Portfolio Carbon Risk Metrics
Methodology

Morningstar Sustainalytics
Methodology & Product Architecture
31 March 2023
Version: 1.0

Contents

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Executive Summary

- Climate-related risks have the potential to disrupt future business prospects, particularly for carbon-intensive industries and products.
- The portfolio carbon risk metrics are designed to support investors in evaluating the degree of carbon-related risk within portfolios.
- The Portfolio Carbon Risk Score measures the degree of material financial risk posed by the transition to a low carbon economy.
- The Portfolio Carbon Stranded Assets Exposure Score is designed to support investors in evaluating a portfolio's risk of exposure to stranded assets.

Introduction

Climate change has the potential to disrupt future business prospects, particularly for carbon-intensive industries and those that sell carbon-intensive products. This risk is amplified by the introduction of legislation, regulatory initiatives, and carbon pricing, based on scientific targets to mitigate human-induced climate change. These potential disruptions can pose significant investment risks. The portfolio carbon risk metrics aim to help investors identify, quantify, and manage these climate-related investment risks, while the percentile and absolute ranks are intended to support informed investment decisions by allowing for comparison of carbon-related risks against peers.

The **Portfolio Carbon Risk Score** is designed to support investors in evaluating the degree of material financial risk within portfolios, measured based on the underlying companies' exposure to and management of material carbon issues. To further support investors in assessing material carbon risk within portfolios, the **Historical Carbon Risk Score** reflects a portfolio's average carbon risk over the trailing 12 months, while the **Carbon Risk Level Breakdown** provides a lens into the portfolio's risk composition. In addition to percentile and absolute rank, the **Portfolio Carbon Risk Level Classification** provides a reliable, objective way to compare overall carbon risk across portfolios.

The **Portfolio Carbon Stranded Assets Exposure Score** is designed to support investors in evaluating a portfolio's risk of exposure to stranded assets. based on the likelihood of the underlying companies owning oil and gas assets that are no longer used or may end up as a liability before the end of its anticipated economic lifetime.

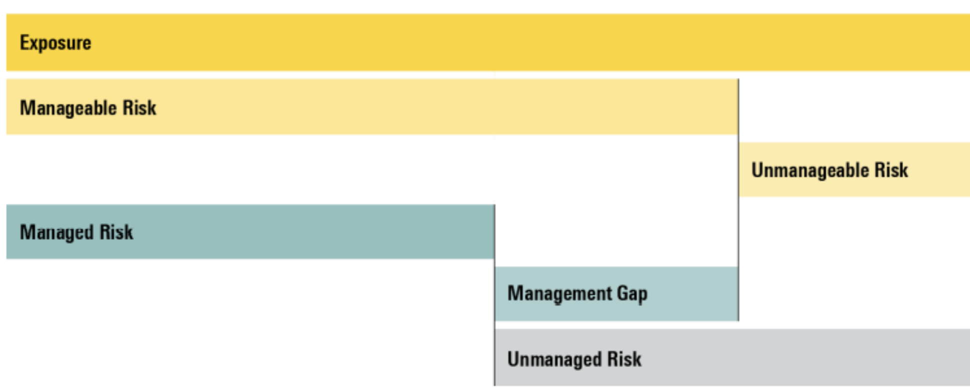
Inputs

Carbon Risk Ratings

Sustainalytics Carbon Risk Ratings measure the degree to which a company's enterprise value is at risk driven by factors related to the transition to a low carbon economy, or more technically speaking, the magnitude of a company's unmanaged carbon risks.

