ISS ESG CLIMATE SOLUTIONS

ISS ESG's Climate Solutions include carbon and climate data, actionable intelligence, and state-of-the art portfolio analytics. ISS ESG's climate solutions have been developed in line with various best practice and regulation-driven international reporting initiatives. Climate solutions leverage its dedicated climate research and other ISS ESG datasets to provide a comprehensive suite of solutions including emissions data, scenario analysis, transition and physical risks analysis, as well as net zero solutions and climate EBA Pillar 3 ESG disclosures.

In total, there are approximately 600 climate related data points available via ISS ESG.

Outputs

Emissions data

ISS ESG's comprehensive quantitative database of GHG emissions includes both reported emissions data and modelled estimations for non-disclosed emissions, or those who report with a low trust metric (according to internal analysis). ISS ESG utilizes a proprietary approximation system to estimate emissions, which includes over 800 climate-relevant sector and subsector-specific models. The modelling system was developed over the course of three years in partnership with the Swiss Federal Institute of Technology (ETH Zurich).

Scenario analysis

ISS ESG's detailed climate scenario analyses can assist clients in assessing the potential business implications of climate change, as suggested by the Task Force on Climate-related Financial Disclosures ("TCFD"). The methodology follows the recommendations by GFANZ (Enhancement, convergence and adoption measuring portfolio alignment, dated August 2022) .

Carbon budgets are allocated for each issuer based on a fair-share approach as recommended by GFANZ using the intensity ratios of the issuer compared against the appropriate benchmark. Intensities are based on physical production whenever possible, with a fallback on an economic denominator substitute otherwise. The benchmark is calculated from a given scenario, and the scenario alignment solution covers a multitude of scenarios from different providers such as the International Energy Agency (IEA), Network for Greening the Financial System (NGFS)[1] and UN Environment Program's One Earth Climate Model (UNEP OECM)[2]. On the other side of the equation, the scope 1, 2 and 3 absolute GHG emissions of the issuer are projected based on several approaches such as historical, scenario benchmark or reduction target inclusion. The comparison between the projected emissions and the carbon budget allows for a cumulative alignment comparison both at a medium-term horizon of 2030 or a long-term horizon of 2050. When baseline emissions of the issuers are not covered, modelled emissions are leveraged.

[1] The ISS data incorporates data obtained from the Network for Greening the Financial System ("NGFS"). The NGFS material is subject to a public license.

The NGFS material is available at the following URL: https://www.ngfs.net/ngfs-scenarios-portal/data-resources-phase-3/ and https://www.ngfs.net/sites/default/files/media/2022/11/21/technical_documentation_ngfs_scenarios_phase_3.pdf

[2] Teske, S. (2022) et. al., Achieving the Paris Climate Agreement Goals- Part 2: Science-based Target Setting for the Finance industry — Net-Zero Sectoral 1.5˚C Pathways for Real Economy Sectors. Springer, Cham. https://doi.org/10.1007/978-3-030-99177-7

Transition risk analysis

ISS ESG's analysis of transition risks and opportunities is based on the Net Zero scenario of the IEA which corresponds to a 1.5˚C increase.

The IEA's World Energy Model incorporates policy, market, and technology risks to analyze the transition to a low-carbon economy.

The analysis is based on granular financial information and the geographic footprint of each company.

The results show the potential financial Value at Risk which measures the potential change in share price considering the financial impact of the transition risks and opportunities derived from the policy, market and technology changes. The estimation model considers the impact of transition risks and opportunities on projected financials, such as adjusting sales trajectories and accounting for increased costs due to carbon prices. The difference in equity value between the two runs is the Transition Value at Risk (TVaR).

Physical Risks

The ISS ESG climate physical risk solution assesses company exposure to physical risks by simulating the impact of hazards such as tropical cyclones on companies' operations and sales. The analysis is based on granular information about companies' geographical footprint, e.g., where in the world companies have production facilities and where they are generating their revenue.

The results show the potential financial impact and Value at Risk of physical risks in three scenarios: historical, IPCC's RCP 4.5 (most-likely scenario) and RCP 8.5 (worst-case scenario). Additionally, the assessment includes a qualitative assessment of a company's strategies to manage those risks.

Net Zero Solutions

ISS ESG's dedicated suite of Net Zero Solutions with automated investor portfolio reporting include a Net Zero target status, i.e., a qualitative look at published targets and strategies relevant to achieving Net Zero emissions, plus a quantitative modelling of Net Zero emissions trajectories which include quality-checked company-reported Scope 3 greenhouse gas emissions data. Issuer-level Net Zero Alignment data can be used to identify positive and negative performing companies against a range of individual climate related metrics. The Net Zero Portfolio Report creates an aggregated view of a portfolio's readiness for Net Zero, considering current and potential future emissions, disclosure performance, fossil fuel exposure, fossil asset expansion, climate mitigating revenue and target setting.

The methodology behind the Net Zero Analysis is based on current reporting frameworks, such as the Net Zero Asset Managers Initiative, Net Zero Asset Owner Alliance, and Net Zero Investment Framework, as well as consultations with leading investment institutions and other market participants. The analysis and data set utilizes approximately 150 metrics to assess the Net Zero status of issuers and portfolios, with a focus on the quality of issuer target-setting.

