Protocol on  
1589 the Reduction of Sulphur Emissions or their Transboundary Fluxes’, 1985.
- 1590 • United Nations Economic Commission for Europe (UNECE) Convention, ‘Sofia Protocol  
1591 concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes’, 1988.
- 1592 • United Nations Environment Programme (UNEP) Convention, ‘Stockholm Convention on  
1593 Persistent Organic Pollutants (POPs)’, Annex A, B, and C, 2009.
- 1594 • United Nations Environment Programme (UNEP), ‘Montreal Protocol on Substances that Deplete  
1595 the Ozone Layer’, 1987.
- 1596 • United Nations Environment Programme (UNEP), *Standards and Codes of Practice to Eliminate*  
1597 *Dependency on Halons - Handbook of Good Practices in the Halon Sector*, 2001.
- 1598 • United Nations Environment Programme (UNEP) and World Meteorological Organization  
1599 (WMO), *Integrated Assessment of Black Carbon and Tropospheric Ozone*, 2011.
- 1600 • United Nations (UN) Framework Convention, ‘United Nations Framework Convention on  
1601 Climate Change’, 1992.
- 1602 • United Nations (UN) Protocol, ‘Kyoto Protocol to the United Nations Framework Convention  
1603 on Climate Change’, 1997.
- 1604 • World Resources Institute (WRI) and World Business Council for Sustainable Development  
1605 (WBCSD), ‘GHG Protocol Corporate Accounting and Reporting Standard’, Revised Edition, 2004.
- 1606 • World Resources Institute (WRI) and World Business Council for Sustainable Development  
1607 (WBCSD), ‘GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard’,  
1608 2011.
- 1609 • World Resources Institute (WRI) and World Business Council for Sustainable Development  
1610 (WBCSD), ‘GHG Protocol for Project Accounting’, 2005.

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- 1612
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- World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD), 'GHG Protocol Product Life Cycle Accounting and Reporting Standard', 2011.
  - World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD), 'Greenhouse Gas Protocol Accounting Notes, No. 1, Accounting and Reporting Standard Amendment', 2012.