MORNINGSTAR | SUSTAINALYTICS

Principal Adverse Impact Data Solution

Methodology | Version 1.2

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About Morningstar Sustainalytics

Morningstar Sustainalytics is a leading ESG research, ratings, and data firm that supports investors around the world with the development and implementation of responsible investment strategies. For 30 years, the firm has been at the forefront of developing high-quality, innovative solutions to meet the evolving needs of global investors. Today, Morningstar Sustainalytics works with hundreds of the world's leading asset managers and pension funds who incorporate ESG and corporate governance information and assessments into their investment processes. The firm also works with hundreds of companies and their financial intermediaries to help them consider sustainability in policies, practices, and capital projects. With 17 offices globally, Morningstar Sustainalytics has more than 1,200 staff members, including more than 500 analysts with varied multidisciplinary expertise across more than 40 industry groups. For more information, visit www.sustainalytics.com.

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Highlights

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- **The EU Action Plan on Financing Sustainable Growth** was created to achieve the European Union's ambitious 2030 climate and energy consumption targets by 2030.

- One key component of the EU Action Plan is to **leverage the power of financial markets** as a potential game changer by requiring financial institutions and institutional investors to **disclose ESG-related information** about their investments and investment products.

- One of the instruments to achieve this objective, on top of the EU Taxonomy Regulation, is the **Sustainable Finance Disclosure Regulation (SFDR)**. The SFDR aims to increase the transparency of ESG disclosure towards end-investors, by introducing standardized disclosure rules for selected **Indicators**[2] and **Metrics:** The **Principal Adverse Impact (PAI)** Indicators.

- In total, 64 PAI Indicators have been defined, of which 18 will be mandatory to report on from 2023 onwards, plus investors can pick two from the list of the 46 voluntary ones. In 2021, **Morningstar Sustainalytics launched a Principal Adverse Impact Data Solution,** designed to support clients to meet the regulatory disclosure requirements. It also provides a comprehensive set of corporate and sovereign investee data points that were mapped to the mandatory and the voluntary PAIs.

- **In 46 instances, out of the 64**, we provide an **Exact Fit** mapping to the regulatory PAI definitions and requirements, for 8 a **Partial Fit,** for 2 a **Minimum Fit,** and No Coverage for the remaining 8. All mandatory corporate and sovereign PAIs are currently covered with Exact or Partial Fit.

- Our standard coverage universe comprises approximately **12,500 corporate issuers** (in some cases not fully available yet). On the sovereign side, we cover **172 countries.**

- Gaps in corporate disclosure are partly filled with the help of **Morningstar Sustainalytics' estimation models** (e.g., targeting GHG emissions) to provide our clients a full picture of their portfolios' impacts.

Introduction

The EU Action Plan and its Objectives

Strengthening the ESG disclosure landscape

The European Union (EU) has set up ambitious climate and energy targets by 2030 and designed a comprehensive European Green Deal[3] to make its economy sustainable. To achieve these targets, it is necessary to direct investments towards sustainable projects and activities. While EU Action Plan on Financing Sustainable Growth covers multiple initiatives,[4] one of the main components is Action 7 *Clarifying institutional investors' and asset managers' duties*. Under Action 7, the Sustainable Finance Disclosure Regulation (SFDR) aims to increase the transparency of ESG disclosure towards end-investors by introducing standardized disclosure rules for selected Indicators and Metrics, the so-called Principal Adverse Impact (PAI) Indicators. Adverse impacts are defined by the EU as "negative, material, or likely to be material effects on sustainability factors that are caused, compounded by, or directly linked to investment decisions and advice performed by the legal entity".

Morningstar Sustainalytics' Principal Adverse Impact Data Solution

Morningstar Sustainalytics' Principal Adverse Impact Data Solution is designed to support clients meeting the regulatory disclosure requirements related to the PAIs and provides corporate and sovereign data points to be used for the regulatory disclosure. The most recent regulatory document, which constitutes the basis for our methodology, is the Delegated Regulation published on 4 April 2022 by the European Commission.[5]

SFDR Regulation – Current State

Investees indirectly targeted

The SFDR aims to improve the disclosure on the integration of environmental, social and governance (ESG) considerations in the decision-making process of institutional investors and in financial products. In doing so, it also aims, indirectly, to increase disclosure of such data from issuers of equity and/or debt. The SFDR also aims to increase financial intermediaries' transparency duties to end-investors with regards to sustainability risks and sustainable investment targets.

Principal Adverse Impact (PAI) Indicators

The requirement to report on PAI Indicators is at the heart of the SFDR. Financial market participants need to disclose if, and how, they take PAIs into account. By June 2023 those participants that do take PAIs into account need to report on a list of 64 PAI Indicators aggregated at the financial market participant entity-level. These PAI Indicators are defined in the regulation with a core set of 18 mandatory indicators and an additional set of 46 voluntary indicators from which investors need to choose two PAIs and also report on them. There are indicators for investee companies/corporates, sovereigns, and real estate investments.

SFDR: Innovation in terms of content, procedure, and scope

The SFDR represents a significant innovation in terms of disclosure requirements on multiple fronts. First, it introduces content innovations. While some of the PAIs are already widely used in the green finance space (e.g.,

policies on human rights or carbon emissions), others are relatively new and rarely used (e.g., measurement of hazardous waste, or emissions of air pollutants). Together with other EU Action Plan regulation, the SFDR is a procedural innovation by instrumentalizing the influential power of investors to improve overall disclosure of environmental and social impacts. Finally, its scope (i.e., the area of impacts covered) is larger than other Action Plan initiatives such as the Benchmarking or Taxonomy, given the wide spectrum of environmental and social disclosures required.[6]

Significant challenges on investors due to lack of reporting at the investee level

The SFDR's ambition clearly constitutes a step forward on the disclosure curve, but it also poses significant challenges on investors and companies. The reporting landscape for many of the PAIs is underpopulated, with a limited number of companies reporting on many of the required metrics and in full accordance with the regulation.

In many cases, there will be little data to collect from companies and, hence, limited data investors will be able to report on—either because companies are not reporting at all, or because they are reporting in a way that is slightly different from the one defined by the regulation. While we can expect this problem to ease in the future, it will keep posing a significant challenge.

Incomplete PAI definitions

Currently, some of the definitions for PAIs are fundamentally incomplete given that they do not fully clarify or characterize the context. For example, some PAIs refer to policies in human rights or child labour although there is a lack of a clear definition for aspirational policies in these fields. In these cases, Morningstar Sustainalytics provides an interpretation of the data point following our expertise and content knowledge, leveraging international norms and standards where possible. All these cases are flagged in the individual PAI sections below.

Focussing on general mapping and aggregation as well as indicator-specific methodology

Our methodology and Principal Adverse Impact Data Solution are designed to support clients to meet the regulatory disclosure requirements related to the PAIs, focussing on two main components:

- The general methodology underlying the mapping and portfolio aggregation processes.
- The indicator-specific methodology covering the data points mapped to each PAI—including all applicable limitations—and the specific portfolio aggregation methodology.

Our methodology is limited to corporate and sovereign PAIs. Due to the current limitations in availability and quality of asset-level data in the market, we provide partial information on real estate PAIs (only one PAI), which are defined for real estate assets. Additionally, there are specific instances where no data point can be matched to PAIs, as indicated in the corresponding subsections below.[7]

Principal Adverse Impact Data Solution

General Methodology Principles

Mapping Morningstar Sustainalytics Data

Leveraging available data

A large selection of the metrics and measurements requested by the SFDR are already disclosed by corporate investee entities, or estimated/calculated for sovereign investee entities, and researched by Morningstar Sustainalytics. However, these disclosures and calculations do not always fully match the definitions provided in the regulation and are not fully harmonized. As a first step, we mapped the data points that are already used across our corporate and sovereign ESG products to the requested PAIs.

Mapping criteria according to coherence and suitability

For each PAI, one or more mapped data points were chosen following two main criteria:

- Coherence with the regulatory definition, or its interpretation, as expressed by the concept of **PAI Fit**
- Suitability in the context of portfolio level aggregation and disclosure

Assessing the coherence of data points with regulatory requirements

We assessed data point's content and research methodology to determine the definition's coherence. In the absence of a clear definition provided by the regulators, the most suitable data points were identified according to our best judgement. Similarly, in the absence of an exact data point, proxies (either individual data points or combinations of different data points) were identified to replicate the requirement. For each PAI, limitations to the fit and/or any caveat regarding the use of proxies are discussed in the dedicated section (page 14 onwards).

Defining and using thresholds at the portfolio level

As a second step, we looked into the interpretability of the data point at the portfolio level: Only data points that can be meaningfully aggregated have been used. To make an aggregation meaningful we defined thresholds that allowed to interpret continuous data points in a binary (true/false) manner. For example, in PAIs referring to policies or programmes, such as policies regarding human rights, the SFDR generally requires disclosing the investments in companies which lack a certain policy or programme. However, the data points we used to map to these requirements are ordinal in nature, implying the need to define a threshold converting the ordinal data point into a binary PAI, as further discussed below.

These thresholds have been applied by default in our portfolio level aggregation methodology. Importantly, clients need to use their own discretion to determine whether they are comfortable with the thresholds suggested by us or whether they would prefer a stricter or looser interpretation of the regulation.

Mapping multiple data points that met coherence and suitability criteria

We included data points in the final mapping and data deliverable only if they met the coherence and suitability criteria as described above. To some of the required PAIs, multiple data points were mapped or added. This option was chosen if:

- Multiple data points constituted a proxy for the requirement, or the requirement is 'naturally' linked to multiple data points.
- We believed that supporting data points are necessary for the contextualization and interpretation of the mapped data point. As described in the SFDR mapping file,[8] we talk about **SFDR PAI Details** to distinguish them from **SFDR PAI Indicators**, which describe those data points that are strictly necessary to speak to the regulation.

All information about multiple mappings or added details is provided in the dedicated section (page 14 onwards).

Gaining a deeper understanding of the strength of the given policy or programme

The difference between SFDR PAI Indicators and SFDR PAI Details data points becomes particularly clear when considering the case of policy/programmes indicators.

For many PAIs, the regulation requires the disclosure of investments in issuers that lack a certain policy or certain compliance mechanisms. From a content perspective, these PAIs can often be interpreted analogously to our **Management Indicators,** requiring a binary call rather than a deeper assessment of the quality of the policy. In these cases, we generally provide a binary (true/false) data point derived from our research referring to the regulatory requirement and included in the SFDR PAI Indicators report. The general interpretation of such data point is to identify cases where a company is completely lacking a certain policy or programme, labelled as 'True', corresponding to cases where the mapped indicator(s) score 0.

As described above, the additional information for the mapped Indicator is provided in the SFDR PAI Details report and can be used to gain a deeper understanding of the strength of the given policy or programme, the so-called: **Rules for Policy/Programme Indicators**.

Measures of Fit

A measure of coherence in terms of content and coverage

As mentioned above, Fit is the criterion that allows us to map a certain data point from Morningstar Sustainalytics to a specific SFDR PAI, representing a distance measured in terms of **Definitional Coherence**. We define 'coherence' as the degree to which the definition of the data point mapped by Morningstar Sustainalytics corresponds to the original definition of the PAI or, where necessary, its interpretation.

The level of Fit is defined for each data point or set of data points vis-à-vis a certain PAI, as described in the dedicated section (page 14 onwards).

Three levels of Fit assessing the level of EU coverage

We define three levels of Fit:

- **Exact Fit:** Denotes a case where the data point provided by Morningstar Sustainalytics fully covers the PAI requirements (see Exhibit 4, PAI 1, page 15.
- **Partial Fit:** Denotes a case where the data point provided by Morningstar Sustainalytics covers the EU requirement to a significant extent, but not fully. For example, when providing a company-level instead of a sector-level data point (see Exhibit 14, PAI 6, page 22 or not considering a spatially explicit perspective (see Exhibit 15, PAI 7, page 23).
- **Minimum Fit:** Denotes a case where the data point provided by Morningstar Sustainalytics covers the EU requirement to a minimum extent. For example, in the case of proxy scores (see Exhibit 27.3, PAI 6, Appendix).

Summary statistics for our measure of Fit

Exhibit 1 illustrates the distribution of Fit by holding type and number of PAIs. As shown, out of the 64 PAIs requested by the regulator, 56 are covered in our PAI Data Solution. Of these, 46 have an Exact Fit, 8 a Partial Fit, and 2 a Minimum Fit. Importantly, of the 8 that are not covered, 6 belong to real estate. All mandatory corporate and sovereign PAIs are covered with either Exact or Partial Fit.

