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The ESG Risk Ratings

Methodology Abstract: Version 3.1

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ESG Risk Ratings

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Morningstar Sustainalytics' ESG Risk Ratings[2] measure the degree to which a company's economic value (enterprise value) is at risk driven by ESG factors. The ESG Risk Ratings assess the magnitude of a company's unmanaged ESG risks. For each company, unmanaged risk is measured by evaluating a set of material ESG issues based on both the company's exposure to and management of those issues. The resulting unmanaged risk for each issue is then summed up to provide one score that represents the company's overall ESG risk.

Highlights

Our ESG Risk Ratings empower investors by providing relevant insights about sustainability risks, specifically through the following key features:

- Focused on material ESG issues that present the most material risks to a company's economic value.
- **Material ESG Issues (MEIs)** are at the centre of our rating, each one speaking to a specific, ESG related topic.
- Corporate Governance and Stakeholder Governance are fully integrated in the ESG Risk Rating's methodology.
- A two-dimensional lens approach, where the **Exposure** lens informs investors about what material ESG risks a company is facing; and the **Management** lens assesses how well the company is managing material ESG risks.
- The exposure dimension incorporates factors such as a company's business model (including geographical aspects), financial strength and event history.
- The management dimension provides a high level of granularity to a company's management strengths and weaknesses.
- In the management dimension, the discounting effect increases with event severity, giving controversies a high impact on the rating and making it more dynamic.
- The 'single-currency-of-risk' approach allows for comparability of companies across industries at both the overall ESG and issue-specific risk levels.
- External shocks are reflected in the rating, increasing a company's risk depending on the materiality of the impact.
- The ESG Risk Ratings are driven and determined by the underlying concept of forward-looking exposure; quantitative and qualitative factors linked to the exposure assessment are designed to capture trends and anticipate future developments.

Introduction

A Single Currency for ESG Risk

Assessing the unmanaged ESG risks of a company

The **ESG Risk Ratings** measure the degree to which a company's economic value is at risk driven by ESG factors or, more technically speaking, the magnitude of a company's unmanaged ESG risks. For each company, **Unmanaged Risk** is measured by evaluating a set of material ESG issues based on both the company's exposure to and management of those issues. The resulting unmanaged risk scores for each issue are then summed to provide one score that represents the company's overall ESG risk.

A 'high risk' assessment reflects a comparable degree of unmanaged ESG risk across all subindustries covered

The quantitative score represents units of unmanaged ESG risk with lower scores representing less unmanaged risk. Unmanaged Risk is measured on an open-ended scale starting at zero (no risk) and, for 95% of cases, a maximum score below 50. Based on their quantitative scores, companies are grouped into one of five risk categories (negligible, low, medium, high, severe). These risk categories are absolute, meaning that a 'high risk' assessment reflects a comparable degree of unmanaged ESG risk across all subindustries covered. This means that a bank, for example, can be directly compared with an oil company or any other type of company. With the ESG Risk Ratings' scores, we have introduced a single currency for ESG risk.

Defining Materiality and Risk

To be considered relevant, an issue must have a substantial impact on a company's economic value

An issue is considered to be material within the ESG Risk Ratings if its presence or absence in financial reporting is likely to influence the decisions made by investors. To be considered relevant in the ESG Risk Ratings, an issue must have a potentially substantial impact on the economic value of a company and, hence, its financial risk- and return profile from an investment perspective.

The effective management of ESG risks should contribute to a more sustainable economy

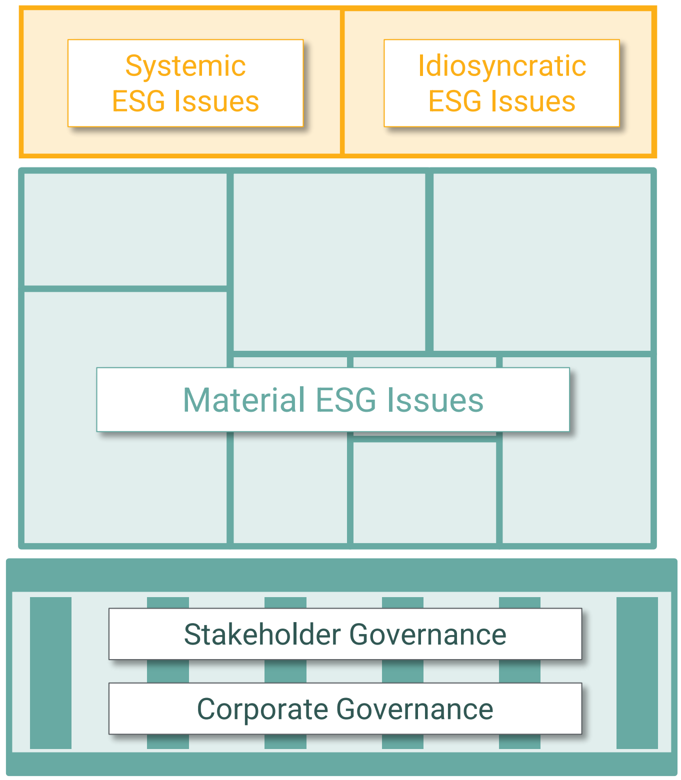
Notably, an underlying premise of the ESG Risk Ratings is that the world is transitioning to a more sustainable economy and that the effective management of ESG risks should, therefore, be associated with superior long-term enterprise value, *ceteris paribus*.[3]

ESG Risk Ratings Building Blocks

The building blocks that contribute to a company's overall rating score

As Exhibit 1 shows, the ESG Risk Ratings are composed by the following three building blocks that contribute to a company's overall rating score: 1) **Material ESG Issues**, 2) the baseline issues: Corporate Governance & Stakeholder Governance, and 3) **Systemic ESG Issues** & **Idiosyncratic Issues**.

Exhibit 1: The Building Blocks of the ESG Risk Ratings



Source: Morningstar Sustainalytics

Building Block 1: Material ESG Issues

Material ESG issues form the core and centre of our ratings

The core building block of the ESG Risk Ratings are the **Material ESG Issues (MEIs)**. MEIs are focused on a topic, or set of related topics, that require a common set of management initiatives or a similar type of oversight. For example, the topics of employee recruitment, development, diversity, engagement and labor relations are all encompassed by the material ESG issue of Human Capital because they are all employee-related and require Human Resources initiatives and oversight. The common thread behind all Human Capital topics is attracting and retaining qualified employees.

