ESG Risk
Assessments & Insights

ESG Assessment Methodology

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Investors increasingly acknowledge that using Environmental, Social and Governance (ESG) factors in investment analysis is beneficial to portfolio selection as there is a strong correlation between ESG and financial performance of companies. Companies with strong ESG risk management practices are more likely to drive long-term sustainable performance and shareholder value. Hence, investors are keen to assess the ESG performance of prospective investment opportunities as well as track the ESG performance of their existing investments on an ongoing basis.

1.1. Scope of ESG assessments

To assess a company's ESG risk management, investors need to understand the company's strategy and performance on ESG indicators. To provide meaningful insights, ESG assessments have to cover:

1. Details of all environmental risks, for example use of water, energy and natural resources, air emissions, effluents discharged in water/land, how innovation is embedded in the company's strategy and how the strategy translates to superior ESG performance measured by achievement of numerical targets. The evaluation must consider the materiality of risks, susceptibility of a company to specific ESG risks and the company's strategy to manage these risks. The efficacy of a company's risk management framework can be assessed by scrutinizing the results of the company's environment management practices. Usually the outcomes are evident through reductions in emissions, reduction in waste, better use of water, etc. and if the results are aligned with the targets the company has set for itself, the ESG risk management framework can be assumed as effective.
2. Similarly, for social compliance, the evaluation has to examine how a company manages its relationships with employees, suppliers, customers and communities. For example, does the company take employee health and safety, career development and labor rights into consideration while developing its policies, plan location and investment outlays? Is the company engaged in community support and development? Does it require its supply chain to follow ESG principles? Like in case of environmental assessment, the social assessment also has to evaluate the materiality of risks, susceptibility to a risk and the company's management framework.

3. For governance, the evaluation has to cover the board independence, diversity, leadership, executive pay, audits, internal controls, and shareholder rights. For example, the choice of its board members, independence, diversity and experience, shareholder rights measured by their ability to vote on important issues, etc. Again, the evaluation has to cover both materiality of risks, susceptibility to risks and the company's risk management framework.

1.2. ESG assessment approach and models

ESG assessments are complex. While reliable evaluation approaches exist, the challenge lies in the lack of standardized / comparable information that can be used for evaluation as well as a standardized approach of ESG assessments across providers. Each company publishes information in proprietary formats and each rating agency uses its own set of criteria to measure ESG performance, increasing the complexity for investors.

The absence of standardization is partially ameliorated by issuers that align their disclosures to frameworks and common themes proposed by SEBI and GRI. Today, many companies provide information through various mandated and voluntary disclosures, with the former covering financial reports and other regulatory filings, and the latter being investor presentations, social responsibility reports and other ad hoc disclosures.

1.2.1. Using survey vs disclosures for data and variations in rating scales

ESG assessments are always based on information disclosed by issuers, either through specific questionnaire administered by the assessment agencies and/or analysis of publicly available disclosures available in sustainability/CSR reports, integrated reports, annual reports and websites.

Investors are looking for standardized, accurate and comparable data and metrics to support investment decisions, many companies report ESG information inconsistently and in a manner that investors find difficult to use. To overcome the limitation of inconsistent disclosures, some agencies providing ESG assessments request companies for information and evaluate companies primarily based on information collected through questionnaires while supplementing their analysis using publicly available information (CSR reports, annual reports, news).

Survey-based assessments have the advantage of direct/targeted questions, collection of up-to-date information and specific answers not requiring interpretation. Drawbacks are the respondent bias, incomplete responses, dependence on voluntary participation and varying response time frames.

Assessments based on public disclosure undoubtedly have the advantage of transparency since the information reported is publicly available. The main drawbacks are that the disclosure formats are inconsistent, information is subject to interpretation and might not fully capture the company's initiatives. To overcome these limitations, initiatives like GRI (Global Reporting Initiative) are providing companies with a global common language to communicate their ESG initiatives and impacts. SEBI in India provides a similar framework through the Business Responsibility Reporting (BRR) guideline.

Each ESG rating agency uses its own ESG assessment methodology. Some rating agencies provide ESG scores on a scale of 100, others provide ratings ranging from AAA to C. Updates to the scores or ratings vary with companies being monitored on an ongoing basis (dynamically) or on weekly or annual basis.

1.3. ESGRisk.ai's approach to ESG assessments

ESGRisk.ai provides ESG assessments. Our model and report are designed to help investors quickly understand issuer's ESG risk exposure and risk management framework, enabling investors to directly integrate ESG factors in their portfolio construction and management. While all data used for ESG assessments provided by ESGRisk.ai is collected and analyzed from publicly available sources, ESGRisk.ai also provides companies the option to review data used and make corrections to the data if needed.

ESGRisk.ai's ESG score provides a summary of the company's ESG strategy, programs/initiatives, results and negative news across 19 themes including energy, emissions, water, environmental management, ESG reporting, human rights, community, supply chain, shareholders' rights, among others. The ESG scores are based on a wide range of 1000 indicators that have been selected and assigned weights based on their materiality and relevance to specific industries.

Indicators are weighted, normalized and scored based on the company's key issue specific performance. Scores are aggregated using materiality and polarity to derive the ESG score, following which the scores are reviewed by the analysts to assign the ESG rating on a AAA-C scale. This document details the approach to ESGRisk.ai's ESG assessment.

1.4. What provides predictive power to ESG assessment models

Classical ESG analysis looks at relevant ESG factors and past performance on these factors. However, analysis of past performance has limited predictive power as the performance may not be consistent. Hence modern analysis also covers risks in the present as well as foreseeable future and evaluates not only past performance but also the ESG risk identification and mitigation strategies, processes and the overall ESG risk management framework of the company.

Thus, combining past performance with the company's ESG risk management strategy and process allows assessments to predict the ability of the company to foresee and manage ESG risks as and when they occur, thereby giving assessments adequate predictive power.

Companies that report on their risk identification and management of environmental, social and governance risks, can be assessed with a fair degree of accuracy and the contrary is also true with the predictive power of assessments declining due to inadequate disclosure of information. Since risks cannot be adequately assessed for companies providing low disclosures, assessment agencies typically treat the absence of disclosures in a specific area as absence of a risk management framework to address that specific risk and conservatively reduce the company's ratings.

It is now well established that environmental, social and governance (ESG) issues are financially material and contribute substantially to a company's performance. Investors are relying increasingly on assessment of ESG factors as important inputs for risk management and business outlook, which in turn influences financial performance.