Exhibit 1: Number of PAIs - Distribution by Type of Fit and Type of Holding
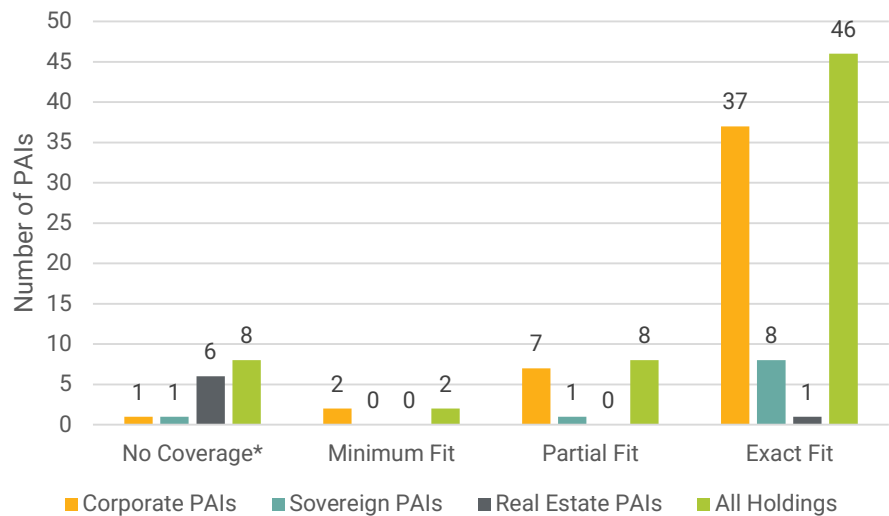
* All corporate and sovereign PAIs with no coverage are extracted from tables 2 and 3; all mandatory corporate and sovereign PAIs are currently covered with Partial or Exact Fit

Source: Morningstar Sustainalytics

Coverage

Aligned with other research areas, our corporate reference universe for the PAI Data Solution is our **Ratings+ Universe,** covering approximately 12,500 corporate issuers globally, and 172 sovereign issuers. As already mentioned, we do not cover real estate PAIs (except for PAI 19, Table 2, Appendix).

In some cases, actual coverage may be less than the Ratings+ Universe. A second main reference is our **Ratings Universe,** covering approximately 4,500 companies.

Distinguishing between corporate and sovereign issuers

A summary of coverage statistics is provided in Exhibit 2, distinguishing between PAIs for corporate issuers (Ratings+ Universe) or sovereign issuers (world coverage) on the one hand; and coverage equal to or smaller than our Ratings+ Universe on the other hand. As illustrated below, roughly half of the PAIs are already available for all companies or countries covered by the PAI Data Solution.

Out of the 15 PAIs flagged with Ratings coverage, 13 are covered by newly introduced Metrics or Management Indicators that are scoped for coverage expansion.

Exhibit 2: Distribution of Coverage by Universe, by Number of Covered PAIs

■ Ratings+ or World   ■ Ratings   ■ Smaller than Ratings
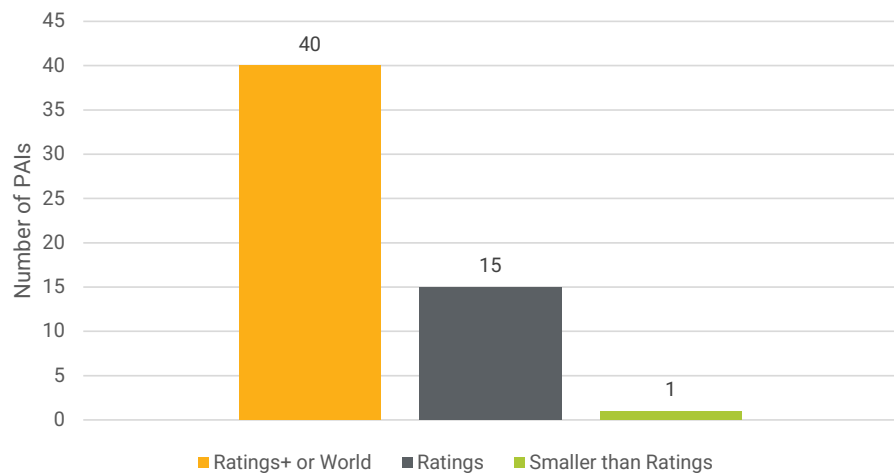
*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Limitations

Mapped data points are limited by interpretation and coverage

There are two types of limitations that apply to the usability of selected mapped data points:

A first type of limitations relates to the interpretation of the regulator's definitions. When there is a need of the definition's interpretation, we apply one that is based on our expertise and reasonable business judgement. Notably, different interpretations could lead to different results for a given PAI. The implications are described in the section 'Description by PAI' (page 14).

A second type of limitations relates to the **Coverage** of a data point, i.e., the approximate number of issuers for which the data point is expected to be available. There are three specifications for this limitation:

▪ **Financial materiality:** Within our ESG Risk Ratings,[9] we only research indicators that asses ESG issues that are deemed material for the subindustry

a company operates in. This implies that, in some cases, an indicator may not be researched for a group of companies, leading to a reduction in coverage.

▪ **Newly developed data points**: To meet the requirements of the PAIs, we developed new data points. As the research for these data point has started only recently, coverage is still limited to the Ratings Universe.

▪ **Disclosure**: Despite the large research universe, only a fraction of companies is disclosing the metric or information that is requested by the PAI. We expect this limitation to ease in the future, as mentioned above.

Indicators and Metrics

Product agnostic indicators and metrics

A large part of data provided by Morningstar Sustainalytics is based on indicators and metrics, the foundation of several ESG products offered to clients. As a rule, our indicators and metrics are not product specific, they provide non-contextualized information that can be used for multiple purposes.

While a Metric is a quantitative data point, an Indicator is a structured assessment call

We define a Metric as a quantitative data point, which is either researched and collected by our analysts, provided by third parties, or estimated/predicted by quantitative models. We define an Indicator as a structured assessment call made by our analysts, third party, and/or by a pre-defined scoring system. Analysts define input (qualitative/quantitative), which is then transformed into a final Indicator Outcome. The transformation is carried out by applying a Scoring Algorithm combined with the analyst's judgement based on the research guidance for the indicator. Indicator scores are typically ranked between 0 (worst) and 100 (best), and do not have a unit of measurement.

Exhibit 3: Morningstar Sustainalytics' Definition of an Indicator
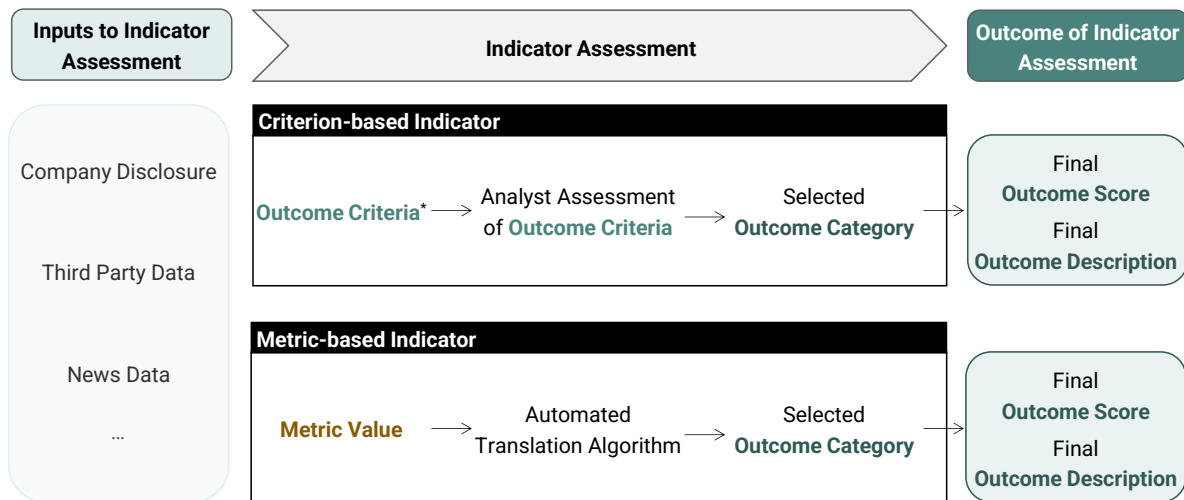
*Outcome Criteria are also referred to as 'tick boxes'   Source: Morningstar Sustainalytics

Four types of indicators

An indicator assesses a specific underlying research question that is meaningful on a standalone basis. Depending on the objective of the assessment, we distinguish between four main types of indicators:

▪ **ESG Management Indicators** assess how effectively a company manages ESG impacts and risks that are relevant for its business model.

- **Beta Indicators** assess the deviation of a company's exposure to ESG risks from its subindustry's exposure.
- **Corporate Governance Indicators** assess the extent to which a company's corporate governance management practices, structures, and behaviours detract from or add to the company's ability to execute its business strategy and build sustainable, long-term value (special type of Management Indicator, not used within the PAI Data Solution product).
- **Event Indicators** provide a signal about the severity of a company's involvement in media-reported controversies. An Event is a group or series of isolated or related Incidents that pertain to the same ESG issue. Incidents reflect a company's involvement in a particular case of specific alleged misconduct with negative environmental and/or social impacts. Incidents form the most granular level of analysis we conduct, where a company is screened through various media and NGO sources in terms of its negative environmental and/or social impact and associated reputational risks.

Indicator structures reflect different assessment criteria

The structure of an indicator depends on the research question it aims to answer, and the underlying criteria taken into consideration for the indicator assessment. The nature of the underlying criteria determines the structure the indicator will have. Depending on how the assessment of an indicator is constructed, we generally differentiate between a **Criterion-based Indicator Structure** and a **Metric-based Indicator Structure.**

For Criterion-based Indicators, the assessment is based on a pre-defined set of criteria represented in the form of **Outcome Criteria** (also referred to as 'tick boxes') that determine the **Outcome Category** and the associated **Outcome Score**. For Metric-based Indicators, the Outcome Category and the associated Outcome Score are determined by assessing a metric value against a pre-defined threshold.

Metrics measure the outcome of an activity or status based on fact-based information

Metrics are used to measure outcomes associated with a company's operational or governance practices (**Operational Metrics** and **Governance Metrics**) or a company's involvement in a certain economic activity (**Involvement Metrics**). Metrics can either be represented as numerical values with a specified unit (percent, tonnes, etc.) or as a binary flag (0: true /1: false), signaling (non-) compliance with a particular condition. In contrast to indicators, metrics provide information on an entity's characteristics but do not explicitly provide an assessment of the subject matter at hand. A metric value doesn't explicitly tell the user whether it's good or bad, high or low: It's not put into context, as opposed to indicators.

We distinguish metric structures based on the level of analyst intervention. **Raw Metrics** and **Derived Metrics** are based on reported data without any analyst assessment. Those are predominantly used to measure ESG-related outcomes. **Curated Metrics** on the other hand, involve an analyst's evaluation of reported data.

- **Raw Metrics** are directly researched and not subject to calculations or standardizations/normalizations (e.g., Water Withdrawal [m3]). They may only be manipulated for data harmonization purposes.
- **Derived Metrics** are created by combining at least two underlying (raw or derived) metrics according to a set formula (e.g., Water Withdrawal Intensity [m^3/ US$m]). The calculation logic should be automated and not allow for any manual intervention.
- **Curated Metrics** are based on Raw and/or Derived Metrics that are reviewed and potentially adjusted by analysts, hereby adding a layer of analyst judgement to the assessment. These metrics are calculated on accepted market standards or standardized assessment criteria (e.g., assessment of a company's involvement in certain activities, see Exhibit 27.4, PAI 9, Appendix).

Portfolio Level Aggregation

Corporate, sovereign, real estate, and other holding types

All portfolio level calculations within our Principal Adverse Impact Data Solution product are conducted in accordance with Morningstar's general aggregation methodology. Morningstar distinguishes between corporate, sovereign, real estate, and other holding types for the purpose of PAI calculations,[10] as follows:

- **Investee Companies**, applicable to corporate issuers including all equity and equity-like securities. It also includes all bonds issued by corporations, including Freddie Mac and Fannie Mae.
- **Sovereign or Supranational**, applicable to government, some agencies and supranational bonds including all government bonds, government agency bonds (except for Freddie Mac and Fannie Mae), and supranational bonds.
- **Other Holdings** including all other security's types (cash, commodities, real estate, derivatives, and unknown securities).

Rebalancing weights

Importantly, portfolio weights used for PAI calculations are based on the proportion of a portfolio a holding represents once any fund holdings have been 'looked through'. The weights are based on the market value of the security. For PAI calculations, the following additional steps are taken to compute weights:

- Netting out of long and short positions for securities having both
- Removal of remaining short positions
- Removal of currency effects

The portfolio weight is then recalculated on the netted-out long positions only. These weights are represented by the subscript 'R' in the methodology.

Coverage calculations

For all PAIs, coverage statistics are calculated to enable users to see the proportion of the **Adjusted Portfolio** that is eligible and covered. In this context, **Eligible** implies those holdings that are the relevant type for the PAI in question —a corporate holding for a corporate PAI—and **Covered** implies those holdings for which the relevant underlying data has been obtained or estimated.

PAIs are grouped into six categories according to specific calculation methodologies

In total, there are 64 PAIs described in the regulation. However, some have more than one indicator or metric linked with them. For aggregation purposes, we

grouped the PAIs into six categories according to the applicable calculation methodology, as follows:

- Emission Calculations
- Average Value Calculations
- Involvement Calculations
- Policy Calculations
- Social Violation Calculations
- Anticorruption/Bribery Violation Calculations

The detailed description of each of the calculation methodologies is provided in the section of the first PAI where it is used.

Description by PAI

General Logic

Illustrating multiple attributes of the PAI mapping

The previous section focusses on the general methodology for the mapping of PAIs to existing data points, including the applicable limitations, and an introduction to the portfolio-level aggregation methodology. In this section, we illustrate the results of the mapping for each PAI, addressing the following aspects:

- **Requirement as per the EU regulation** representing the regulatory definition of the PAI. This includes, where applicable, references to the Annex I of the Delegated Regulation and other relevant regulatory aspects.
- **Mapped data point(s)** including metrics and/or indicators, both referring directly to the PAI (PAI Indicators) and additional context (PAI Details).
- **Criterion** discussing how the mapped data point was selected.
- **Fit** examining the coherence between the regulatory and Morningstar Sustainalytics' definitions and the conclusion around the Fit.
- **Applicable limitations** discussing any applicable limitations of the mapped data point.
- **Rules for portfolio aggregation** specifying the applicable portfolio aggregation methodology.