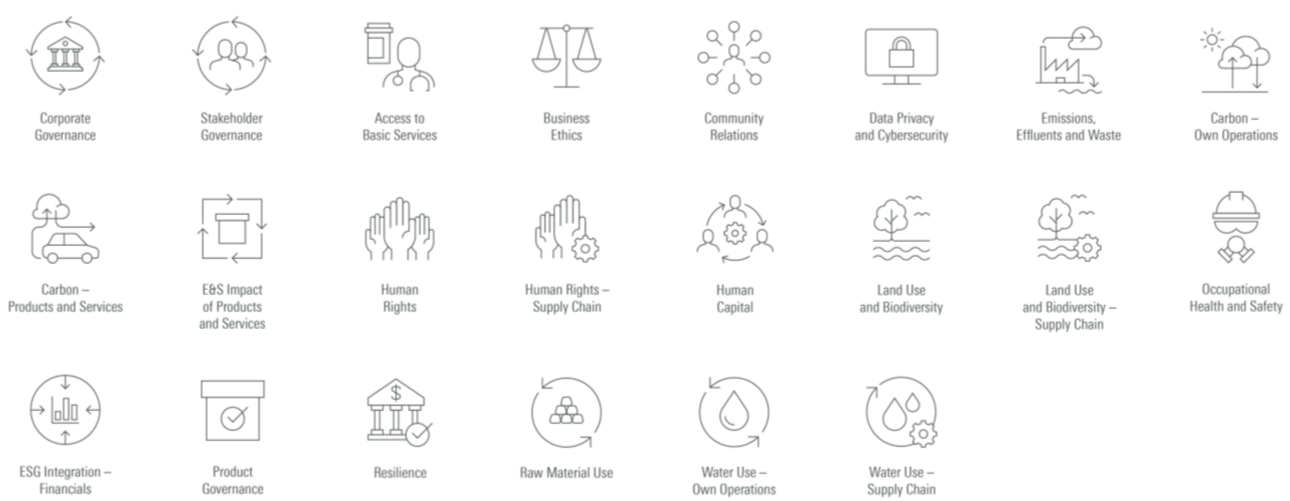
Occupational Health and Safety also concerns employees, but the common thread here is to ensure the health and safety of employees at their workplace. The business risks associated with this are different from general Human Capital risks and are managed through a different set of activities.

The assessment of material ESG issues occurs at the subindustry level and is reviewed annually through a comprehensive and structured process (see page 16). Conversely, at a company level, Material ESG Issues can be removed from the rating if they are not relevant to the company's business model.

Material ESG issues at the core of our methodology

The Material ESG issues building block of the ESG Risk Ratings forms the essential core of our methodology. It assumes that ESG issues can influence the economic value of a company in a given subindustry in a fairly predictable manner. Our rating is forward looking in the sense that it identifies these issues based on the typical business model and business environment a company is operating in. Exhibit 2 lists the 22 material ESG Issues[4] used for new company assessments across all subindustries, with the Appendix providing descriptions for each of them.

Exhibit 2: List of Material ESG Issues



Source: Morningstar Sustainalytics

Building Block 2: Corporate Governance & Stakeholder Governance

The foundational element in the ESG Risk Ratings

The second Building Block of our ESG Risk Ratings are the baseline Material ESG Issues Corporate Governance and Stakeholder Governance. Corporate Governance is a system of rules and practices that help to ensure the interests of owners and managers are aligned and promote transparency and accountability amongst management and shareholders. Stakeholder Governance considers perspectives and interests of various stakeholders to identify and mitigate potential reputational and financial risks.

Poor governance poses material risks for companies

Both baseline issues are considered material, reflecting our conviction that poor governance poses material risks for companies. However, in contrast to other MEIs, these risks are not determined by a company's business model and, hence, their materiality assessment is not affected by a company's subindustry affiliation. Instead, the exposure and therefore relative importance of Corporate Governance and Stakeholder Governance is largely dependent on whether the company is traded publicly on exchanges or if it's privately owned.

For companies that are publicly traded, we assign relatively higher exposure scores due to the typically more complex management structures, greater degree of regulatory scrutiny and higher cost of operation compared to privately owned corporations.

Building Block 3: Systemic ESG Issues & Idiosyncratic Issues

Systemic events are out of a company's control

A **Systemic ESG Issue** captures the material risk of sea change events, unpredictable in nature, and affecting a large set of companies across a multitude of ESG issues. Systemic events are assessed through the **Systemic Event Indicator (SEI)**. This type of issue is not caused by any company action and their management is (almost) completely out of a company's control.

For example, the SEI 'Business Resilience Risk Due to Ukraine Conflict' assesses the level of business resilience risk relating to the Russia – Ukraine war that companies face and is based on the percentage of assets held in Ukraine. The spotlight on systemic events in ESG Risk Ratings[5] provides an in-depth description of how the concept of SEIs has been applied in the context of the Russia - Ukraine war.

Idiosyncratic Issues cover company-specific events

Idiosyncratic Issues are triggered by company-specific events which are atypical for its business model, and therefore not part of its material ESG issues.

For example, a human rights scandal is atypical for many subindustries like Heavy Machinery and Trucks or Electronics Equipment. It is certainly not predictable and falls outside of the logic with which we capture subindustry-specific material ESG issues. Idiosyncratic issues become material issues only for the specific company in question, not for the entire subindustry that a company is part of, and the issue represents a failure in a company's management.

The Two Dimensions of the ESG Risk Ratings

Exposure and Management: The two dimensions of the risk ratings

The ESG Risk Ratings' approach to materiality is assessed through two dimensions: **Exposure** and **Management**. The first dimension: Exposure reflects the extent to which a company is exposed to material ESG risks at the overall and the individual MEI level. The second dimension: Management reflects how well a company is managing its exposure.

First Dimension: Exposure

Determined by a set of ESG-related factors that pose potential economic risks for companies

Exposure can be considered as a set of ESG-related factors that pose potential economic risks for companies. Another way to think of exposure is as a company's sensitivity or vulnerability to ESG risks. Material ESG issues and their exposure scores are assessed at the subindustry level and then refined at the company level through **Beta Indicators**.