2.1. Ratings as a summary of a comprehensive ESG assessment

ESGRisk.ai's ESG Ratings have been developed to help investors understand a company's ESG performance and link it to the investor's portfolio risk. Our ESG ratings are a summary of financially material ESG factors. The rating report provides the performance on all these factors. Our ratings and the rating report can be used for portfolio construction and management as well as for ESG performance comparisons and benchmarking.

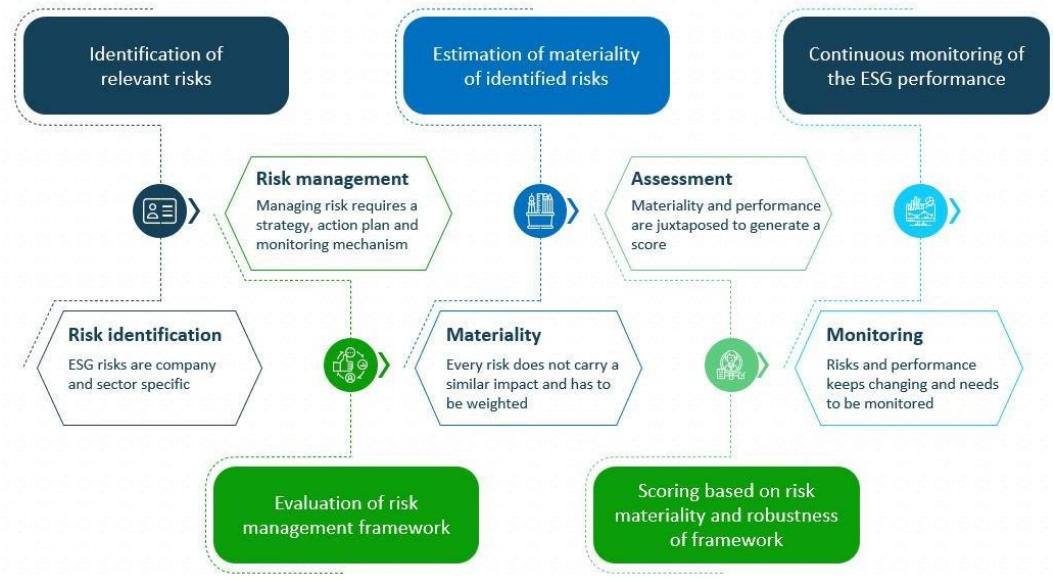


Figure 1: ESGRisk.ai's framework for ESG assessments

2.1.1. Understanding ESGRisk.ai's ESG data taxonomy

A comprehensive ESG assessment requires identifying all material ESG risks and evaluating the company's risk management practices to proactively address these risks. Since every company has exposure to a wide variety of risks and each risk impacts a company to varying degrees, the evaluation of exposure and scoring of the risk management process has to be structured in a hierarchy where individual indicators pertaining to the risk exposure and management can be aggregated to evaluate the performance. ESGRisk.ai aggregates data in three levels, viz.: The Key Issue, Theme and Category level, each of which is the next level of aggregation for hierarchical risk evaluation.