The overall unmanaged risk is measured by evaluating the company's Exposure to and Management of material carbon issues. For each issue, exposure can be broken between two types of risk: manageable risk and unmanageable risk. Unmanageable risks are those risks that are outside the boundaries of a company management's control based on the assumption that the company continues its inherent business—that is, doesn't fundamentally change what it is doing. For the portion that is manageable, a management assessment is applied based on the strength of company commitments, actions, and outcomes that demonstrate how well a company is managing the carbon risk exposure. The portion of manageable risk that is managed is considered *managed risk*, and the portion that is not managed is a *management gap.* Any carbon risk that is not properly managed by the company or that is unable to be managed by the company is considered *unmanaged risk* (see Exhibit 1). The resulting measure of risk for each issue is summed to provide one score that represents the company's overall carbon risk.

Exhibit 1 Combining Exposure and Management to Determine Unmanaged Risk



Source: Sustainalytics

The Carbon Risk Ratings aim to provide investors with a signal that reflects the degree to which investments are exposed to carbon risks that are not sufficiently managed by companies. Hence, the **Carbon Risk Score** is designed as a measure of unmanaged risk, in which the two dimensions of the rating, **Carbon Exposure** and **Carbon Managed Risk** are assessed against each other at both the issue level and the overall level.

Material Carbon Issues

In the Carbon Risk Ratings, a company's management of and exposure to carbon is broken out into separate Material Carbon Issues. **Carbon Operations** refers to a company's management of risks related to its own operational energy use and greenhouse gas emissions. **Carbon Products & Services** refers to a company's management of the emissions intensity of its services and products during the use phase.

Carbon Risk Rating Categories

The Carbon Risk Ratings are considered an absolute risk assessment, which means that the output is comparable across sectors, industries, and subindustries as opposed to relative risk assessments, which calculate performance relative to peers and which may not be directly comparable to nonpeers. Based on the unmanaged risk scores, companies are assigned to one of five **Carbon Risk Rating Categories**.

Exhibit 2 Carbon Risk Rating Categories

- **Negligible Risk** (overall score of 0.00 points): Enterprise value is considered to have a negligible risk of material financial impact driven by carbon factors.
- **Low Risk** (overall score of 0.01 to 9.99 points): Enterprise value is considered to have a low risk of material financial impact driven by carbon factors.
- **Medium Risk** (10.00 to 29.99 points): Enterprise value is considered to have a medium risk of material financial impact driven by carbon factors.
- **High Risk** (30.00 to 49.99 points): Enterprise value is considered to have a high risk of material financial impact driven by carbon factors.
- **Severe Risk** (50.00 points and above): Enterprise value is considered to have a severe risk of material financial impact driven by carbon factors.

Stranded Assets Risk

Sustainalytics' stranded assets research evaluates the risk of oil and gas assets becoming noncommercial due to the transition to a low carbon economy, leaving companies with assets that are no longer used and may end up as a liability before the end of their anticipated economic lifetime. The **Stranded Assets Exposure Score** measures a company's exposure to stranded assets risk based on carbon intensity of fuel mix and involvement in **high-cost oil and gas production**.

Portfolio 'Look Through'

Morningstar will first attempt to "look through" any funds that are held by the portfolio to find underlying, indirectly held holdings. The "look though" function goes up to 10 portfolios '"deep"—that is, when a portfolio holds a fund and in turn that fund hold other funds, the "look through" process will assess 10 "levels" of portfolios. The exception to this rule is for funds that are synthetically replicated; for the purpose of the carbon emissions calculations, they will be treated as being equivalent to a portfolio holding derivatives. The derivative holding will not be "looked through" and for the purposes of the calculations are treated as "other holdings"—that is, not corporate nor sovereign holdings.

Portfolio Weights

The calculation steps start with a net long portfolio, also referred to as the *adjusted portfolio.* We calculate portfolio weights based on the following steps:

1) Any securities that have both long and short positions will be "netted out"—that is, the short position weight will be subtracted from the long position weight.
2) Any remaining short positions will be removed.
3) Any currency offsets will be removed.
4) The portfolio weight will then be recalculated on the netted-out long positions only:

The rescaled weight of a holding in the adjusted portfolio is derived as the holding's original portfolio weight, divided by sum of the original portfolio weights of the netted-out long, noncash offset holdings:
[1]

$$W_i^R = \frac{Portfolio\ Weight_i}{\sum_{i=1}^{n} PortfolioWeight_i}$$

Where

W_i^R	=	The net long rescaled weight of the holding, which for each holding is derived as the original portfolio weight divided by the weight of the net long portfolio.
$Portfolio\ Weight_i$	=	Original portfolio weight.
i=1, n	=	All long, noncash offset holdings.