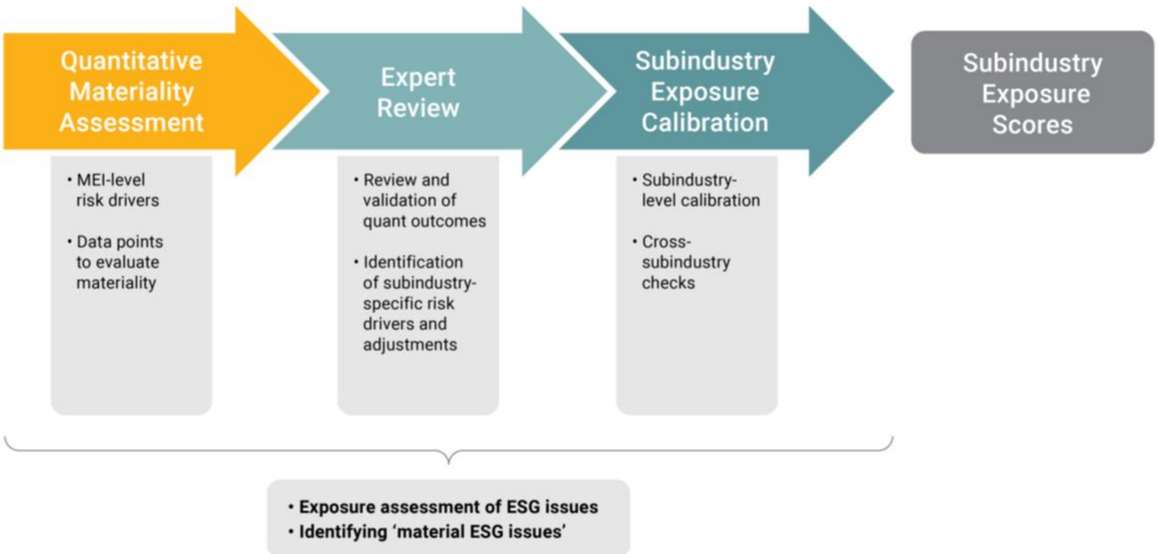
Subindustry Exposure Assessment

Factors considered when assessing subindustry exposure

Subindustry Exposure Score assessment begins with identifying the most relevant risk drivers based on an MEI's content, as well as associated data points that best allow us to estimate the materiality of each risk driver at the subindustry level.

Examples of risk drivers include labor and skill intensity for Human Capital or data intensity and data sensitivity for Data Privacy and Cybersecurity. Individual risk driver assessments are combined to produce a MEI-level quantitative materiality assessment, which forms the basis of our subindustry exposure score assessments, as illustrated by Exhibit 3 below. The outcomes are reviewed and calibrated at the subindustry level by sector experts who may adjust outputs based on unique subindustry factors. The final subindustry exposure score ranges from 2 (low exposure) to 10 (high exposure), with scores below 2 deemed immaterial.

Exhibit 3: Subindustry Exposure Score Assessment Process



Source: Morningstar Sustainalytics

Corporate Governance & Stakeholder Governance

As described on page 5, Corporate Governance and Stakeholder Governance deviate slightly from the approach taken for MEIs, on the exposure dimension. Both issues are assessed for all publicly traded companies and cannot be disabled. Their exposure score across all subindustries is evaluated at 7 for Corporate Governance and 2 for Stakeholder Governance.

It is crucial for private companies to effectively manage their relationships with stakeholders

For privately owned companies, a typical assessment of Corporate Governance is not suitable as factors like ownership, shareholder rights, and financial reporting are either irrelevant or significantly less important. However, it is crucial for private companies to effectively manage their relationships with stakeholders. To reflect this, the exposure score of Stakeholder Governance is increased to 5 through the application of **Betas** (see page 9).

Systemic ESG Issues & Idiosyncratic Issues

Idiosyncratic Issue is based on an atypical event

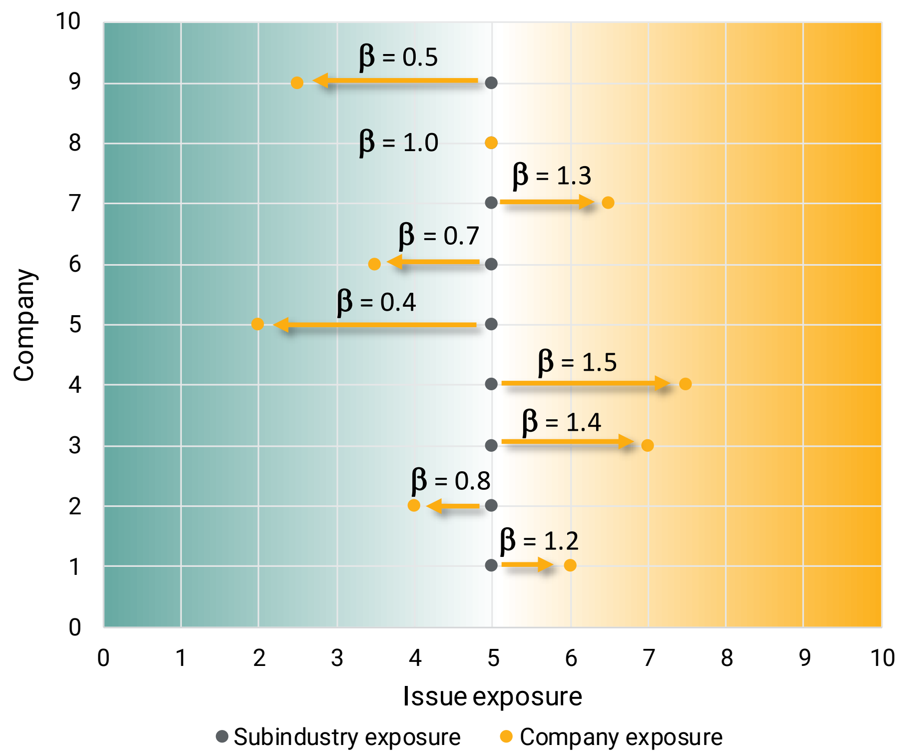
Both concepts are built upon **Events** (see page 6). The **Systemic ESG Issue** depends on the **SEI** assessment whereas the **Idiosyncratic Issue** is based on an atypical event. With a significance threshold of high impacts and risks (category 4) or severe impacts and risks (category 5) passed, a company's exposure increases by 6 or 8 points, respectively. These scores can still be adjusted by analysts depending on the unique case.

The ESG Risk Ratings are company specific

Beta Assessment

Betas are a key part of what makes the ESG Risk Ratings company specific, as Exhibit 4 illustrates. They reflect the degree to which a company's exposure to a material ESG issues deviates from the average exposure to that issue within its subindustry. To arrive at a company's exposure score for a particular ESG issue, the subindustry exposure score is multiplied by the company's **Issue Beta**.