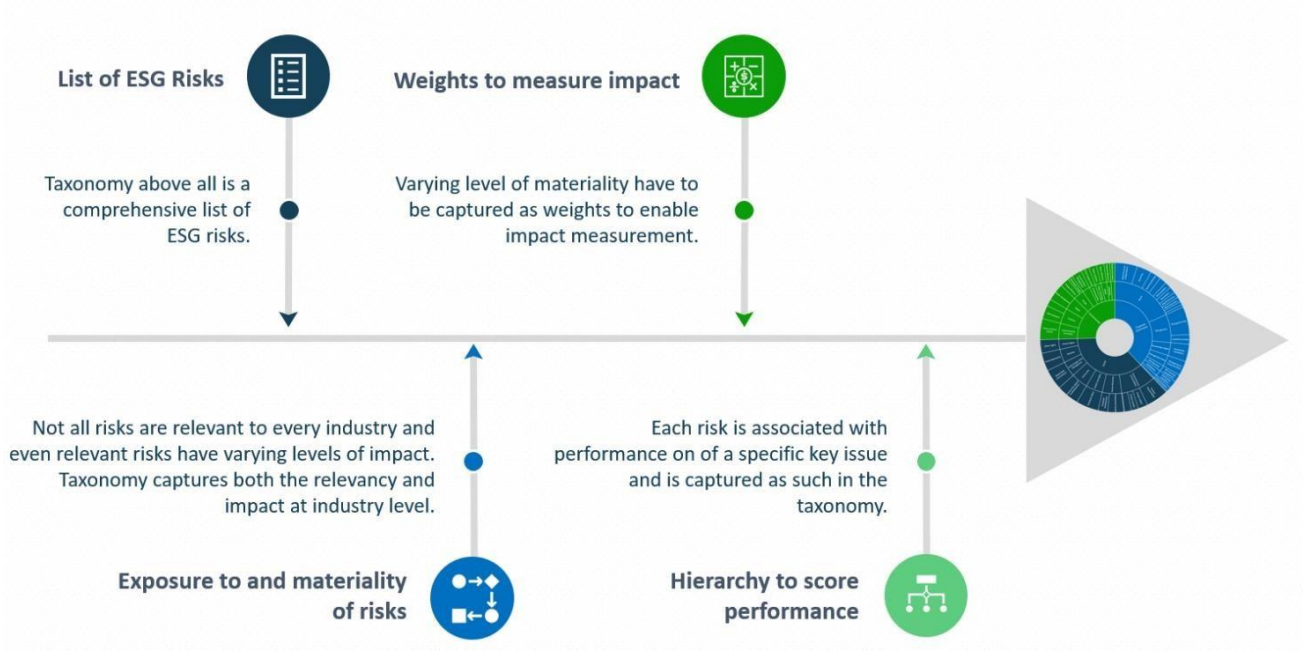


Figure 2: Overview of ESGRisk.ai's data taxonomy

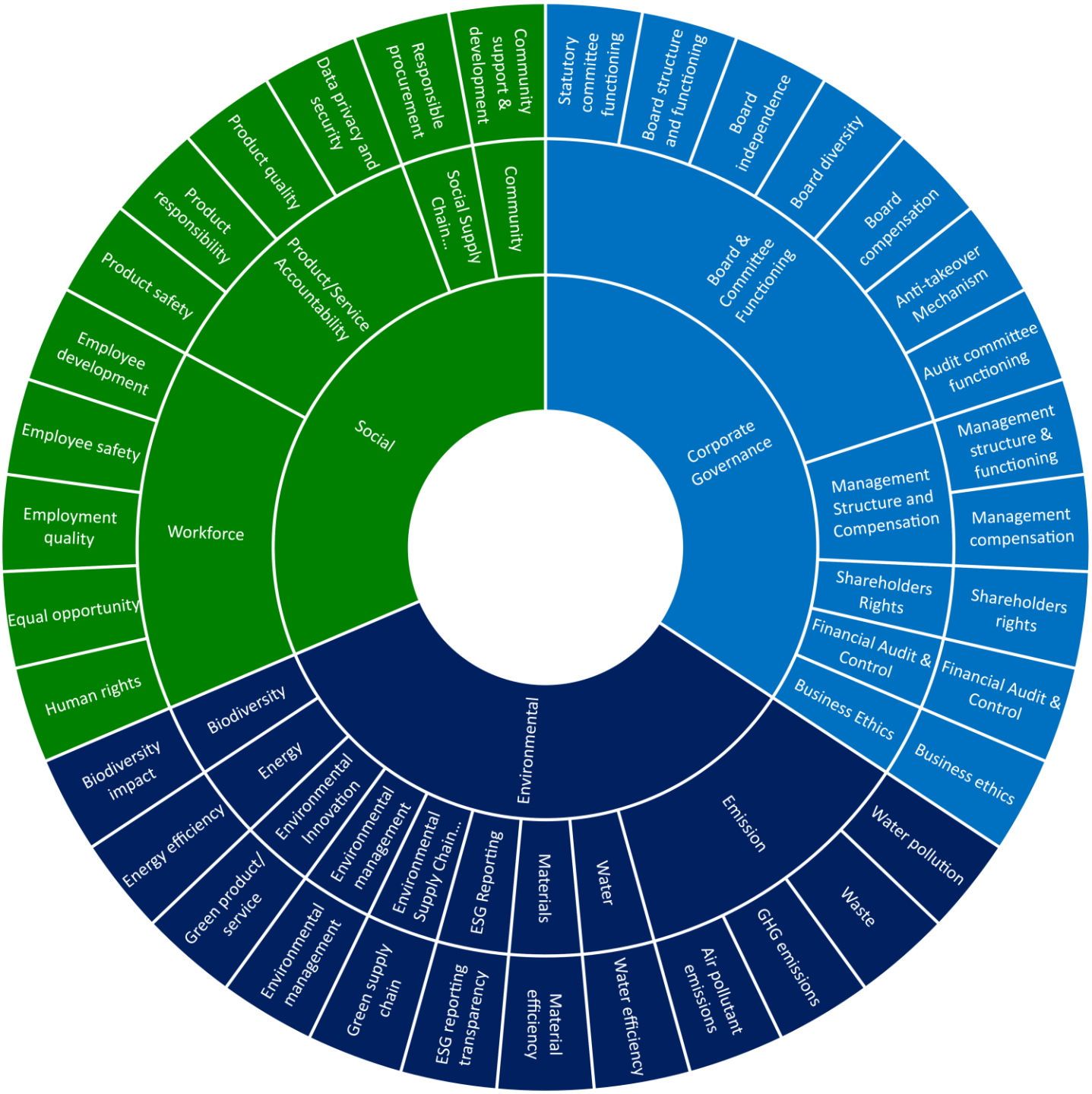


Figure 3: Visual representation of our data taxonomy

As evident from above chart, ESGRisk.ai's ESG ratings are based on three categories, 19 themes with – 9 in Environment, 4 in Social and 6 in Governance.

The performance on these 19 themes are assessed by measuring the strategy, performance and results on 35 Key Issues and ~1000 indicators as shown in Table 1 below.

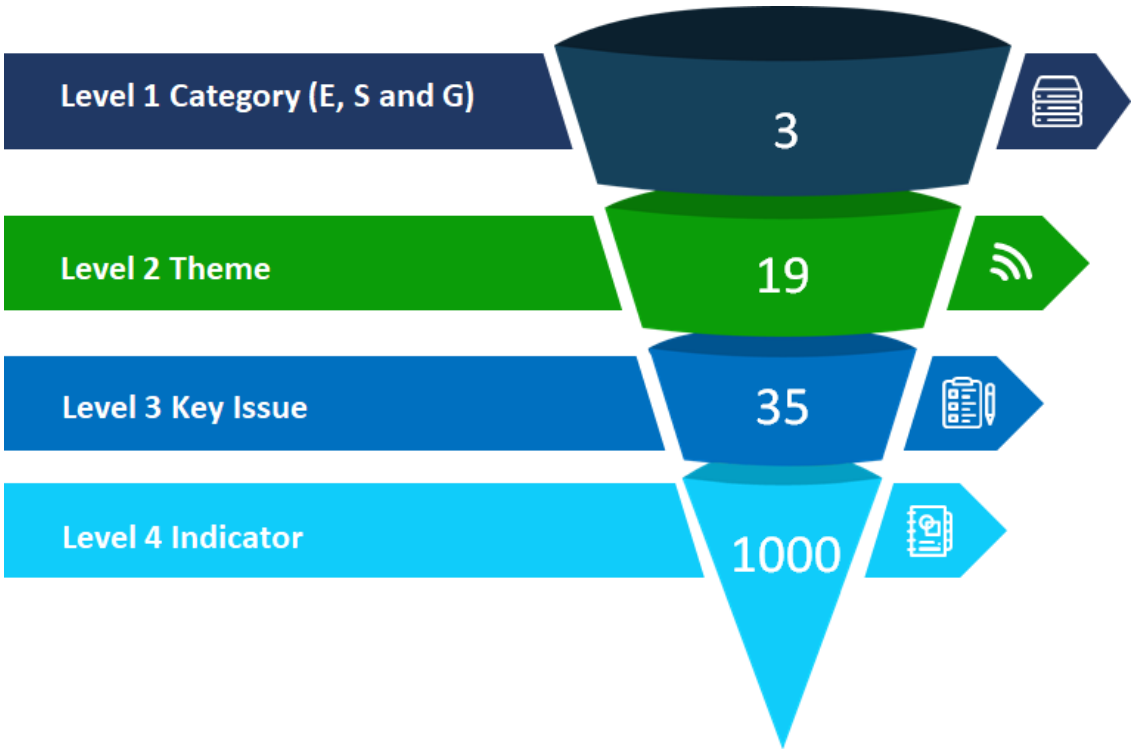


Figure 4: Five levels of ESGRisk.ai's data taxonomy

2.2. Primary data sources for ESGRisk.ai's ESG ratings

ESGRisk.ai bases its ESG assessments on company disclosures and publicly available information. Information sources such as the company's website, annual reports, CSR/sustainability reports, 10-K/Q (in case the company has US investors), notice for meetings, vote results as well as local and global NGO and news websites are being used to assess the company's performance on ESG issues.