Coverage Calculations

For all portfolio carbon risk metrics, coverage statistics will be calculated to enable users to see the proportion of the adjusted portfolio that is eligible and covered. The initial step of the process is to identify the portion of the adjusted portfolio's holdings that can potentially contribute the required data to derive a given portfolio metric. These are known as **eligible holdings**. In the context of the portfolio carbon risk metrics, **eligible holding type** means corporate entities, such as equities and corporate bonds. Next, we identify which holdings have coverage of the required company-level data. **Covered holdings** are the subset of eligible holdings that have relevant input data available. A field indicating the **number of holdings covered** (that is, that have the relevant data for the given statistic) will also be calculated for each portfolio metric.

To start, the proportions of the adjusted portfolio that are eligible, not eligible, covered, not covered, and eligible but not covered will be calculated.

Percentage of Portfolio Eligible:

[2]

$$PortfolioEligible_R = \sum_{i=1}^{E} W_i^R$$

Where

$PortfolioEligible_R$	=	The proportion of the adjusted (net long) portfolio that is composed of eligible holdings.
W_i^R	=	The net long rescaled weight of the holding.
$\mathrm{i} = 1, \mathrm{E}$	=	All long, eligible holdings. These are securities in the adjusted (net long) portfolio that are of the relevant holding type.

Percentage of Portfolio Not Eligible:
[3]

$$PortfolioNotEligible_R = \sum_{i=1}^{NE} W_i^R$$

Where

$PortfolioNotEligible_R$	=	The proportion of the adjusted (net long) portfolio that is composed of **noneligible holdings**.
W_i^R	=	The net long rescaled weight of the holding.
$\mathrm{i} = 1, \mathrm{NE}$	=	All long, noneligible holdings. These are securities in the adjusted (net long) portfolio that are not of the relevant holding type.

Percentage of Portfolio Covered:
[4]

$$PortfolioCovered_R = \sum_{i=1}^{EC} W_i^R$$

Where

$PortfolioCovered_R$	=	The proportion of the adjusted (net long) portfolio that is composed of covered holdings—that is, securities for which the underlying data is available for the calculation.
W_i^R	=	The net long rescaled weight of the holding.
$\mathrm{i} = 1, \mathrm{EC}$	=	All eligible, covered holdings. These are securities in the adjusted (net long) portfolio that are of the relevant holding type (eligible, E) and for which the relevant underlying data is known (covered, C).

Percentage of Portfolio Not Covered:

[5]

$$PortfolioNotCovered_R = \sum_{i=1}^{NC} W_i^R$$

Where

$PortfolioNotCovered_R$	=	The proportion of the adjusted (net long) portfolio that is composed of **noncovered holdings**—that is, securities for which the underlying data is not available for the calculation.
W_i^R	=	The net long rescaled weight of the holding.
$\mathrm{i} = 1, \mathrm{NC}$	=	All noncovered holdings. These are securities in the adjusted (net long) portfolio for which relevant underlying data is not available.

Percentage of Portfolio Eligible Not Covered:
[6]

$$PortfolioEligibleNotCovered_R = \sum_{i=1}^{ENC} W_i^R$$

Where

$PortfolioEligibleNotCovered_R$	=	The proportion of the adjusted (net long) portfolio that is composed of eligible holdings and for which the underlying data is not available for the calculation.
W_i^R	=	The net long rescaled weight of the holding.
$\mathrm{i} = 1, \mathrm{ENC}$	=	All eligible, noncovered holdings. These are securities in the adjusted (net long) portfolio that are of the relevant holding type (eligible, E) and for which relevant underlying data is not available (noncovered, NC).

