
Portfolio Fossil Fuel & Carbon Solutions Involvement Methodology

Morningstar Sustainalytics
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Executive Summary

- ▶ Portfolio fossil fuel and carbon solutions involvement metrics are designed to help investors understand and manage risks and opportunities associated with their exposure both to companies involved in fossil fuels as well as companies involved in efforts to mitigate greenhouse gas emissions.
- ▶ The Portfolio Fossil Fuel Involvement metric measures a portfolio's exposure to companies involved in high-impact and conventional fossil fuels.
- ▶ The Portfolio Carbon Solutions Involvement metric measures a portfolio's exposure to companies involved in products and services focused on carbon efficiency and mitigating greenhouse gas emissions.
- ▶ To support investors in understanding and managing their exposure to fossil fuels and carbon solutions, portfolio involvement metrics are derived as a percentage of the net long portion of the portfolio, as well as the portion of the portfolio considered eligible for involvement, and the covered portion of the portfolio.
- ▶ Each set of portfolio involvement metrics is further broken out by revenue range to give context to a portfolio's exposure to companies by level of involvement.

Introduction

While climate-related risks have the potential to disrupt future business prospects, particularly for carbon-intensive industries, increased focus on decarbonization and commitment to climate action present opportunities related to mitigating greenhouse gas emissions and improving carbon efficiency. Portfolio fossil fuel and carbon solutions involvement metrics are designed to support investors in evaluating the extent to which portfolios are exposed to companies that generate revenue from involvement in fossil fuels versus companies that generate revenue from involvement in products and services that help mitigate or avoid greenhouse gas emissions.

Portfolio Fossil Fuel Involvement measures a portfolio's exposure to companies involved in conventional fossil fuels, such as thermal coal and oil and gas, as well as high-impact fossil fuels, including oil sands, oil shale, and arctic oil and gas.

Portfolio Carbon Solutions Involvement measures a portfolio's exposure to companies involved in products and services that help mitigate or avoid greenhouse gas emissions, such as renewable energy, energy efficiency, green transportation, and green real estate.

To support investors in understanding and managing their exposure to companies involved in fossil fuels and carbon solutions, portfolio involvement is derived as a percentage of different portions of the portfolio (see Exhibit 1). Portfolio involvement is first measured as a percentage of the total adjusted portfolio. This can be thought of as a portfolio's "overall" involvement, representing a portfolio's involvement as percentage of all long positions after being netting out.

Next, portfolio involvement is derived as a percentage of the eligible portion of the portfolio—that is, as a percentage of all long positions in securities issued by a corporate entity. This represents the portion of a portfolio's holdings that *are* involved in the relevant activity, as a percentage of all the portfolio holdings that *could be* involved. Portfolio involvement as a percentage of eligible holdings may be helpful in comparing portfolio involvement for funds composed of different asset classes.

Finally, portfolio involvement is measured as a percentage of the covered portion of the portfolio. This represents the portion of a portfolio's holdings that are known to be involved in a relevant activity, as a percentage of all holdings that have been evaluated for involvement. Portfolio involvement as a percentage of the covered portion of the portfolio can provide the most direct comparison between portfolios, eliminating bias due to variability in coverage. For example, two equity portfolios may both have 15% of their net long holdings involved in fossil fuels, but Portfolio A has 100% of its holdings covered whereas Portfolio B only has 50% of its holdings covered. Looking at portfolio involvement as a percentage of the covered portion of the portfolio, we see that Portfolio A has 15% of its covered holdings in companies involved in fossil fuels, while Portfolio B has 30% of its covered holdings in companies involved in fossil fuels.

For each portion of the portfolio, in addition to measuring involvement derived as the portion of the portfolio invested in companies that generate any revenue from the relevant involvement area, portfolio involvement is further broken down by level of involvement based on company revenue range, providing insight into portfolio involvement through multiple lenses (see Exhibit 1).