When multiple data points are mapped to an individual PAI, they are discussed sequentially. Additionally, given that real-estate PAIs are marginally covered by the current product (only PAI 19 Table 2), they are addressed briefly below. Finally, we explicitly indicate when a PAI is not covered by Morningstar Sustainalytics.

Organized according to the regulation's distinction

Following the structure of the regulation, the methodology is organized according to the regulation's distinction between tables 1, 2 and 3, as follows:

- **Table 1:** Statement on principal adverse impacts of investment decisions on sustainability factors, containing the mandatory PAIs for reporting.
- **Table 2:** Additional climate and other environmental-related indicators.
- **Table 3:** Additional indicators for social and employee, respect for human rights, anti-corruption and anti-bribery matters.

For PAIs on Table 1, we provide the information in a full text format, including contextualized additional information, such as the used portfolio aggregation methodologies and current empirical outcomes. Table 2 and 3 PAIs are summarized in Exhibits 26 and 27 (Appendix).

Principal Adverse Sustainability Impacts Statement (Table 1)

Climate and Other Environmental-Related Indicators

PAI 1: GHG Emissions

Data points are considered to provide an Exact Fit

From January 2023 onwards, this PAI requires investors to report on greenhouse gas (GHG) emissions Scope 1, 2 and in their portfolios. GHG emissions are calculated according to the formula in Annex I, Formula (1) of the Delegated Regulation, and are, for the purpose of the regulation, intended to go beyond carbon only (i.e., covering also other green house gases in accordance with Point (1), Article (3) of Regulation (EU) 2018/842).[11]

This PAI is covered with the data points described in Exhibit 4.

Exhibit 4: Mapping Morningstar Sustainalytics Data points to PAI 1 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Reported Data (%)*
Carbon - Scope 1 Emissions	Emission Calculations	Exact	Corporate	Ratings+	34%
Carbon - Scope 2 Emissions	Emission Calculations	Exact	Corporate	Ratings+	34%
Carbon - Scope 3 Emissions	Emission Calculations	Exact	Corporate	Ratings+	20%
Carbon - Total Emissions Scope 1&2	Emission Calculations	Exact	Corporate	Ratings+	36%
Carbon - Total Emissions Scope 1,2&3	Emission Calculations	Exact	Corporate	Ratings+	20%

*Coverage data as of September 2022, reported data (%) only considers research entities and excludes coverage entities (companies that are covered via a related entity)[12]

Source: Morningstar Sustainalytics

Exact Fit measures total GHG emissions, not just carbon-related emissions

The selected data points cover GHG emissions as reported by researched companies or as estimated by Morningstar Sustainalytics, measured in terms of tonnes of CO_2 equivalents. For further details about the estimation models applied, please refer to the corresponding methodologies for Scope 1, 2[13] and 3[14] emissions.

Approximately 34% of the companies included in the Ratings+ Universe report their Scope 1 and 2 emissions, respectively, while the remaining is estimated. Similarly, approximately 20% of the companies included in the Ratings+ Universe report their emissions, while the remaining is estimated. These limitations also apply to the data points mapped to PAIs 2 and 3.

All of the above data points cover the full spectrum of GHG emissions and not only carbon. Hence, we consider them as an Exact Fit. PAI 1 data points are aggregated at the portfolio level following the Emission Calculations approach, explained below.

Emission Calculation Approach

Calculating the emissions for which a portfolio is 'responsible for'

GHG emissions are aggregated to the portfolio level by assuming that the portfolio is considered 'responsible for' the underlying holdings' emissions in proportion to the share of ownership in respective investee entities. For example, if a portfolio owns 10% of a given company, it would be responsible for 10% of its emissions. These 'responsible for' emission numbers get summed up across all companies that are Eligible and Covered:

Total amount in tonnes can be different for portfolios with identical holdings

$$(1)\ TotalEmissions_R = \sum_{i=1}^{EC} \frac{Investment_i}{EVIC_i} * CompanyEmissions_i$$

A description of the variables of this equation can be found in Exhibit 5 below. If the overall dollar amount of investment in these portfolios differs, the calculation result of the total amount in tonnes would be different for portfolios with identical holdings in identical proportions.

Exhibit 5: Share of Emissions Calculations Approach

Variable	Description
Total Emissions	The amount in tonnes of the relevant emission(s) for which the portfolio is known to be responsible.
Investment	The amount in millions of euros the portfolio has invested in the relevant underlying company.
EVIC	The entire value of the company (enterprise value including cash). Calculated by summing the market capitalisation, the total preferred stock/units/securities, the noncontrolling/minority interests in equity, and the total debt.
i = 1, ..., EC	Securities in the adjusted portfolio that are of the relevant holding type (eligible) for the PAI in question and have data (covered).
Portfolio Covered	The amount in millions of euros held in covered holdings.
Company Emissions	The amount in tonnes of the relevant emission(s) for which the relevant company is responsible.

Source: Morningstar Sustainalytics

PAI 2: Carbon Footprint

Data point provided is considered an Exact Fit

Closely related to PAI 1 is the PAI 2, which requires investors to disclose the carbon footprint of a portfolio, according to the formula in Annex I, Formula (2) in the Delegated Regulation.

We cover this PAI with the data points described in Exhibit 6.

Exhibit 6: Mapping Morningstar Sustainalytics Data points to PAI 2 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Reported Data (%)*
Carbon - Total Emissions Scope 1&2	Emission Calculations	Exact	Corporate	Ratings+	36%
Carbon - Total Emissions Scope 1,2&3	Emission Calculations	Exact	Corporate	Ratings+	20%

*Coverage data as of September 2022, reported data (%) only considers research entities and excludes coverage entities (companies that are covered via a related entity)
Source: Morningstar Sustainalytics

As above, these data points are reported or estimated and measured in terms of tonnes of CO_2 equivalents. For references about the usage of estimation models in carbon products, refer to the discussion on PAI 1. These data points provide one component of the requested calculation in Formula (2) in the Delegated

Regulation, as the other component (i.e., the weighting coming from invested amounts) is not researched by Morningstar Sustainalytics directly. We regard this data point as an Exact Fit. These data points are aggregated at the portfolio level following the Emission Calculations approach.

PAI 3: GHG Intensity of Investee Companies

Requiring investors to disclose the GHG intensity of a portfolio's components

This PAI requires investors to disclose the calculation of the GHG intensity of a portfolio's components, according to the formula in Annex I, Formula (3) in the Delegated Regulation. We cover this PAI with the data points described in Exhibit 7.

Exhibit 7: Mapping Morningstar Sustainalytics Data Points to PAI 3 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Reported Data (%)*
Carbon Intensity_Scope 1&2_EUR	Average Value	Exact	Corporate	Ratings+	34%
Carbon Intensity_Scope 1,2&3_EUR	Average Value	Exact	Corporate	Ratings+	19%

*Coverage data as of September 2022, reported data (%) only considers research entities and excludes coverage entities (companies that are covered via a related entity). The coverage is lower than the one for reported Scope 1 and 2 emissions due to lack of reported revenue data.

Source: Morningstar Sustainalytics

Considering the full spectrum of GHG emissions

These data points are measured in tonnes of CO_2 equivalents per million of euros of revenue. They cover the full spectrum of GHG emissions and not only carbon. Hence, we consider them as an Exact Fit as well. GHG Intensity figures are aggregated at the portfolio level following the Average Value Calculations approach (see page 18 below).

Electric Utilities, Independent Power Production and Traders, and Construction Materials subindustries among the highest emitters

Exhibit 8 illustrates the distribution of Scope 1 and 2 Carbon Intensity for reporting companies (i.e., excluding estimated data points). In the skewed distribution there are few high-emitters and most companies are concentrated in the central and lower ranges of the distribution. As expected, while not shown in the chart, the highest carbon intensive companies of Scope 1 and 2 emissions are concentrated in a handful of subindustries, such as Electric Utilities (20), Independent Power Production and Traders (17), and Construction Materials (14).

Few Coal (1), Integrated Oil & Gas (3) and Multi-Utilities (5) companies are identified as high emitters, but the subindustries are underrepresented due to the lower disclosure and the fact that Scope 3 emissions are not taken into consideration in this chart.

Distribution skewed to the right

Exhibit 8: Distribution of Scope 1 and 2 Carbon Intensity*
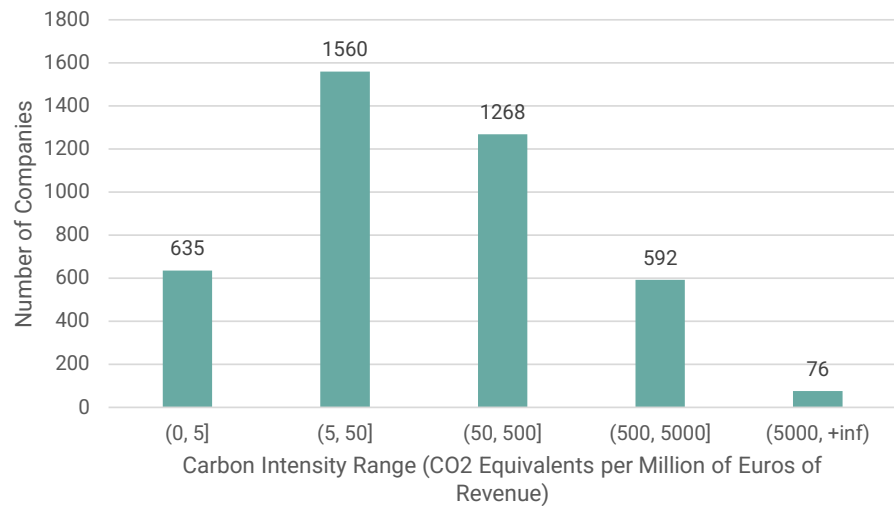
*Data as of September 2022, excluding estimated data while underlying data used for this chart only considers research entities and excludes coverage entities (companies that are covered via a related entity)

Source: Morningstar Sustainalytics

Average Value Calculations Approach

PAIs for which this aggregation approach is used require a calculation of the Average Value of the holdings, which means that only holdings for which the relevant underlying data is available can be used. Excluding the board gender diversity PAI 13 (see page 27), we calculate the weighted Average Value of the holdings according to the following equation:

$$(2) \; AverageValue_R = \frac{\sum_{i=1}^{EC} W_{R,i} * UnderlyingPAIValue_i}{PortfolioCovered_R}$$

A description of the parameters and variables of this equation is explained in Exhibit 9.

Exhibit 9: Average Value Calculations Approach

Variable	Description
Average Value	The weighted average amount (for the PAI in question) of the covered holdings (i.e. holdings where the data is known) in the portfolio.
Underlying PAI Value	The value for the individual holding for the underlying PAI in question.
W_R	Adjusted portfolio weight.

Source: Morningstar Sustainalytics

PAI 4: Exposure to Companies Active in the Fossil Fuel Sector

Data points are considered an Exact Fit

This PAI requires investors to disclose the share of investments in companies active in the fossil fuel sector, defined from Definition (5) as "*companies active in the fossil fuel sector' means companies that derive any revenues from exploration, mining, extraction, production, processing, storage, refining or distribution, including transportation, storage and trade*[15] *of fossil fuels as*

defined in Article 2, point (62), of Regulation (EU) 2018/1999 of the European Parliament and of the Council."[16]

Where article 2, point (62), of Regulation (EU) 2018/1999[17] of the European Parliament and of the Council refers to fossil fuels as *"non-renewable carbon-based energy sources such as solid fuels, natural gas and oil".*

We cover this PAI with the data points listed in Exhibit 10.

Exhibit 10: Mapping Morningstar Sustainalytics Data Points to PAI 4 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Involved in Fossil Fuels	Involvement	Exact	Corporate	Ratings+	PAI Indicators
Fossil Fuel-Revenue Percentage	Involvement	Exact	Corporate	Ratings+	PAI Details
Thermal Coal Extraction-Revenue Percetange	Involvement	Exact	Corporate	Ratings+	PAI Details
Thermal Coal Supporting Products/Services-Revenue Percetange	Involvement	Exact	Corporate	Ratings+	PAI Details
Oil & Gas Production-Revenue Percentage	Involvement	Exact	Corporate	Ratings+	PAI Details

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

All data points provide levels or exact percentages of revenue involvement per area

Where:

- Solid fuels from the definition are covered by the data points related to Thermal Coal Extraction and Supporting Products/Services (including storage and transportation, mining, and coal refining services).
- Natural gas and oil are covered by the Oil & Gas Production data point (including exploration, production, refining, transportation, and storage).

Then, the data point Fossil Fuel-Revenue Percentage sums up the revenue percentage of all the underlying data points. The binary metric Involved in Fossil Fuels gives an indication whether a company is involved in the fossil fuel sector, (i.e., when Fossil Fuel-Revenue Percentage is greater than 0) or not.

All data points provide levels or exact percentages of revenue involvement per area following our **Product Involvement** methodology.[18] As the selection of data points cover the full spectrum of fossil fuel involvements covered by the PAI's definition, we regard them as an Exact Fit. They get aggregated following the Involvement Calculations approach.

Exhibit 11 illustrates the distributions of Oil & Gas and Thermal Coal involvements in the Ratings+ Universe. As shown below, the bulk of companies identified as involved are active in Oil & Gas Production, Thermal Coal Extraction, and Thermal Coal Supporting Products/Services.

Active companies in the fossil fuel sector are involved in the production of oil and gas

Most of the companies that are active in the fossil fuel sector are involved in the production of oil and gas. Interestingly, those companies involved in the production of oil and gas tend to be either pure players (301 companies involved for more than 50% of their revenues) or marginally involved (172 companies involved for less than 5% of their revenues). Compared to the high number of companies involved in the production of oil and gas, there are relatively less

companies that extract thermal coal and/or provide supporting products and services for thermal coal.

