

S&P Global Physical Risk Exposure Scores

Addendum

S&P Global Sustainable1 – September 2026



This addendum has been prepared in response to ESMA's public disclosure requirements and is intended for a public audience. It provides supplementary information related to the methodology and supports analytical integrity, consistency, and transparency by offering additional clarity on the methodology's design, application, and governance.

ESMA Disclosure	Sustainable1's Response
an overview of the rating methodologies used and changes thereto, including whether analysis is backward-looking or forward-looking and the time horizon covered;	The rating methodology is titled "Climate Physical Hazard Exposure Scores".
	The Climate Physical Hazard Exposure Scores Data Methodology applies to corporate entities and their physical assets, including both public and private companies, subsidiaries, and ultimate parent entities covered within the S&P Global Sustainable1 Core and Expanded universes. The methodology evaluates climate physical hazard exposure at the asset level (e.g., facilities, plants, infrastructure, offices, real estate, mining, energy, telecommunications, technology, industrial and manufacturing assets) and aggregates these results to the company level. It can also be applied on a bespoke basis to client-provided asset portfolios, such as real estate, mortgage, infrastructure, or project finance portfolios. The methodology provides exposure scores for assets and companies across ten climate physical hazards, including coastal flood, fluvial flood, pluvial flood, extreme heat, extreme cold, tropical cyclone, wildfire, water stress, drought, and landslide.
	The Climate Physical Hazard Exposure Scores assess climate physical risk exposure over a long-term forward-looking horizon extending from the 2020s through the 2090s. The methodology provides annualized decadal average exposure scores across eight future time periods and evaluates risks under four climate change scenarios (SSP1-2.6, SSP2-4.5, SSP3-7.0, and SSP5-8.5). As a result, the scores are designed to reflect climate hazard exposure at specific future decades rather than a single fixed validity period.
	Supporting models & analytical framework: The methodology is supported by a suite of science-based climate hazard models and datasets that quantify exposure to ten physical hazards: coastal flood, fluvial flood, pluvial flood, extreme heat, extreme cold, tropical cyclone, wildfire, water stress, drought, and landslide. Hazard modelling draws on CMIP6 climate models, NEX-GDDP downscaled climate projections, WRI Aqueduct, HydroATLAS, NASHM tropical cyclone models, and other peer-reviewed scientific datasets. Exposure is assessed by overlaying company asset locations onto hazard maps across four climate scenarios (SSP1-2.6, SSP2-4.5, SSP3-7.0, SSP5-8.5) and multiple future decades. Key rating assumptions: (i) physical hazard exposure can be represented through location-based hazard metrics; (ii) asset-level exposure scores can be normalized on a 1-100 scale and aggregated to company-level scores using assumed asset values; (iii) company sensitivity to certain hazards can be approximated using water intensity, labour intensity, and tangible asset intensity metrics; and (iv) where complete asset information is unavailable, geographic revenue and country-average datasets may be used as proxies.

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	Data quality and reliability measures: To promote data quality and reliability, S&P Global Sustainable1 maintains a proprietary asset-level database linked to corporate ownership structures and applies a Data Quality Framework with four categories (A+, A, B, and C). The highest-quality category (A+) relies on analyst-led research to identify all material asset locations, while lower categories utilize asset, revenue, and country-level information according to defined minimum requirements. Company-level scores are calculated using transparent methodologies and documented weighting approaches. The methodology uses a relative climate physical hazard exposure scoring system ranging from 1 to 100, where 1 represents the lowest level of exposure and 100 represents the highest level of exposure to a given climate hazard. Scores are assigned at the asset level based on an asset's location within climate hazard maps and are then aggregated to the company level. The score is intended to represent the relative level of exposure compared with global conditions across all scenarios and time periods, rather than relative to a specific industry, peer group, or geographic region. A score of 100 indicates exposure at or above a hazard-specific threshold representing the highest global exposure, while a score of 1 indicates exposure below a threshold representing the lowest exposure. The methodology also provides composite exposure scores that combine exposure across all ten climate hazards and rescale the results to a 1-100 range. Accordingly, the ranking system should be interpreted as a measure of an asset's or company's relative climate hazard exposure on a global basis, enabling comparison across companies, sectors, geographies, climate scenarios, and future time horizons. The most recent version of the methodology was published in July 2026, with the document describing the 2025 dataset release, which incorporates a complete update of the underlying asset-level database and several methodological enhancements. Key changes introduced relative to the previous version include the addition of landslide as a new climate hazard, updates to the water stress hazard using the latest WRI Aqueduct data, expanded coverage to approximately 78,000 public companies and 864,000 private companies and subsidiaries, and enhanced asset data coverage through analyst-led research for more than 7,700 public companies. The release also maintains the use of the latest available CMIP6 climate models, covers ten climate hazards across four climate scenarios, and includes refinements to the underlying asset database and exposure scoring framework to improve coverage and analytical robustness.
the industry classification used;	The methodology references the Global Industry Classification Standard (GICS) as the industry classification system used for certain analyses and sector-based assumptions. GICS is jointly developed and maintained by MSCI Inc. and S&P Dow Jones Indices LLC. Official public documentation on the GICS methodology and classification structure is available at: https://www.msci.com/our-solutions/indexes/gics https://www.spglobal.com/spdji/en/indices/equity/gics/.
an overview of data sources, including whether data is sourced from sustainability statements required under Directive 2013/34/EU or	The methodology does not describe a formal engagement process with rated items or issuers as part of the calculation of Climate Physical Hazard Exposure Scores. Instead, the scores are primarily derived from location-based analysis using physical asset data, climate hazard models, and externally sourced scientific and geospatial datasets. The methodology relies on S&P Global's proprietary asset database, analyst-led research to identify material asset locations for certain companies (Data Quality A+), corporate ownership data, geographic revenue information, and client-provided asset data where applicable. Information obtained through company-related research is incorporated into the analysis by improving asset coverage, ownership mapping, and company-level aggregation of exposure scores. However, the methodology does not indicate that companies are systematically engaged for review, validation, or adjustment of scores, nor does it

