

Study Design and Protocols
GHG Emissions Ranking Project
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Research question: Are the data reported by S&P 500 companies sufficient to support rankings? If not, what changes could make them sufficient?

Finding: The data are currently sufficient but would not remain so if the companies acted strategically to improve their rankings.

Universe: S&P 500 reports covering the year 2020.

Unit of analysis: company. There should be one record for each of the 500 companies.

Phases: Once we finalize the data for 100 companies, we will expand the data to 500 companies.

Definition of “2020 data.” 2020 data are data for calendar year 2020 or the fiscal year that have the greatest overlap with the calendar year 2020. Data for a fiscal year ending at the end of June 2021 is 2020 data. Data for a fiscal year ending at the end of June 2020 is 2019 data. “June” includes all June dates from June 15 and July dates through July 15.

Report Collection.

1. Identify the CSR report(s) covering the year 2020 and determine whether each contains GHG data or an assurance certificate.

Highlight the information on which you base those determinations and add comments that identify the information by field name or similar phrase.

2. Save the 2020 report(s) with the file name: [Company Name] [CSR report year] [[GHG [GHG year] or No GHG] [“CSR Report”, “CSR Report-Certif”, “Certificate”, “CDP Questionnaire,” or [custom name]]
3. Move reports covering years before 2020 to a separate folder. If the file name contains 2019 or earlier years, there is no need to determine what year the report actually covers.

Choose Data Source

4. If we have an assurance certificate, highlight and comment the Scope 1 and Scope 2 totals.
5. If we have a second document that contains GHG information, highlight and comment the Scope 1 and Scope 2 totals.
6. If the Scope 1 and Scope 2 totals match in the two sources, enter the GHG information from the certificate. If they don’t match, broaden the search. Add documents if necessary.

Data Entry: Enter the data in accord with the following protocols:

Second 100	Field name	CHK field
Yes	10k Down. Did we download the 10k?	
Don't calculate	10k-CsrMatchDates. Is DateEnd10k the same month as DateEndCsr ? "yes," "no," or "no CSR Report date."	
Don't calculate	10k-GhgMatchDates. Is DateEnd10k the same month as DateEndGhg ? "yes," "no," or "no GHG date."	
Yes	Assure2020. Did the company obtain assurances with regard to its 2020 GHG emission data? "yes" or "no" or "not yet." "Not yet" indicates that the company either obtained assurances of 2019 GHG data or said it is seeking 2020 GHG assurances. "Yes" does not require that we have a copy of the certificate.	
Yes	AssureCert2020. Do we have an assurance certificate that covers the year 2020? It may be stand-alone or part of the CSR Report. "yes" or "no".	
Yes	AssureCoverage. What data did the third party assure? Categories are "GHG emissions only," "GHG/environmental" (energy consumption is "environmental"), "includes social," "no assurances" (we found no evidence of assurances), "Coverage unknown" (assurances were given, but we don't know what was assured), and "Scope 1 emissions only."	
Yes	AssureProtocol. The Protocol to which the company reported, as indicated in the Assurance Certificate. "GHG Protocol," "GRI," "The Climate Registry," others, or "unknown" (if "Assure2020" is "yes" but we don't know the protocol(s) reported to). "no assurances" if the company did not obtain assurances and did not disclose any protocols.	
Yes	AssureThirdParty. Name of third-party making assurances regarding 2020 CSR data, from Certificate if available. "Unidentified party" if assurances were given, but we don't know who gave them. "No assurances" if Assure2020 is "no" or "not yet."	
Yes	AssureType. Level of third-party assurance: "reasonable," "limited," "high," "moderate," "type unknown," "no 2020 GHG data" (if DateGhgEnd and Scope1+2Total are blank), "no assurances."	