Exhibit 4: Using the Beta Concept to Arrive at Company Specific Exposure Assessments



Source: Morningstar Sustainalytics

Beta Indicators & Beta Signals

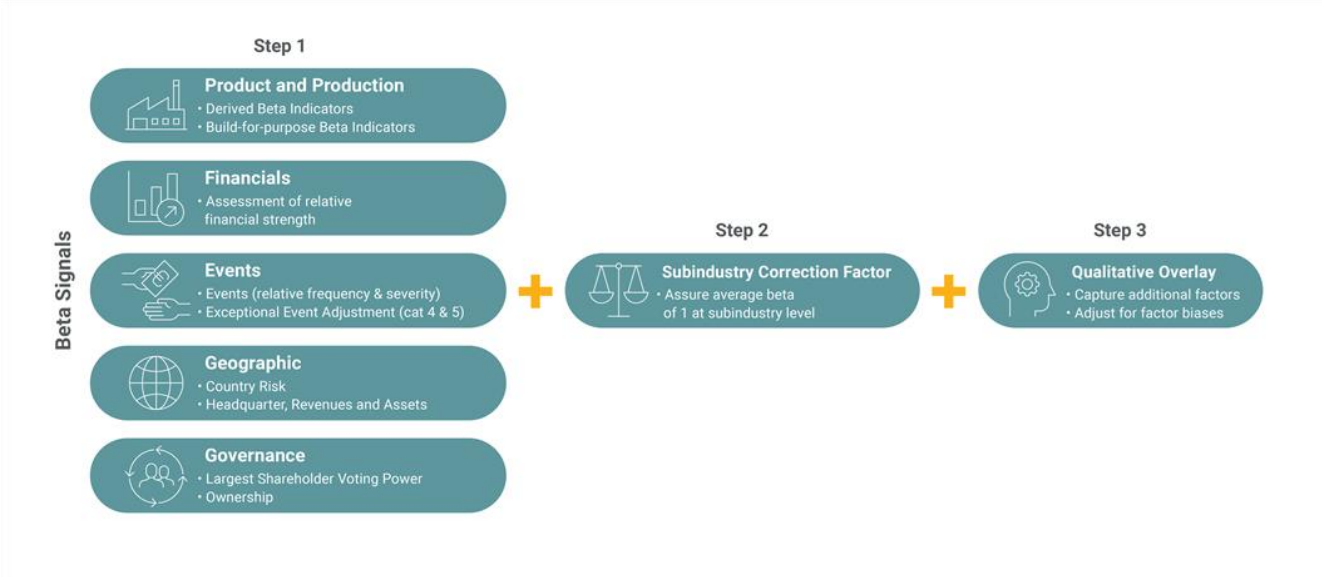
Five distinct thematic areas: Product & Production, Financials, Events, Geographic, and Governance

As shown in Exhibit 5 below, the beta for a company vis-à-vis an ESG issue is calculated in a three-stage process. The core of our model is a list of subindustry and MEI specific so-called beta indicators. Their assessment constitutes the first step in the process. The outcomes of this assessment generate the so-called **Beta Signals** that finally get added to the subindustry default beta value of 1 together with the qualitative overlay and the correction factor.

A three-step approach

Beta indicators have been created for five distinct thematic areas: Product & Production, Financials, Events, Geographic, and Governance. In a second step, a technical correction factor, the **Subindustry Correction Factor**, is applied to assure that the average beta within a subindustry is one. Finally, a **Qualitative Overlay** may be applied by our analysts when updating a company profile to reflect company specific factors that are not reflected in the standard model.

Exhibit 5: Model for Calculating Issue Betas*



* Governance Components only applied to Corporate Governance or Stakeholder Governance, and Subindustry Correction Factor not applicable.

Source: Morningstar Sustainalytics

Manageable Risk Factors

The share of risk that is manageable is predefined at the subindustry level

For some material ESG issues, the risk cannot be fully managed. The share of risk that is manageable versus the share of risk that is unmanageable is predefined at the subindustry level by an **Issue Manageable Risk Factor (MRF)**. MRFs range from 30% to 100% and represent the share of exposure to a material ESG issue that is deemed to be (at least theoretically) manageable by the company. MRFs are intended to achieve more realistic rating outcomes and to ensure the comparability of ratings across companies and subindustries.

Second Dimension: Management

A set of company actions that demonstrate how well a company is managing the ESG risks

The ESG Risk Ratings' second dimension is **Management**. It can be considered as a set of company commitments, actions and outcomes that demonstrate how well a company is managing the ESG risks it is exposed to.

Distinguishing between management, quantitative performance, and event indicators

The management score for a company is derived from a set of management indicators (e.g., policies, management systems, certifications) and outcome-focused indicators. Outcome-focused indicators measure management performance either directly in quantitative terms (e.g., CO2 emissions or CO2 intensity) or via a company's involvement in controversies (represented by the company's event indicators).

Indicators are not exclusively linked to just one issue

For each material ESG issue/subindustry combination, management- and event indicators are selected and weighted to explain and measure how well a company manages an issue. They may be applied to any issue where they are considered relevant and may therefore show up in the context of several material ESG issues.

Management Indicators

Systematic and granular assessment of a company's management

Management Indicators are the smallest assessment unit used to measure a company's management of ESG issues. They provide a systematic and consistent way of assessing clearly delineated and standardized criteria. These criteria are based on key areas of risk or best practices that help to distinguish between the performance of different companies.

Management Indicators are scored based on a pre-defined, indicator specific scheme which is defined as a set of outcome categories and a linked score on a scale from 0 to 100. Exhibit 6 provides an example of such a scoring scheme.

Exhibit 6: Management Indicator – Example: Environmental Policy

Score	Outcome Category
100	The company has a **very strong** policy.
75	The company has a **strong** policy.
50	The company has an **adequate** policy.
25	The company has a **weak** policy.
0	Based on available evidence, the company **does not have** a policy.

Source: Morningstar Sustainalytics

Event Indicators

Assessing the adequacy of a company's management systems to manage relevant ESG risks

Morningstar Sustainalytics assesses companies' level of involvement in controversial events that influence the environment, society or a company's governance. Involvement in events may indicate that a company's management systems are not adequate to manage relevant ESG risks, and therefore events might reduce a company's management score for relevant ESG issues. **Event Indicators** are scored on a scale of 0 (no evidence of relevant incidents) to 5 (impact and severe risks). Every material ESG issue can have one or more event indicators linked to it.