Exhibit 11: Oil & Gas and Thermal Coal Involvements by Revenue Range
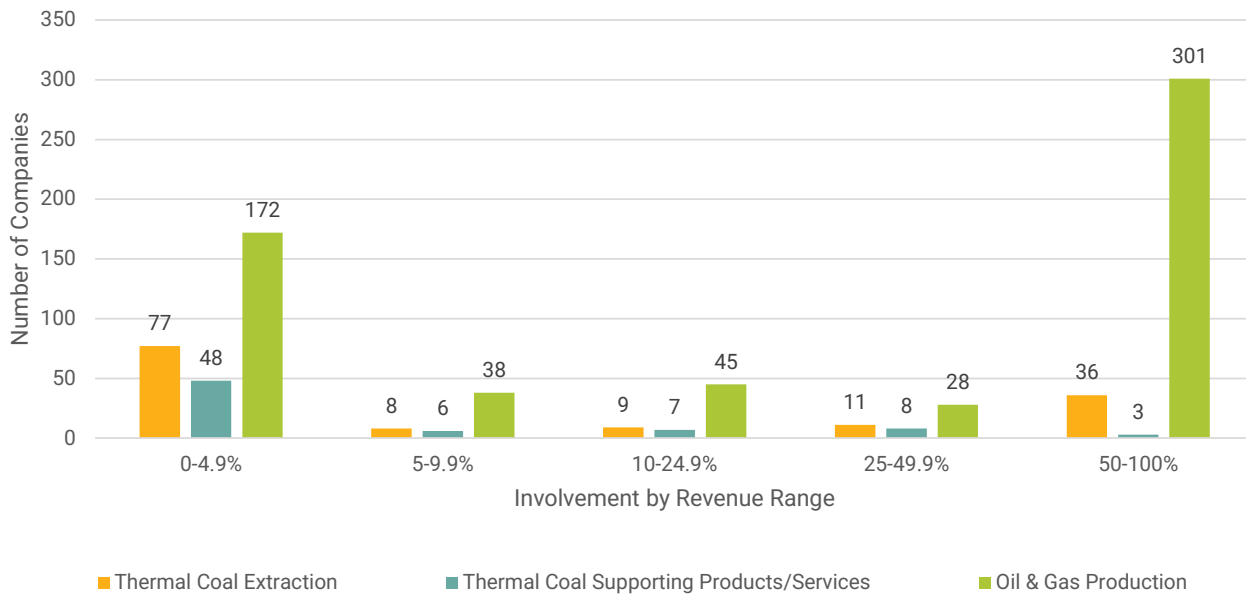
*Data as of September 2022, the underlying data used for this chart only considers research entities and excludes coverage entities (companies that are covered via a related entity)   Source: Morningstar Sustainalytics

Involvement and Policies Calculations Approach

Calculating the share of investments that are exposed to with certain industries or activities

Those PAIs for which this aggregation approach is used require a calculation of the share of investments that are involved with (or exposed to) certain industries or activities. The involved proportion of the portfolio is calculated as a proportion of the holdings that are Eligible and Covered, expressed as a percentage of the total Adjusted Portfolio (i.e., portfolio where long positions got netted against short positions in the same underlying).

'Involved' and 'Not Involved' statistics are calculated according to the following formulas:

$$(3)\ PortfolioInvolved_R = \sum_{i=1}^{CI} W_{R,i}$$

$$(4)\ PortfolioNotInvolved_R = \sum_{i}^{CNI} W_{R,i}$$

Policy calculations describe the proportion of the portfolio with or without policy

A description of the parameters and variables of this equation can be found in Exhibit 12 below.

Policy calculations are identical to the Involvement Calculations but describe the proportions of the portfolio that have or lack the relevant policy or process and

are generally denoted as 'with policy' or 'lacking policy' (see the data point 'Lack of Carbon Emission Reduction Initiatives' in Exhibit 26.2 for an example).

Exhibit 12: Involvement and Policies Calculations Approach

Variable	Description
Portfolio Involved$_R$	The proportion of the adjusted portfolio that is held in securities which are exposed to or involved in the relevant industry/activity.
i = 1, …, CI	Securities in the adjusted portfolio that are exposed to or involved in the relevant industry/activity.
Portfolio Not Involved$_R$	The proportion of the adjusted portfolio that is held in securities which are not exposed to or involved in the relevant industry/activity.
i = 1, …, CNI	Securities in the adjusted portfolio that are not exposed to or involved in the relevant industry/activity. This does not include securities where it is not known if the security is involved or not.

Source: Morningstar Sustainalytics

Data points are considered an Exact Fit

PAI 5: Share of Non-Renewable Energy Consumption and Production

This PAI requires investors to disclose the *share of non-renewable energy consumption and non-renewable energy production of investee companies from non-renewable energy sources compared to renewable energy sources*,[19] expressed as a percentage, with renewable and non-renewable energy sources being specified in definitions (6) and (7) of the Delegated Regulation. We cover this PAI with the data points listed in Exhibit 13.

Exhibit 13: Mapping Morningstar Sustainalytics Data points to PAI 5 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Share of Non-Renewable Energy Production_Percentage	Average Value	Exact	Corporate	Ratings+	PAI Indicators
Share of Non-Renewable Energy Consumption_Percentage	Average Value	Exact	Corporate	Ratings+	PAI Indicators
Non-Renewable Energy Consumption	Average Value	Exact	Corporate	Ratings+	PAI Details
Non-Renewable Energy Production	Average Value	Exact	Corporate	Ratings+	PAI Details
Total Energy Consumption	Average Value	Exact	Corporate	Ratings+	PAI Details
Total Energy Production	Average Value	Exact	Corporate	Ratings+	PAI Details

Coverage data as of September 2022   Source: Morningstar Sustainalytics

Keeping energy consumption separate from energy production

In coherence with the referenced regulation, we consider Non-Renewable Energy to comprise fossil fuels (i.e., non-renewable carbon-based energy, including solid fuels, natural gas and oil) and nuclear. To calculate the reported shares, we either look at percentages as directly reported by companies, or we calculate the shares based on company disclosure on total energy consumption or production and related non-renewable share. No estimates are used for the purpose of these metrics.

Conceptually, we see the production and consumption of energy as separate from each other (also distinguishing between the subindustries to be researched) as opposed to aggregate both in a unique percentage. Hence, we provide two individual metrics for this PAI. We consider the data points as an Exact Fit to the regulatory requirements. They are aggregated to the portfolio level following the Average Value Calculations approach (see page 19).

Data points are considered a Partial Fit

PAI 6: Energy Consumption Intensity per High Impact Climate Sector

This PAI requires the disclosure of the *energy consumption in GWh per million EUR of revenue of investee companies, per high impact climate sector*,[20] where high impact climate sectors are defined following the Statistical Classification of Economic Activities in the European Community (*Nomenclature statistique des Activités économiques dans la Communauté Européenne*, NACE)[21], (sectors A to H and L). We cover this PAI with the data points listed in Exhibit 14.

Exhibit 14: Mapping Morningstar Sustainalytics Data Points to PAI 6 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Energy Consumption Intensity_Agriculture, Forestry & Fishing	Average Value	Partial	Corporate	Ratings+	PAI Indicators
Energy Consumption Intensity_Construction	Average Value	Partial	Corporate	Ratings+	PAI Indicators
Energy Consumption Intensity_Electricity, Gas, Steam & Air Conditioning Supply	Average Value	Partial	Corporate	Ratings+	PAI Indicators
Energy Consumption Intensity_Manufacturing	Average Value	Partial	Corporate	Ratings+	PAI Indicators
Energy Consumption Intensity_Mining & Quarrying	Average Value	Partial	Corporate	Ratings+	PAI Indicators
Energy Consumption Intensity_Real Estate Activities	Average Value	Partial	Corporate	Ratings+	PAI Indicators
Energy Consumption Intensity_Transportation & Storage	Average Value	Partial	Corporate	Ratings+	PAI Indicators
Energy Consumption Intensity_Water Supply, Sewerage, Waste Management & Remediation Activities	Average Value	Partial	Corporate	Ratings+	PAI Indicators
Energy Consumption Intensity_Wholesale & Retail Trade & Repair of Motor Vehicles & Motorcycles	Average Value	Partial	Corporate	Ratings+	PAI Indicators

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Applying the One Company, One Sector rule

The metrics are measured, according to the regulation, in terms of Gigawatt hours (GWh) per million euros of revenue. There is an important assumption underlying this data point, which is the rule One Company, One Sector.

Due to practical limitations in disclosure, it is not possible at the current stage to dissect a company across the full spectrum of NACE's activities and sectors in which it is involved. For this reason, we assume that each company sits in only one sector, obtained via a mapping of its subindustry to NACE sectors. Then, for each company where disclosure allows a calculation, only one of these data points will have a value greater than zero and the others will turn zero.

Considering this limitation, we regard these data points as a Partial Fit only, since the approximation is reasonable but limited when looking at companies that are active across sectors. These data points get aggregated following the Average Value Calculations approach (see page 19).

Data points are considered a Partial Fit

PAI 7: Activities Negatively Affecting Biodiversity-Sensitive Areas

For this PAI, investors need to disclose the "*share of investments in investee companies with sites/operations located in or near to biodiversity sensitive-areas where activities of those investee companies negatively affect those areas*",[22] where:

- "*Activities negatively affecting biodiversity-sensitive areas*" are defined in Definition (18) of Annex I of the Delegated Regulation.
- "*'Biodiversity-sensitive areas' means Natura 2000 network of protected areas, UNESCO World Heritage sites and Key Biodiversity Areas (KBAs), as well as other protected areas, as referred to in Appendix D of Annex II to Commission Delegated Regulation (EU) 2021/2139*".[23]

We cover this PAI with the data points listed in Exhibit 15.

Exhibit 15: Mapping Morningstar Sustainalytics Data Points to PAI 7 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Activities Negatively Affecting Biodiversity Areas	Involvement & Policies	Partial	Corporate	Ratings+	PAI Indicators
Activities Negatively Affecting Biodiversity Areas-Headlines of Incidents	n/a	Partial	Corporate	Ratings+	PAI Details

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Spatially explicit data is provided by our media-analysis based Incidents Research

This data point takes a value of 'True' if a company has operations affecting biodiversity sensitive areas and 'False' otherwise. In addition, we provide a second data point that captures the headlines of a company's relevant incidents that affect biodiversity sensitive areas to provide further context. We assess this metric using our **Incidents Research** and match spatially explicit incidents in the previous three years to sensitive areas as defined by the Natura 2000 network of protected areas,[24] the UNESCO World Heritage Sites[25] as well as other protected areas referred to by the Delegated Regulation.

We consider this approach as a Partial Fit for two reasons:

- The access to the Key Biodiversity Area (KBA)[26] database is not public, hence reducing the possibility to match locations.
- An assessment of operations located in or near to biodiversity sensitive areas would require a spatial perspective which, as of now, is not available due to the lack of asset level databases. Hence, the only spatially explicit data that we use is provided by our Incidents Research.

The mapped data points are aggregated to the portfolio level following the Involvement and Policies Calculations approach (see page 20).

PAIs 8 and 9: Emissions to Water and Hazardous Waste Ratio

Both data points provide an Exact Fit

For PAI 8, Emissions to Water, investors are requested to report on the "*… tonnes of emissions to water generated by investee companies per million EUR invested, expressed as a weighted average, [where] 'emissions to water' means direct emissions of priority substances as defined in Article 2(30) of Directive*

2000/60/EC of the European Parliament and of the Council (6) and direct emissions of nitrates, phosphate and pesticides.[27]

PAI 9, Hazardous Waste and Radioactive Waste Ratio, requires investors to disclose the "*tonnes of hazardous waste and radioactive waste generated by investee companies per million EUR invested, expressed as a weighted average*",[28] where hazardous waste is defined, following Definition (15) in Annex I, following Article 3(2) of Directive 2008/98/EC of the European Parliament and the Council, and radioactive waste is defined, following Definition (16) in Annex I, following Article 3(7) of Council Directive 2011/70/Euratom.

We cover PAI 8 and 9 with the data points listed in Exhibit 16.

Exhibit 16: Mapping Morningstar Sustainalytics Data Points to PAI 8 and 9 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Emissions to Water_Tonnes	Emission Calculations	Exact	Corporate	Ratings+	PAI Indicators
Hazardous Waste Production_Tonnes	Emission Calculations	Exact	Corporate	Ratings+	PAI Indicators

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Emissions to Water: Highly heterogeneous disclosure to be expected

Emissions to Water is measured in tonnes of pollutants. The following pollutants are considered for the purpose of this metric: Direct emissions of nitrates, phosphate, and pesticides, and direct emissions of priority substances as defined in Article 2(30) of Directive 2000/60/EC of the European Parliament and of the Council (e.g., heavy metals, loads of organic pollutant parameters such as biochemical oxygen demand (BOD) and chemical oxygen demand (COD), nitrogen and phosphorus compounds). At first, we expect a highly heterogeneous disclosure with most companies only including a subset of these pollutants in their reporting.

Hazardous Waste: Includes radioactive waste

Hazardous Waste Ratio is measured in tonnes of hazardous waste generated by a company. Following the EU definition, we include both hazardous and radioactive waste as reported by companies.

Based on the above and despite the reporting complexities, we consider both metrics to be an Exact Fit to the definition as provided by the regulation given the correspondence of covered substances. We do not use estimation models to cover these two PAIs.