Exhibit 1 Summary of Types of Portfolio Involvement Metrics

	PERCENTAGE OF PORTFOLIO	PERCENTAGE OF ELIGIBLE PORTFOLIO	PERCENTAGE OF COVERED PORTFOLIO
ANY INVOLVEMENT	Percentage of Portfolio Involved	Percentage of Eligible Portfolio Involved	Percentage of Covered Portfolio Involved
NO INVOLVEMENT	Percentage of Portfolio Not Involved	Percentage of Eligible Portfolio Not Involved	Percentage of Covered Portfolio Not Involved
INVOLVEMENT BY REVENUE RANGE	Percentage of Portfolio With <5% Revenue	Percentage of Portfolio With <5% Revenue	Percentage of Portfolio With <5% Revenue
	Percentage of Portfolio With 5-10% Revenue	Percentage of Portfolio With 5-10% Revenue	Percentage of Portfolio With 5-10% Revenue
	Percentage of Portfolio With 10-25% Revenue	Percentage of Portfolio With 10-25% Revenue	Percentage of Portfolio With 10-25% Revenue

	Percentage of Portfolio With 25-50% Revenue	Percentage of Portfolio With 25-50% Revenue	Percentage of Portfolio With 25-50% Revenue
	Percentage of Portfolio With >50% Revenue	Percentage of Portfolio With >50% Revenue	Percentage of Portfolio With >50% Revenue

Inputs

Fossil Fuel Involvement assesses the level of company involvement in high-impact and conventional fossil fuels, represented as a revenue range.

A company's Fossil Fuel Involvement is derived based on the following underlying involvement areas:

- ▶ **Thermal Coal Extraction**
- ▶ **Thermal Coal Power Generation**
- ▶ **Oil & Gas Production**
 - **Oil Sands Extraction**
 - **Arctic Oil & Gas Exploration**
 - **Shale Energy Extraction**
- ▶ **Oil & Gas Power Generation**
- ▶ **Oil & Gas Products and Services**

While the revenue associated with involvement in Oil Sands Extraction, Arctic Oil & Gas Exploration, and Shale Energy Extraction are included in Oil & Gas Production, involvement in these subareas is identified because of their controversial and high-impact nature.

Carbon Solutions Involvement assesses the level of company involvement in products and services that help mitigate or avoid greenhouse gas emissions. A company's Carbon Solutions Involvement is derived based on underlying involvement areas focused on renewable energy and low carbon alternatives to fossil fuels, such as green transportation, green real estate, and energy efficiency. Involvement is represented as a revenue range.

A company's **level of involvement** is represented as a revenue range, where the range of revenue is expressed as the percentage of total company revenue generated from involvement in the relevant activity. Level of involvement is represented as one of the following revenue ranges:

Exhibit 2 Level of Involvement Expressed as Revenue Range

- **0%-4.9%** of total company revenue derived from involvement in relevant activity.
- **5%-9.9%** of total company revenue derived from involvement in relevant activity.
- **10%-24.9%** of total company revenue derived from involvement in relevant activity.
- **25%-49.9%** of total company revenue derived from involvement in relevant activity.
- **50%-100%** of total company revenue derived from involvement in relevant activity.

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 through" 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 portfolio fossil fuel and carbon solutions involvement calculations, they will be treated as being equivalent to a portfolio holding derivatives. The derivative holdings 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]

$$W_i^R = \frac{\text{Portfolio Weight}_i}{\sum_{i=1}^n \text{Portfolio Weight}_i}$$

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.
$\text{Portfolio Weight}_i$	=	Original portfolio weight.
$i=1, n$	=	All long, noncash offset holdings.

Coverage Calculations

For all portfolio fossil fuel and carbon solutions involvement fields, 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 involvement metric. These are known as **eligible holdings**. In the context of the portfolio fossil fuel and carbon solutions involvement 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 involvement field.