Next, the proportion of the eligible part of the adjusted portfolio where the relevant data is known (covered) and not known (not covered) is calculated.

This is calculated by taking the proportion of the adjusted portfolio that is covered (or not covered) and dividing it by the proportion of the portfolio that is eligible.

Percentage of Eligible Portfolio Covered:
[7]

$$EligiblePortfolioCovered_R = \frac{PortfolioCovered_R}{PortfolioEligible_R}$$

Where

$EligiblePortfolioCovered_R$	=	The proportion of only the eligible part of the adjusted portfolio where the underlying data is available for the calculation.
$PortfolioCovered_R$	=	The proportion of the adjusted portfolio that is composed of covered holdings.
$PortfolioEligible_R$	=	The proportion of the adjusted portfolio that is composed of eligible holdings.

Percentage of Eligible Portfolio Not Covered:
[8]

$$EligiblePortfolioNotCovered_R = \frac{PortfolioEligibleNotCovered_R}{PortfolioEligible_R}$$

Where

$EligiblePortfolioNotCovered_R$	=	The proportion of only the eligible part of the adjusted portfolio where the underlying data is not available for the calculation.
$PortfolioEligibleNotCovered_R$	=	The proportion of the adjusted portfolio that is composed of eligible holdings and for which the underlying data is not available.
$PortfolioEligible_R$	=	The proportion of the adjusted portfolio that is composed of eligible holdings.

The Number of Holdings Covered is also calculated:
[9]

Number of Holdings Covered	=	A simple count of the holdings in the adjusted portfolio where the underlying data is available.

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Portfolio Carbon Risk & Stranded Assets Exposure Scores

The Portfolio Carbon Risk and Portfolio Carbon Stranded Assets Exposure scores are calculated as the asset-weighted average of the underlying holdings' Carbon Risk Scores and Stranded Asset Exposure Scores, respectively.

[10]

$$Portfolio\ Carbon\ Risk\ Metric = \frac{\sum_{i=1}^{EC} W_i^R * CarbonRiskMetric_i}{PortfolioCovered_R}$$

Where

$Portfolio\ Carbon\ Risk\ Metric$	=	The asset-weighted average of a company's relevant carbon-related risk metric.
W_i^R	=	The net long rescaled weight of the holding.
$Carbon\ Risk\ Metric_i$	=	The relevant carbon-related risk metric of the covered holding.
$\mathrm{i} = 1, \mathrm{EC}$	=	All long, covered holdings.
$PortfolioCovered_R$	=	The proportion of the adjusted portfolio that is composed of covered holdings.

Historical Carbon Risk Score

The Historical Carbon Risk Score is calculated as a weighted average of the trailing 12 months of Portfolio Carbon Risk Scores. Historical scores are not equal-weighted; rather, more-recent portfolios are weighted more heavily than more-distant portfolios.

[11]

$$Historical\ Carbon\ Risk\ Score = \frac{\sum_{i=0}^{11}(12 - i) * PortfolioCarbonRiskScore_i}{\sum_{i=0}^{11} i + 1}$$

Where

$Historical\ Carbon\ Risk\ Score$	=	The historical-weighted average of the trailing 12 months of Portfolio Carbon Risk Scores.
i	=	The number of months from present.
$PortfolioCarbonRiskScore_i$	=	The Portfolio Carbon Risk Score as of i months from present.
$\mathrm{i} = 0, 11$	=	The trailing 12 months, beginning with the present month (i=0).

Portfolio Carbon Risk Level Breakdown

The Portfolio Carbon Risk Level Breakdown measures the covered portion of a portfolio's exposure to each of the five categories of carbon risk (see Exhibit 2).