Yes	BiogenicComplete. Have we completed our search for biogenic emissions for 2020? “yes” or “no”	
Drop	BiogenicEmitSource. Source of the Biogenic emissions numbers. “CSR Report,” “Certificate,” “CDP Questionnaire,” or combinations.	
Yes	Biogenic Reported. Did the company report any category of biogenic emissions? yes or no.	
Yes	BiogenicScope1. 2020 biogenic scope 1 CO ₂ emissions as explicitly indicated, in metric tons. Companies should report biogenic emissions separately from scope 1 emissions. This field is numeric and so is blank if the company did not report a number. We drew no inference from the company’s statement on the CDP Questionnaire that biogenic emissions were not “relevant”.	
Yes	BiogenicScope2. 2020 biogenic Scope 2 CO ₂ emissions as explicitly indicated, in metric tons. Companies should report scope 2 biogenic emissions separately from scope 2 emissions. This field is numeric and so is blank if the company did not report a number. We drew no inference from the company’s statement on the CDP Questionnaire that biogenic emissions were not “relevant”.	
Calculate	BiogenicTotal. Total of BiogenicScope1 , BiogenicScope2 , and BiogenicUndifferentiated	
Yes	BiogenicUndifferentiated. 2020 biogenic CO ₂ emissions stated without differentiation, in metric tons. This field is numeric and so is blank if the company did not report a number. We drew no inference from the company’s statement on the CDP Questionnaire that biogenic emissions were not “relevant”.	
Yes	BoundaryFirm. Boundary of the firm used in calculating emissions. “Equity Share,” “Financial Control,” “Operational Control,” “Mixed,” “other boundary,” “no boundary data,” or “no report.” If a company begins a new boundary approach and includes the old approach for reference, use the new one.	
Yes	CdpQuest2020. Do we have a copy of the CDP Climate Change Questionnaire that covers the year 2020? “yes” if we do, otherwise blank. This questionnaire will probably be labeled “2021.”	

Done	CIK. The SEC’s company identifier. From Cap IQ.	
Yes	Comments. Use for necessary information that does not fit elsewhere.	
Done	Company Name. Name from Cap IQ.	
Yes	CsrCalendarYear. Are the CSR report 2020 coverage dates for the calendar year? yes/no Calculated from DateBeginCsr and DateEndCsr . If the fiscal year does not end on December 31, the CSR year is the calendar year with the greatest overlap with company’s CSR reporting year.	
Don’t calculate	Csr-GhgMatchDates. Is DateEndGhg the same month as DateEndCsr ? “yes,” “no,” “no GHG date” (if DateEndGhg is blank) or “no dates” (if both dates are blank).	
	CsrPermaLink. The hyperlink to the CSR Report.	
Drop	CsrRelease DataSource. Source of DateCsrRelease. “pdf creation date”, “press release,” “no CSR Report,” “release date unknown,” or “CSR Report, p. [page number]”	
Yes	CSR Report. Do we have at least one CSR Report that covers the year 2020? yes/no. A CSR report is a pdf or a website that reports data on at least one of the subjects of reporting under the GRI or SASB protocols. The report must contain numeric data. “We are reducing our GHG emissions” is not a report. The report must be for some fixed period of time. “We’ve reduced our emissions by more than 32%” is not a CSR Report if it states no period of coverage. A CDP questionnaire that is available free on the internet is a CSR report. Titling the report a “Corporate Responsibility Report” or “Sustainability Report” does not make it one.	
Yes	CSR ReportName. Name of the 2020 CSR report, from report cover. A CSR Report that covers a CY or FY period later than 2020 is still the 2020 CSR Report if it contains the initial disclosure of 2020 GHG data. If more than one document qualifies, give preference to the one that also contains social and environmental data. If the company did not issue a CSR report but has a website that reports greenhouse gas emissions, enter the name of the website page followed by “(website)” If the company did not issue a CSR report and did not disclose greenhouse gas emissions, enter “Company issued no report.”	