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.
$i = 1, E$	=	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.
$i = 1, NE$	=	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.
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W_i^R	=	The net long rescaled weight of the holding.
$i = 1, EC$	=	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.
$i = 1, NC$	=	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.
$i = 1, ENC$	=	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

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

<i>EligiblePortfolioNotCovered_R</i>	=	The proportion of only the eligible part of the adjusted portfolio where the underlying data is not available for the calculation.
<i>PortfolioEligibleNotCovered_R</i>	=	The proportion of the adjusted portfolio that is composed of eligible holdings and for which the underlying data is not available.
<i>PortfolioEligible_R</i>	=	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 Involvement Calculations

Portfolio fossil fuel and carbon solutions involvement calculations measure the portion of a portfolio's investments that generate revenue from involvement in the relevant activity. The proportion that is involved is calculated as a percentage of the total adjusted portfolio (that is, all long positions after being netting out), the eligible portion of the portfolio (those holdings that could have data), and the covered portion of the portfolio (those holdings that do have data).

Percentage of Portfolio Involved:

[10]

$$PortfolioInvolved_R = \sum_{i=1}^{CI} W_i^R$$

Where

$PortfolioInvolved_R$	=	The proportion of the adjusted (net long) portfolio that is held in securities that are involved in the relevant industry/activity.
W_i^R	=	The net long rescaled weight of the holding.
$i = 1, CI$	=	All covered, involved holdings. There are securities in the adjusted (net long) portfolio for which the relevant underlying involvement data is known (covered, C) and which generate any revenue from the relevant industry/activity (involved, I).

Percentage of Portfolio Not Involved:

[11]

$$PortfolioNotInvolved_R = \sum_{i=1}^{CNI} W_i^R$$

Where

$PortfolioNotInvolved_R$	=	The proportion of the adjusted (net long) portfolio that is held in securities that are not involved in the relevant industry/activity.
W_i^R	=	The net long rescaled weight of the holding.
$i = 1, CNI$	=	All covered, noninvolved holdings. There are securities in the adjusted (net long) portfolio for which the relevant underlying involvement data is known (covered, C) and which do not generate any revenue from the relevant industry/activity (not involved, NI).

For the adjusted portfolio, the involved/not involved statistics only include those holdings where the information is known. So, combining the involved/not involved statistics (as a percentage of the adjusted

portfolio) with the percentage of the portfolio not covered (or percentage eligible not covered and percentage not eligible) will sum to 100%.

Percentage of Eligible Portfolio Involved:

[12]

$$EligiblePortfolioInvolved_R = \frac{PortfolioInvolved_R}{PortfolioEligible_R}$$

Where

<i>EligiblePortfolioInvolved_R</i>	=	The proportion of the eligible portion of the portfolio that is held in securities that are involved in the relevant industry/activity.
<i>PortfolioInvolved_R</i>	=	The proportion of the adjusted (net long) portfolio that is held in securities that are involved in the relevant industry/activity.
<i>PortfolioEligible_R</i>	=	The proportion of the adjusted (net long) portfolio that is composed of eligible holdings.

Percentage of Eligible Portfolio Not Involved:

[13]

$$EligiblePortfolioNotInvolved_R = \frac{PortfolioNotInvolved_R}{PortfolioEligible_R}$$

Where

<i>EligiblePortfolioNotInvolved_R</i>	=	The proportion of the eligible portion of the portfolio that is held in securities that are not involved in the relevant industry/activity.
<i>PortfolioNotInvolved_R</i>	=	The proportion of the adjusted (net long) portfolio that is held in securities that are not involved in the relevant industry/activity.
<i>PortfolioEligible_R</i>	=	The proportion of the adjusted (net long) portfolio that is composed of eligible holdings.

For eligible portfolios, the involved and not involved statistics only include those holdings where the information is known, and so combining the involved/not involved statistics (as a percentage of the eligible portfolio) with the percentage eligible not covered of the portfolio will sum to 100%.

