Environmental, Social and Governance (ESG) Scores from Refinitiv

June 2019

REFINITIV™

DATA IS JUST
THE BEGINNING

Contents

Executive summary

Refinitiv recognizes the increasingly critical importance of transparent, accurate and comparable Environmental, Social and Governance (ESG) data for the financial industry. We strive to be the trusted and preferred partner for ESG data and solutions, and are committed to bringing an array of best-in-class data, analytics and workflow solutions to the market which allow customers to use Refinitiv data as the backbone of their ESG process.

With Refinitiv you can easily integrate ESG factors into portfolio analysis, equity research, screening or quantitative analysis. We offer users the possibility to combine and analyze ESG data using cutting-edge applications for in-depth analysis.

ESG Scores from Refinitiv are designed to transparently and objectively measure a company's relative ESG performance, commitment and effectiveness across 10 main themes (emissions, environmental product innovation, human rights, shareholders, etc.) based on company-reported data. We also provide an overall ESG Combined (ESGC) Score which is discounted for significant ESG controversies impacting the corporations in our coverage. The ratings are available on over 7,000 companies globally with time series data going back to 2002. They are simple to understand percentile rank scores (available in both percentages and letter grades from D- to A+) benchmarked against Thomson Reuters Business Classifications (TRBC) from Refinitiv for all environmental and social categories as well as the Controversies Score and against the country for all governance categories.

ESG Scores, an enhancement and replacement to the existing ASSET4® Equal Weighted Ratings (EWR), reflect our strategic ESG framework and are a robust, data-driven assessment of companies' ESG performance and capacity where company size and transparency biases are minimal. Key enhancements over the legacy equa-weighted ASSET4 ratings are:

1. **ESG controversies overlay** – to magnify the impact of significant controversies on the overall ESG scoring

2. **Industry and country benchmarks at the data point scoring level** – to facilitate comparable analysis within peer groups

3. **Data-driven category weights** – to reflect data availability within each category that supports more precise differentiation across companies

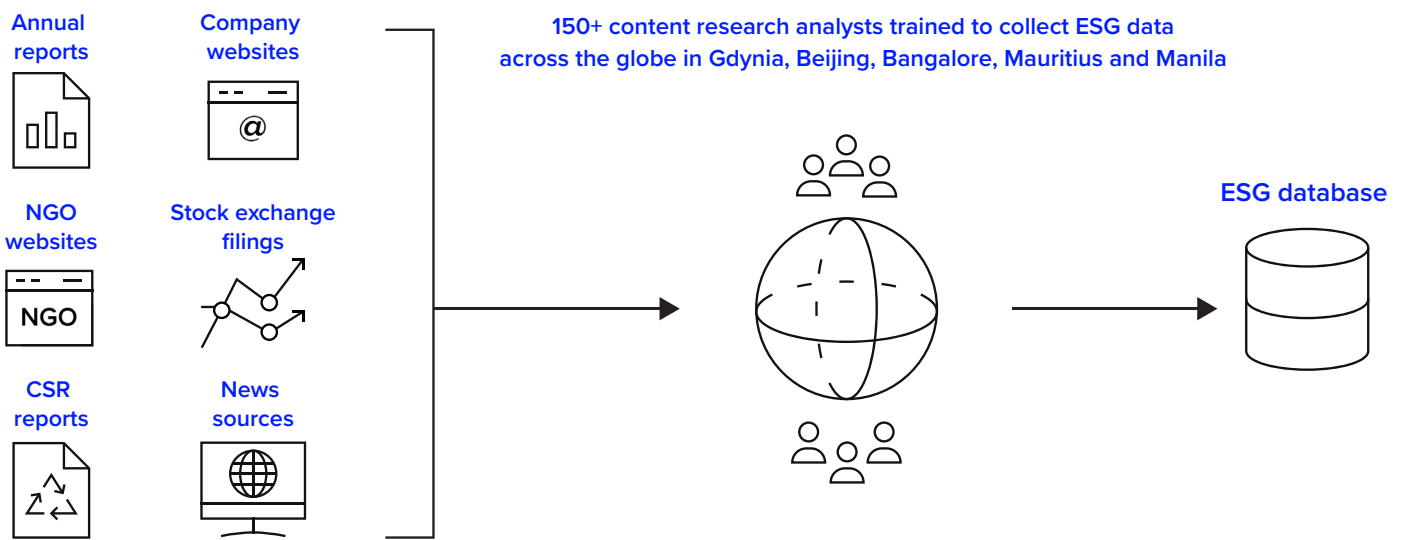4. **Percentile rank scoring methodology** – to eliminate hidden layers of calculations