Both data points are aggregated to the portfolio level following the Share of Emissions Calculations approach (see Exhibit 5, page 16).

Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters

PAI 10: Violations of UN Global Compact (UNGC) Principles and Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises

Data points provide an Exact Fit

This PAI requires investors to disclose the "*share of investments in investee companies that have been involved in violations of the UNGC principles or OECD Guidelines for Multinational Enterprises*".[29]

We assess this PAI with the data points listed in Exhibit 17.1. On top of this, we provide a comprehensive list of additional data points coming from our Events Research. This list is included on Exhibits 17.2 and 17.3 in the Appendix.

Exhibit 17.1: Mapping Morningstar Sustainalytics Data Points to PAI 10 Requirements – Part I

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Breach of UN Global Compact Principles & OECD Guidelines for Multinational Enterprises	Involvement & Policies	Exact	Corporate	Ratings+	PAI Indicators
Details - Global Compact					
Overall Global Compact Compliance Status	n/a	Exact	Corporate	Ratings+	PAI Details
Global Compact Non-Compliant Principle Description	n/a	Exact	Corporate	Ratings+	PAI Details
Global Compact Watchlist Principle Description	n/a	Exact	Corporate	Ratings+	PAI Details

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Using a combination of our Event Indicators and our Global Standard Screening research

In alignment with our **Minimum Safeguards** framework, which we developed in the context of our new **EU Taxonomy Solution**, we assess UN Global Compact Principles and OECD Guidelines using a combination of our Event Indicators[30] and our **Global Standard Screening (GSS)** research.[31]

Since GSS refers to the requirement of the regulation, we use it as primary signal with Events used as supporting signals. Companies for which we arrived at a **Breach** conclusion under the data point "Breach of UN Global Compact Principles & OECD Guidelines for Multinational Enterprises", i.e., companies in violation of UN Global Compact Principles (GSS status Non-Compliant), get calculated under this PAI. The terminology 'Breach' does not mean that the company is claimed to breach, e.g., EU law but a non-binding norm that is assessed in GSS. Conversely, companies obtaining a **Watch** conclusion (i.e., being either flagged as **Watchlist** under GSS or as Category 4 or 5 under Events) are regarded to be closely monitored but not yet in violation of the principles relevant for the regulation. Last, if a company has a GSS status of Compliant and is not involved in a Category 4 or 5 Event as defined in Exhibits 17.2 and 17.3 in the Appendix, then the company is flagged as 'No Breach'. Given the scope of the principles and standards covered, we consider this data point as an Exact Fit.

These data points are aggregated at the portfolio level following the Involvement and Policies Calculations approach (see page 20), where a 'Breach' value is equivalent to 'Involved' and 'Watch' or 'No Breach' conclusions are considered as 'Not Involved'.

PAI 11: Lack of Processes and Compliance Mechanisms to Monitor Compliance with UNGC Principles and OECD Guidelines for Multinational Enterprises

Under this PAI, investors shall disclose their investments in companies that (1) lack *"policies to monitor compliance with the UNGC principles or OECD Guidelines for Multinational Enterprises"* or (2) lack *"grievance/complaints handling mechanisms to address violations of the UNGC principles or OECD Guidelines for Multinational Enterprises"*.

We cover this PAI with the data points listed in Exhibit 18.

Exhibit 18: Mapping Morningstar Sustainalytics Data Points to PAI 11 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies*	Data Services Report Name
Lack of Processes & Compliance Mechanisms to Monitor Compliance with UN Global Compact Principles & OECD Guidelines for MNEs	Involvement & Policies	Exact	Corporate	Ratings***	PAI Indicators
Lack of Policies to Monitor Compliance with UN Global Compact Principles & OECD Guidelines for Multinational Enterprises	n/a	Exact	Corporate	Ratings***	PAI Details
E.1.1 Environmental Policy-Raw Score	n/a	Exact	Corporate	Ratings+	PAI Details
S.1.4 Collective Bargaining Agreements-Raw Score	n/a	Exact	Corporate	Ratings+	PAI Details
S.4.2.1.2 Human Rights Programme-Raw Score	n/a	Exact	Corporate	Ratings	PAI Details
S.1.1 Freedom of Association Policy-Raw Score	n/a	Exact	Corporate	Ratings+	PAI Details
S.2.1 Scope of Social Supplier Standards-Raw Score	n/a	Exact	Corporate	Ratings+	PAI Details
G.1.1 Bribery & Corruption Policy-Raw Score	n/a	Exact	Corporate	Ratings+	PAI Details
S.1.2 Discrimination Policy-Raw Score	n/a	Exact	Corporate	Ratings	n/a**
Employee-related matters covered	n/a	Exact	Corporate	Ratings	n/a**
Human rights issues covered	n/a	Exact	Corporate	Ratings	n/a**
Ethical matters covered	n/a	Exact	Corporate	Ratings	n/a**
Environmental matters covered	n/a	Exact	Corporate	Ratings	n/a**

* Coverage data as of September 2022 **Data field not included in the PAI Details report but used in the calculation ***Since the calculation follows a nullable 'and' rule, the coverage for the aggregated conclusion is smaller than the smallest coverage of components   Source: Morningstar Sustainalytics

We address the first part of the PAI's requirement by providing data points that refer the lack of relevant policies. The existence/non-existence of these policies is reflected in the scores of our Management Indicators that are listed in Exhibit 18 (rows 3 to 9). Management Indicators are primarily used in our ESG Risk Ratings product. We focus on low Outcome Scores to identify those companies that do not satisfy credible policy standards in all those areas that refer to UNGC principles or the OECD Guidelines. This indicator is aggregated using an 'AND' condition, implying that a company needs to have all policies to qualify.

The second part of this PAI is addressed via the last four data points in Exhibit 18 assessing the outcome criteria of the Management Indicator G.1.2.2 'Grievance and Complaints Handling Mechanism'. The four outcome criteria check on a binary basis whether a company's grievance/complaints handling mechanism covers all relevant dimensions as defined by the UNGC principles and OECD Guidelines. The aggregation across the four data points uses again the 'AND' condition, which requires a company's grievance/complaints handling mechanism to be complete.

For companies without relevant policies to monitor compliance or a grievance/complaints handling mechanism in place, the first data point in Exhibit 18 adopts a value of 'True', in coherence with the rules for policy and programme indicators described above (see page 8). We consider this data point as an Exact Fit as we cover this PAI in terms of both policies and grievance/complaints handling mechanisms. These data points are aggregated at the portfolio level following the Involvement and Policies Calculations approach (see Exhibit 12, page 21).

PAI 12: Unadjusted Gender Pay Gap

Measuring the difference in hourly earnings between male and female employees

The PAI defines unadjusted gender pay gap as the "*difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees*".[32]

We cover this PAI with the data point listed in Exhibit 19.

Exhibit 19: Mapping Morningstar Sustainalytics Data Points to PAI 12 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Unadjusted Gender Pay Gap_Percentage of Male Employees Gross Hourly Earnings	Average Value	Exact	Corporate	Ratings+	PAI Indicators

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Data point is considered an Exact Fit

This metric follows the regulatory definition provided above and thus, we consider our data point as an Exact Fit. To abide with the definition as set up by the EU Commission, we leverage 'as reported' data only for this metric. The EU's definition differs from other standards in the market, which implies clear limitations regarding data availability. Data point values can theoretically range from -100 to +100%.

This metric is aggregated to the portfolio level following the Average Value Calculations approach.

PAI 13: Board Gender Diversity

Ratio of female to male board members in investee companies

Under this PAI, investors need to report the average ratio of female to male board members in investee companies, where the board is considered the "*administrative, management or supervisory body of a company*",[33] as reflected in Definition (24) in the Delegated Regulation.

We assess these requirements using the data point listed in Exhibit 20.

Exhibit 20: Mapping Morningstar Sustainalytics Data Points to PAI 13 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Board Gender Diversity	Average Value	Exact	Corporate	Ratings+	PAI Indicators
Number of Men on Board	Average Value	Exact	Corporate	Ratings+	PAI Details
Number of Women on Board	Average Value	Exact	Corporate	Ratings+	PAI Details

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Data point is considered an Exact Fit

This metric can take on values ranging from 0% to 100%. Like the Gender Pay Gap metric, this data point is also collected directly from company reports only

and is not estimated by Morningstar Sustainalytics. Also, no further adjustments are made to the metric values. They are provided 'as reported' raw data points, i.e., individual members of a company's board.

Given the correspondence of the data point and the definition provided by the regulator, we consider this metric as an Exact Fit.

These data points are aggregated to the portfolio level following the Average Value Calculations approach.

AVERAGE VALUE CALCULATIONS FOR BOARD GENDER DIVERSITY

Calculating the harmonic average of the number of females on the board

For the Board Gender Diversity PAI, the regulation asks for the "average ratio of female to male board members […] expressed as a percentage of all board members." If a company has no male board members that ratio could not be calculated. Hence, slightly deviating from the regulator's definition, we calculate the harmonic average of the number of females on the board by taking the weighted average number of females for the portfolio divided by the weighted average total number of board members. This approach reduces the effect of outliers on the average, and thus it does not need to be rescaled by the percentage covered.

$$(5)\ AverageValue\%Female_R = \frac{\sum_{i=1}^{EC} W_{R,i} * number\ of\ females\ on\ the\ board_i}{\sum_{i=1}^{EC} W_{R,i} * total\ number\ of\ board\ members_i}$$

A description of the parameters and variables of this equation is illustrated in Exhibit 21.

Exhibit 21: Average Value Calculations Specified for Board Gender Diversity

Variable	Description
Average Value % Female R	The harmonic average of the percentage of females on the baord for the portfolio.
Number of females on the board	The number of people who identify as female on the board for the individual holding.
Total number of board members	The total number of board members for the individual holding.

Source: Morningstar Sustainalytics

PAI 14: Exposure to Controversial Weapons: Antipersonnel Mines, Cluster Munitions, Chemical Weapons and Biological Weapons

Manufacturing or selling of controversial weapons

For this PAI, investors are requested to disclose their share of investments in companies that are involved in the manufacturing or selling of controversial weapons: Antipersonnel mines, cluster munitions, chemical weapons and biological weapons.[34]

We cover this PAI with the data points listed in Exhibit 22 below.

Exhibit 22: Mapping of Morningstar Sustainalytics Data Points to PAI 14 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Controversial Weapons (SFDR Definition)-Evidence of Activity	Involvement & Policies	Exact	Corporate	Ratings+	PAI Indicators
Controversial Weapons-Evidence of Activity	Involvement & Policies	Partial	Corporate	Ratings+	PAI Indicators
Controversial Weapons-Type of Weapon	n/a	Partial	Corporate	Ratings+	PAI Details
Anti-Personnel Mines-Category of Involvement Id	n/a	Exact	Corporate	Ratings+	PAI Details
Biological and Chemical Weapons-Category of Involvement Id	n/a	Exact	Corporate	Ratings+	PAI Details
Cluster Weapons-Category of Involvement Id	n/a	Exact	Corporate	Ratings+	PAI Details
Anti-Personnel Mines-Ownership Relationship	n/a	Exact	Corporate	Ratings+	PAI Details
Biological and Chemical Weapons-Ownership Relationship	n/a	Exact	Corporate	Ratings+	PAI Details
Cluster Weapons-Ownership Relationship	n/a	Exact	Corporate	Ratings+	PAI Details
Depleted Uranium-Category of Involvement Id	n/a	Partial	Corporate	Ratings+	PAI Details
Nuclear Weapons-Category of Involvement Id	n/a	Partial	Corporate	Ratings+	PAI Details
White Phosphorus-Category of Involvement Id	n/a	Partial	Corporate	Ratings+	PAI Details

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Offering additional data points to provide a more exhaustive scope of controversial weapons

We follow the definition of controversial weapons from the Delegated Regulation and capture a company's involvement in anti-personnel mines, biological or chemical weapons, and/or cluster weapons in the binary metric 'Controversial Weapons (SFDR Definition)-Evidence of Activity'. In addition, for the 'Yes/No' involvement at the company level, we do not consider a company to be involved if only its parent company is involved, but the company itself is not.

Moreover, we provide additional data points beyond the definition provided by the regulator (e.g., categories of involvements for white phosphorus, nuclear weapons, and depleted uranium) with the aim to offer a more exhaustive scope of controversial weapons covered by Morningstar Sustainalytics.

The values provided by the 'Category of Involvement Id' data points leverage the following naming conventions:

▪ To identify the type of weapon, the following acronyms are used: Antipersonnel Mines (AP), Biological and Chemical Weapons (BC), Cluster Weapons (CM), Nuclear Weapons (NW), Depleted Uranium (DU) and White Phosphorus (WP).

▪ Since a company can be involved in different ways, either directly or indirectly through a parent/subsidiary, Morningstar Sustainalytics also distinguishes between key involvement (i.e., with components and services that are considered essential for the lethal use of the weapon or weapon system), and dedicated involvement (i.e., with components or service that are considered tailor-made for the weapon or weapon system).

Four categories of involvement

Categories of involvement are defined as follows:

▪ **Key and dedicated:** The company is involved in the core weapon system, or components/services of the core weapon system that are considered tailor-made and essential for the lethal use of the weapon.

- **Key and non-dedicated or non-key and dedicated:** The company provides components/services for the core weapon system, which are either considered not tailor-made or not essential for the lethal use of the weapon.
- **Ownership in key and dedicated:** The company is involved, through corporate ownership, in the core weapon system, or components/services of the core weapon system that are considered tailor-made and essential for the lethal use of the weapon.
- **Ownership in key and non-dedicated or non-key and dedicated:** The company provides, through corporate ownership, components/services for the core weapon system, which are either considered not tailor-made or not essential for the lethal use of the weapon.