[12]

$$PercentCoveredPortfolioCarbonRiskCategory_j = \sum_{i\ \in EC\ Category\ j} \frac{W_i^R}{PortfolioCovered_R}$$

Where

$PercentCoveredPortfolioCarbonRisk$	=	The sum of the net long rescaled weight of all holdings assigned to Carbon Risk Rating Category j, divided by the proportion of the adjusted portfolio that is composed of covered holdings.
$PortfolioCovered_R$	=	The proportion of the adjusted portfolio that is composed of covered holdings.
W_i^R	=	The net long rescaled weight of the holding.
$i \in EC\ Category\ j$	=	All long, covered holdings for Carbon Risk Rating Category j

Portfolio Carbon Risk Level Classification

The fund's Portfolio Carbon Risk Level Score is assigned to one of five risk categories. The thresholds for assigning Portfolio Carbon Risk Level Classification leverages the same threshold methodology as the company level:

Portfolio Carbon Risk Score	Risk Level Classification
0	Negligible Risk
0.01-9.99	Low Risk
10-29.99	Medium Risk
30-49.99	High Risk
50+	Severe Risk

Portfolio Carbon Risk Rankings

The percentile and absolute ranks are intended to support informed investment decisions by allowing for comparison of carbon-related risks against peers. Ranks are calculated for the Portfolio Carbon Risk Score, Historical Carbon Risk Score and Portfolio Carbon Stranded Assets Exposure Score. The peer groups used are the standard Morningstar Categories.

For a portfolio to be ranked against its peers, the Percentage of Eligible Portfolio Covered must meet or exceed 67% for the relevant risk score. Ranks are calculated for a given Morningstar Category only when at least five funds meet the coverage requirement within this category.

Absolute ranks are assigned as follows:

1. Pull in the relevant Portfolio Carbon Risk Metric for all funds for which the Percentage of Eligible Portfolio Covered is greater than or equal to 67%.
2. Sort the relevant Portfolio Carbon Risk Metric in ascending order.
3. Assign a value of 1 to the lowest risk score.

4. When two distinct portfolios share the same return, assign the same absolute rank to each portfolio.
5. For the next score that has a different value, assign a rank equal to the absolute rank of the previous fund, plus the number of distinct portfolios that shared the same return. For example, if three portfolios are assigned a rank of 13, the next portfolio will receive a rank of 16 (13 + 3).
6. Continue until the last absolute rank is assigned. The last absolute rank value should be equal to the number of distinct portfolios in the category (n). This value will be used in the formula for calculating the percentile rank.

Percentile ranks are assigned as follows:

[13]

$$CarbonScorePercentRank_i = ROUNDDOWN(100 * (\frac{CarbonScoreAbsoluteRank_i - 1}{n - 1})$$

Where

$CarbonScorePercentRank_i$	=	The percent rank of the relevant carbon score for portfolio i
$CarbonScoreAbsoluteRank_i$	=	The percent rank of the relevant carbon score for portfolio i
n	=	The total number of observations

Category Averages

Category averages are computed for all portfolio carbon risk metrics to enable comparison of funds against their peer groups. The peer groups used are the standard Morningstar Categories.

Funds need to have at least 67% of their eligible portfolio covered to be included in the category average calculation. A category average is computed for a given Morningstar Category only when at least five funds meet the coverage requirement within this category.

[14]

$$CategoryAverage_R = \frac{\sum_{i=1}^{F} PortfolioCarbonRiskMetric_f}{Number\ of\ Funds}$$

Where

$\mathrm{PortfolioCarbonRiskMetric}_f$	=	The relevant portfolio carbon risk metric for fund f.
Number of Funds	=	The **number of funds** in the category that meet the relevant criteria to be included in the category average calculation.
$\mathrm{i} = 1, \mathrm{F}$	=	All funds in the category that meet the relevant criteria.