Refinitiv offers one of the most comprehensive ESG databases in the industry, covering over 70% of global market cap, across more than 400 different ESG metrics, with history going back to 2002.
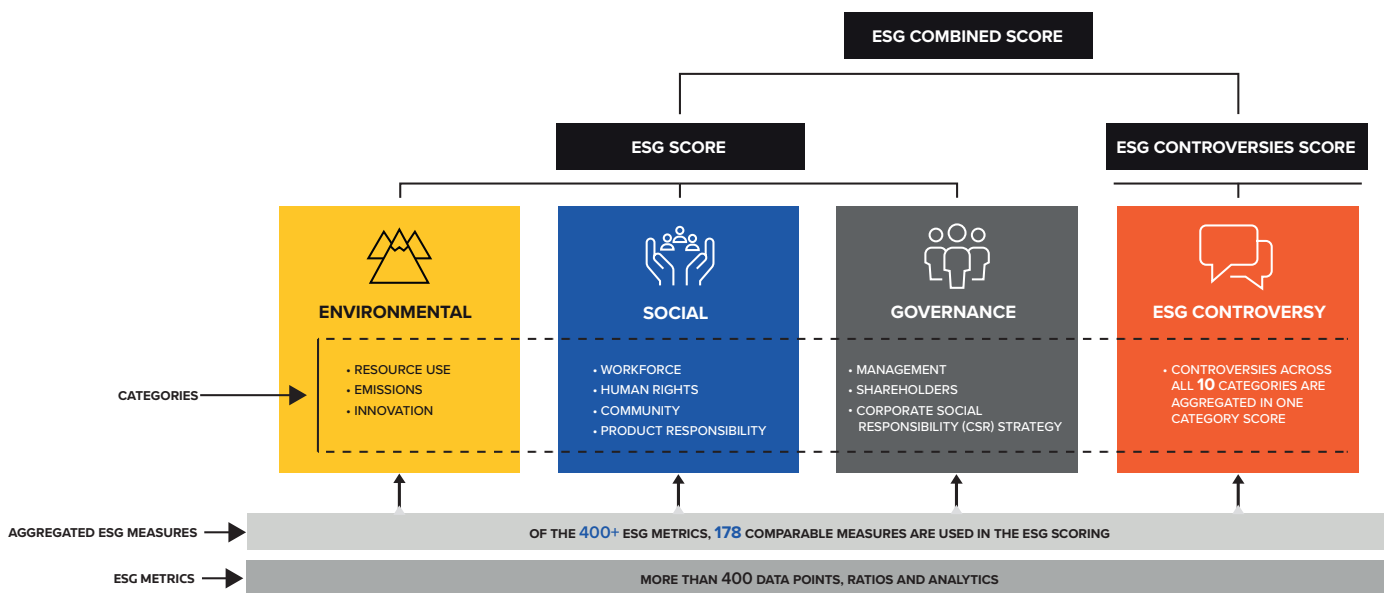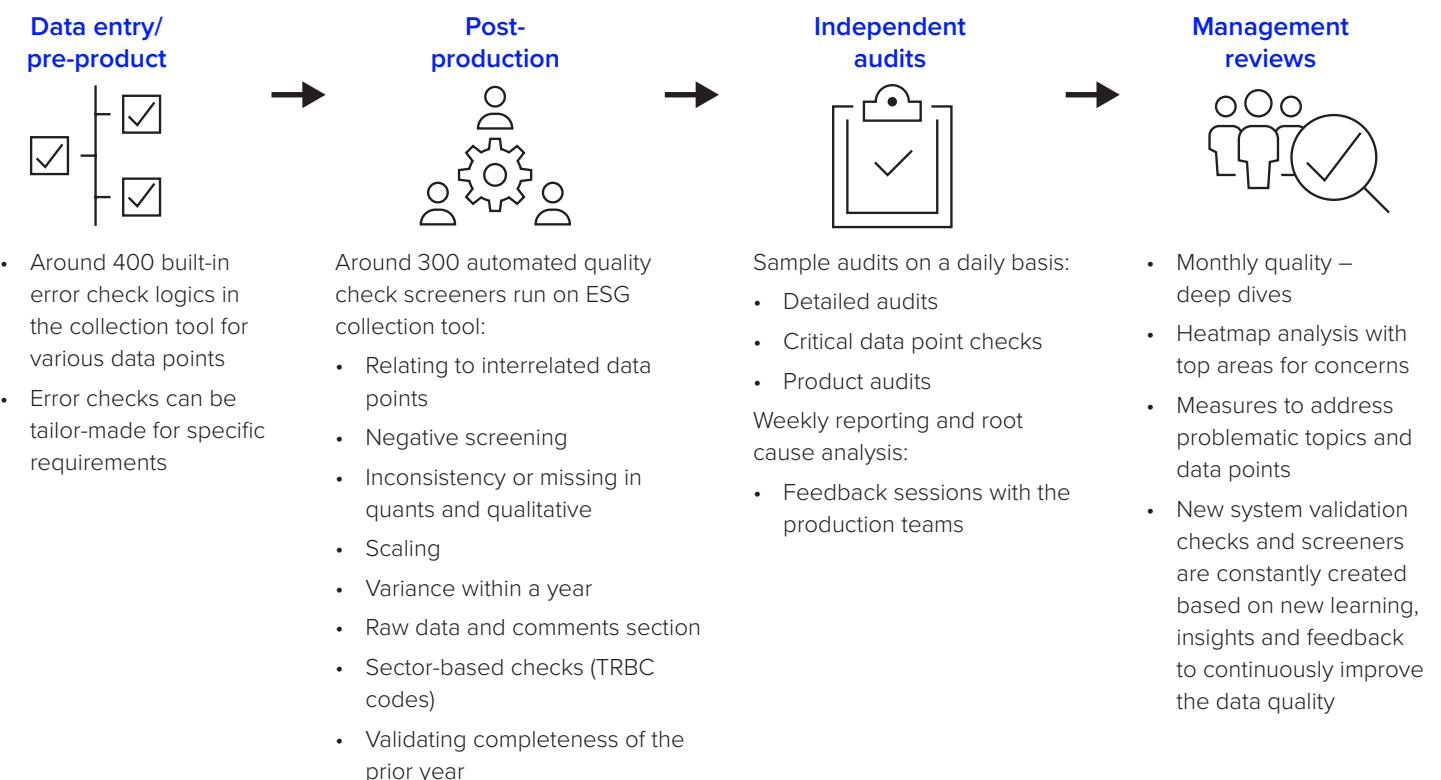
Data process

With over 150 content research analysts who are trained to collect ESG data, we have one of the largest ESG content collection operations in the world. With local language expertise and operating from different locations across the globe, we process numerous publicly available information sources with the aim of providing up-to-date, objective and comprehensive coverage. There are over 400 ESG measures, which our analysts process manually for each company within the ESG universe, with each measure going through a careful process to standardize the information and guarantee it is comparable across the entire range of companies.

The database is updated on a continuous basis aligned with corporate reporting patterns, and data is refreshed on products every week, which includes the recalculation of the ESG Scores. Updates could include a brand-new company being added to the database, the latest fiscal year update or the inclusion of a new controversy event. In most cases, ESG reported data is updated once a year in line with companies' own ESG disclosure. We refresh data more frequently in exceptional cases, when there is a significant change in the reporting or corporate structure during the year. ESG news and controversies are updated on a continuous basis and when such events occur and get picked up by global media.