Calculating the ESG Risk Ratings

Deriving Unmanaged Risk from Exposure and Management

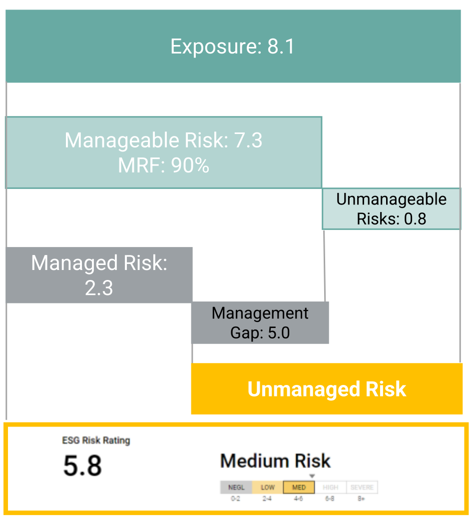
Unmanaged Risks at the issue and the overall level

The fundamental idea of our ESG Risk Ratings is to provide investors with a signal that reflects to what degree their investments (single assets or portfolios) are exposed to unmanaged ESG risks. To this end, the final rating outcome was designed as a measure of **Unmanaged Risk**, in which the two dimensions of the rating, Exposure and Management, are placed side by side and compared at both the issue level and the overall level.

The portion of material ESG risk that is not (yet) managed by a company

The final ESG Risk Ratings scores are a measure of unmanaged risk, which is defined as the portion of material ESG risk that is not (yet) managed by a company. The ESG Risk Ratings scoring system for a company is best thought of as a waterfall with four levels. The waterfall logic can be applied at the issue level and the overall level. Exhibit 7 explains the calculation based on a single material ESG issue.

Exhibit 7: Risk Decomposition – Issue Level



Company Exposure	=	Subindustry Exposure	*	Issue Beta		
	=	6	*	1.35	=	**8.1**
Manageable Risk	=	Company Exposure	*	MRF		
	=	8.1	*	90%	=	**7.3**
Unmanageable Risk	=	8.1	-	7.3	=	**0.8**
Managed Risk	=	Manageable Risk	*	Management score (as%)		
	=	7.3	*	31.9%	=	**2.3**
Management Gap	=	7.3	-	2.3	=	**5.0**
Unmanaged Risk	=	Company Exposure	-	Managed Risk		
	=	8.1	-	2.3	=	**5.8**

Source: Morningstar Sustainalytics

First level: Calculating a company's subindustry exposure

The starting point at the top is a company's exposure to that issue, calculated as the product of the company's subindustry exposure and its issue beta.

Second level: Distinguishing between manageable and unmanageable risks

At the second level, **Issue Manageable Risk (Manageable Risk)** is separated from **Issue Unmanageable Risk (Unmanageable Risk)** with the help of the manageable risk factor (see page 10). In the example above, 90% of the risk associated with the ESG issue at hand is considered manageable. Multiplied with exposure, this gives us the manageable risk for this company's issue.

Third level: Deriving managed risk from manageable risk

At the third level, the **Issue Managed Risk (Managed Risk)** is derived from the **Issue Manageable Risk (Manageable Risk)** by multiplying the latter with the **Issue Management (Management Score)**—interpreted as a percentage number—that is based on a set of management and event indicators outcomes. The part of manageable risk that's not managed is called Issue management gap and is calculated by subtracting managed risk from manageable risk.

Fourth level: Subtracting managed risk from exposure

At the fourth level, **Issue Unmanaged Risk (Unmanaged Risk)** is calculated by either subtracting managed risk from exposure or by adding the management gap to the portion of risk that has been deemed unmanageable. In the example above, 5.8 points of risk out of a total of 8.1 remained unmanaged.

Arriving at the ESG Risk Ratings

The final ESG Risk Ratings score, the company's full unmanaged risk, is calculated as the sum of the individual material ESG Issues' unmanaged risk scores.

The Core Framework

Two Frameworks: One Rating

The **Core Framework** extends the coverage universe of the ESG Risk Ratings. Its scoring design, the core model, is derived from the full ESG Risk Ratings model and uses a reduced indicator set and structure to approximate outcomes from the so-called **Comprehensive Framework**.

Core model does not breakdown risks to MEI level

The most important difference between the two frameworks is the Core frameworks top-down approach. It does not break down risk by material ESG issue but keeps the waterfall logic in place at the overall level with its **Risk Decomposition**. The two-dimensional lens is applied to Core with only some targeted adjustments to factor in the top-down approach.

Exposure Dimension

Exposure dimension on overall level

The definition of exposure is identical in both frameworks: Exposure is a set of ESG-related risk factors that pose financial risks for companies.

As the Core framework follows a top-down approach, the **Overall Subindustry Exposure Score** is derived by summing up the subindustry's issue exposure scores.

As in the Comprehensive framework, the beta assessment is a key part of ensuring the Core framework accurately measures ESG risks specific to each company. Beta signals work very similar as described on page 9, except the beta indicators are applied to the overall subindustry Exposure score instead of the single-issue level. Exhibit 8 shows an example application of beta indicators.

Exhibit 8: Beta Signals – Aggregation to Overall Beta in Core Framework* – Illustrative Example for a Fictive Automotive Company

Beta Indicator	Beta Signal**	Beta Component	Beta Component Signal**
Carbon Emissions	- 0.02	Product & Production	- 0.01
Carbon Solutions Offering	+ 0.01		
Operating Performance	+ 0.03	Financials	+ 0.05
Solvency	- 0.02		
Financial Flexibility	+ 0.02		
Asset Performance	+ 0.02		
Env. Impact of Products Events	+ 0.04	Events	+ 0.06
Carbon Impact of Products Events	+ 0.02		
Exceptional Event Adjustment	± 0.00		
Geographic Water Risk	± 0.00	Geographic	+ 0.05
Regional Corruption	+ 0.05		
Sum of Beta Signals	**+ 0.15**		**+ 0.15**
Qualitative Overlay	- 0.05		
Subindustry Correction Factor	+ 0.01		
Baseline****	+ 1.00		
Overall Beta	**+ 1.11**		

* Note for Core: all beta indicators are combined and applied to the overall exposure score as there is no MEI structure in the Core framework. Although core beta indicators are a feature of the core framework, for demonstration purposes this exhibit only includes event indicators with beta signals other than zero.
** Increments of 0.01 at the beta signal qualitative overlay, subindustry correction factor level, final mark up rounded to the nearest 0.01 increment.
***Sum of beta signals for each component.
**** Subindustry default value.