Information Source	Frequency of Update
Annual Report	Annual
CSR, BRR report	Annual
ESGM/AGM notice, Press releases, vote results	Annual
Company website	Annual
NGO/Government websites	Annual
News	Daily

Table 1: Data sources for our ESG assessments

2.3. ESGRisk.ai's ratings and quality process

All data collected and analyzed for the assessment of a company's ESG performance are from publicly available sources. Once the data is collected, there is an in-depth quality assurance process at each stage.

After quality assurance, the data is used by the scoring model to calculate the initial ESG scores. These initial ESG scores along with the peer comparison are used by the analyst to review the company's performance on ESG parameters for assigning ESG ratings. The ratings assigned by the analyst are then reviewed for quality and process compliance before it is sent to clients.

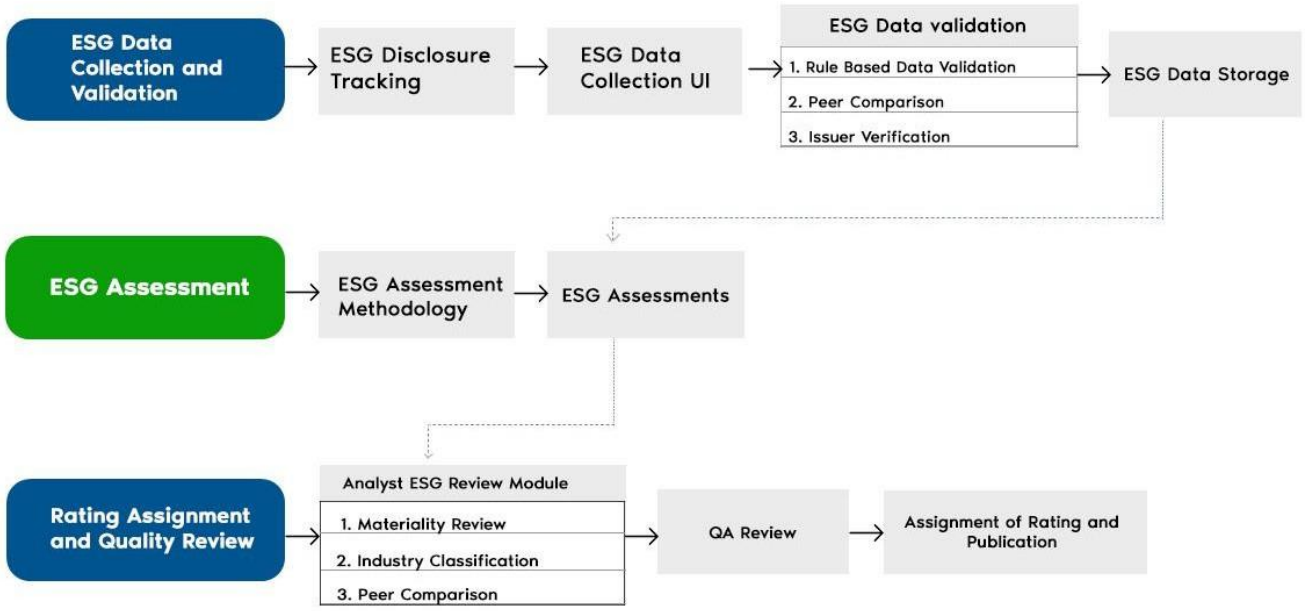
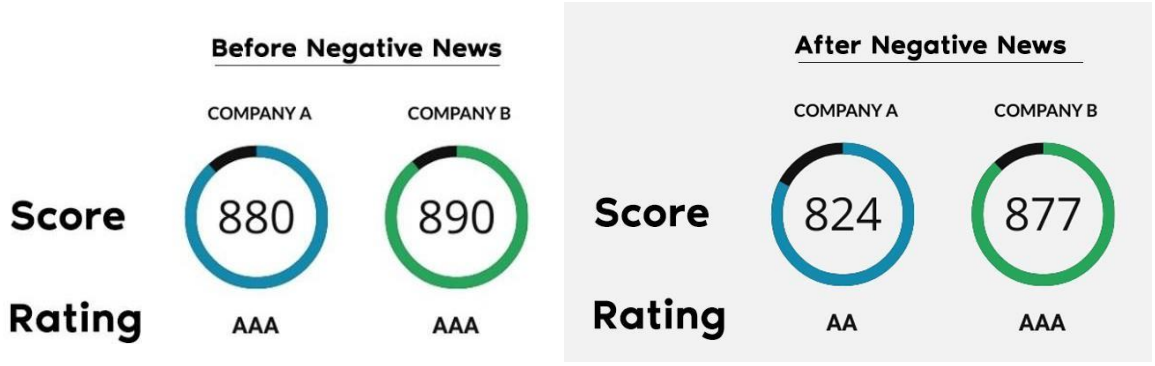


Figure 5: ESGRisk.ai's ratings and quality process

2.3.1. ESGRisk.ai's approach to surveillance and rating updates

Although most of the data for ESG assessments is sourced from annual disclosures, some of the data sources provide event-based updates. To reflect changes to ratings from data that are dependent on ad-hoc information, ESGRisk.ai will continuously monitor negative news and corporate events.

With every update on negative news or corporate event, we update the ESG scores for the company. However, ESGRisk.ai's analysts review and update the ratings of a company only in case of a rating change. For example, consider a company that has a score of 880 has a negative news which causes its score to fall to 824. The drop in the score results in the rating of the company to change from AAA to AA. However, if the score only would have changed from 880 to 877, then the ESG rating would remain the same. The latter illustrates that how a change in the ESG score can keep the rating unchanged. In this case, ESGRisk.ai will not update the report until new disclosures are published by the company.



ACTION	
Company A	Update score and change rating
Company B	Only update score

Table 2: Example of score update and rating changes

The ESGRisk.ai's ESG assessment framework evaluates the company's performance across ~1000 indicators parameters, that aggregate to key issues and themes which are then combined to evaluate the performance on E, S and G. The score on each key issue is a combination of the company's risk management framework to deal with a specific ESG risk and materiality of the risk to the industry in which the company operates.