Annual reports

Company websites

NGO websites

Stock exchange filings

CSR reports

News sources

150+ content research analysts trained to collect ESG data across the globe in Gdynia, Beijing, Bangalore, Mauritius and Manila
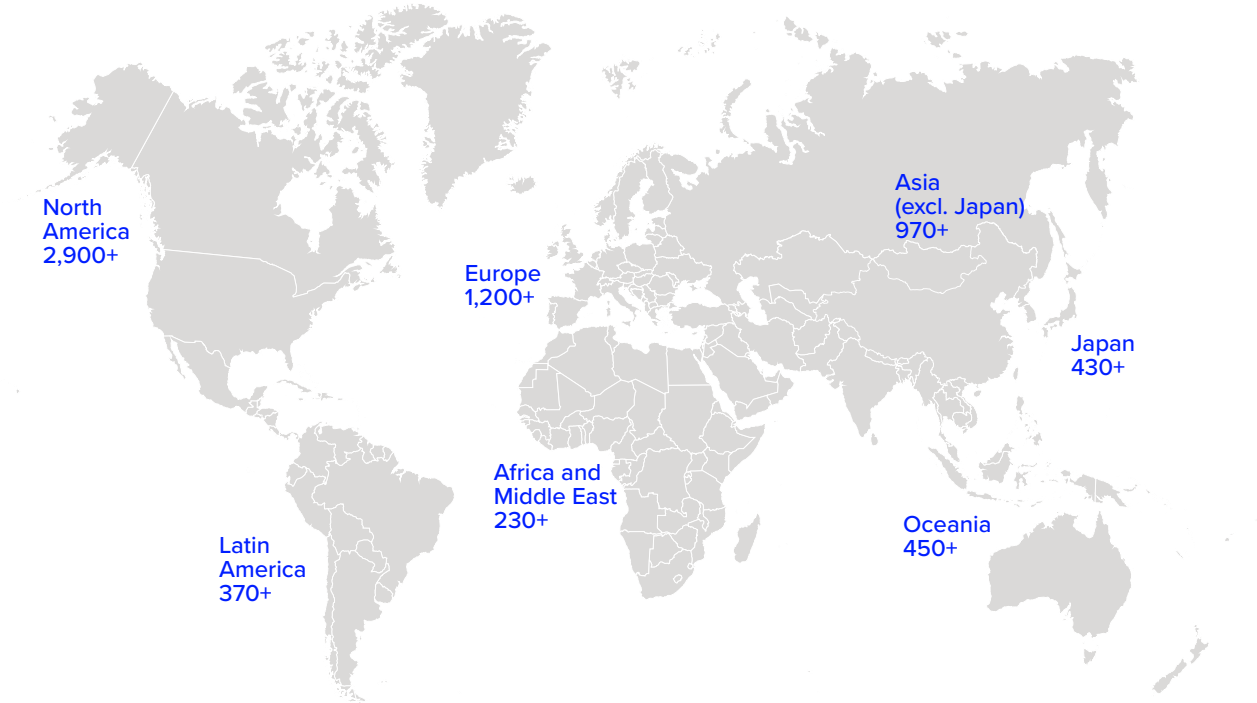
ESG database

Data quality is a key part of the collection process; that is why we use a combination of both algorithmic and human processes to make sure we achieve as close to 100% data quality as possible. Below is an overview of the various methods we use to achieve this goal.

Data entry/ pre-product

- Around 400 built-in error check logics in the collection tool for various data points
- Error checks can be tailor-made for specific requirements

Post- production

Around 300 automated quality check screeners run on ESG collection tool:

- Relating to interrelated data points
- Negative screening
- Inconsistency or missing in quants and qualitative
- Scaling
- Variance within a year
- Raw data and comments section
- Sector-based checks (TRBC codes)
- Validating completeness of the prior year

Independent audits

Sample audits on a daily basis:

- Detailed audits
- Critical data point checks
- Product audits

Weekly reporting and root cause analysis:

- Feedback sessions with the production teams

Management reviews

- Monthly quality – deep dives
- Heatmap analysis with top areas for concerns
- Measures to address problematic topics and data points
- New system validation checks and screeners are constantly created based on new learning, insights and feedback to continuously improve the data quality
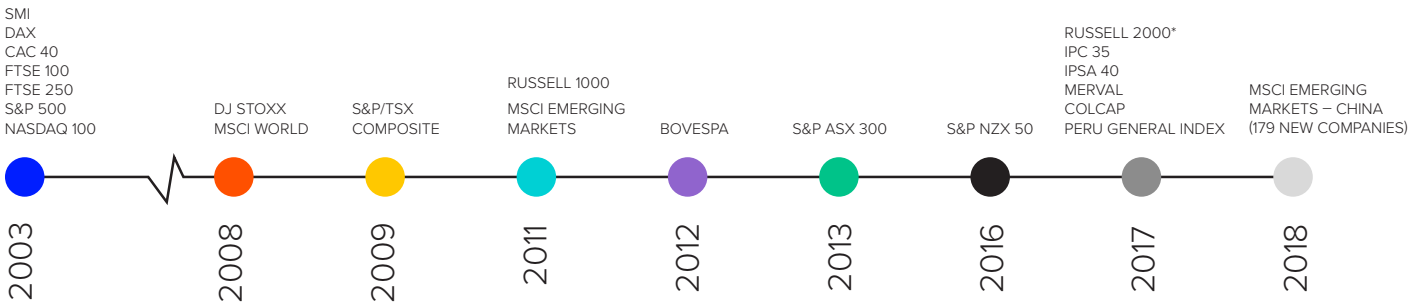
Global coverage

The ESG universe of companies for which ESG data is maintained and ESG Scores are calculated consists of more than 7,000 companies globally. Regional breakdown is provided in the illustration below:

North America
2,900+

Europe
1,200+

Asia
(excl. Japan)
970+

Japan
430+

Africa and
Middle East
230+

Oceania
450+

Latin
America
370+

Our coverage has evolved over time and is continuously expanding as we include more indices. Quarterly, we review the constituents of these indices and additional companies to our coverage. We are in the process of adding all the Russell 3000 Index companies to the coverage, most of which are already covered and available on our products. The illustration below shows a timeline of the index inclusion in the ESG universe.