Frequency of Calculations

Portfolio carbon risk metrics will be issued monthly, one month and six business days after the reported as-of date for the company from Sustainalytics. The Portfolio Carbon Risk Scores, Portfolio Carbon Stranded Assets Exposure Scores, Portfolio Carbon Risk Rankings, and Category Averages are issued as part of the same monthly cadence, calculated one month and six business days after their reported as-of date using the most recent portfolio. If an updated portfolio with the same as-of date as the company data has not been received by the calculation date, the most recent portfolio available will be used, provided the portfolio is less than 276 days old.

Methodology History

Version: 1.0 *31 March 2023* Original publication

Appendix

Glossary

Term	Description
Carbon Date	The effective date of the portfolio carbon risk metrics.
Carbon Exposure	A measure of the extent to which a company is exposed to material carbon risks. Exposure can be considered as a sensitivity or vulnerability to carbon risks. It is one of two key dimensions in the Carbon Risk Ratings.
Carbon Managed Risk	A measure of a company's handling of material carbon issues through policies, programs, quantitative performance, and involvement in controversies, as well as its management of corporate governance. It is one of two key dimensions in the Carbon Risk Ratings.
Carbon Operations	A measure of a company's management of risks related to its own operational energy use and greenhouse gas emissions.
Carbon Products & Services	A measure of a company's management of the emissions intensity of its services and products during the use phase.
Carbon Risk Rating Categories	A company's Carbon Risk Rating is assigned to one of five carbon risk rating categories: • Negligible Risk (overall score of 0.00 points): Enterprise value is considered to have a negligible risk of material financial impact driven by carbon factors. • Low Risk (overall score of 0.01 to 9.99 points): Enterprise value is considered to have a low risk of material financial impact driven by carbon factors. • Medium Risk (10.00 to 29.99 points): Enterprise value is considered to have a medium risk of material financial impact driven by carbon factors. • High Risk (30.00 to 49.99 points): Enterprise value is considered to have a high risk of material financial impact driven by carbon factors. • Severe Risk (50.00 points and above): Enterprise value is considered to have a severe risk of material financial impact driven by carbon factors.

Carbon Risk Level Breakdown	A measure of the covered portion of a portfolio's exposure to each of the five Carbon Risk Rating Categories: Carbon Risk Rating Categories Negligible Risk — 0 Low Risk — 0.01-9.99 Medium Risk — 10-29.99 High Risk — 30-49.99 Severe Risk — 50+
Carbon Risk Score	Refers to a company's overall score in the Carbon Risk Ratings that measures the extent to which enterprise value is at risk driven by carbon factors. The Carbon Risk Score is measured on an open-ended scale starting at zero (no risk) and a maximum score that is typically below 100.
Covered Holdings	Refers to the subset of eligible holdings that have relevant input data available.
Eligible Holding Type	An indication of which of the Corporate, Sovereign, or Other classifications is eligible for calculations. In the case of portfolio carbon risk metrics, the Eligible Holding Type is Corporate for all calculations.
Eligible Holdings	Refers to the holdings that can potentially contribute the required data to derive a given portfolio metric. In the case of portfolio carbon risk metrics, eligible holdings refer to long positions in securities issued by corporate entities, such as equities and corporate bonds.
High-Cost Oil and Gas Production	Refers to involvement in high-cost production methods, including extraction from oil sands, deepwater drilling, and arctic offshore operations.
Historical Carbon Risk Score	The historical-weighted average of the trailing 12 months of Portfolio Carbon Risk Scores. Historical portfolio scores are not equal-weighted; rather, more-recent portfolios are weighted more heavily than older portfolios. Combining the trailing 12 months of portfolio scores adds consistency while still reflecting portfolio managers' current decisions by weighting the most recent portfolio scores more heavily.
Noncovered Holdings	Refers to the holdings that do not have relevant input data to contribute to a given portfolio metric. Noncovered holdings include both noneligible holdings and the subset of eligible holdings that do not have the relevant input data available.
Noneligible Holdings	Refers to the holdings that cannot potentially contribute the required data to derive a given portfolio metric. In the case of portfolio carbon risk metrics, noneligible holdings refer to any noncorporate securities, such as cash, commodities, and sovereign and subsovereign bonds.