Hence each indicator is assigned weights based on the risk materiality and the significance of the indicator in the company's risk management framework. The scores of the indicators are totalled and normalized so that the aggregate score for each industry totals 1,000.

At times despite a robust risk management framework and robust program implementation, there may be certain events that expose gaps in the ESG management framework. These events usually come to light through negative news or controversies and are also factored in our assessments.

The aggregated scores are then analyzed to assign a rating.

This section details the scoring methodology.

3.1. Components of ESGRisk.ai's ESG assessment

The ESGRisk.ai's ESG assessment is comprehensive and includes the following steps:

1. Assigning relevancy and materiality to the indicators
2. Accounting for polarity
3. Scoring each indicator
4. Aggregating scores of individual indicators to the overall score using weights
5. Assigning ratings
6. Scoring a company on transparency

Each step is detailed in the sections that follow.

3.1.1. Indicator relevancy and materiality

The materiality and relevance of environmental and social indicators vary across industries. Since not all indicators are relevant to every industry, ESGRisk.ai has identified the industry applicability of each indicator and, as evident in the tables below, 90% of environmental and 93% of social indicators are sector specific.

Key issues	Indicators that are industry agnostic	Indicator that are industry specific	Total Indicator	Percentage of industry specific indicator
Air pollutant emissions	0	9	9	100%
Biodiversity impact	0	7	7	100%
Energy efficiency	3	11	14	79%
Environmental management	0	13	13	100%
ESG reporting transparency	2	1	3	33%
GHG emissions	3	11	14	79%
Green product/service	0	20	20	100%
Green supply chain	0	6	6	100%
Material efficiency	0	5	5	100%
Waste use	0	9	9	100%
Water efficiency	3	6	9	67%
Water pollution	0	6	6	100%
Environmental	**11**	**104**	**115**	**90%**

Table 3: Industry agnostic and industry specific indicators in the Environment category

Key Issues	Indicator that are industry agnostic	Indicator that are industry specific	Total indicator	% of industry specific indicator
Community support & development	4	2	6	33%
Data privacy & security	0	9	9	100%
Employee development	0	6	6	100%
Employee safety	0	16	16	100%
Employment quality	0	8	8	100%
Equal opportunity	0	12	12	100%
Human rights	3	4	7	57%
Product quality	0	9	9	100%
Product responsibility	1	28	29	97%
Product safety	0	11	11	100%
Responsible procurement	0	7	7	100%
Social	**8**	**112**	**120**	**93%**

Table 4: Industry agnostic and industry specific indicator in the Social category

Not all indicators are equally material to all industries. Hence for assessments, weights corresponding to the indicator's materiality in a specific industry are assigned. They range from very high materiality to marginal material. For example, GHG emission reduction is considered as very high materiality for mining companies while GHG emissions are only marginally material for real estate and financial services companies. Diversity and inclusion strategy on the other hand is not highly material for mining companies but is of very high materiality for financial services and real estate companies.

The ESGRisk.ai materiality and relevancy framework ensures a company's score is not negatively impacted if the company does not disclose their risk management framework on issues that are not considered material to that specific industry. Vice versa, the company's score is adversely impacted if it does not report on issues that are material.

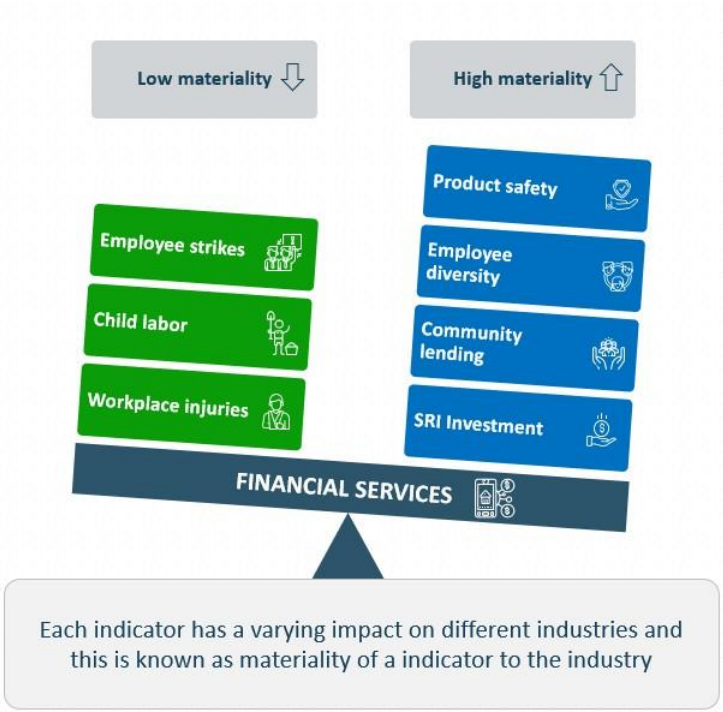


Figure 6: Example of materiality in financial services industry

3.1.2. Accounting for indicator polarity

Indicators in each category are assigned a polarity to denote if their high performance indicator represents good or poor risk management. For example in the environmental category, answering "yes" to nuclear production or "yes" to animal testing in the social category have a negative polarity. However, answering "yes" to policies or initiatives and targets to reduce nuclear waste and animal testing have a positive polarity.

Quantitative indicators that have a high value reported for energy use or water use in the environmental category or employee fatalities in the social category have a negative polarity, while a high percentage of recycled water or average training hours would a positive polarity.

For governance, all indicators under strategy and compliance have a positive polarity, while negative news are always assigned a negative polarity.

The above principles are used to determine and assign polarity for each ESG indicator assessed by ESGRisk.ai.