Data points are considered an Exact Fit

For a full explanation of acronyms and methodologies of the controversial weapons dataset, refer to the dedicated methodology document.[35] Given the correspondence between the mapped data point and the PAI definition, we consider this case as an Exact Fit.

The PAI 14 related data points are aggregated to the portfolio level following the Involvement and Policies Calculations approach.

Sovereigns

PAI 15: GHG Intensity

Covering the full spectrum of GHG emissions

This PAI requires investors to disclose the GHG emissions of invested countries. As in the case of corporates, GHG Intensity is not limited to carbon only, but spans the full GHG spectrum. We cover this PAI with the data point listed in Exhibit 23.

Exhibit 23: Mapping of Morningstar Sustainalytics Data Points to PAI 15 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Carbon Emissions Intensity	Average Value	Partial	Sovereign	World	PAI Indicators

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Data point is considered a Partial Fit only

This metric is measured as the level of carbon emissions (measured in kilo tons, Kton) per unit of GDP (in millions of euro, M€). Data for the GDP of invested countries is obtained from the World Bank and converted into euros, while carbon emissions are sourced from EDGAR.[36] Intensities are then computed as a simple ratio between emissions and GDP for the latest year available according to the formula below:

$$(6)\ Intensity\ =\ \frac{Carbon\ emissions\ (Kton)}{GDP\ (M\ EUR)}$$

We see this PAI as a Partial Fit as the scope is limited to carbon rather than the full GHG spectrum.

These data points are aggregated to the portfolio level following the Average Value Calculations approach.

PAI 16: Social Violations

For this PAI, investors are required to disclose the "*number of investee countries subject to social violations (absolute number and relative number divided by all investee countries), as referred to in international treaties and conventions, United Nations principles and, where applicable, national law*".[37]

As the references provided by the regulation are very general in nature, we interpret them to include the following items, in accordance with the Event Indicators we use within our Country Risk Rating:

- Civil Conflict
- State Repression
- Transnational Conflict
- Violent Crime
- Labour Rights related events
- Discrimination

We cover this PAI with the data points listed in Exhibit 24.

Exhibit 24: Mapping of Morningstar Sustainalytics Data Points to PAI 16 Requirements

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Any Country Social Violations	Social Violation	Exact	Sovereign	World	PAI Indicators
Event - Civil Conflict-Answer Category	Social Violation	Exact	Sovereign	World	PAI Details
Event - Civil Conflict-Answer Category Justification	Social Violation	Exact	Sovereign	World	PAI Details
Event - State Repression-Answer Category	Social Violation	Exact	Sovereign	World	PAI Details
Event - State Repression-Answer Category Justification	Social Violation	Exact	Sovereign	World	PAI Details
Event - Transnational Conflict-Answer Category	Social Violation	Exact	Sovereign	World	PAI Details
Event - Transnational Conflict-Answer Category Justification	Social Violation	Exact	Sovereign	World	PAI Details
Event - Violent Crime-Answer Category	Social Violation	Exact	Sovereign	World	PAI Details
Event - Violent Crime-Answer Category Justification	Social Violation	Exact	Sovereign	World	PAI Details
Event - Labour Rights-Answer Category	Social Violation	Exact	Sovereign	World	PAI Details
Event - Labour Rights-Answer Category Justification	Social Violation	Exact	Sovereign	World	PAI Details
Event - Discrimination-Answer Category	Social Violation	Exact	Sovereign	World	PAI Details
Event - Discrimination-Answer Category Justification	Social Violation	Exact	Sovereign	World	PAI Details

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

The media-analysis based country Events that Morningstar Sustainalytics captures represent controversial cases in which a country is involved in that are interpreted to potentially affect the prosperity and economic development of a country and its ability to manage its wealth in an effective and sustainable manner.

To arrive at an Event score, relevant news that are expected to have material negative implications for the **Human Capital** component of a **Country's Wealth**, are screened and then processed as Incidents.[38] The potential impacts of an Incident are summarized in a **Severity Score**, which measures the Depth (the

degree of impact), Breadth (how widespread the impact is), and Duration (what the duration is likely to be) of an Incident.

For more details, see the respective Country Risk Rating methodology document.[39]

Event Categories range from 1 (low impact) to 5 (severe impact)

Events assessments are based on one or multiple incidents and their assessments. At the Event level, the overall impact on stakeholders and the environment gets assessed based on the Incidents' Severity Scores as well as the risk to a country's Human Capital, which is one of the three Capitals we evaluate for each country. Finally, we add an assessment of the government's response to an incident or chain of incidents to arrive at an (Event) Outcome Category (also called Answer Category) ranging from 1 (low impact) to 5 (severe impact). The Outcome Category Justification—also called Answer Category Justification—field provides for each Event a descriptive summary of the Event as such and our assessment.

Data points are considered an Exact Fit

In alignment with corporate PAIs, we consider only the most relevant Events (category 4 and 5) to constitute Social Violations in the spirit of the regulation, so that only these ones get reflected in the above listed data points we have mapped to PAI 16. We consider the data points provided by us as an Exact Fit to this PAI's requirements.

These data points are aggregated to the portfolio level following the Social Violation Calculations approach.

SOCIAL VIOLATION CALCULATIONS APPROACH

Investments are not reflected in the metrics provided

Our metrics represent the number of countries the portfolio is invested in—as an absolute number and as a percentage of the total number of countries it is invested in—that are subject to social violations.

The amount invested in a country is not reflected in our calculations. The following four metrics are provided:

$$(7) \ CountriesViolation_R = \sum_{i=1}^{SV} C_{R,i}$$

$$(8) \ CountriesNoViolation_R = \sum_{i=1}^{NV} C_{R,i}$$

$$(9) \ \%CountriesViolation_R = \frac{CountriesViolation_R}{CountriesViolation_R + CountriesNoViolation_R}$$

$$(10) \ \%CountriesNoViolation_R$$
$$= \frac{CountriesNoViolation_R}{CountriesViolation_R + CountriesNoViolation_R}$$

For a description of the parameters and/or variables of these formulas see Exhibit 25 below.

Exhibit 25: Social Violation Calculations

Variable	Description
Countries Violation R	The absolute number of countries the portfolio invests in that are subject to social violations.
CR	The unique countries the portfolio invests in via sovereign or some types of agency bond.
i = 1, …, SV	Countries invested in that are subject to social violations.
Countries No Violation R	The absolute number of countries the portfolio invests in that are not subject to social violations.
i = 1, …, NV	Countries invested in that are not subject to social violations.
% Countries Violation	The percentage of countries the portfolio invests in that are subject to social violations.
% Countries No Violation	The percentage of countries the portfolio invests in that are not subject to social violations.

Source: Morningstar Sustainalytics

Mapping voluntary requirements on top of the mandatory disclosure

We have now arrived at the end of the mandatory disclosure (Table 1) section. In the following, we are summarizing how we have mapped our data points to Table 2 (Exhibit 27) and Table 3 (Exhibit 28) requirements in a summary table format. Further details can also be found in the mapping file that we provide to our clients as a part of the standard data deliverable. Note again that from these two lists with voluntary PAIs two need to be picked by investors and reported.

Appendix

Additional Climate and Other Environment-Related Indicators (Table 2)

Exhibit 26.1: Additional Climate and Other Environment-Related Indicators (Table 2)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 1	Emissions of Inorganic Pollutants_Tonnes	Tonnes	Emission Calculations	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Definition (27)	This datapoint corresponds to the definition as stated in the Regulation and is an Exact Fit.
PAI 2	Emissions of Air Pollutants - Total_Tonnes	Tonnes	Emission Calculations	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Definition (28)	This datapoint is computed as the sum of ammonia (NH3), fine particulate matter (PM2.5), heavy metals, non-methane volatile organic compounds (NMVOC), NOx, and SOx emissions,. This is an Exact Fit as it comprises all air pollutants as defined by the Regulation. We expected limited reporting on all six air pollutants by companies and thus, provide additionally a Partial Fit that only covers NOx and SOx emissions.
	Emissions of Air Pollutants - NOx & SOx_Tonnes	Tonnes	Emission Calculations	Partial	Corporate	Ratings+	PAI Indicators	DR, Annex I, Definition (28)	This datafield is computed as sum of NOx and SOx emissions, which is a Partial Fit but has a larger coverage with non-missing values as the Exact Fit.
	Ammonia Emissions_Tonnes	Tonnes	Emission Calculations	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Definition (28)	
	Fine Particulate Matter Emissions_Tonnes	Tonnes	Emission Calculations	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Definition (28)	
	Heavy Metals Emissions_Tonnes	Tonnes	Emission Calculations	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Definition (28)	
	Non-Methane Volatile Organic Compounds	Tonnes	Emission Calculations	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Definition (28)	
	NOx Emissions_Tonnes	Tonnes	Emission Calculations	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Definition (28)	
	SOx Emissions_Tonnes	Tonnes	Emission Calculations	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Definition (28)	
PAI 3	Emissions of Ozone Depletion Substances_Tonnes	Tonnes	Emission Calculations	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Definition (29)	This datapoint corresponds to the definition as stated in the Regulation and is an Exact Fit.

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 26.2: Additional Climate and Other Environment-Related Indicators (Table 2)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 4	E.1.7.0 GHG Reduction Programme - Raw Score	0-100 Score	Involvement & Policies	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 2, Metric 4	This indicator looks at GHG reduction programmes in general where the outcome criterion "Net Zero and Paris Alignment" checks whether the company has a net zero or science-based temperature aligned GHG emissions reduction target to be achieved no later than 2050.
	Lack of Carbon Emission Reduction Initiatives	Binary	Involvement & Policies	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 4	A value of True represents a lack of carbon emission reduction initiatives aligned with the Paris Agreement. This datapoint uses the outcome criterion "Net Zero and Paris Alignment" from the management indicator E.1.7.0 GHG Reduction Programme. As this outcome criterion checks whether a company's emission target is aligned with the Paris Agreement, it is an Exact Fit.
PAI 5	Share of Non-Renewable Energy Consumption from Coal_Percentage	Percentage of Total Energy Consumption	Average Value	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 5	With this set of datapoints we cover companies' energy consumption from non-renewable energy sources as defined in DR, Annex I, Definition (7) and hence it is an Exact Fit.
	Share of Non-Renewable Energy Consumption from Natural Gas_Percentage	Percentage of Total Energy Consumption	Average Value	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 5	
	Share of Non-Renewable Energy Consumption from Nuclear_Percentage	Percentage of Total Energy Consumption	Average Value	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 5	
	Share of Non-Renewable Energy Consumption from Oil_Percentage	Percentage of Total Energy Consumption	Average Value	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 5	
	Total Energy Consumption from Coal	GWh	n/a	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 2, Metric 5	
	Total Energy Consumption from Natural Gas	GWh	n/a	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 2, Metric 5	
	Total Energy Consumption from Nuclear	GWh	n/a	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 2, Metric 5	
	Total Energy Consumption from Oil	GWh	n/a	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 2, Metric 5	
	Total Energy Consumption	GWh	n/a	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 2, Metric 5	

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 26.3: Additional Climate and Other Environment-Related Indicators (Table 2)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 6	Water Consumption Intensity	Cubic Meters / EUR million	Average Value	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 2, Metric 6	This datapoints expresses a company's water consumption in cubic meters per million EUR revenue. This definition corresponds to the definition of the Regulation and hence is an Exact Fit.
	Water Consumption	Cubic Meters	n/a	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 2, Metric 6	
	Water Recycling & Reuse_Percentage of Water Withdrawal	Percentage of Water Withdrawal	Average Value	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 6	This datapoint measures the percentage of water recycled and reused of the total quantity of water withdrawn by a company. We regard this datapoint as an Exact Fit to the Regulation's requirement which does not explicitly say what "percentage of water recycled and reused" refers to.
	Water Recycling & Reuse_Cubic Meters	Cubic Meters	n/a	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 2, Metric 6	
	Water Whitdrawal	Cubic Meters	n/a	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 2, Metric 6	
PAI 7	E.1.3.4 Water Management Programmes - Raw Score	0-100 Score	Involvement & Policies	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 2, Metric 7	A value of 0 represents the lack of water management policies. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an Exact Fit.
	Lack of Water Management Policies	Binary	Involvement & Policies	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 7	A value of 'True' represents the lack of water management policies. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an with Exact Fit.
PAI 8	EA.G.5 Regional Water Stress - Beta Signal Comprehensive	Numeric	n/a	Minimum	Corporate	Ratings+	PAI Details	DR, Annex I, Table 2, Metric 8	This beta indicator's methodology is based on country level data combined with segment information. Given the lack and limited quality of asset level data, there is a misalignment between the regulatory definition and the mapped datapoints, leading to a Minimum Fit.
	EA.G.5.1 Regional Water Stress - Beta Signal Core	Numeric	n/a	Minimum	Corporate	Ratings+	PAI Details	DR, Annex I, Table 2, Metric 8	

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 26.4: Additional Climate and Other Environment-Related Indicators (Table 2)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 9	Pesticides Production Involvement	Binary	Involvement & Policies	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 2, Metric 9	The focus of these indicators is pesticides with limited coverage of the other agrochemicals not elsewhere identified according to the NACE classification. As a residual class, we consider these datapoints as an Exact Fit.
	Pesticides Production - Level of Involvement	Percentage of Revenue	Involvement & Policies	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 2, Metric 9	
	Pesticides Significant ownership (production) - Category of Involvement	NULL|PE2	Involvement & Policies	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 2, Metric 9	
PAI 10	Activities Causing Land Degradation, Desertification or Soil Sealing	Binary	Involvement & Policies	Partial	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 2, Metric 10	This datapoint takes a value of 'True' if a company's activities cause land degradation, desertification or soil sealing, and 'False' otherwise. We assess this metric using our Incidents Research by considering relevant incidents related to land degradation, desertification or soil sealing in the previous three years. This approach does not give us a complete overview of a company's activities and thus, we consider this datapoint as a Partial Fit.
PAI 11	E.2.1.3 Sustainable Agriculture Programmes - Raw Score	0-100 Score	n/a	Minimum	Corporate	455	PAI Details	DR, Annex I, Table 2, Metric 11	The datapoint does not cover the full spectrum of land/agricultural practices that could be interpreted to be relevant for the regulation but only a subset and with a specific focus on agriculture, leading to a Minimum Fit.
PAI 12	Lack of Sustainable Oceans/Seas Practices or Policies	Binary	Involvement & Policies	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 12	A value of 'True' represents the lack of sustainable oceans/seas practices or policies. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an with Exact Fit.
	E.1.2.11 Sustainable Oceans or Seas Programmes-Raw Score	0-100 Score	Involvement & Policies	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 2, Metric 12	A value of 0 represents the lack of sustainable oceans/seas practices or policies. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an Exact Fit.