Number of Funds	The number of funds in a Morningstar Category that reach the minimum coverage threshold needed to contribute to the category average and peer group ranks.
Number of Holdings Covered	The number of the long, eligible holdings with the relevant underlying data available.
Percentage of Eligible Portfolio Covered	The proportion of the eligible portfolio for which the relevant underlying data is available.
Percentage of Eligible Portfolio Not Covered	The proportion of the eligible portfolio for which the relevant underlying data is not available.
Percentage of Portfolio Covered	The proportion of the long-only portfolio that is eligible for the calculation and for which the relevant underlying data is available.
Percentage of Portfolio Eligible	The proportion of the long-only portfolio that is eligible for the calculation.
Percentage of Portfolio Eligible Not Covered	The proportion of the long-only portfolio that is eligible for the calculation but for which the relevant underlying data is not available.
Percentage of Portfolio Not Covered	The proportion of the long-only portfolio for which the relevant underlying data is not available. The Percentage of Portfolio Not Covered is equivalent to the sum of the Percentage of Portfolio Not Eligible and Percentage of Portfolio Eligible Not Covered.
Percentage of Portfolio Not Eligible	The proportion of the long-only portfolio that is not eligible for the calculation.
Portfolio Carbon Risk Level Classification	The fund's Portfolio Carbon Risk Score is assigned to one of five risk categories, from Negligible to Severe, based on the same threshold methodology as the company Carbon Risk Rating Categories:

Portfolio Carbon Risk Score	Risk Level Classification
0	Negligible Risk
0.01-9.99	Low Risk
10-29.99	Medium Risk
30-49.99	High Risk
50+	Severe Risk

Portfolio Carbon Risk Score	The asset-weighted average of company Carbon Risk Scores for the portfolio's covered, corporate holdings. The Carbon Risk Score indicates the overall material risk a company faces from the transition to a low-carbon economy. A lower score is better.
Portfolio Carbon Stranded Assets Exposure Score	The asset-weighted average of company Stranded Assets Exposure Scores for the portfolio's covered, corporate holdings. Exposure includes lifecycle carbon intensity of production and proven reserves as well as involvement in high-cost oil and gas production. A lower score is better.

Stranded Assets Exposure Score	A measure of the extent to which a company is exposed to stranded asset risk based on its lifecycle carbon intensity of production and proven reserves as well as its involvement in high-cost oil and gas production.
Sustainalytics' Carbon Risk Ratings	A measure of the degree to which a company's enterprise value is at risk driven by factors related to society's transition to a low carbon economy. The rating takes a two-dimensional approach. The exposure dimension measures a company's exposure to material carbon risks, while the management dimension assesses a company's handling of these material carbon risks. It is calculated as the difference between a company's overall Carbon Exposure score and its overall Carbon Managed Risk score.

Frequently Asked Questions

For what vehicles will portfolio carbon risk metrics be calculated?
The portfolio carbon risk metrics can be useful to investors globally and will be calculated for all funds regardless of where they are domiciled or sold. While the Portfolio Carbon Risk and Stranded Assets Exposure scores will be calculated for all investment types, the percentile and absolute ranks will only be calculated for public fund universes.