Percentage of Covered Portfolio Involved:

[14]

$$CoveredPortfolioInvolved_R = \frac{PortfolioInvolved_R}{PortfolioCovered_R}$$

Where

$CoveredPortfolioInvolved_R$	=	The proportion of the covered portion of the portfolio that is held in securities that are involved in the relevant industry/activity.
$PortfolioInvolved_R$	=	The proportion of the adjusted (net long) portfolio that is held in securities that are involved in the relevant industry/activity.
$PortfolioCovered_R$	=	The proportion of the adjusted (net long) portfolio that is composed of covered holdings.

Percentage of Covered Portfolio Not Involved:

[15]

$$CoveredPortfolioNotInvolved_R = \frac{PortfolioNotInvolved_R}{PortfolioCovered_R}$$

Where

$CoveredPortfolioNotInvolved_R$	=	The proportion of the covered portion of the portfolio that is held in securities that are not involved in the relevant industry/activity.
$PortfolioNotInvolved_R$	=	The proportion of the adjusted (net long) portfolio that is held in securities that are not involved in the relevant industry/activity.
$PortfolioCovered_R$	=	The proportion of the adjusted (net long) portfolio that is composed of covered holdings.

The involved/not involved statistic (as a percentage of the covered portfolio) will sum to 100% as it only contains holdings that have data.

Portfolio Involvement Breakdown by Revenue Range

Portfolio fossil fuel and carbon solutions involvement can be further broken down by level of involvement, measuring the proportion of a portfolio's investments whose revenue is derived from involvement in a given activity falls within each of the five revenue ranges (see Exhibit 2).

The proportion that is involved for each revenue range is calculated as a percentage of the total adjusted portfolio (that is, all long positions after being netting out), the eligible portion of the portfolio (those

holdings that could have data), and the covered portion of the portfolio (those holdings that do have data).

Percentage of Portfolio Involved by Revenue Range:

[16]

$$PortfolioInvolvedRevenueRange_j = \sum_{i \in CI\ RevenueRange\ j} W_i^R$$

Where

PortfolioInvolvedRevenueRange_j = The sum of the net long rescaled weight of all holdings whose level of involvement in the relevant industry/activity falls within Revenue Range j.

W_i^R = The net long rescaled weight of the holding.

$i \in CI\ RevenueRange\ j$ = All covered, involved holdings whose level of involvement falls within Revenue Range j.

The proportion of the adjusted portfolio involved in each of the five revenue ranges will sum to the overall Percentage of Portfolio Involved.

Percentage of Eligible Portfolio Involved by Revenue Range:

[17]

$$EligiblePortfolioInvolvedRevenueRange_j = \sum_{i \in CI\ RevenueRange\ j} \frac{W_i^R}{PortfolioEligible_R}$$

Where

EligiblePortfolioInvolvedRevenueRange_j = The sum of the net long rescaled weight of all holdings whose level of involvement in the relevant industry/activity falls within Revenue Range j, divided by the proportion of the adjusted portfolio that is composed of eligible holdings.

W_i^R = The net long rescaled weight of the holding.

PortfolioEligible_R = The proportion of the adjusted (net long) portfolio that is composed of eligible holdings.

$i \in CI\ RevenueRange\ j$ = All covered, involved holdings whose level of involvement falls within Revenue Range j.

The proportion of the eligible portfolio involved in each of the five revenue ranges will sum to the overall Percentage of Eligible Portfolio Involved.

Percentage of Covered Portfolio Involved by Revenue Range:

[18]

$$= \sum_{i \in CI \text{ RevenueRange } j} \frac{W_i^R}{\text{PortfolioCovered}_R} \text{ CoveredPortfolioInvolvedRevenueRange}_j$$

Where

$\text{CoveredPortfolioInvolvedRevenueRange}_j$	=	The sum of the net long rescaled weight of all holdings whose level of involvement in the relevant industry/activity falls within Revenue Range j, divided by the proportion of the adjusted portfolio that is composed of covered holdings.
W_i^R	=	The net long rescaled weight of the holding.
$\text{PortfolioCovered}_R$	=	The proportion of the adjusted (net long) portfolio that is composed of covered holdings.
$i \in CI \text{ RevenueRange } j$	=	All covered, involved holdings whose level of involvement falls within Revenue Range j.