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 26.5: Additional Climate and Other Environment-Related Indicators (Table 2)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 13	Non-Recycled Waste Generation_Tonnes	Tonnes	Emission Calculations	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 2, Metric 13; Article 3(17) of Directive 2008/98/EC	This datapoint assesses the total value of direct non-recycled waste, produced/ generated by sources that are owned and controlled by the entity, as reported by companies. We define non-recycled waste as any waste that cannot be reprocessed into products, materials, or substances whether for the original or other purposes consistently with the referenced regulation.
PAI 14	Operations Affecting Threatened Species	Binary	Involvement & Policies	Partial	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 2, Metric 14; Definition (20)	This datapoint takes a value of 'True' if a company's operations affect threatened species, and 'False' otherwise. We assess this metric using our Incidents Research by considering relevant incidents related to threatened species in the previous three years. This approach does not give us a complete overview of a company's operations but fully reflects the definition of threatened species given by the regulation and thus, we consider this datapoint as a Partial Fit.
	Lack of Biodiversity Protection Policy	Binary	Involvement & Policies	Partial	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 14; Definitions (10) and (11)	A value of 'True' represents the lack of biodiversity protection policy. We leverage research from the management indicator E.1.2.1 Biodiversity Programmes. That is, we consider whether a company has a formal policy to either avoid operating in areas with the highest biodiversity value, commit to "no net loss" or having "net positive impact" on biodiversity, or minimise impact on biodiversity or to consider biodiversity in planning. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an Partial Fit as we do not account for protected areas.

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 26.6: Additional Climate and Other Environment-Related Indicators (Table 2)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 15	Lack of Deforestation Policy	Binary	Involvement & Policies	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 15; Definition (21)	A value of 'True' represents the lack of deforestation policy. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an Exact Fit.
	E.1.2.9 Deforestation Policy - Raw Score	0-100 Score	Involvement & Policies	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 2, Metric 15; Definition (21)	A value of 0 represents the lack of deforestation policy. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an Exact Fit.
PAI 19	Energy Consumption Intensity - Real Estate	Numeric	n/a	Exact	Real Estate	Ratings	PAI Indicators	DR, Annex I, Table 2, Metric 19	This datapoint assesses the amount of energy consumed by a company's real estate portfolio and is expressed in GWh per square meter. Based on this definition, we regard this PAI as an Exact Fit.

*Coverage data as of September 2022 **Note that PAIs 16, 17, 18 are not covered   Source: Morningstar Sustainalytics

Additional Indicators for Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters (Table 3)

Exhibit 27.1: Additional Indicators for Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters (Table 3)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 1	Lack of Workplace Accident Prevention Policy	Binary	Involvement & Policies	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 3, Metric 1	This datapoint uses an outcome criterion from the management indicator S.1.6.2.1 'Health & Safety Management System'. This outcome criterion assesses whether a company has a formal health and safety (H&S) policy. This policy includes a written commitment to provide a safe working environment, prevent injuries and illnesses, identify and manage H&S hazards and/or implement an H&S management system. If a company has such a formal H&S policy, then the binary flag signals a value of 'True'. Given the scope of formal H&S policy assessment, we see this datapoint as an Exact Fit.
PAI 2	Recordable Work-Related Injuries Rate	Cases/Yearly Hours	Average Value	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 2	This metric assesses the rate of all recordable work-related injuries suffered by employees and contractors, including any of the following: Fatality, i.e. accidental death on the job; Lost time injury (LTI), i.e. workplace injury leaving an employee unfit for and absent from work; Restricted work case (RWC), i.e. a workplace injury resulting in an employee being given an alternative job assignment; Medical treatment cases. The rate is calculated as the number of work-related incidents/ cases/ injuries multiplied by 200'000, then divided by the total number of hours worked in a year. The multiplier base represents the number of hours worked by 100 FTEs in a year, hence implicitly computed for 100 workers. If the rate is reported on a different base, we use a conversion formula to bring it to a common base. We consider this metric as an Exact Fit for this PAI.

* Coverage data as of September 2022

Source: Morningstar Sustainalytics

Exhibit 27.2: Additional Indicators for Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters (Table 3)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 3	Contractor Lost Days Due to Injuries, Accidents, Fatalities or Illness	Days Lost	Average Value	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 3	We measure the days lost as the total number of working days lost within a workplace due to recordable injury or illness suffered by contractors, employees, or contractors and employees combined. For this purpose, a recordable injury/illness is any work-related fatality; injury or illness that results in loss of consciousness, days away from work, restricted work, or transfer to another job; injury or illness requiring medical treatment beyond first aid; diagnosed case of cancer, chronic irreversible diseases, fractured or cracked bones. The metric is measured as number of working days following an injury or illness during which the employee was unable to perform routine functions. We see these metrics as covering the PAI with an Exact Fit.
	Employee & Contractor Lost Days Due to Injuries, Accidents, Fatalities or Illness	Days Lost	Average Value	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 3	
	Employee Lost Days Due to Injuries, Accidents, Fatalities or Illness	Days Lost	Average Value	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 3	
PAI 4	S.2.1 Scope of Social Supplier Standards - Raw Score	Score 0-100	Involvement & Policies	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 4	A value of 0 represents the lack of a supplier code of conduct. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an Exact Fit.
	Lack of Supplier Code of Conduct	Binary	Involvement & Policies	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 4	A value of True represents the lack of a supplier code of conduct. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an Exact Fit.
PAI 5	Lack of Grievance/Complaints Handling Mechanisms Related to Employee Matters	Binary	Involvement & Policies	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 3, Metric 5	This datapoint uses an outcome criterion from the management indicator G.1.2.2 'Grievance and Complaints Handling Mechanism'. This outcome criteiron assesses whether a company's grievance/complaints handling mechanism allows to report on employee matters such as labour right violations or complaints on working conditions. If a company's mechanism has such a feature, then the binary flag signals a value of 'True'. Given the scope of the outcome criterion, we see this datapoint as an Exact Fit.

* Coverage data as of September 2022

Source: Morningstar Sustainalytics

Exhibit 27.3: Additional Indicators for Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters (Table 3)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 6	G.1.2 Whistleblower Programmes - Raw Score	Score 0-100	Involvement & Policies	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 6	A value of 0 represents the lack of whistleblower protection. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an Exact Fit.
	Lack of Whistleblower Protection	Binary	Involvement & Policies	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 6	A value of True represents the lack of whistleblower protection. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as an Exact Fit.
PAI 7	Number of Incidents of Discrimination	Numerical	Average Value	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 7	This datapoint speaks to the number of discrimination-related incidents associated with a company towards both employees and customers (in a given calendar year). Discrimination can be on the basis of age, gender, race and ethnicity, disability, sexual orientation, caste, religion, nationality or social origin. We use incidents to assess this PAI, thus this datapoint is an aggregation of specific incidents in the area of discrimination. For this reason, we consider this PAI as an Exact Fit.
	Number of Incidents of Discrimination Leading to Sanctions	Numerical	Average Value	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 7	This datapoint speaks to the number of discrimination-related incidents associated with a company towards both employees and customers that lead to sanctions or fines (in a given calendar year). We use incidents to assess this PAI, thus this datapoint is an aggregation of specific incidents in the area of discrimination with the additional constraint that relevant incidents lead to sanctions. For this reason, we consider this PAI as an Exact Fit.
PAI 8	Excessive CEO Pay Ratio	Numerical	Average Value	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 8	This metrics is measured as a ratio starting from 0 and open-ended. It is only derived from companies' reports and not computed by Sustainalytics to comply with the EU's definition. For this reason, we expect a limited availability of data due to disclosure differences and constraints, especially in the early years of reporting. As a result, we see this PAI as an Exact Fit.

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 27.4: Additional Indicators for Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters (Table 3)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 9	S.4.2.1 Human Rights Policy - Raw Score	Score 0-100	Involvement & Policies	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 9	A value of 0 represents the lack of a human rights policy. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as covered with Exact Fit.
	Lack of Human Rights Policy	Binary	Involvement & Policies	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 9	A value of 'True' represents the lack of a human rights policy. Given the correspondence between the datapoint and the definition as interpreted from the regulator, we regard this PAI as covered with Exact Fit.
PAI 10	S.4.2.1.2 Human Rights Programme - Raw Score	Score 0-100	Involvement & Policies	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 3, Metric 10	A value of 0 represents the lack of a human rights due diligence. We identify the diligence process defined by the regulator with an assessment of the strength of the company's initiatives to comply with its obligations to respect human rights, hence we regard this PAI as covered with Exact Fit.
	Lack of Human Rights Due Diligence	Binary	Involvement & Policies	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 3, Metric 10	A value of 'True' represents the lack of a human rights due diligence. We identify the diligence process defined by the regulator with an assessment of the strength of the company's initiatives to comply with its obligations to respect human rights, hence we regard this PAI as covered with Exact Fit.
PAI 11	S.4.2.1 Human Rights Policy - Raw Score	Score 0-100	Involvement & Policies	Partial	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 11	A value of 0 represents the lack of measures to prevent trafficking in human beings. While we do not have a specific indicator speaking to human trafficking, we include aspects related to human trafficking in our human rights policy indicator and hence regard this PAI as a Partial Fit.
	Lack of Processes to Prevent Human Trafficking	Binary	Involvement & Policies	Partial	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 11	A value of 'True' represents the lack of measures to prevent trafficking in human beings. While we do not have a specific indicator speaking to human trafficking, we include aspects related to human trafficking in our human rights policy indicator and hence regard this PAI as a Partial Fit.

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

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Exhibit 27.5: Additional Indicators for Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters (Table 3)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 12	Operations and Suppliers Exposed to Child Labour	Binary	Involvement & Policies	Partial	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 12	This datapoint takes a value of 'True' if a company's operations are exposed to child labour, and 'False' otherwise. We assess this metric using our Incidents Research by considering relevant incidents related to child labour in the previous three years. This assessment considers a company's own operations and its supply chain. We consider this datapoint as a Partial Fit as we do not consider incidents of child labour in terms of geographic areas or type of operation as SFDR requires.
PAI 13	Operations and Suppliers Exposed to Forced or Compulsory Labour	Binary	Involvement & Policies	Partial	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 13	This datapoint takes a value of 'True' if a company's operations are exposed to forced or compulsory labour, and 'False' otherwise. We assess this metric using our Incidents Research by considering relevant incidents related to threatened species in the previous three years. This assessment considers a company's own operations and its supply chain. We consider this datapoint as a Partial Fit as we do not consider incidents of forced labour in terms of geographic areas and/or the type of operation as SFDR requires.
PAI 14	Number of Identified Cases of Severe Human Rights Issues & Incidents	Number of Cases	Average Value	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 14	We define severe issues according to the following criteria: a) Types of activities such as child labour, forced labour, involvement with entities violating human rights such as terrorist organization or authoritarian regimes, etc., and 2) Extent of inflicted harm, i.e. cases which might not be severe themselves but may become severe in light of the breadth of the violation, its duration, if it affected vulnerable groups, or if it represents an endemic violation for the company. It is also important to remember that human rights cases are not unanimously defined and hence case by case assessments will apply. Based on the broad and generally accepted definition adopted in our research, we see this PAI as an Exact Fit.