Yes	CsrReportYear. Calculated from DateEndCsr. The ReportYear is “2020” if DateEndCsr is no later than June 2021 and no earlier than June 2020. “June” includes all June dates from June 15 and July dates before July 15. A report that ends with June is a report for the previous year. If the report that covers 2020 also covers more than a year, prorate the data over the years covered. See McCormick & Company, Incorporated’s CSR Report. DateEndCsr for this case was changed from 11/30/2021 to 11/30/2020 to reflect the split between reporting years.	
Yes	Date10kReleased. Date the 2020 10-K was filed with SEC. From EDGAR	CHK Release Date 10-k
Yes	DateBeginCsr. First date covered by the 2020 CSR Report	CHK CSR Report
Yes	DateBeginGhg. First date covered by the 2020 GHG Emissions Report	CHK CSR Report
Yes	DateCsrRelease. Date the 2020 CSR Report was released. If the report was included in a press release, the release date is the date of the press release.	CHK Release Date CSR
Yes	DateEnd10k. Year-end date of the 2020 10-K.	CHK Release Date 10-k
Yes	DateEndCsr. Last date covered by the 2020 CSR Report	CHK CSR Report
Yes	DateEndGhg. Last date covered by the 2020 GHG data	CHK Release Date GHG
No	DateGhgCertificate Date the certificate of assurance covering 2020 GHG emissions was signed.	CHK Release Date GHG
Yes	DateGhgRelease. Date the GhgReport was released. If the data were initially made publicly accessible in a report that was included in a press release, the release date is the date of the press release. If a signed and dated assurance certificate containing GHG data is attached to a CsrReport and has a date earlier than the CsrReport, the certificate date is the DateGhgRelease , not the CsrReport date.	CHK Release Date GHG
Yes, calculate	Days10kToRelease. Days from DateEnd10k to Date10kReleased	CHK Release Date 10-k

Yes, calculate	DaysCsrToRelease. Days from DateEndCSR to DateCsrReleased	CHK Release Date CSR
Yes, calculate	DaysGhgToRelease. Days from DateEndGHG to DateGhgReleased	CHK Release Date GHG
Done	EpaScope1Emit. Scope 1 emissions as reported by facilities to the EPA	
Yes, calculate	EpaScope1Rank. Company’s rank based on EPA Scope 1 emissions. All companies not reporting rank tied for first.	
Yes, calculate	EpaScope1/Revenues. EpaScope1Emit divided by Revenues	
Yes, calculate	Exclusions. Did the company make an unlimited exclusion of emissions from its Scope 1+2Total? yes/no, calculated from GhgExcluCap.	
Yes, calculate	EPA rank revenues. The company’s rank based on EPAScope1/Revenues	
Being done incorrectly	Foreign. Is the company incorporated outside the United States? Enter name of the country or two-digit U.S. state postal code.	
Yes	GeographComments. If GeographWorldwide is “yes,” quote or describe the exclusion language. If “no,” quote the geographical inclusion language, for example, “worldwide.” For companies reporting covered country names only, download the 10-K and determine whether the countries covered include all operations.	CHK ExcludeGeograph
Yes	GeographWorldwide. Does the company represent that it is reporting its emissions and not state geographical limitations? If so, enter “worldwide.” If not, enter “not worldwide.” If the company did not disclose 2020 GHG information, enter “no GHG.” Use the 10-Ks to check geographical limitations. In the absence of any geographical limitation, we assume the data are worldwide.	CHK ExcludeGeograph
Yes, calculate	GhgCalendarYear. Is the 2020 GHG data for the year ending December 31, 2020? yes/no. “December 29 is ‘yes.’” If the company did not disclose 2020 GHG information, enter “no 2020 GHG data.”	CHK GHG Calendar Year

Yes	GhgExcluCap. If GhgExclusions were made, what information did the company provide that limits the amount of GHG excluded? Enter the limit or “no limit.” If the company did not disclose 2020 GHG information, enter “no 2020 GHG.”	CHK ExcludeGeograph
Yes	GhgExclusions. GHG emissions that are excluded from the numbers the company reports, if the exclusions are not stated in GeographWorldwide . If the company did not disclose 2020 GHG data (DateEndGhg is blank and Scope1+2Total is blank), enter “no 2020 GHG data.”	CHK ExcludeGeograph
	GhgPermaLink. The hyperlink to the GhgReport .	
	GhgReleaseDateSource. Source of DateGhgRelease .	CHK Release Date GHG
Yes	GhgReportYear. Calculated from DateEndGhg . The ReportYear should be “2020” if DateEndGhg is no later than June 2021 and no earlier than June 2020. “June” includes all June dates from June 15 and July dates before July 15. A report that ends in June is a report for the previous year.	CHK GHG Calendar Year
	GhgReportName. The name of the GhgReport . The GhgReport is the first document released that shows Ghg emissions, even if they are undifferentiated.	
Yes	GwpAssessment. The assessment (ratios) the company used to convert gases into CO ₂ equivalents.	CHK GWP
Drop	GwpSource. The document from which we obtained the assessment in GwpAssessment .	CHK GWP
Done	IndustGicsPrimary. From Cap IQ. Data derived from Global Industry Classification Standard (GICS) system. We downloaded these industries with the S&P 500 in June 2020.	CHK SASB
Done	IndustNaicsPrimary. From Cap IQ (WRDS). North American Industrial Classification System Code.	CHK Industry
Yes	IndustNumSicPrimary. The number of unique, primary SIC codes reported for the company in Compustat. We downloaded these codes in October 2021.	CHK Industry
Yes	IndustNumSicSecondary. The number of unique, secondary SIC codes reported for the company in Compustat. A secondary code is unique even if it matches a primary SIC	CHK Industry