Source: Morningstar Sustainalytics

Management Dimension

Similar to the Comprehensive framework, the second dimension in the Core framework is Management, which is defined identically in both frameworks. It speaks to how well a company is mitigating its ESG exposure through suitable policies and initiatives and how these efforts are reflected in the actual ESG performance of a company.

Predicting management scores

Instead of selecting and weighting management indicators based on a subindustry's issues, a focused set of indicators is used to generate comparable scores to the Comprehensive framework on overall level. Technically speaking, the Core framework model is a predictive model. Management indicators are not selected for inclusion individually but rather as a set that collectively achieves the strongest correlation between a company's predicted score based on the Core model and the known score (using the full ESG Risk Ratings model). This method is preferable to choosing individual indicators that have a strong correlation with the overall score, as it is often a combination of indicators that creates the strongest correlation and yields comparability between rating outcomes in both frameworks.

Minimizing deviations between predicted and known company management scores

The weights of indicators in our Core model are optimized for each subindustry using an iterative optimization approach. Weight combinations are tested to find the weights that minimize the deviation between the 'predicted' management scores from Core and in the 'known' management scores from the full model.

In most cases, this optimization is performed not on individual subindustries but on groupings of similar subindustries to obtain a reasonable sample size. The weight optimization may include certain constraints like a maximum indicator weight or removal of certain indicators if these are frequently disabled in the Comprehensive framework.

Conclusion

The ESG Risk Ratings is Morningstar Sustainalytics' flagship product for measuring a company's economic risk from material ESG issues.

Material ESG Issues (MEIs) are the core of the rating

Material ESG Issues (MEIs) are the core building block. Each MEI is focused on an ESG topic, or set of related topics, that are likely to have significant effect on the enterprise value of the company due to its business model.

The second building block comprise the two baseline issues: Corporate Governance and Stakeholder Governance and are considered material regardless of the business model with differentiations based on ownership structure.

The third building block, refers to systemic ESG issues and idiosyncratic issues, sea change events, and atypical events respectively.

A two-dimensional lens that provides deep insights into a company's exposure to ESG risks

All three building blocks are assessed by using a two-dimensional lens that provides deep insights into a company's exposure to ESG risks and the strength to manage these through detailed, company specific research.

The outcome is the ESG Risk Ratings that measure the degree to which a company's enterprise value is at risk due to ESG factors. The rating comprises of a quantitative score and a risk category.

Our rating allows for direct company and industry comparability

Our rating features an equivalence principle for (unmanaged) units of risk: Companies can be compared across (sub-)industries. The comparison is not only available on overall company level, but also allows for a thematic perspective. (Sub)industries can easily be compared across MEIs to differentiate their risks related specific risks like Water Use or Data Privacy and Security.

Additional Information

Data Sources and Quality Assurance

Types of information used to inform ESG Risk Ratings

Morningstar Sustainalytics collects and analyses public information as well as information owned by third parties to inform ESG Risk Ratings. Automated web crawling tools are used to identify, monitor, and retrieve information from company websites and third-party sources. Although ESG Risk Ratings are primarily based on public information, we may consider non-public, non-material information provided by a researched company if it meets our standards of credibility and authenticity.

The following sources of information are used to inform ESG Risk Ratings: Corporate disclosures, such as Annual Reports, Sustainability Reports, Codes of Conduct and other corporate policies and procedures, information disclosed on a company's website, information provided to Sustainalytics by researched companies, financial and other data provided by Morningstar (the parent company of Sustainalytics), and information sourced from third parties including civil society, government, industry associations, investor, media, and regulatory sources.[6] Morningstar Sustainalytics considers the information available for providing ESG Risk Ratings to be of satisfactory quality.

Data quality assurance procedures

Sustainalytics research and data analysts ensure that all information meets internal standards for accuracy, completeness, and timeliness. Sources must comply with internal standards for credibility and authenticity. Depending on the information type, quality assurance procedures may include:

- Verifying that corporate policies and procedures apply to a sufficient proportion of a company's operations.
- Third-party verification of corporate disclosures.
- Analyst peer reviews.
- Fact checking by researched companies.
- Validation rules to identify inconsistencies, significant score changes, or unexpected outcomes.
- For quantitative data, minimum thresholds for data completeness and benchmarking.
- Rule-based checks for accuracy and completeness built into data platforms.

Users can provide factual feedback to address any potential errors, in line with the ESG Risk Ratings methodology, by contacting the Issuer Relations & Investor Support Team.[7]

ESG Risk Ratings Review and Enhancement of Model Components

Regular review and adjustments of the ESG Risk Ratings model

Our rating model and its components are designed for continuity. However, we recognize that ESG risks and our understanding of them are constantly evolving due to various reasons. To address this dynamic nature, we conduct an annual review of our ESG Risk Ratings model components, known as the ESG Risk Ratings review. This review is conducted at the subindustry level, focusing on the selection, and scoring of material ESG issues (MEIs), the selection and weighting of indicators that are linked to these MEIs and the degree to which the identified risks can potentially be managed by companies. This process allows us to strengthen the assessment of model parameters, thus preserving the relevance and forward-looking feature of our ratings.

Periodic enhancements to MEIs and indicators

In addition, we periodically strengthen the methodology behind our model components, MEIs and indicators, to ensure that it remains relevant and substantive. Typically, deployment of these updates takes place on a semi-annual basis. Clients are given advance notice of upcoming changes due to the ESG RR Review and structural changes. Enhancements to the model components are rolled out on a company-by-company basis in combination with the annual company profile update.

Publication Cycle

A full update of each rating is conducted regularly

Ratings inputs are regularly updated to account for updated reporting and a changing operating environment for companies. This includes reviewing all available sources such as corporate reporting to update management indicators, beta indicators, review the applicability and materiality of ESG issues, manageable risk factors, exposure scores, and event indicators.

Ongoing monitoring of company information for irregular updates

In addition to the regular update, underlying indicators may be updated at other points during the year due to research alignment with company reporting cycles or the timing of the availability of peer or universe research that is required to score relative performance indicators. Moreover, additional underlying indicators, particularly Event Indicators, may be updated outside of the regular update cycle if there is a development considered material enough to warrant such an update.

Providing the most up to date information

Due to different research cycles (both internal and external), the data contained within the rating may reflect various reporting periods. For example, GHG emissions data that is used for the carbon intensity indicator could reflect reporting for FY 2021, while the management indicator for Renewable Energy Use for the same company could reflect data from a FY2022 report. Although we attempt to match research cycles as much as possible, the potential mismatch reflects a desire to provide the most up to date information to our clients, regardless of the fiscal year of reporting.