SMI DAX CAC 40 FTSE 100 FTSE 250 S&P 500 NASDAQ 100		DJ STOXX MSCI WORLD	S&P/TSX COMPOSITE	RUSSELL 1000 MSCI EMERGING MARKETS	BOVESPA	S&P ASX 300	S&P NZX 50	RUSSELL 2000* IPC 35 IPSA 40 MERVAL COLCAP PERU GENERAL INDEX	MSCI EMERGING MARKETS – CHINA (179 NEW COMPANIES)
2003		2008	2009	2011	2012	2013	2016	2017	2018

Scores overview

ESG Scores from Refinitiv are designed to transparently and objectively measure a company's relative ESG performance, commitment and effectiveness across 10 main themes (emissions, environmental product innovation, human rights, shareholders, etc.) based on company-reported information. An overall ESGC score is further calculated which discounts the ESG Score for news controversies which materially impact the corporations. The underlying measures are granular enough to differentiate effectively between companies that have limited reporting and are not transparent or deliver minimal implementation and execution, versus companies that "walk the talk" and emerge as leaders in their respective industries or regions.

ESG Scores are calculated and available for all companies and historical fiscal periods in the ESG global coverage. In other words, ESG Scores are available going back to fiscal year 2002 for approximately 1,000 companies (mainly U.S. and European).

There are two overall ESG Scores in the model:

1. **ESG Score** – measures company's ESG performance based on reported data in the public domain
2. **ESG Combined (ESGC) Score** – overlays the ESG Score with ESG controversies to provide a comprehensive evaluation on the company's sustainability impact and conduct

The availability of the two overall scores and underlying category assessments allows users to adopt and apply the scoring that meets their requirements, mandates or investment criteria.

Scores structure

The model is fully automated, data-driven and transparent, which makes it free from subjectivity and hidden calculations or inputs.

ESG Score

Refinitiv captures and calculates over 400 company-level ESG measures, of which we have carefully selected a subset of 178 of the most comparable and relevant fields to power the overall company assessment and scoring process. The underlying measures are based on considerations around comparability, data availability and industry relevance.

They are grouped into 10 categories. A combination of the 10 categories, weighted proportionately to the count of measures within each category, formulates the three Pillar Scores and the final ESG Score, which is a reflection of the company's ESG performance, commitment and effectiveness based on publicly reported information.

The category scores are rolled up into three pillar scores – environmental, social and corporate governance.
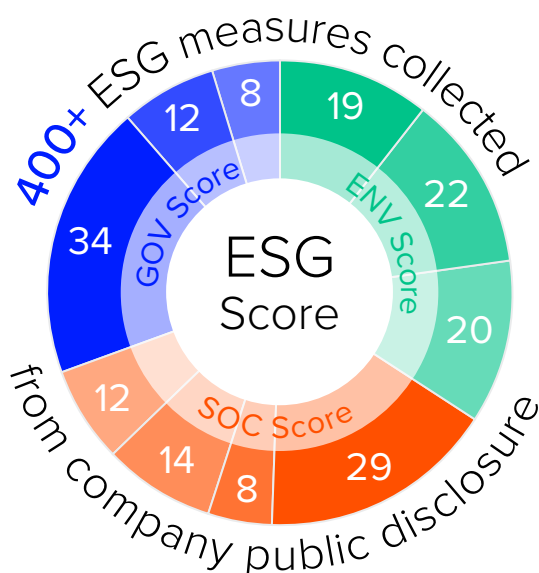
Category definitions are available in the Appendix.

ESG Combined (ESGC) Score

The ESGC scores provide a rounded and comprehensive scoring of a company's ESG performance based on the reported information in the ESG pillars with the ESG controversies overlay captured from global media sources. The main objective of this score is to discount the ESG performance score based on negative media stories. It does this by incorporating the impact of significant, material ESG controversies in the overall ESGC score.

When companies are involved in ESG controversies, the ESGC score is calculated as the weighted average of the ESG Scores and ESG Controversies Score per fiscal period, with recent controversies reflected in the latest completed period. When companies were not involved in ESG controversies, the ESGC score is equal to the ESG Score.
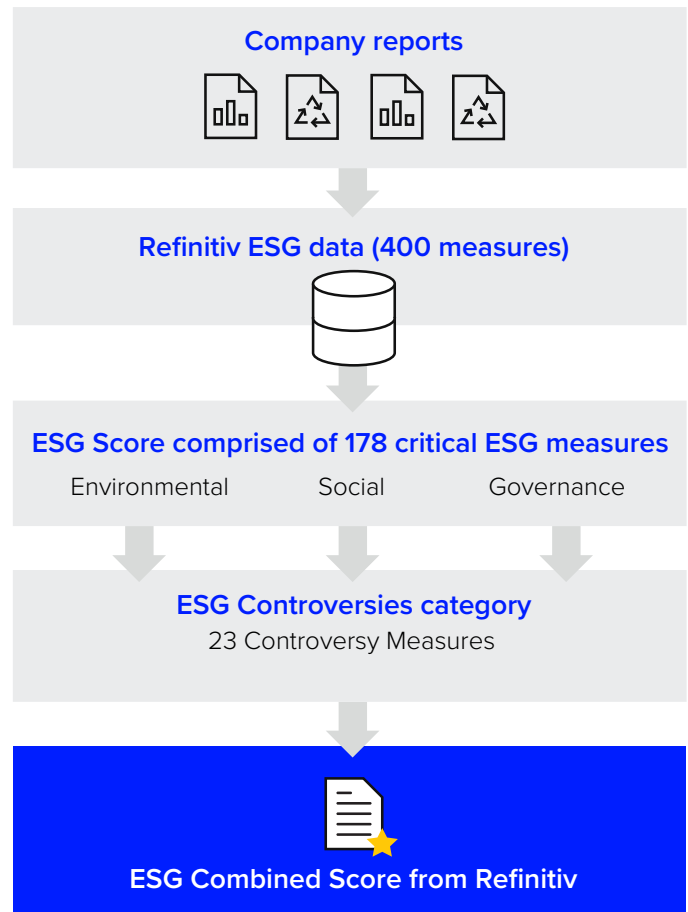
ESG Controversies category

The ESG Controversies Score is calculated based on 23 ESG controversy topics. During the year, if a scandal occurs, the company involved is penalized and this affects their overall ESGC score and grading. The impact of the event may still be seen in the following year if there are new developments related to the negative event, for example lawsuits, ongoing legislation disputes or fines. All new media materials are captured as the controversy progresses.

Easily identify companies with strong ESG practices or exposure to ESG risks

ESG Scores are available on Eikon™ for seamless integration into users' workflows. They are accessible via the new ESG company views, the Screener app, Eikon for Office and Portfolio Analytics app. The new ESG views render the percentage scores to letter grades to quickly interpret how companies are performing relative to their peers and where a company's ESG weaknesses and strengths lie.