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from information disclosed under Regulation (EU) 2019/2088 and whether sources are public or non-public, and an overview of data processes, estimation of input data in case of unavailability and frequency of data updates;	describe a process through which issuer feedback directly influences the resulting exposure scores.
the ownership structure of the ESG rating provider;	Ownership structure of the ESG rating provider
information on whether and how the rating methodologies are based on scientific evidence;	The methodology identifies and incorporates relevant scientific evidence through the use of peer-reviewed climate science, internationally recognized climate scenarios, and established hazard models and datasets. Climate hazard characterization is based on the latest available CMIP6 climate models, IPCC Shared Socioeconomic Pathway (SSP) and Representative Concentration Pathway (RCP) scenarios, and a range of scientifically recognized datasets and publications, including NEX-GDDP downscaled climate projections, WRI Aqueduct, HydroATLAS, NASHM tropical cyclone models, and other peer-reviewed research sources cited throughout the methodology. The methodology applies these scientific inputs to model ten climate hazards globally across multiple future time horizons and climate scenarios. To enhance scientific robustness, Sustainable1 utilizes averages across all available CMIP6 Global Climate Models (GCMs) to mitigate individual model uncertainty and regularly updates the methodology to incorporate improved climate data and scientific developments, such as the introduction of landslide risk modelling and updated water stress datasets in the 2025 release.
information on the ESG rating's clearly defined objective and marking whether the rating is assessing risks, impacts, or both, according to the double materiality principle, or any other dimensions, and in the case of double materiality the proportion of the risk and	The methodology assesses climate physical risks arising from both acute and chronic climate-related hazards that may result in financial impacts such as asset damage, operational disruption, and supply chain interruption. The assessment covers ten physical climate hazards: coastal flood, fluvial (river) flood, pluvial (extreme rainfall) flood, extreme heat, extreme cold, tropical cyclone, wildfire, water stress, drought, and landslide. These risks are evaluated using forward-looking climate scenarios and time horizons extending from the 2020s to the 2090s, enabling the assessment of how exposure to physical climate risks may evolve over time. Exposure scores are calculated at the asset level and aggregated to the company level to indicate the relative degree of exposure to each hazard and to a composite measure of overall climate physical risk exposure. The methodology is primarily designed to assess exposure to climate physical hazards rather than measuring actual impacts. However, it is based on the premise that climate-related physical hazards may lead to adverse consequences for companies, including damage to physical assets, interruption of operations, disruption of supply chains, constrained access to water resources, reduced labor productivity due to temperature extremes, and other climate-related financial impacts. The methodology evaluates exposure to ten physical hazards, including flooding, extreme