The proportion of the covered portfolio involved in each of the five revenue ranges will sum to the overall Percentage of Covered Portfolio Involved.

Historical Fossil Fuel Involvement

To further support investors in understanding and managing their exposure to fossil fuel involvement and related risks, the **Historical Fossil Fuel Involvement** is calculated as a weighted average of the trailing 12 months of Portfolio Fossil Fuel Involvement. The Historical Fossil Fuel Involvement will be derived only for the covered proportion of the portfolio. Historical involvement values are not equal-weighted; rather, more-recent portfolios are weighted more heavily than more-distant portfolios.

[19]

$$\text{Historical Fossil Fuel Involvement} = \frac{\sum_{i=0}^{11} (12 - i) * \text{CoveredPortfolioInvolved}_{R_i}}{\sum_{i=0}^{11} i + 1}$$

Where

<i>Historical Fossil Fuel Involvement</i>	=	The historical-weighted average of the trailing 12 months of Portfolio Fossil Fuel Involvement, calculated for the Percentage of the Covered Portfolio Involved.
<i>i</i>	=	The number of months from present.
<i>CoveredPortfolioInvolved_{Ri}</i>	=	The Portfolio Fossil Fuel Involvement as of <i>i</i> months from the present, calculated as the Percentage of the Covered Portfolio Involved
<i>i = 0, 11</i>	=	The trailing 12 months, beginning with the present month (<i>i=0</i>).

Category Averages

Category averages will be calculated for the portfolio fossil fuel and carbon solutions involvement fields as a percentage of the covered portfolio, which is to say, for the Percentage of Covered Portfolio Involved metrics. The peer groups used are the standard Morningstar Categories.

[20]

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

Where

<i>CoveredPortfolioInvolved_f</i>	=	The Percentage of Covered Portfolio Involved in the relevant industry/activity for fund <i>f</i> .
Number of Funds	=	The number of funds in the category that meet the relevant criteria to be included in the category average calculation.
<i>i = 1, F</i>	=	All funds in the category that meet the relevant criteria.

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. The number of funds included in the calculation is also provided.

Frequency of Calculations

Portfolio fossil fuel and carbon solutions involvement metrics will be issued monthly, one month and six business days after the reported as-of date for the company data from Sustainalytics. The Portfolio Fossil Fuel Involvement metrics, Portfolio Carbon Solutions Involvement metrics, 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 for score and ranking, provided the portfolio is less than 276 days old. ■■

Methodology History

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Appendix

Glossary

Term	Description
Arctic Oil & Gas Exploration	This involvement area provides an assessment of whether companies derive revenues from oil and gas exploration in offshore Arctic regions. Exploring for oil and natural gas in the Arctic is controversial in the context of global climate change as well as because of the increased risk of environmental disasters.
Carbon Date	The effective date of the portfolio fossil fuel and carbon solutions involvement metrics.
Carbon Solutions Involvement	Refers to the level of company involvement in products and services that help mitigate or avoid greenhouse gas emissions, such as green transportation, green real estate and energy efficiency, represented as a revenue range.
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 fossil fuel and carbon solutions involvement 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 fossil fuel and carbon solutions involvement metrics, eligible holdings refer to long positions in securities issued by corporate entities, such as equities and corporate bonds.
Fossil Fuel Involvement	Refers to the level of company involvement in high-impact and conventional fossil fuels, represented as a revenue range.
Historical Fossil Fuel Involvement	The historical-weighted average of the trailing 12 months of Fossil Fuel Percentage of Covered Portfolio Involved. Historical portfolio values are not equal-weighted; rather, more-recent portfolios are weighted more heavily than older portfolios. Combining the trailing 12 months of portfolio involvement adds consistency while still reflecting portfolio managers' current decisions by weighting the most recent portfolio involvement more heavily.
Level of Involvement	Refers to a company's level of involvement represented as a revenue range, where the range of revenue is expressed as the percentage of total company revenue generated from involvement in the relevant