	code for the company. We downloaded these codes in October 2021.	
Done	IndustSicPrimary. From Cap IQ (WRDS). Standard Industrial Classification Code.	CHK Industry
Don't calculate	Keyword. The key word or phrase in the name of the CSR Report. "Sustainability," "Responsibility," both ("Responsibility/Sustainability"), "ESG," "Environmental, Social, and Governance," "Environmental" not with "Social and Governance," "ESG/Sustainability" "Citizenship," "Governance," or "Other."	CHK CSR Report
Yes	Logo. Have we downloaded the company's logo? "yes" or blank. Logo is the symbol that serves as the company's logo. Search on [Company Name] logo. The Company Name will appear beside the logo on the website, so do not choose a logo for its inclusion of the Company Name. Choose a logo with a white background if one is available. Choose a logo with resolution above 400 by 400 if one is available. Right click on the logo and save it to the folder "OneDrive - UCLA School of Law\CSR Projects\GHG Emissions Ranking Project\Logos" with a file name that begins with the Company Name and contains your initials. Prefer svg files, then png files.	
Done	Random. The random number assigned by Excel to this record	
Yes, calculate	Rank. The rank order of the companies, from lowest to highest, based on Scope1+2Total emissions. Rank nonreporting companies (Scope1+2Total is blank) tied for last.	CHK Ranking
Yes, calculate	RankIndustry. Company's within-industry rank (SasbIndustry), from lowest to highest, based on Scope1+2/Revenues. Nonreporting companies (Scope1+2Total is blank) are ranked as tied for last.	CHK Ranking
Yes, calculate	RankRevenues. Rank by Scope1+2Total/Revenues.	
Done	Revenues. Annual revenues from Cap IQ downloaded in June 2021.	
No	SasbCodeScope1Emit. The SASB Code that requires reporting of Scope 1 emissions for this industry. If no SASB	CHK SASB

	standard does, enter “ <u>No applicable standard</u> ” The underline is necessary so the field will sort.	
Yes	EnergyUseAmount. If the company disclosed an amount for its 2020 energy use, energy usage, or energy consumption, state the amount disclosed in the unit of disclosure (do not convert). “Fuel consumption” is included if the reporter includes it, but not if fuel consumption is separately reported.	CHK SASB
No	SasbCodeEnergy. The SASB Code that requires reporting of energy use or consumption for SasbIndustry. If no SASB standard does, enter “ <u>No applicable standard</u> ” The underline is necessary so the field will sort.	CHK SASB
Yes	SasbEnergyReport. Did the company disclose its 2020 energy use pursuant to a SASB standard? “yes,” “no,” or “undecipherable.” To qualify, the company must have included the relevant SASB code or explicitly stated that they followed the SASB protocol.	CHK SASB
Yes	SasbEnergyUnits. State the unit of disclosure for SasbEnergyAmount. https://www.unitconverters.net/power/megawatt-to-joule-second.htm	CHK SASB
Yes	SasbIndustry. The company’s 2020 self-classification by SASB industry. From the SASB Industry Tool. https://www.sasb.org/find-your-industry/	CHK Ranking
Yes, calculate	SasbIndustryShort. SasbIndustry shortened to fit on the website. [number of characters].	
No	SasbIndustryCode. SASB’s four-digit code applicable to this industry.	CHK SASB
No	SasbReport. Does a 2020 CSR report include data for at least one SASB standard?	CHK SASB
No	SasbSector. The company’s 2020 self-classification by SASB sector. From the SASB Industry Tool. https://www.sasb.org/find-your-industry/	CHK SASB
Don’t calculate	SasbToGics. How does the SASB industry compare to the corresponding GICS industry. “Different,” “Name change no split,” “No change,” “Split,” “Unclear.”	CHK SASB