ESG Scores are available on Eikon, Microsoft® Excel® add-in, Datastream® and via Datastream Data Loader (DDL) for automated processing and integration of all ESG data and scores in users' quant models and analytics tools. The scores are also available via a cloud-based delivery solution on the Elektron® Data Platform.

The conversion from a score to a letter grade is based on the logic in the table to the right.

Company reports

Refinitiv ESG data (400 measures)

ESG Score comprised of 178 critical ESG measures

Environmental   Social   Governance

ESG Controversies category
23 Controversy Measures

ESG Combined Score from Refinitiv

SCORE RANGE	GRADE
0.0 <= score <= 0.083333	D -
0.083333 < score <= 0.166666	D
0.166666 < score <= 0.250000	D +
0.250000 < score <= 0.333333	C -
0.333333 < score <= 0.416666	C
0.416666 < score <= 0.500000	C +
0.500000 < score <= 0.583333	B -
0.583333 < score <= 0.666666	B
0.666666 < score <= 0.750000	B +
0.750000 < score <= 0.833333	A -
0.833333 < score <= 0.916666	A
0.916666 < score <= 1	A +

Scores calculation methodology

This section describes in detail the ESG scoring methodology because we believe transparency is a key component of trust and confidence in the data we provide to our customers.

Category scores calculation

Percentile rank scoring methodology is adopted to calculate the 10 category scores and the ESG Controversies Score. It is based on three factors:

- How many companies are worse than the current one?
- How many companies have the same value?
- How many companies have a value at all?

Percentile rank score is based on the rank, and therefore it is not very sensitive to outliers. The distribution of the scores generated with percentile rank score is almost flat; for this reason, average and standard deviation of the scores generated with percentile rank score are not overly useful.

$$score = \frac{\textit{no. of companies with a worse value} + \dfrac{\textit{no. of companies with the same value included in the current one}}{2}}{\textit{no. of companies with a value}}$$

Each category score is the equally-weighted sum of all relevant indicators for each industry used to create it. The normalized weights are calculated excluding quantitative indicators with no data available in the public domain, as it would be highly inaccurate to assign a default value with the exception of greenhouse gas (GHG) emissions, where we calculate estimated emissions when not reported by the companies. For further information on the Refinitiv proprietary emissions estimate model, refer to the following document.

Category benchmarks

To calculate the environmental and social category scores, as well as the Controversies Score, TRBC industry group is used as the benchmark, as these topics are more relevant and similar to companies within the same industries.

To calculate the governance categories, country of headquarters is used as the benchmark, as best governance practices are more consistent within countries.

Category weights

To calculate the overall ESG Score, automated, data-driven and objective logic that determines the weight of each category is applied.

The category weights are determined by the number of indicators that make up each category in comparison to all indicators used in the Refinitiv ESG Score framework. This means that higher weight is assigned to themes that are more mature in terms of disclosure and the relative performance scores of companies is calculated with a higher degree of confidence. As a result, categories that contain multiple issues with relatively higher transparency like management (composition, diversity, independence, committees, compensation, etc.) and companies reporting more information across these topics will have higher weight than lighter and less reported categories such as human rights or CSR strategy.

Each category consists of a different number of measures. The count of measures per category determines the weight of the respective category. Detailed counts and weights are provided in the table below:

PILLAR	CATEGORY	INDICATORS IN RATING	WEIGHTS	PILLAR WEIGHTS
Environmental	Resource use	19	11%	(11%+12%+11%)
	Emissions	22	12%	
	Innovation	20	11%	
Social	Workforce	29	16%	(16%+4.5%+8%+7%)
	Human rights	8	4.50%	
	Community	14	8%	
	Product responsibility	12	7%	
Governance	Management	34	19%	(19%+7%+4.5%)
	Shareholders	12	7%	
	CSR strategy	8	4.50%	
TOTAL		178	100%	

Calculation of individual category scores

1. Qualitative data

Qualitative metrics are Boolean questions and the values are 'yes' or 'no'. If the company does not report on the metric, it is answered as 'no' depending on the default value of each measure (details of the default values are available in the ESG glossary, available on request). All Boolean data is converted to numeric values for the percentile score calculation, details are available in the table below:

BOOLEAN VALUE	NUMERIC VALUE
Yes	1
No	0.5

Each measure has a polarity indicating whether the higher value is positive or negative. For instance, having an emissions reduction policy is positive but having environmental controversies is negative.

2. Quantitative Data

Quantitative metrics are assigned a numeric value only if reported by the company. If a measure has a value, then percentile rank formula is applied. Quantitative measures not reported have no impact on the score, as the percentile rank considers only companies with numeric values.

Again, each measure has a polarity indicating whether the higher value is positive or negative. For instance, more water recycled is positive but more emissions is negative.

Industry group relevancy

Some indicators are industry-specific, thus not relevant for all the companies. If an indicator is not relevant for a particular sector, then the same is excluded from calculation and its value will be not relevant (N/R).

Example: The indicator responsible asset management is relevant only for the financial sector.

Category Scoring example

In this section, we will illustrate how a category score gets calculated using the data available in the ESG database as of September 2017, for the water and other utilities industry companies (e.g, the Emission Category Score for fiscal year 2015 across the 15 companies in this industry).

Detailed calculations are available [here](#).

Step-by-Step Illustration

- 22 metrics are considered in calculating Emission Category Scores; of these two metrics flaring gases and cement CO_2 equivalents emissions, are excluded, as they are not relevant to this industry
- Values are extracted for all 20 metrics
- Based on the nature of the metric, relevant numeric values are assigned and calculated
- Percentile score calculation formula is applied for each measure

For example, we illustrate the calculation of the percentile rank for "estimated CO_2 equivalents emission total" measure which has negative polarity – the lower the value the better.