	activity. Level of involvement is represented as one of the following revenue ranges: 0%-4.9%, 5%-9.9%, 10%-24.9%, 25%-49.9%, 50%-100%.
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 fossil fuel and carbon solutions involvement metrics, noneligible holdings refer to any noncorporate securities, such as cash, commodities, and sovereign and subsovereign bonds.
Number of Holdings Covered	The number of the long, eligible holdings with the relevant underlying data available.
Oil & Gas Power Generation	This involvement area provides an assessment of whether companies derive revenue from generating electricity from oil and/or gas. The oil & gas industry is controversial because of its high carbon intensity and the impact on climate change. Also, it is very resource-intensive in terms of land and water. Its impacts on ecosystems include spillages, waste management issues, and spontaneous flaring, which can lead to fines and are associated with reputational risks. In certain geographies, oil & gas operations are associated with strained relations with local communities and with issues with governance and business practices. Health and safety issues are also important as repetitive accidents can lead to operational disruption or fatalities.
Oil & Gas Production	This involvement area provides an assessment of whether companies derive revenue from involvement in oil and gas exploration, production, refining, transportation, and/or storage. The oil & gas industry is controversial because of its high carbon intensity and the impact on climate change. Also, it is very resource-intensive in terms of land and water. Its impacts on ecosystems include spillages, waste management issues, and spontaneous flaring, which can lead to fines and are associated with reputational risks. In certain geographies, oil & gas operations are associated with strained relations with local communities and with issues with governance and business practices. Health and safety issues are also important as repetitive accidents can lead to operational disruption or fatalities.
Oil & Gas Products and Services	This involvement area provides an assessment of whether companies derive revenue by providing tailor-made products and services that support oil and gas exploration, production, refining, transportation, and/or storage. The oil & gas industry is controversial because of its high carbon intensity and the impact on climate change. Also, it is very