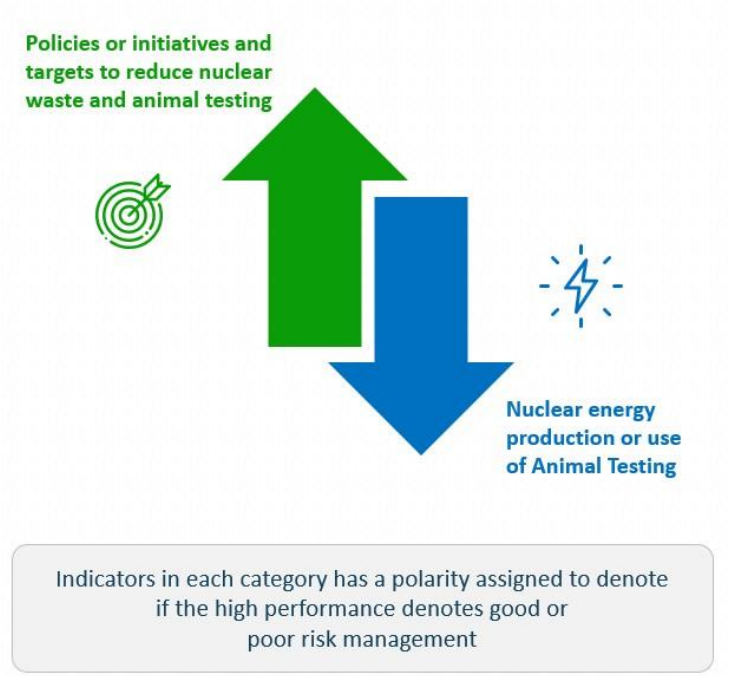


Figure 7: Understanding polarity of similar indicator

3.1.3. Scoring each indicator

Each indicator is scored based on two parameters, viz. its function in the risk management framework indicator and the risk it represents.

A company's risk management framework is evaluated using its strategy/compliance/targets, programs/initiatives, as well as the results of the same measured against targets set by the companies themselves.

To evaluate specific aspects of the risk management framework, ESGRisk.ai assesses a company's:

1. Strategy – by evaluating:
   a. Policies and governance frameworks that the company has instituted to address crucial ESG risks and issues.
   b. Targets to measure performance (results) against the objectives set by the company.
   c. Company's compliance with specific sections of the Company's Act 2013 or SEBI guidelines
2. Performance – by evaluating programs or initiatives that the company has put in place to address key issues.
3. Results – by evaluating quantitative information reported by the company on specific ESG issues such as energy use, total CO_2 emissions, women employees, fatalities, training costs, etc. Results are usually measured against the targets set by the company.

To ensure comparability, quantitative indicators will be normalized consistently across all industries in the universe. Some common normalization factors used in the model are percentage, ratio to people / revenue or conversion to standard units.

For example, in the environment category, percentage of water recycled will be considered as an indicator in the scoring model. This indicator is already normalized and can be easily compared across companies.

In the social category, total injury rate is a indicator which is normalized to million hours worked. In case the company reports the number of injuries instead of the rate, the latter can be calculated by assuming 1 worker works 8 hours per day, 2,000 hours per year.

Indicators are then weighted based on their industry materiality and relevancy, e.g.: if not relevant or material to an industry, the indicator will be assigned a weight of 0, if considered low relevancy, weight assigned is 1 and 4 if very high. More details regarding indicator materiality and relevancy are provided in the sections Indicator Materiality and Relevancy.

For illustration, a simplified version of our scoring approach is shown in the table below:

Function	Multiplier for Positive Polarity		Multiplier for Negative Polarity	
	Yes	No/NA	Yes	No/NA
Strategy/Target/Compliance	1	0	0	1
Performance	2	0	0	2
Results	3	0	0	3

Table 5: Weights based on polarity

Results are usually quantitative and cannot be scored in isolation to industry benchmarks. Hence ESGRisk.ai consistently uses a comparison based approach for scoring reasults, where the comparison of performance is with other peers in the specific industry. In such cases the weight is assigned using a percentile approach.

Of the ~1000 indicators used in our assessment model, ~83 indicators relate to the results of company performance on various key issues and are reported as numerical values. Each of these numerical indicators need to be weighted and scored in comparison to peers. While all these indicators are first normalized by either revenue or headcount to make it comparable, the comparison itself is more complex for the following reasons:

1. The comparison will always be with a sample set of peers as the entire population of peers will not be listed and all listed companies will not be covered in the initial years.
2. Comparative scoring will require availability of all data simultaneously but given that companies disclose data at varying points in time, the comparisons cannot be done on actual peer data.

Given the above constraints, using an absolute percentile-based scoring for numerical indicators will require either bunching of disclosures or bunching of publications. With the weekly refresh, adopting the absolute percentile approach will delay publications, requiring a stochastic approach.

After considering all the possible options, ESGRisk.ai, has chosen the Z-Score based determination of percentile using the area under the normal distribution curve.