What is the Carbon Date, and how does it differ from a fund's portfolio date?
The **Carbon Date** represents the effective date of the portfolio carbon risk metrics and is intended to provide a standard effective date for comparison across portfolios. It is the date in which the most recent portfolio and company data are used to derive the Portfolio Carbon Risk Metrics. The Portfolio Carbon Risk Scores, Portfolio Carbon Stranded Assets Exposure Scores, Portfolio Carbon Risk Rankings, and Category Averages are issued together on a monthly basis, calculated as-of the same Carbon Date. To accommodate different portfolio reporting frequencies, the portfolio carbon risk metrics as-of a given Carbon Date will be calculated on a one-month, six-business-day lag. If an updated portfolio with the same as-of date as Carbon Date has not been received by the calculation date, the most recent portfolio available will be used, provided the portfolio is less than 276 days old.

For example, Portfolio Carbon Risk Metrics as-of Carbon Date Jan. 31, 2023, will be issued on the sixth business day of March. If a portfolio date as of Jan. 31, 2023, has not been received for a given fund by the sixth business day of March, the most recent portfolio will be used, provided the portfolio is less than 276 days old.

How does the effective date of the company data used relate to the Carbon Date?
The Carbon Date represents the month-end effective date of the company data that was used to derive portfolio-level metrics. This means the most recently available company data as of the Carbon Date is what is used for the calculations. For Portfolio Carbon Risk Metrics, this will be on a monthly basis with a one-month and six-business-day delay.

For example, all Portfolio Carbon Risk Metrics as-of Carbon Date Jan. 31, 2023, will be calculated using Sustainalytics company data reported as-of January 2023 and would be derived one month and six business days after Jan. 31, 2023.

Is there a minimum coverage requirement to generate Portfolio Carbon Risk Metrics?
Portfolio carbon risk metrics will be calculated for all portfolios regardless of coverage, with a few exceptions:

Historical Carbon Risk Score: In order for the Historical Carbon Risk Score to be calculated as of a given Carbon Date, the Percentage of Eligible Portfolio Covered must meet or exceed 67%. When calculating the historical weighted average, only include scores for which the corresponding month's Percentage of Eligible Portfolio Covered meets or exceeds 67% will be included.

Percentile Ranks: For a portfolio to be ranked against its peers, the Percentage of Eligible Portfolio Covered must meet or exceed 67% for the relevant risk score. Ranks are calculated for a given Morningstar Category only when at least five funds meet the coverage requirement within this category.
Absolute Ranks: For a portfolio to be ranked against its peers, the Percentage of Eligible Portfolio Covered must meet or exceed 67% for the relevant risk score. Ranks are calculated for a given Morningstar Category only when at least five funds meet the coverage requirement within this category.

Why does my fund have a Portfolio Carbon Risk Score but not a Historical Carbon Risk Score?
If a fund has a Portfolio Carbon Risk Score but does not have a Historical Carbon Risk Score, this is most likely due the fund not meeting the minimum 67% coverage required to generate a Historical Carbon Risk Score.

Why does my fund have a Portfolio Carbon Risk/Stranded Assets Exposure Score but not a ranking?
If a fund has a Portfolio Carbon Risk or Stranded Assets Exposure Score but is not ranked, this could be due to one or more of the following:
The fund does not meet the minimum 67% coverage required to be ranked against its peers.
The fund's Morningstar Category has fewer than five funds that meet the 67% coverage requirement.
The fund is not a public vehicle.

Why does my fund not have a Portfolio Carbon Risk/Stranded Assets Exposure Score?
While there is no minimum coverage requirement to generate Portfolio Carbon Risk and Portfolio Carbon Stranded Assets Exposure scores, a lack of scores is most likely due to no coverage at all. This could be either because the fund holds no eligible securities or because none of the holdings have the relevant company data available.

Why does my fund not have any Portfolio Carbon Risk Metrics?
If a fund does not have any portfolio carbon risk metrics generated, this is most likely due to a lack of portfolio data. If an updated portfolio with the same as-of date as Carbon Date has not been received by the calculation date, the most recent portfolio available will be used, provided the portfolio is less than 276 days old. If the most recent portfolio is older than 276 days old, no portfolio carbon risk metrics will be issued.