Appendix

Glossary of Terms

Beta

Assesses the degree to which a company's exposure deviates from its subindustry's exposure. For companies in the Comprehensive Framework, betas are set at the issue level (see Issue Beta). For Core companies, they are set at the overall level (see Overall Beta).

Beta Indicator

Beta indicators provide a systematic and consistent assessment of clearly delineated and standardized criteria at individual company level. Beta indicators comprise a set of Outcome Categories with the outcome of the assessment forming the Beta Signal. Forms the lowest level of defined scoring within the Exposure dimension of the ESG Risk Ratings.

Beta Signal

Provides the outcome (score) of the associated Beta Indicator that typically ranges between -1 and +1. The scoring algorithm applied to a beta indicator (and therefore the beta signal) can be MEI- and subindustry-specific. Individual beta signals add up and, together with the qualitative overlay, the subindustry correction factor, the beta default value of 1 form the final Issue Beta.

Comprehensive Framework (Comprehensive)

The research framework that forms the methodological foundation of the ESG Risk Ratings. It comprises all features, is very granular in nature, and provides additional qualitative analyst insights. The related Scoring Model is called Comprehensive Model.

Core Framework (Core)

A simplified research framework that has been created to extend the coverage universe of the ESG Risk Ratings. It is derived from the full ESG Risk Ratings model and uses a reduced indicator set and structure to approximate the Comprehensive framework's outcomes. The related Scoring Model is called Core Model.

ESG Risk Categories at Overall Level

A company's ESG Risk Ratings score on Overall Level is assigned to one of five ESG risk categories in the ESG Risk Ratings:

Negligible risk (overall unmanaged risk score between 0 and 9.99 points): ESG factors are considered to drive negligible risk to enterprise value. Visually represented by 5 globes.

Low risk (overall unmanaged risk score between 10 and 19.99 points): ESG factors are considered to drive low risk to enterprise value. Visually represented by 4 globes.

Medium risk (overall unmanaged risk score between 20 and 29.99 points): ESG factors are considered to drive medium risk to enterprise value. Visually represented by 3 globes.

High risk (overall unmanaged risk score between 30 and 39.99 points): ESG factors are considered to drive high risk to enterprise value. Visually represented by 2 globes.

Severe risk (overall unmanaged risk score 40 points and above): ESG factors are considered to drive severe risk to enterprise value. Visually represented by 1 globe.

Note: Because ESG risks materialize at an unknown time in the future and depend on a variety of unpredictable conditions, no predictions on financial or share price impacts, or on the time horizon of such impacts, are intended or implied by these risk categories.

ESG Risk Ratings	Morningstar Sustainalytics' rating framework that measures the extent to which enterprise value is at risk, driven by environmental, social and governance (ESG) factors. The rating takes a two-dimensional approach. The exposure dimension measures a company's exposure to ESG risks, while the management dimension assesses a company's handling of these ESG risks. A company's ESG Risk Rating applies the concept of Risk Decomposition to derive the level of Unmanaged Risk for a company and is comprised of a quantitative score and a related ESG Risk Category on Overall Level. The quantitative score represents units of unmanaged ESG risk with lower scores representing less unmanaged risk. Unmanaged Risk is measured on an open-ended scale starting at zero (no risk) and, for 95% of cases, a maximum score below 50. It is calculated as the difference between a company's overall Exposure score and its overall Managed Risk score. For companies in the Comprehensive framework, it can alternatively be calculated summing up the company's Issue Unmanaged Risk scores.
(Systemic) Event Indicator (SEI)	An indicator that provides a signal about a potential failure of management as reflected by an involvement in controversies. Events have a dilution effect on a company's management score for the respective material ESG issue. Any event indicator has a raw score of 0. The dilution effect is achieved by giving this score a weight in the overall management score calculation that increases with the severity of occurred events and their frequency. If the event indicator relates to an ESG issue that was not previously selected as material for a company, the issue becomes material if there is a category 4 or 5 event (see Idiosyncratic Issues or Systemic Event Indicator). Together with Management Indicators, event indicators form the Management dimension of the ESG Risk Ratings.
Exposure – ESG Risk	An assessment dimension that reflects the extent to which a company is sensitive to material ESG risks.
Idiosyncratic Issue	An issue that was not deemed material at the subindustry level but becomes a Material ESG Issue for a company based on the occurrence of a Category 4 or 5 event. In the Comprehensive framework, Idiosyncratic issues are represented only by the respective event indicator and receive an exposure score according to a specific predetermined scheme. In the Core framework, Idiosyncratic Issues are represented by a Beta Indicator and Event Indicator.
Issue Beta (Beta, β)	A factor that assesses the degree to which a company's exposure deviates from its subindustry's exposure on a material ESG issue. It is used to derive a company-specific Issue Exposure score for a material ESG issue. It ranges from 0 to 10, with 0 indicating no exposure, 1 indicating the subindustry average (as represented by the subindustry exposure score), and 2 indicating exposure that is twice the subindustry average. Betas above 2 are extreme cases and very rare. The Beta is calculated as the sum of beta signals, qualitative overlay and subindustry correction factor plus the beta default value of 1.
Issue Exposure Score – ESG Risk	A numerical value that represents the extent to which a company is sensitive to a single material ESG issue. It is displayed on an open-ended scale starting at 0. Zero indicates that the issue is not material to the company, while values of 8 and above indicate highly material issues.
Issue Manageable Risk	Refers to the part of Issue Exposure that can potentially be influenced and managed by a company through suitable policies, programs and initiatives. It is determined by the Issue Manageable Risk Factor and expressed as a score ranging between 0 (indicating no manageable risk) and the issue exposure score.