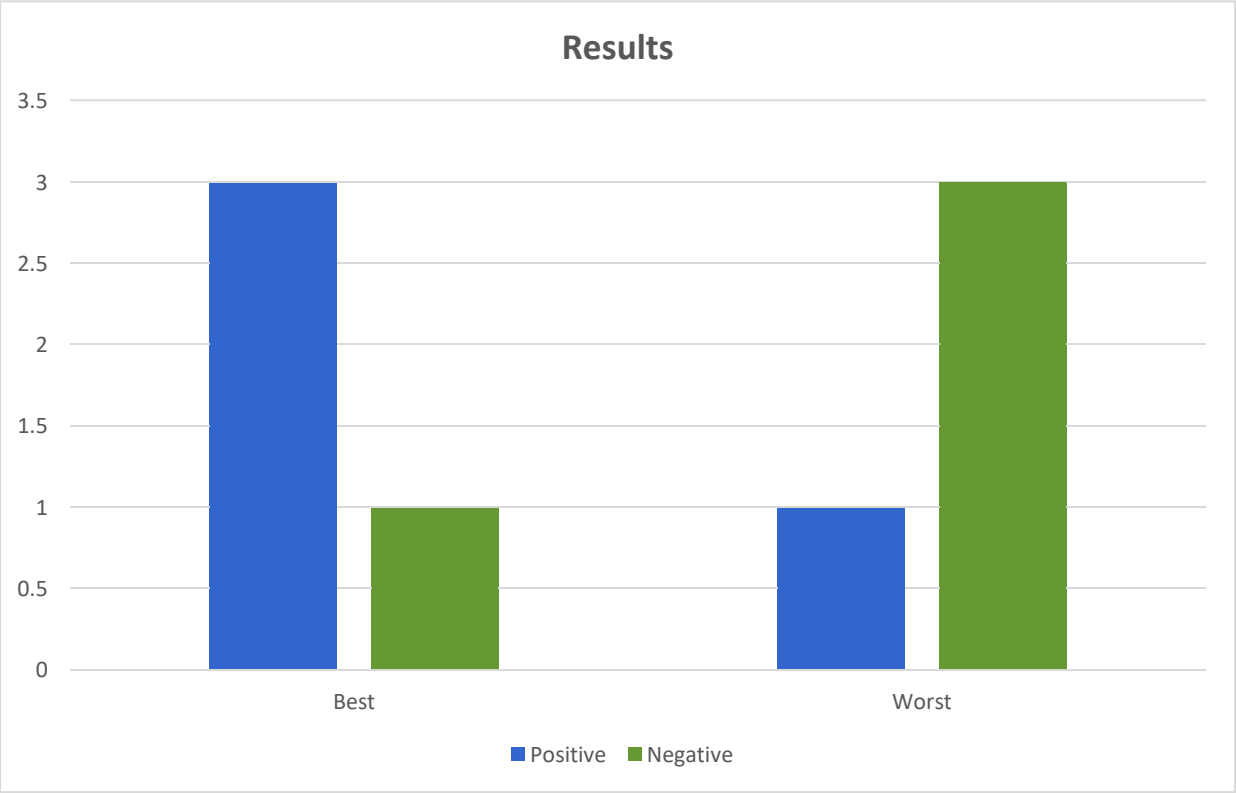


Figure 8: Scoring the best and worst performers using percentiles

3.1.4. Scoring negative news

Negative news/controversies are unfailing indicators of the gaps in an issuer's risk management framework. The inability to foresee and manage a risk is starkly evident when the company faces controversies arising from its inability to address adverse events when they are encountered in the normal course of business.

A company's involvement in controversial events (negative news) that have an impact on the environment or society are also considered in the assessment of the ESG scoring. Indicators under the "Negative News" function, are pre-assigned a weight ranging from 0-4 based on their impact on the company, with 0 signifying no impact and 4 signifying very high impact.

Negative news/controversies have varying levels of impact and the issuers themselves have varying approaches to manage adverse events. ESGRisk.ai's model evaluates the fragility of the risk management framework based on the magnitude of the controversy's impact. The approach on how controversies impact the scores (deduction of scores) is explained below:

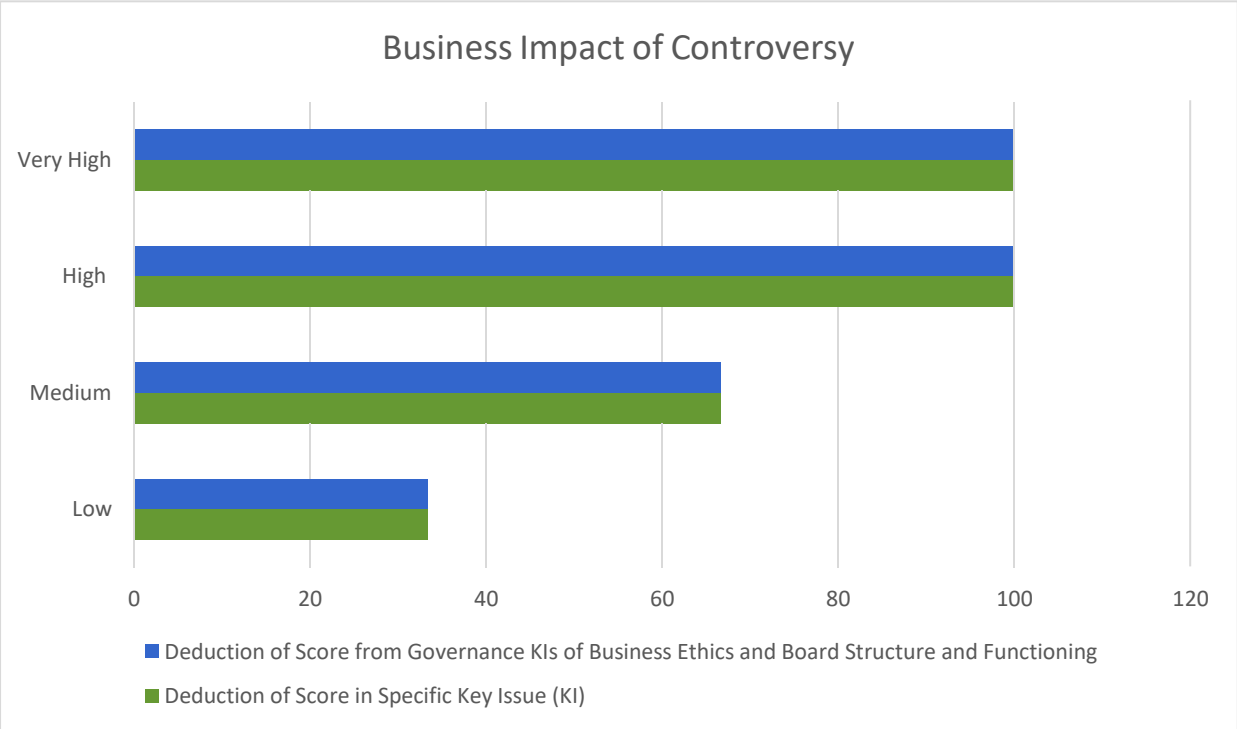


Figure 9: Impact of negative news on scoring

In case the controversy has a very high impact, the category scores will be deducted by 20% in addition to the KI deduction. The deduction is made on the last published score.

3.1.5. Aggregating scores of individual indicators to the overall score using weights

To calculate the overall ESG score, the total weight of each indicator is calculated as indicator weight= Risk materiality * Functions weight * indicator value.

Using the above framework, ESGRisk.ai aggregates the scores of individual indicator to calculate the key issue, theme, category and overall scores.