DESCRIPTION	AQUA AMERICA INC	AMERICAN STATES WATER CO
No. of companies with worse value	14	13
No. of companies with same value	1	1
No. of companies with value	15	15

COMPANY NAME	VALUES	PERCENTILE SCORES	PERCENTILE SCORE FORMULA APPLIED
Aqua America Inc	0.00009438	0.966666667	(14+(1/2))/15
American States Water Co	0.00015559	0.9	(13+(1/2))/15
United Utilities Group PLC	0.00016684	0.833333333	(12+(1/2))/15
California Water Service Group	0.00017066	0.766666667	(11+(1/2))/15
Aguas Andinas SA	0.00017236	0.7	(10+(1/2))/15
Consolidated Water Co. Ltd.	0.00017997	0.633333333	(9+(1/2))/15
Severn Trent Plc	0.00019745	0.566666667	(8+(1/2))/15
Inversiones Aguas Metropolitanas SA	0.00020508	0.5	(7+(1/2))/15
Metro Pacific Investments Corp.	0.00021981	0.433333333	(6+(1/2))/15
American Water Works Company Inc	0.00022414	0.366666667	(5+(1/2))/15
Beijing Enterprises Water Group Limited	0.00027149	0.3	(4+(1/2))/15
Manila Water Company Inc	0.00028717	0.233333333	(3+(1/2))/15
Guangdong Investment Ltd	0.0002975	0.166666667	(2+(1/2))/15
Companhia de Saneamento de Minas Gerais	0.00074917	0.1	(1+(1/2))/15
Companhia de Saneamento Basico-Sabesp	0.00079476	0.033333333	(0+(1/2))/15

- The same steps are applied to all other data points in the category
- Once the percentile scores are calculated data point-wise, average scores are derived for individual companies as described in the table below:

COMPANY NAME	TITLE	VALUES	PERCENTILE SCORES
United Utilities Group PLC	Estimated CO_2 equivalents emission total	0.000166844	0.833333333
United Utilities Group PLC	Policy emissions	1	0.7
United Utilities Group PLC	Targets emissions	1	0.9
United Utilities Group PLC	Biodiversity impact reduction	1	0.766666667
United Utilities Group PLC	Emissions trading	1	0.933333333
United Utilities Group PLC	Environmental partnerships	1	0.766666667
United Utilities Group PLC	Environmental restoration initiatives	1	0.8
United Utilities Group PLC	Climate change commercial risks opportunities	1	0.733333333
United Utilities Group PLC	NOx and SOx emissions reduction	0.5	0.466666667
United Utilities Group PLC	e-Waste reduction	0.5	0.466666667
United Utilities Group PLC	Staff transportation impact reduction	0.5	0.5
United Utilities Group PLC	VOC or particulate matter emissions reduction	0.5	0.466666667
United Utilities Group PLC	Environmental expenditures investments	0.5	0.366666667
	Average		0.669230769

- After deriving average scores for all the companies, the average score is sorted from highest to lowest
- Apply percentile scores formula to derive Emission Category Score

COMPANY NAMES	AVERAGE OF EMISSION CATEGORY PERCENTILE SCORES	EMISSION CATEGORY SCORE	PERCENTILE SCORE FORMULA APPLIED	GRADES
United Utilities Group PLC	0.669230769	0.966666667	(14+(1/2))/15	A+
Severn Trent Plc	0.61025641	0.9	(13+(1/2))/15	A
Companhia de Saneamento Basico-Sabesp	0.564285714	0.833333333	(12+(1/2))/15	A
Aqua America Inc	0.564102564	0.766666667	(11+(1/2))/15	A-
American States Water Co	0.558974359	0.7	(10+(1/2))/15	B+
Manila Water Company Inc	0.556666667	0.633333333	(9+(1/2))/15	B
American Water Works Company Inc	0.556410256	0.566666667	(8+(1/2))/15	B-
Aguas Andinas SA	0.554444444	0.5	(7+(1/2))/15	C+
California Water Service Group	0.51025641	0.433333333	(6+(1/2))/15	C+
Companhia de Saneamento de Minas Gerais	0.420512821	0.366666667	(5+(1/2))/15	C
Inversiones Aguas Metropolitanas SA	0.412820513	0.3	(4+(1/2))/15	C-
Metro Pacific Investments Corp.	0.407692308	0.233333333	(3+(1/2))/15	D+
Consolidated Water Co. Ltd.	0.384615385	0.166666667	(2+(1/2))/15	D+
Beijing Enterprises Water Group Limited	0.358974359	0.1	(1+(1/2))/15	D
Guangdong Investment Ltd	0.348717949	0.033333333	(0+(1/2))/15	D-

Pillar Scores calculations

ESG Pillar Scores are calculated based on the 10 category scores. Calculations to derive pillar scores are illustrated below:

PILLAR	CATEGORY SCORE	CATEGORY SCORES*	CATEGORY WEIGHTS	SUM OF CATEGORY WEIGHTS	FORMULA: SUM OF CATEGORY WEIGHTS	NEW CATEGORY WEIGHTS*	FORMULA: NEW CATEGORY WEIGHTS	PILLAR SCORES	FORMULA: PILLAR SCORES
Environmental	Resource use	72.57	11%	34%	(11%+12%+11%)	32.35%	(11%/34%)	77.84	72.56637*0.3235294+86.504425*0.3529412+73.67256*0.3235294
Environmental	Emissions	86.50	12%			35.29%	(12%/34%)		
Environmental	Innovation	73.67	11%			32.35%	(11%/34%)		
Social	Workforce	90.93	16%	35.50%	(16%+4.5%+8%+7%)	45.07%	(16%/35.5%)	75.41	90.9292*0.4507042+78.09735*0.1267606+77.65487*0.2253521+35.61947*0.1971831
Social	Human rights	78.10	4.50%			12.68%	(4.5%/35.5%)		
Social	Community	77.65	8%			22.54%	(8%/35.5%)		
Social	Product responsibility	35.62	7%			19.72%	(7%/35.5%)		
Corporate Governance	Management	47.25	19%	30.50%	(19%+7%+4.5%)	62.30%	(19%/30.5%)	50.36	47.24774*62.29508+32.87462*22.95082+90.67278*14.7541
Corporate Governance	Shareholders	32.87	7%			22.95%	(7%/30.5%)		
Corporate Governance	CSR strategy	90.67	4.50%			14.75%	(4.5%/30.5%)		

* five decimal places to be considered

Detailed calculations are available [here](#).