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impact materiality;	temperatures, tropical cyclones, wildfire, drought, water stress, and landslides, as indicators of the potential for such impacts to materialize. Additionally, the sensitivity-adjusted exposure scores incorporate company characteristics such as water intensity, labor intensity, and tangible asset intensity to reflect the extent to which companies may be affected by these climate hazards. The methodology is focused on assessing financial materiality arising from climate-related physical risks and does not explicitly apply a double materiality framework. It evaluates how exposure to ten climate physical hazards may affect companies through potential impacts such as asset damage, operational disruption, supply chain interruption, water constraints, and reduced productivity. Exposure scores are calculated at the asset and company level and further refined through sensitivity adjustments based on company characteristics such as water intensity, labor intensity, and tangible asset intensity, which are intended to reflect the relative vulnerability of companies to climate hazards. While the methodology assesses how environmental factors may create risks for companies (outside-in financial materiality), it does not assess a company's impacts on the environment or society (inside-out impact materiality) and therefore does not explicitly address double materiality as defined under EU sustainability reporting frameworks. In addition to assessing physical climate hazard exposure, the methodology incorporates company sensitivity dimensions intended to reflect the potential materiality of climate-related risks to different companies. These dimensions include water intensity, used as a proxy for sensitivity to water stress and drought; labor intensity, used as a proxy for sensitivity to extreme heat and extreme cold; and tangible asset intensity, used as a proxy for sensitivity to physically destructive hazards such as wildfire, fluvial flood, pluvial flood, tropical cyclone, landslide, and coastal flood. These sensitivity measures are used to calculate Sensitivity Adjusted Climate Hazard Exposure Scores, which combine a company's level of hazard exposure with its relative susceptibility to adverse impacts from those hazards. The methodology therefore incorporates both exposure and vulnerability considerations to better reflect the potential financial materiality of climate physical risks across companies and sectors.
the ESG rating's scope, namely, whether it covers an individual E, S, or G factor or whether it is an aggregated rating aggregating E, S and G factors, or whether it covers specific issues such as transition risks;	The Climate Physical Hazard Exposure Scores methodology has a focused Environmental (E) scope and is not an aggregated ESG rating combining Environmental, Social, and Governance factors. Specifically, it assesses climate-related physical risks arising from ten environmental hazards: coastal flood, fluvial flood, pluvial flood, extreme heat, extreme cold, tropical cyclone, wildfire, water stress, drought, and landslide. The methodology evaluates the exposure of company assets and operations to these hazards under multiple future climate scenarios and time horizons, generating hazard-specific, composite, and sensitivity-adjusted exposure scores. While the methodology references the broader TCFD framework, which distinguishes between transition risks and physical risks, this methodology is limited to the assessment of physical climate risks and does not evaluate transition risks, social factors, governance factors, or an aggregated E, S and G rating.

general information on criteria used for establishing fees charged to clients, specifying the various elements taken into consideration, and general information on the business/payment model;	S&P Global ESG Ratings Europe Limited with support from its commercial affiliates (“SPGE ESG REL”) maintains a pricing framework for its regulated ESG rating products that is designed to support pricing that is fair, reasonable, transparent, and non-discriminatory. Pricing for ESG rating products is determined using objective and documented criteria within a common pricing framework. The pricing framework is supported by internal procedures, training and governance processes, including review and approval requirements for any discounts, exceptions or other departures from standard pricing parameters. SPGE ESG REL currently operates a subscription and non-subscription paid model for its regulated ESG rating products. Regulated ESG rating products are priced and invoiced separately from non-regulated products and services, with fees identified as separate line items for clients.
any limitation in data sources and methodologies used for the construction of ESG ratings;	Limitations are detailed in limitation section of the methodology document (page 14). Link to methodology document: https://portal.s1.spglobal.com/survey/documents/SPG_S1_Physical_Risk_Methodology.pdf
the main risks of conflicts of interest and the steps taken to mitigate them;	Conflict of Interest Management Policy
if an ESG rating of a rated item covers the E factor, information on whether that rating takes into account the targets and objectives of the Paris Agreement or any other relevant international agreements;	The methodology covers the Environmental (E) factor by assessing exposure to climate-related physical risks. It explicitly incorporates four climate change scenarios based on IPCC Shared Socioeconomic Pathways (SSPs) and Representative Concentration Pathways (RCPs), including the Low Climate Change Scenario (SSP1-2.6), which is described as an aggressive mitigation pathway resulting in net-zero emissions by 2050 and temperature outcomes that are consistent with the goals of the Paris Agreement. The methodology uses these scenarios to evaluate future climate hazard exposure across multiple decades, enabling users to assess the implications of different climate pathways. However, the methodology does not assess company alignment with the Paris Agreement or measure progress toward specific Paris Agreement targets; rather, it uses Paris Agreement-aligned climate scenarios as an analytical input to model future physical climate risks.

if an ESG rating of a rated item covers the S and G factors, information on whether that rating takes into account any relevant international agreements;	The Climate Physical Hazard Exposure Scores methodology does not cover Social (S) or Governance (G) factors. Its scope is limited to the assessment of Environmental (E) factors, specifically climate-related physical risks arising from hazards such as flooding, extreme heat, wildfire, drought, water stress, tropical cyclones, and landslides. As a result, the methodology does not evaluate social or governance characteristics of rated items and does not incorporate any international agreements specifically related to S or G factors.
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