3.1.6. Assigning ratings based on the overall scores

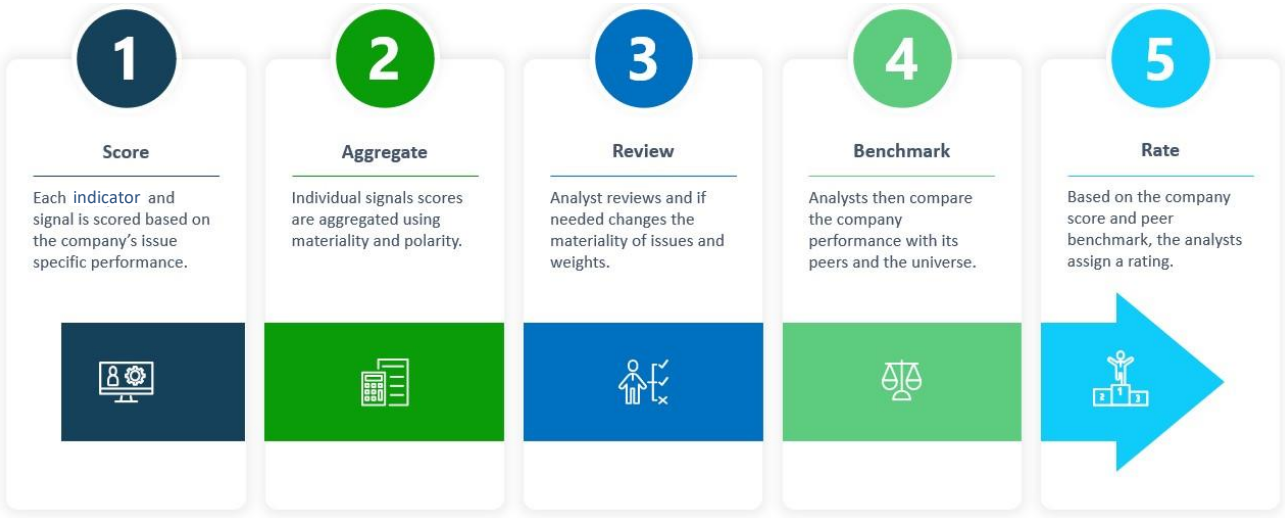


Figure 10: Process of assigning ratings

After the total scores are calculated, the analyst assigns the company's rating, following the below steps:

1. Review and change the industry classification if required. As explained in section 3.11, both relevancy and materiality are industry specific and assigning the correct industry code is crucial to evaluate the appropriate risks. ESGRisk.ai's analysts, based on the company's reviews and exposure to different industry segment, confirm or change the industry classification.
2. Review and change the materiality of indicator if needed. Ever so often, companies are exposed to specific risks due to operational reasons (for example over-dependence on hazardous materials for manufacturing) or business reasons (for example trade with countries that are ranked poorly on corruption indexes). In such cases materiality of certain risks may need to be increased. Hence, the analysts review the business construct and change the risk materiality where relevant.
3. Select different peers if needed to make the comparison more meaningful. This is done to make the analysis more representative of a company's ESG risk given the business exposure. For example if a company is processing tobacco as well as manufacturing confectionary, the peer selection may have to cover multiple industries.

Rating Scale	Scores		What the rating signifies
	High End	Low End	
ESG-RISK AAA	Above 871		An ESG leader who is successfully managing all ESG risks
ESG-RISK AA	870	721	An ESG leader reliably managing all material ESG risks
ESG-RISK A	720	571	An ESG leader with a largely positive track record of managing material risks
ESG-RISK BBB	570	421	A company with a good track record of risk management, but no evidence of a robust framework
ESG-RISK BB	420	271	A company with a mixed track record of risk management and no evidence of a robust framework
ESG-RISK B	270	121	A company with poor track record of risk management and absence of a risk management framework
ESG-RISK C	Below 121		A company that is drastically impacted by ESG risks

Table 6: Mapping scores to rating scale

Finally, based on the above, the analysts assign the ratings and write a summary explaining the category specific and the overall risks and strengths of the company's ESG risk assessment.

To assign the ratings, the analysts use the scores to ratings mapping table as a guidance. The analysts have the flexibility to change the ratings by a notch, based on their analysis and the table only serves as a guidepost.

3.1.7. Scoring a company's ESG disclosures and transparency

Based on the company's disclosure of indicators, ESGRisk.ai will compute and publish two transparency scores, one will score the level of overall disclosures and the second will score the BRR disclosures, relevant largely in the Indian context.

Overall transparency score: The overall transparency score is calculated as:

Number of indicators where performance can be ascertained through disclosures / Total material indicator

Transparency scores are also calculated at different levels as shown below:

Transparency Score	Description
Key issue level	Number of indicators where performance can be ascertained through disclosures/ Total material indicator under key issue
Theme level	Number of indicators where performance can be ascertained through disclosures/ Total indicator under theme
Category level	Number of indicators where performance can be ascertained through disclosures/ Total indicator under category

Table 7: Overall transparency score across hierarchy

BRR transparency score: BRR transparency score is based on indicators that correspond with BRR disclosures and is calculated as *Number of indicators corresponding to BRR disclosures material to the industry where company has performed or complied / Total material indicator corresponding to BRR disclosures.*

Methodology maintenance and update: In regular intervals, ESGRisk.ai reviews the materiality of each indicator assigned to each industry as well as their weights. The revision is a forward-looking process to identify emerging issues and reduce or eliminate issues that are receding in prominence. As part of the review, ESGRisk.ai updates its clients about proposed changes and seeks their feedback.

Intermediate reviews will be performed on a discretionary basis.

4. Addendum 1

Change in logic for calculation of Indicators

This addendum updates scoring logic from relative to absolute basis for a few of the indicators and changes in the range of Key Managerial Personnel (KMP) age.

In the previous assessment year, scoring for the indicator of the average age of the KMP was positive when the age was between 45 – 55 years. However, based on the current trends, and startup cultures, the range of KMPs is changed to 40-55 years.

To ensure comparability, quantitative indicators are normalized consistently across all industries in the rating universe. Some common normalization factors used in the model are percentage, ratio to people, revenue or conversion to standard units. The objective of this review is to score a few indicators on the actual performance of the company and not compare it at industry levels.

For some indicators, the calculation is based on the company's individual performance. ESGRisk.ai consistently uses a comparison-based approach for scoring results, where the company's performance is compared with other peers in the specific industry. In such cases, the weight is assigned using a percentile approach.

For example, in the environment category, there are some indicators related to air pollution key issues - NOx per-unit revenue, Ozone Depleting Substances per-unit revenue, where we calculate scores based on relative approach and normalize it across industries.

In the peer-based relative scoring model, companies with good performance were getting penalized. This would have also penalized companies where a particular indicator may not be applicable and thus get a high score for no effort or vice-versa.

For example, in the social category if employees' fatality for the year is 0, then the company should get scores. Since fewer companies disclose this indicator, the percentile is not calculated and therefore companies are penalized. ESGRisk.ai has revised the calculation logic and the scores are delinked from peers and now scoring is done based on threshold slabs or absolute values. The significance of this approach is that the actual performance of the company is taken into account. Such an approach would not penalize high performing companies or those showing improvement and at the same time factor in slippages or low performance based on actual disclosures.

Following are the indicators where we have changed our approach for calculation from percentile/ relative to absolute/company's individual performance.

Energy Management System Certification Percentage
EMS Certification Percentage
Supplier EMS Certification Percentage
Percentage ISO 9000 - Quality Management System
Gender Pay Gap
Fatalities, Total lost days
ISO 45001 Certification Percentage
OHSAS 18001 Certification Percentage

For Analytical Queries, please reach out to info@esgrisk.ai

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