Steps:

- Sum of category weights: sum each category weight of respective pillars.
  Calculation to derive sum of category weights is illustrated below:
  - Environmental Pillar Categories = resource use (11%) + emissions (12%) + innovation (11%) = 34%
  - Social Pillar Categories = workforce (16%) + human rights (4.50%) + community (8%) + product responsibility (7%) = 35.50%
  - Corporate Governance Categories = management (19%) + shareholders (7%) + CSR strategy (4.50%) = 30.50%

- New category weights: new category weights are calculated based on the sum of category weights calculated above.
  New category weights = category weights divided by sum of category weights of respective pillar.
  Calculation of new category weights for Environmental Pillar is as below:
  - Resource use new category weight = 11% divided by 34% = 32%
  - Emissions new category weight = 12% divided by 34% = 35%
  - Innovation new category weight = 11% divided by 34% = 32% (similarly social and corporate governance new category weights are calculated)

- Pillar Score Calculation: category scores multiplied by new category weights = Pillar Scores
  Calculation of Environmental Pillar Score is as below:
  - Resource Use Score*32% + Emission Score*35% + Innovation Score*32% = 77.84357106 (Environmental Pillar Score).
    (Similarly Social and Corporate Governance Pillar Scores are calculated).

*Note: Pillar scores are available only on desktop products.

Controversies Score methodology

ESG Controversies Score is calculated based on 23 ESG controversy topics with recent controversies reflected in the latest complete period.

- Default value of all controversy measures is 0. Example: for a controversy measure, if the benchmark consists of six companies, four with a value of 0 and 2 with a value of 1 (polarity here is negative, so the higher the number the worse it is), then the formula for the companies with no controversies will be: (2+4/2) / 6 = 67% and for the companies with one controversy: (0+2/2) / 6 = 17%
- All recent controversies are counted in the latest closed fiscal year and no controversy is double counted
- Controversies are benchmarked on industry group

For instance, last completed fiscal year for a company is December 31st, 2015. If there is one controversy on May 1st, 2016 and one controversy on May 1st, 2017, both are accounted under recent controversies and included in the scoring for FY2015.

Once FY2016 is completed, the two recent controversies are moved to FY2016 but the one on May 1st, 2016 is moved to the normal controversy data point while the one from 2017 remains under recent but accounted in FY2016.

When FY2017 is completed, it will be removed from recent in 2016 and moved to normal DP in 2017.

Except for management departures, all other controversies are quantitative.

Controversies Score example

Detailed score examples are available [here](#).

Steps:

- Extract values pertaining to controversies for all companies of FY2015
- Sum all values for individual companies and sort companies from lowest to highest (lowest being better)
- Apply percentile rank formula to derive the ESG Controversies Scores

COMPANY NAMES	SUM OF ALL CONTROVERSIES	CONTROVERSY SCORE	PERCENTILE SCORE FORMULA APPLIED	GRADES
Companhia de Saneamento Basico-Sabesp	0	0.56667	(2+(13/2))/15	B-
United Utilities Group PLC	0	0.56667	(2+(13/2))/15	B-
Aguas Andinas SA	0	0.56667	(2+(13/2))/15	B-
American Water Works Company Inc	0	0.56667	(2+(13/2))/15	B-
Consolidated Water Co. Ltd.	0	0.56667	(2+(13/2))/15	B-
Beijing Enterprises Water Group Limited	0	0.56667	(2+(13/2))/15	B-
Guangdong Investment Ltd	0	0.56667	(2+(13/2))/15	B-
American States Water Co	0	0.56667	(2+(13/2))/15	B-
Inversiones Aguas Metropolitanas SA	0	0.56667	(2+(13/2))/15	B-
California Water Service Group	0	0.56667	(2+(13/2))/15	B-
Manila Water Company Inc	0	0.56667	(2+(13/2))/15	B-
Aqua America Inc	0	0.56667	(2+(13/2))/15	B-
Metro Pacific Investments Corp.	0	0.56667	(2+(13/2))/15	B-
Companhia de Saneamento de Minas Gerais	1	0.06667	(0+(2/2))/15	D-
Severn Trent Plc	1	0.06667	(0+(2/2))/15	D-

Final ESG Combined Score assembly

ESGC score is calculated as the average of the ESG Score and ESG Controversies Score when there were controversies during the fiscal year. When the controversies score is greater than or equal to 50%, then ESG Score is equal to ESGC score.

Detailed combined score examples are available here.

Refer to the below table for combined score logics:

SCENARIO	ESG CONTROVERSIES SCORE	ESG SCORE	ESGC SCORE
If Controversies Score > =50, then ESG Score = ESGC score	57	38	38
If Controversies Score > ESG Score but less than 50, then ESGC score = ESG Score	49	42	42
If Controversies Score < 50 and Controversies Score < ESG Score, then ESGC score = average of the ESG and Controversies Score	48	49	48.5

Appendix

Category Scores

The table below lists the category scores and their definitions:

SCORE	DEFINITION
TR ESG Resource Use Score	The Resource Use Score reflects a company's performance and capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management.
TR ESG Emissions Reduction Score	The Emission Reduction Score measures a company's commitment and effectiveness towards reducing environmental emissions in the production and operational processes.
TR ESG Innovation Score	The Innovation Score reflects a company's capacity to reduce the environmental costs and burdens for its customers, thereby creating new market opportunities through new environmental technologies and processes or eco-designed products.
TR ESG Workforce Score	The Workforce Score measures a company's effectiveness towards job satisfaction, a healthy and safe workplace, maintaining diversity and equal opportunities and development opportunities for its workforce.
TR ESG Human Rights Score	The Human Rights Score measures a company's effectiveness towards respecting the fundamental human rights conventions.
TR ESG Community Score	The Community Score measures the company's commitment towards being a good citizen, protecting public health and respecting business ethics.
TR ESG Product Responsibility Score	The Product Responsibility Score reflects a company's capacity to produce quality goods and services integrating the customer's health and safety, integrity and data privacy.
TR ESG Management Score	The Management Score measures a company's commitment and effectiveness towards following best practice corporate governance principles.
TR ESG Shareholders Score	The Shareholders Score measures a company's effectiveness towards equal treatment of shareholders and the use of anti-takeover devices.
TR ESG CSR Strategy Score	The CSR Strategy Score reflects a company's practices to communicate that it integrates the economic (financial), social and environmental dimensions into its day-to-day decision-making processes.