Yes, calculate	Scope1+2Reported. Did the company report its 2020 Scope 1 and Scope 2 emissions, whether separate for Scope 1 and Scope 2, or undifferentiated? “yes,” “no,” “yes, exclusions.” If the company reports foreign GHG emissions, but no US GHG emissions, enter “no”.	
Yes, calculate	Scope1+2Total. Total of Scope1Emit , Scope2Total , and Scope1+2Undiff .	
Yes	Scope1+2Undiff. Scope 1+2 2020 GHG total emissions as reported when the allocation method is unspecified. In equivalent metric tons.	
Yes, calculate	Scope1+2/Revenues. Scope1+2Total divided by Revenues (in millions of dollars).	
Yes, calculate	Scope1Emit. Scope 1 2020 GHG total emissions in equivalent metric tons.	
Yes	Scope2EmitLocation. Scope 2 2020 GHG total emissions reported as location-based. In equivalent metric tons.	
Yes	Scope2EmitMarket. Scope 2 2020 GHG total emissions reported as market-based. In equivalent metric tons.	
Yes	Scope2EmitUndifferentiated. Scope 2 2020 GHG total emissions as reported when the allocation method is unspecified. In equivalent metric tons.	
Yes, calculate	Scope2Total. Scope 2 2020 GHG total emissions in equivalent metric tons. Scope2EmitMarket if available, else Scope2EmitLocation , else Scope2EmitUndifferentiated	
Yes	Scope3Reported. Did the company report any numbers for 2020 Scope 3 emissions? yes/no.	
Drop	ScopeDataSource. The place from which we obtained the Scope 1 and Scope 2 numbers. [Field to be redesigned.]	
Done	Ticker. Ticker from Cap IQ	
Yes, calculate	TrAssurances. If AssuranceType = “high,” “moderate,” “limited,” or “reasonable,” enter “1”. Calculated. Used to calculate Transparency score .	
Yes, calculate	TrBiogenic. If BiogenicReported = “yes,” enter “1”. Calculated. Used to calculate Transparency score .	

Yes, calculate	TrCalendarYear. If CalendarYearAll = “yes,” enter “1”. Calculated. Used to calculate Transparency score .	
Yes, calculate	TrCsrReport. If CSR Report = “yes”, enter “1”. Calculated. Used to calculate Transparency score .	
Yes, calculate	TrExclusions. If Exclusions = “no,” enter “1”. Calculated. Used to calculate Transparency score .	
Yes, calculate	TrFirmBoundary. If BoundaryFirm = “equity share,” “financial control,” or “operational control,” enter “1”. Calculated. Used to calculate Transparency score .	
Yes, calculate	TrGwpAssessment. If GwpAssessment ≠ “not reported,” enter “1”. Calculated. Used to calculate Transparency score .	
Yes, calculate	TrScope1+Scope2. If Scope1+Scope2 = “yes*,” enter “2”. Calculated. Used to calculate Transparency score .	
Yes, calculate	TrScope3. If Scope3Reported = “yes,” enter “1”. Calculated. Used to calculate Transparency score .	
Yes	URL Report. URL of the CSR Report. If there are more than one, the one that contains the most CSR data is the CSR Report.	
Yes, calculate	Transparency score. A number from 0 to 10. The company receives one point for each of the following: (1) Scope 1 number reported, (2) Scope 2 number reported, (3) Scope 3 = “yes”, (4) Biogenic = “yes”, (5) Firm boundary is “equity share,” “financial control,” or “operational control,” (6) GWP assessment = “yes”, (7) Calendar year = “yes”, (8) GHG report = “yes”, (9) Exclusions = none, (10) Assurances is “high,” “moderate,” “limited,” or “reasonable.”	
Yes	URL Report. URL of the Primary CSR Report. If there are more than one, the one that contains the most CSR data is the Primary CSR Report.	
Yes	URL ReportDownloadPage. URL of the page from which we downloaded the CSR Report	