Issue Manageable Risk Factor (MRF)	A factor that assesses how much of a company's Issue Exposure is (theoretically) manageable by the company. The issue manageable risk factor is predetermined at the subindustry level. The factor ranges between 0% and 100%, with a low percentage indicating that a high level of the issue risk is considered unmanageable and 100% indicating that the issue risk is considered fully manageable. Note: Fully manageable does not mean that Sustainalytics believes there are no challenges or difficulties to managing the issue – rather, fully manageable indicates that there are no evident physical or structural barriers that make it impossible to fully manage the issue.
Issue Managed Risk	Refers to the part of the Issue Manageable Risk that the company has demonstrated to actually manage through suitable policies and programs or initiatives as determined by the Issue Management and expressed as a score that ranges between 0 and the manageable risk score.
Issue Management (Management, Management Score)	Measures a company's handling of a single material ESG issue and is used to calculate the Issue Managed Risk. It is expressed as a score that is calculated as the sum of all indicators weighted scores in an issue and ranges from 0 to 100, with 0 indicating no (evidence of) management of the issue and 100 very strong management of the issue.
Issue Unmanageable Risk	Refers to the amount of issue exposure that is deemed "unmanageable" and which cannot be mitigated by the company through management initiatives; it is expressed as a score that's calculated by subtracting the Issue Manageable Risk score from the Issue Exposure score. The score ranges from 0 to the issue exposure score, with 0 indicating that the issue risk is fully manageable, and a score equaling to the issue exposure score indicating that none of the issue risk is manageable.
Issue Unmanaged Risk	The portion of the issue exposure that a company either cannot manage (because it is unmanageable) or has not yet addressed through management initiatives (as demonstrated in relevant policies and programs and proven track record). It is expressed as a score that's calculated by subtracting the Issue Managed Risk score from the Issue Exposure score and ranges from 0 (indicating no unmanaged risk) to the issue exposure score.
Management	One of the two dimensions of the ESG Risk Ratings, this dimension measures a company's handling of material ESG Issues through policies, programs, quantitative performance and involvement in controversies, as well as its management of Corporate Governance. Its final outcome is expressed in the Overall Management score. Also used as short form for Issue Management score.
Material ESG Issues	A core building block of the ESG Risk Ratings. An ESG issue is considered to be material within the rating if it is likely to have a significant effect on the enterprise value of a typical company within a given subindustry and its presence or absence in financial reporting is likely to influence the decisions made by a reasonable investor. Material ESG issues were determined at a subindustry level through a structured consultation process with analysts but can be disabled for a company if the issue is not relevant to the company's business. Note: There are no specific predictions about financial impacts at the company level implied by the presence or absence of an issue as a material ESG issue.
Management Indicator	An indicator that provides a signal about how effectively a company is managing (a part of) its exposure to a material ESG issue through policies, programs or quantitative performance, for example. Management indicators comprise a set of Outcome Categories with one being selected to determine the final Indicator Score. The score ranges between 0 (indicating no management) and 100 (indicating best practice). Together with the Event Indicators, management indicators are used to form the Management score of a company.
Overall Subindustry Exposure Score – ESG Risk	A numerical value that represents the extent to which a subindustry is sensitive to all its material ESG issues. It is calculated by summing up the Subindustry Issue Exposure scores. The score can be used to represent a company's overall exposure to material ESG issues in its respective subindustry.

Overall Unmanaged Risk (ESG Risk)	Refers to a company's overall score in the ESG Risk Ratings that measures the extent to which enterprise value is at risk driven by ESG factors. It is assessed as that part of exposure that a company does not manage based on available information regarding policies, programs, quantitative performance and event track record. The overall unmanaged risk score is measured on an open-ended scale starting at zero (no risk) and, for 95% of cases, a maximum score below 50.
Qualitative Overlay	A special Beta Indicator that is optionally and applied by an analyst to arrive at the final Issue Beta for a company. Potential reasons for a qualitative overlay include, for example, (1) situations in which company-specific factors are not reflected in the beta signals or (2) situations in which the beta signals, either individually or collectively, do not yet reflect recent developments (e.g. M&A activity). Overlays can be done at the MEI-level only, not at the overall level. Analysts must provide a written rationale to explain their overlay.
Risk Decomposition	Describes the logic that distinguishes different types of risk that contribute to Exposure to derive Unmanaged Risk scores and is applied on the overall level (Comprehensive and Core model) as well as on the issue level (Comprehensive model only). The ESG Risk Ratings differentiate Unmanageable Risks, which cannot be addressed through company initiatives, from Manageable Risks, which can be addressed. Manageable risks are assessed as either managed by companies through suitable policies and programs, etc. (Managed Risk), or as not managed by companies (Management Gap). Unmanageable risk and management gap can be added up to arrive at the unmanaged risk of a company at the issue- or overall level.
Subindustry Correction Factor (SCF)	A technical correction factor that is applied to assure that the average Issue Beta within a subindustry is one.
Subindustry Exposure – ESG Risk (Subindustry Exposure Score)	Refers to Issue Subindustry Issue Exposure Score – ESG Risk and Overall Subindustry Exposure Score – ESG Risk.
Systemic ESG Issue	A Systemic ESG Issue represents the issue which arises by a Systemic Event considered material for a set of companies. The systemic ESG issue materializes with a Systemic Event Indicator assessment of category 4 or category 5.
Unmanaged Risk	Refers to Issue Unmanaged Risk and Overall Unmanaged Risk.

Endnotes

1 Acknowledgements: The authors would like to thank Alexander Dobrinevski, Henry Hofman and Sophia Burress for their contributions to develop the methodology and this report, and Cristina Zabalaga for the editorial review.

2 Text that is highlighted in bold teal indicates a term that is explained in the Glossary of terms in the Appendix.

3 Since ESG risks materialize at an unknown time in the future and depend on a variety of unpredictable conditions, no predictions on financial or share price impacts, or on the time horizon of such impacts, are intended or implied by the ESG Risk Ratings' outcomes.

4 List of material ESG Issues assessed as of May 2024.

5 Garz H., Karoui A., Pop O., Flaherty T. (2022), "Systemic Events in the ESG Risk Ratings", Sustainalytics.

6 A list of third-party data vendors and their respective terms of use is available at https://www.sustainalytics.com/third-party-terms-of-use.

7 Factual feedback to address any potential errors can be communicated by contacting the Issuer Relations & Investor Support Team at issuer.relations@morningstar.com.

Change Log

Version	Date	Initiator	Main items that changed	Comment / Rationale
2.0	January 2020	Methodology, Product Development & Portfolio Research	N/A	N/A
2.1	January 2021	Methodology, Product Development & Portfolio Research	Update section: Annual Review of Subindustry Assessments and Model Components: ESG RR Review.	Update visuals with new data.
3.0	18.03.2024	Research & Methodology	Update to new Corporate Governance & Stakeholder Governance methodology. Implementation of Systemic ESG Issue, Systemic Events and Systemic Event Indicator. Update of several sections and visuals.	Methodological changes to Corporate Governance and Stakeholder Governance assessments for the product implemented in document. Concept of Systemic Events, established in Spotlight, implemented in document.
3.1	12.06.2024	Research & Methodology	New section on Data Sources and Quality Assurance. Updated section on Publication Cycle.	Increased transparency on data inputs and processes.

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