The Net Zero Solutions help investors understand the level of disclosure and target setting they can expect from an issuer today, and how this translates into issuer- and portfolio-level Net Zero alignment.
The Net Zero Analysis includes Net Zero-specific metrics as well as metrics from other ISS ESG data sets, including Energy and Extractives and EU Taxonomy Solutions.

Climate Impact Report

The ISS ESG Climate impact report enables investors to assess the climate impact of their portfolios with the click of a button. By combining ISS ESG's Emissions Data set with Climate Scenario Analyses, including scenario alignment and transition value at risk; Carbon Risk Rating overview, Energy & Extractives Screens and physical risk analyses, Net zero solutions, the climate impact report helps financial market participants understand, measure and act on climate-related risks and their impact on their investments.

Climate EBA Pillar 3 ESG Solution

Pursuant to the European Union's EBA ESG Disclosure Regulation, large EU financial institutions are required to disclose the climate impact and mitigation actions of their activities recorded on the banking book of such institutions. ISS ESG's Climate EBA Pillar 3 ESG Solution leverages ISS ESG's climate and regulatory solutions data to support EU banks in meeting their unique disclosure requirements. The EBA Pillar 3 reporting requirements are divided across 10 granular templates, with each one covering a specific focus area, such as banking book exposures subject to transition risk, physical risks and the mitigating actions taken by banks, as displayed by the calculation of the Green Asset Ratio and Banking Book Taxonomy Alignment Ratio (BTAR). ISS ESG offers a dedicated dataset, with a detailed user guide and a mapping of its factors to the templates.

Research Process

The data used in ISS ESG's Climate Solutions is updated regularly: Financial and asset data is updated throughout the year while company emissions and physical risk data is updated annually. ISS ESG's climate research process can be broken down as follows:

- Data Research: ISS ESG has dedicated research team that collects qualitative and quantitative data from a variety of sources, including corporate disclosures, disclosures to national and international Environmental Protection Agencies and voluntary disclosureinitiatives. The research process and manuals are continuously improved and streamlined based on continuous feedback mechanisms which have been implemented across ISS ESG.
- Specialized Research and Quality Assurance: ISS ESG's climate team uses the raw data and augments it with an additional layer of quality control and specialized research to complement the data to bring it up to the mark for various products and services within ISS ESG Climate Solutions remit.
- Data Coverage: The emission data comprising of reported and modelled information for more than 29,000 listed companies and issuers of corporate debt across Scope 1, 2 and 3. The emission data further extends towards alternative asset classes, some of which are available off the shelf – sovereign, municipals etc; whereas other asset classes require more bespoke undertaking – real estate, infrastructure, or private equity. For the physical risk analysis, financial data used for the analysis for approximately 29,000 companies as well as an asset database consisting of approximately 250,000 physical assets' locations is collected and updated throughout the year.
- The Net Zero research focuses on a company's disclosure regarding preparedness and effort to achieve net zero in coming decades. Data is collected from company publications including public filings, sustainability and CSR reports, integrated reports, publicly available company

policies, and information on company websites. Both quantitative and qualitative data are collected. Furthermore, climate products solutions include research from other areas such as Energy & Extractives, EU Taxonomy or SDG assessments. Cycles of update are annual and on ad-hoc basis for E&E dataset where relevant. *Please refer to the Energy & Extractives, EU Taxonomy, and SDG assessment methodology pieces*.

- Data analysis: To provide investors with actionable intelligence, ISS ESG's climate solutions leverage ISS ESG proprietary databases to provide a variety of analyses as described above.

Use of Estimated Data

ISS ESG Climate Solutions uses estimated or modelled data if disclosed data is insufficient or inadequate. Estimated figures are based on clear estimation and modelling rules to ensure that results are based on reasonable assumptions with medium to high certainty. The main estimated data sources that are included in ISS ESG Climate Solutions are listed below:

- Emissions database: For companies which do not disclose emissions, and those who report with a low trust metric (according to internal analysis), emission data is modelled. Due to limited disclosure from issuers, approximately 80 percent of company emissions are modelled. This is applicable for all solutions that use emissions data (see above).
- Transition Risk: External projections are leveraged from the IEA on both growth projections and carbon pricing. Estimated financial impact is then based on EVA financial projections. *Please refer to the ISS EVA Methodology*. The solution also leverages UN SDG data which may include up to 10% of estimated data in its overall dataset. *Please refer to the UN SDG assessment Methodology.*
- Physical risk: Hazard intensities are derived from external sources for example several CMIP5 models and the climate risk modelling tool, Climada.
- E&E: ISS ESG's Energy and Extractives primarily leverages company reported data. Should disclosure be insufficient or inadequate, information regarding the degree of involvement of an issuer in certain activities will be estimated. This is largely a result of significant differences in reporting quality, standards, and requirements between the companies in Energy and Extractives' large universe. *Please refer to the Energy and Extractive methodology for further information.*
- EU Taxonomy: For companies that do not report their taxonomy alignment and/or are outside of ISS ESG's data collection universe, ISS ESG models issuers' taxonomy alignment leveraging several proprietary, as well as third party, data sets. *Please refer to the EU Taxonomy methodology for further information.*

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We empower investors and companies to build for long-term and sustainable growth by providing high-quality data, analytics, and insight.

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Email sales@iss-esg.com or visit iss-esg.com for more information.

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