Controversy measures

List of all controversy measures that make up the ESG Controversy Category Score.

CATEGORY	NAME (N)	LABEL (L)	DESCRIPTION (D)
Community	TR.ControvAntiCompetition	Anti-competition controversy	Number of controversies published in the media linked to anti-competitive behavior (e.g., anti-trust and monopoly), price-fixing or kickbacks.
Community	TR.ControvBusinessEthics	Business ethics controversies	Number of controversies published in the media linked to business ethics in general, political contributions or bribery and corruption.
Community	TR.ControvCopyrights	Intellectual property controversies	Number of controversies published in the media linked to patents and intellectual property infringements.
Community	TR.ControvCriticalCountries	Critical countries controversies	Number of controversies published in the media linked to activities in critical, undemocratic countries that do not respect fundamental human rights principles.
Community	TR.ControvPublicHealth	Public health controversies	Number of controversies published in the media linked to public health or industrial accidents harming the health and safety of third parties (non-employees and non-customers).
Community	TR.ControvTaxFraud	Tax fraud controversies	Number of controversies published in the media linked to tax fraud, parallel imports or money laundering.
Human Rights	TR.ControvChildLabor	Child labor controversies	Number of controversies published in the media linked to use of child labor issues.
Human Rights	TR.ControvHumanRights	Human rights controversies	Number of controversies published in the media linked to human rights issues.
Management	TR.ControvMgtComp	Mgt compensation controversies count	Number of controversies published in the media linked to high executive or board compensation.
Product Responsibility	TR.ControvConsumer	Consumer controversies	Number of controversies published in the media linked to consumer complaints or dissatisfaction directly linked to the company's products or services.
Product Responsibility	TR.ControvCustomerHS	Controversies customer health and safety	Number of controversies published in the media linked to customer health and safety.
Product Responsibility	TR.ControvPrivacy	Controversies privacy	Number of controversies published in the media linked to employee or customer privacy and integrity.
Product Responsibility	TR.ControvProductAccess	Controversies product access	Number of controversies published in the media linked to product access.
Product Responsibility	TR.ControvRespMarketing	Controversies responsible marketing	Number of controversies published in the media linked to the company's marketing practices, such as over-marketing of unhealthy food to vulnerable consumers.
Product Responsibility	TR.ControvResponsibleRD	Controversies responsible R&D	Number of controversies published in the media linked to responsible research and development (R&D).
Resource Use	TR.ControvEnv	Environmental controversies	Number of controversies related to the environmental impact of the company's operations on natural resources or local communities.
Shareholders	TR.ControvAccounting	Accounting controversies count	Number of controversies published in the media linked to aggressive or non-transparent accounting issues.
Shareholders	TR.ControvInsiderDealings	Insider dealings controversies count	Number of controversies published in the media linked to insider dealings and other share price manipulations.
Shareholders	TR.ControvShareholders	Shareholder rights controversies count	Number of controversies published in the media linked to shareholder rights infringements.
Workforce	TR.ControvDiversityOpportunity	Diversity and opportunity controversies	Number of controversies published in the media linked to workforce diversity and opportunity (e.g., wages, promotion, discrimination and harassment).
Workforce	TR.ControvEmployeesHS	Employee health & safety controversies	Number of controversies published in the media linked to workforce health and safety.
Workforce	TR.ControvWorkingCondition	Wages or working condition controversies count	Number of controversies published in the media linked to the company's relations with employees or relating to wages or wage disputes.
Workforce	TR.MgtDepartures	Management departures	Has an important executive management team member or a key team member announced a voluntary departure (other than for retirement) or been ousted?

How do Refinitiv ESG Scores compare?

How do Refinitiv ESG Scores compare to the Equal Weighted Ratings from ASSET4?

	REFINITIV ESG SCORES	ASSET4 EQUAL WEIGHTED RATINGS (EWR)	FURTHER DETAILS ON THE REFINITIV ESG SCORES
Scoring methodology	Percentile rank	Z-Scoring	
Industry benchmarks	Yes	No	Environmental and social categories
Country benchmarks	Yes	No	Governance categories
Industry-specific weights	Yes	No	At the category level
Economic pillar	No	Yes	On Eikon, combine ESG Scores with StarMine® analytical models from Refinitiv
Controversies in a separate category	Yes	No	Separate category and separate overall score
Industry-relevant measures	Yes	Yes	'Yes' includes industry-specific measures
Standard pillar scores (E, S, G)	Yes	Yes	10 category scores that can easily be aggregated in Pillar Scores
Outcome/driver indicators	No	Yes	Refinitiv ESG Scores use only driver indicators to remove hidden layers of calculations
Uses the strategic ESG data model	Yes	No	Uses only strategic measures which are available on Eikon (EWR uses some stale fields)

OLD MODEL		MEASURES	WEIGHT	NEW MODEL	MEASURES	WEIGHT	
EN	Environment	70	25%	Environmental	61	34%	ESG SCORE
RR	Resource reduction	17	8.33%	Resource use	19	11%	
ER	Emission reduction	28	8.33%	Emissions	22	12%	
PL	Product innovation	25	8.33%	Innovation	20	11%	
SO	Social	88	25%	Social	63	35.50%	
EQ	Employment quality	17	3.57%	Workforce	29	16%	
HS	Health and safety	9	3.57%				
TD	Training and development	10	3.57%				
DO	Diversity and opportunity	10	3.57%				
HR	Human rights	8	3.57%	Human rights	8	4.50%	
CO	Community	15	3.57%	Community	14	8%	
PR	Product responsibility	19	3.57%	Product responsibility	12	7%	
CG	Corporate governance	68	25%	Governance	54	30.50%	
BS	Board structure	17	5%	Management	34	19%	
CP	Compensation policy	13	5%				
BF	Board functions	15	5%				
SR	Shareholder rights	11	5%	Shareholders	12	7%	
VS	Vision and strategy	12	5%	CSR strategy	8	4.50%	
EC	Economic	56	25%	Not applicable	0	0.00%	
CL	Client loyalty	18	8.33%				
PE	Performance	16	8.33%				
SL	Shareholder loyalty	22	8.33%				
	Not applicable			ESG controversies	23	100	
				ESG controversies	23		
	Total Count	282			201		

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