	resource-intensive in terms of land and water. Its impacts on ecosystems include spillages, waste management issues, and spontaneous flaring, which can lead to fines and are associated with reputational risks. In certain geographies, oil & gas operations are associated with strained relations with local communities and with issues with governance and business practices. Health and safety issues are also important as repetitive accidents can lead to operational disruption or fatalities.
Oil Sands Extraction	This involvement area provides an assessment of whether companies are involved in oil sands extraction. Oil sands are considered controversial because they are extremely carbon intensive, dirty — their extraction methods cause air pollution “in situ,” water withdrawal, and contamination from mining.
Percentage of Covered Portfolio Involved	The proportion of the covered portion of the portfolio that is held in securities that are involved in the relevant industry/activity.
Percentage of Covered Portfolio Involved by Revenue Range	The proportion of the covered portfolio involved in each of the five levels of involvement by revenue range: 0%-4.9%, 5%-9.9%, 10%-24.9%, 25%-49.9%, and 50%-100%. The proportion of the covered portfolio involved in each of the five revenue ranges will sum to the overall Percentage of Covered Portfolio Involved.
Percentage of Covered Portfolio Not Involved	The proportion of the covered portion of the portfolio that is held in securities that are not involved in the relevant industry/activity.
Percentage of Eligible Portfolio Covered	The proportion of the eligible portfolio for which the relevant underlying data is available.
Percentage of Eligible Portfolio Involved	The proportion of the eligible portion of the portfolio that is held in securities that are involved in the relevant industry/activity.
Percentage of Eligible Portfolio Involved by Revenue Range	The proportion of the eligible portfolio involved in each of the five levels of involvement by revenue range: 0%-4.9%, 5%-9.9%, 10%-24.9%, 25%-49.9%, 50%-100%. The proportion of the eligible portfolio involved in each of the five revenue ranges will sum to the overall Percentage of Eligible Portfolio Involved.
Percentage of Eligible Portfolio Not Covered	The proportion of the eligible portfolio for which the relevant underlying data is not available.
Percentage of Eligible Portfolio Not Involved	The proportion of the eligible portion of the portfolio that is held in securities that are not involved in the relevant industry/activity.
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 Involved	The proportion of the long-only portfolio that is held in securities that are eligible for the calculation and are known to be involved in the relevant industry/activity.
Percentage of Portfolio Involved by Revenue Range	The proportion of the adjusted (net long) portfolio involved in each of the five levels of involvement by revenue range: 0%-4.9%, 5%-9.9%, 10%-24.9%, 25%-49.9%, and 50%-100%. The proportion of the adjusted portfolio involved in each of the five revenue ranges will sum to the overall Percentage of Portfolio Involved.
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.
Percentage of Portfolio Not Involved	The proportion of the long-only portfolio that is held in securities that are eligible for the calculation but are not involved in the relevant industry/activity.
Portfolio Carbon Solutions Involvement	Refers to a portfolio's exposure to companies involved in products and services that help mitigate or avoid greenhouse gas emissions, such as renewable energy, energy efficiency, green transportation, and green real estate.
Portfolio Fossil Fuel Involvement	Refers to a portfolio's exposure to companies involved in conventional fossil fuels, such as thermal coal and oil and gas, as well as high-impact fossil fuels, including oil sands, oil shale, and arctic oil and gas.
Shale Energy Extraction	This involvement area provides an assessment of whether companies derive revenue from shale energy (gas and/or oil) extraction and/or production. Shale energy production involves environmental risks like water pollution and carbon emissions. Rock fracture, or fracking, is needed to make natural gas flow through the shale, which poses environmental concerns because of its potential effects on the watershed. Shale energy is also associated with slightly higher carbon emissions than conventional resources.
Thermal Coal Extraction	This involvement area provides an assessment of whether companies derive revenue from mining thermal coal. On a lifecycle basis, thermal coal is more carbon-intensive than other fossil fuel sources, while from an energy generation perspective, it is easily substitutable.
Thermal Coal Power Generation	This involvement area provides an assessment of whether companies derive revenue from generating electricity from thermal coal. On a lifecycle basis, thermal coal is more carbon-intensive than other fossil fuel sources, while from an energy generation perspective, it is easily substitutable.

Frequently Asked Questions

For what vehicles will portfolio fossil fuel and carbon solutions involvement metrics be calculated?

The portfolio fossil fuel and carbon solutions involvement metrics can be useful to investors globally and will be calculated for all funds regardless of where they are domiciled or sold and will be calculated for all universe types.

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 fossil fuel and carbon solutions involvement 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 involvement metrics. The Portfolio Fossil Fuel Involvement fields, Portfolio Carbon Solutions Involvement fields, 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 involvement 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 Fossil Fuel Involvement fields 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 involvement fields. This means the most recently available company data as of the Carbon Date is what is used for the calculations. For portfolio fossil fuel and carbon solutions involvement fields, this will be on a monthly basis with a one-month and six-business-day delay.

For example, all Portfolio Fossil Fuel and Carbon Solutions Involvement fields 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 fossil fuel and carbon solutions involvement metrics?

There is no minimum coverage required to generate portfolio fossil fuel and carbon solutions involvement metrics, with the exception of Historical Fossil Fuel Involvement. In order for Historical Fossil Fuel Involvement to be calculated as of a given Carbon Date, the Fossil Fuel Percentage of Eligible

Portfolio Covered must meet or exceed 67%. When calculating the historical weighted average, only involvement values for which the corresponding month's Fossil Fuel Percentage of Eligible Portfolio Covered meets or exceeds 67% will be included.

Why does my fund not have any portfolio fossil fuel or carbon solutions involvement metrics?

If a fund does not have any portfolio fossil fuel or carbon solutions involvement metrics generated, this could be due to one or more of the following:

- ▶ The fund does not have portfolio data available, or the most recent portfolio data is more than 276 days old.
- ▶ The fund does not contain any holdings eligible to generate portfolio involvement metrics.
- ▶ The fund does not contain any covered holdings—that is, holdings with the relevant underlying involvement data available.