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 27.6: Additional Indicators for Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters (Table 3)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 15	G.1.1 Bribery & Corruption Policy - Raw Score	Score 0-100	Involvement & Policies	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 15	A value of 0 represents the lack of an anti-corruption policy. As this indicator assesses a company's policy to mitigate risks related to bribery and corruption, we regard this PAI as an Exact Fit.
	Lack of Anti-Corruption & Anti-Bribery Policy	Binary	Involvement & Policies	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 15	A value of 'True' represents the lack of an anti-corruption policy. As the underlying indicator assesses a company's bribery and corruption policy, we regard this PAI as an Exact Fit.
PAI 16	G.1.1.1 Bribery & Corruption Programmes - Raw Score	Score 0-100	n/a	Exact	Corporate	Ratings	PAI Details	DR, Annex I, Table 3, Metric 16	While the PAI does not provide details on what constitutes insufficient action, we interpret it as a combination of two items: a) Preparedness to handle risks posed by the occurence of bribery and corruption covered by the management indicator G.1.1.1 Bribery & Corruption Programmes. b) Occurred incidents of bribery and corruption in a company's own operations and its supply chain, as identified by the last four datapoints from our events research. These datapoints represent companies' insufficient action under this PAI once they reach a significant category, i.e. a category 4 or 5. When companies score 0 on the programme indicator G.1.1.1 and/or are involved in a category 4 or 5 event speaking to bribery and corruption, this PAI returns the value 'True' and 'False' otherwise. As such we consider this PAI as an Exact Fit.
	Insufficient Action on Breaches of Anti-Corruption Policy	Binary	Involvement & Policies	Exact	Corporate	Ratings	PAI Indicators	DR, Annex I, Table 3, Metric 16	
	Bribery and Corruption - Answer Category	Categorical	n/a	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 16	
	Bribery and Corruption- Summary	Text	n/a	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 16	
	Bribery and Corruption - SC - Answer Category	Categorical	n/a	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 16	
	Bribery and Corruption - SC - Summary	Text	n/a	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 16	

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 27.7: Additional Indicators for Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters (Table 3)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 17	Number of Convictions for Violations of Anti-Corruptions & Anti-Bribery Laws	Number of Convictions	Anticorruption/ Bribery Calculations	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 17	These datapoints represent the number of convictions and, in both local currencies and euros, the amount of fines. We consider this PAI as an Exact Fit.
	Amount of Fines for Violations of Anti-Corruptions & Anti-Bribery Laws_EUR	Euros	Anticorruption/ Bribery Calculations	Exact	Corporate	Ratings+	PAI Indicators	DR, Annex I, Table 3, Metric 17	
	Amount of Fines for Violations of Anti-Corruptions & Anti-Bribery Laws_Local Currency	Local Currency	Anticorruption/ Bribery Calculations	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 17	
	Amount of Fines for Violations of Anti-Corruptions & Anti-Bribery Laws_Currencies	Text	n/a	Exact	Corporate	Ratings+	PAI Details	DR, Annex I, Table 3, Metric 17	
PAI 18	Income Inequality	Score 0-100	Average Value	Exact	Sovereign	World	PAI Indicators	DR, Annex I, Table 3, Metric 18	This indicator, converted to a 0-100 score via the standardization process from our Country Risk Ratings, is a Gini coefficient sourced directly from the World Bank. The Gini coefficient is a widely used indicator of economic inequality scoring between 0 (perfectly egalitarian society) and 1 (perfectly unequal society). We see this PAI as an Exact Fit.
PAI 19	Voice and Accountability - Score	Score 0-100	Average Value	Exact	Sovereign	World	PAI Indicators	DR, Annex I, Table 3, Metric 19	The chosen indicator, converted to a 0-100 score via the standardization procedure from our Country Risk Ratings, is sourced from the World Bank. It represents perceptions of the extent to which a country's citizens can participate in selecting their government, and have freedom of expression, freedom of association, and a free media. We consider this PAI as an Exact Fit.

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 27.8: Additional Indicators for Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters (Table 3)

PAI	Datapoint Name	Measurement Unit/Datatype	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 20	IC - Civil Liberties-Score	Score 0-100	Average Value	Exact	Sovereign	World	PAI Details	DR, Annex I, Table 3, Metric 20	The last datapoint is an aggregation of the first four, once standardized according to Sustainalytics' Country Risk Ratings methodology, via a weighted average. These, respectively, represent: a) People's access to civil liberties, according to Freedom House's annual Freedom in the World report. b) The level of peacefulness of a country, according to Vision of Humanity. c) People's access to political rights, according to Freedom House's annual Freedom in the World report. d) A score based on the fundamental human rights conventions, described as 0 if no conventions or treaties are ratified; 50 if some conventions and/or treaties have been ratified; and 100 if all conventions and treaties have been ratified. Datapoints a)-c) are overweighted with a weight of 0.3 each, while d) is underweighted with a weight of 0.1 as it offers little granularity (e.g., not signing at least one convention leads to a score of 0). Based on the above, consider this PAI as an Exact Fit.
	IC - Level of Peace-Score	Score 0-100	Average Value	Exact	Sovereign	World	PAI Details	DR, Annex I, Table 3, Metric 20	
	IC - Political Rights-Score	Score 0-100	Average Value	Exact	Sovereign	World	PAI Details	DR, Annex I, Table 3, Metric 20	
	HR - Human Rights Conventions - Score	Score 0-100	Average Value	Exact	Sovereign	World	PAI Details	DR, Annex I, Table 3, Metric 20	
	Average Human Rights Performance	Score 0-100	Average Value	Exact	Sovereign	World	PAI Indicators	DR, Annex I, Table 3, Metric 20	
PAI 21	IC - Control of Corruption - Score	Score 0-100	Average Value	Exact	Sovereign	World	PAI Indicators	DR, Annex I, Table 3, Metric 21	The chosen indicator, converted to a 0-100 score via the standardization procedure from Sustainalytics' Country Risk Ratings, is sourced from the World Bank. It represents perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests. We consider this PAI as an Exact Fit.

* Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 27.9: Additional Indicators for Social and Employee, Respect for Human Rights, Anti-Corruption and Anti-Bribery Matters (Table 3)

PAI	Datapoint Name	Measurement Unit/Datatype	Aggregation Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name	Reference to Regulation	Comments
PAI 22	Non-Cooperative Tax Jurisdictions	Binary	Involvement & Policies	Exact	Sovereign	World	PAI Indicators	DR, Annex I, Table 3, Metric 22; https://www.consilium.europa.eu/en/policies/eu-list-of-non-cooperative-jurisdictions/	This datapoint takes a value of 'True' if a given country is on the list, and 'False' otherwise. To assign the values, we source the list directly from the relevant source and apply it without any modification. For this reason, we see this PAI as an Exact Fit.
PAI 23	IC - Political Stability Score	Score 0-100	Average Value	Exact	Sovereign	World	PAI Indicators	DR, Annex I, Table 3, Metric 23	The chosen indicator, converted to a 0-100 score via the standardization procedure from our Country Risk Ratings, is sourced from the World Bank. It represents perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism. We consider this PAI as an Exact Fit.
PAI 24	IC - Rule of Law Score	Score 0-100	Average Value	Exact	Sovereign	World	PAI Indicators	DR, Annex I, Table 3, Metric 24	The chosen datapoint, converted to a 0-100 score via the standardization procedure from Sustainalytics' Country Risk Ratings, is sourced from the World Bank. It represents perceptions of the extent to which agents have confidence in and abide by the rules of society, in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. As a result, we consider this PAI as an Exact Fit.

* Coverage data as of September 2022

Source: Morningstar Sustainalytics

Anti-Corruption/Bribery Violations Calculations Approach

This approach, which is used only for PAI 17 in Table 3, requires a calculation of the number of convictions and the amount of fines (in euros) due to corruption and/or bribery offenses of the underlying portfolio holdings. These metrics consider only whether a company has been invested in, and the amount invested in the company or if the weight in the portfolio is not a factor.

$$AntiCorruptionViolation_R = \sum_{i=1}^{E} Convictions_{R,i}$$

$$AntiCorruptionFines_R = \sum_{i=1}^{E} CorruptionFines_{R,i}$$

Where (see Exhibit 28 below):

Exhibit 28: Anti-Corruption/Bribery Violations Calculations

Variable	Description
Anti Corruption Violation R	The total number of convictions for corruption and/or bribery offenses of all the companies the portfolio invests in.
Convictions R	The number of convictions the company has for corruption and/or bribery offenses.
i = 1, …, E	All eligible portfolio holdings.
Anti Corruption Fines R	The total amount in euros of fines for corruption and/or bribery offenses of all the companies the portfolio invests in.
Corruption Fines R	The amount in euros the company has been fined for corruption and/or bribery offenses.

Source: Morningstar Sustainalytics

Exhibits

Exhibit 17.2: Mapping Morningstar Sustainalytics Data Points to PAI 10 Requirements – Part II

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Details - Event Indicators					
Access to Basic Services-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Access to Basic Services-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Accounting and Taxation-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Accounting and Taxation-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Animal Welfare-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Animal Welfare-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Anti-Competitive Practices-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Anti-Competitive Practices--SFDR	n/a	Exact	Corporate	Ratings+	PAI Details
Bribery and Corruption-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Bribery and Corruption-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Business Ethics-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Business Ethics-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Community Relations-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Community Relations-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Corporate Governance-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Corporate Governance-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Occupational Health and Safety-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Occupational Health and Safety-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Intellectual Property-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Intellectual Property-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Labour Relations-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Labour Relations-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Lobbying and Public Policy-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Lobbying and Public Policy-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Marketing Practices-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Marketing Practices-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Media Ethics-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Media Ethics-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Data Privacy and Security-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Data Privacy and Security-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Quality and Safety-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Quality and Safety-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Resilience-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Resilience-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Sanctions-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Sanctions-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Social impact of products-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Social impact of products-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Weapons-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Weapons-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Animal Welfare - SC-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Animal Welfare - SC-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Bribery and Corruption - SC-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Bribery and Corruption - SC-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Business Ethics - SC-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Business Ethics - SC-Summary	n/a	Exact	Corporate	Ratings+	PAI Details

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Exhibit 17.3: Mapping Morningstar Sustainalytics Data points to PAI 10 Requirements – Part II

Datapoint Name	Calculation Type	Fit	Holding Type	Number of Companies	Data Services Report Name
Community Relations - SC-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Community Relations - SC-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Labour Relations - SC-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Labour Relations - SC-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Occupational Health and Safety - SC-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Occupational Health and Safety - SC-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Employees - Human Rights-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Employees - Human Rights-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Society - Human Rights-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Society - Human Rights-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Employees - Human Rights - SC-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Employees - Human Rights - SC-Summary	n/a	Exact	Corporate	Ratings+	PAI Details
Society - Human Rights - SC-Answer Category	n/a	Exact	Corporate	Ratings+	PAI Details
Society - Human Rights - SC-Summary	n/a	Exact	Corporate	Ratings+	PAI Details

*Coverage data as of September 2022   Source: Morningstar Sustainalytics

Glossary of Terms

Adjusted Portfolio	The portfolio after the removal of any net short position, composed of long positions only.
Beta Indicator	Assesses to what degree a company's exposure to an ESG issue deviates from the subindustry's average exposure to the ESG issue.
Breach	A signal that indicates a company being in violation of UN Global Compact Principles.
Corporate Governance Indicator	A special type of Management Indicator, assessing the extent to which a company's corporate governance management practices, structures, and behaviours detract from or add to the company's ability to execute its business strategy and build sustainable, long-term value.
Covered (Holding)	A holding for which a relevant data point has been obtained or estimated.
Criterion-based Indicator Structure	The indicator assessment is based on pre-defined set of criteria represented in the form of outcome criteria (also referred to as 'tick boxes'). The outcome criterion level is followed by an Outcome Category level and an indicator level. The structure is typically used for qualitative and composite indicators.
Curated Metrics	Metrics that have been reviewed and potentially adjusted by analysts to apply a Morningstar Sustainalytics-specific methodology.
Definitional Coherence	The degree to which the definition of the data point mapped by Morningstar Sustainalytics corresponds to the original definition of the PAI or, where necessary, its interpretation.
Derived Metrics	These metrics are calculated by combining multiple Raw Metrics according to a set formula.
Eligible (Holding)	A holding that is the relevant type for the PAI in question.
Event, Event Indicator	An indicator that provides a signal about a potential failure of management as reflected by an involvement in controversies.
EU Taxonomy Solution	Morningstar Sustainalytics' solution to help clients leverage the EU Taxonomy framework to gain detailed insights about the involvement of companies in environmentally sustainable activities as defined by the EU Taxonomy. It provides an assessment of individual holdings as well as portfolio level alignment to the taxonomy's climate change mitigation objective.
Exact Fit	Denotes a case where the data point provided by Morningstar Sustainalytics is fully covering the PAI requirements.
Global Standard Screening (GSS)	Assesses the impact that companies have on stakeholders and the extent to which companies cause, contribute or are linked to violations of international norms and standards. Specifically, GSS provides Morningstar Sustainalytics' opinion as to whether a company is violating, or is at risk of violating, a principle (or principles) of the United Nations Global Compact (UNGC).
Governance Metrics	Governance metrics assess governance-related outcomes associated with a company's governance practices, structures, and behaviors, at the overall company level. Selected examples are metrics assessing violations of anti-corruption laws or the excessive CEO pay ratio.
Human Capital	In Morningstar Sustainalytics' Country Risk Rating, Human Capital is defined as the estimated total present value of expected future labour income that could be generated over the lifetimes of the people in the country.
Indicator	A structured assessment call made by our analysts, third party, and/or by a pre-defined scoring system. Indicators reflect information that includes any kind of judgement and is linked with a definition (Outcome Category) to interpret the score.

Incident	A data point that assesses a company's involvement in cases of specific alleged misconduct with negative environmental and/or social impacts. Incidents form the most granular level of analysis that we conduct. They are identified based on a comprehensive daily media analysis. Our analysts provide two assessments at the incident level, a stakeholder impact assessment, and a reputational risk assessment.
Involvement Metrics	Involvement metrics reflect a company's involvement in a certain economic activity, such as the production of cement or the extraction of crude oil. They are the outcome of a two-step involvement analysis, including an involvement call. Involvement metrics are classified as curated metrics.
Management Indicator	The smallest assessment unit in our product offerings used to measure a company's performance in managing the impact and risk associated with ESG issues. Management Indicators provide a systematic and consistent way of assessing clearly delineated and standardized criteria. These criteria refer to key areas of risk and benchmark a company's performance against relevant best practices in the overall market and within relevant peer groups. Management Indicators are scored on a scale between 0 and 100.
Metric-based Indicator Structure	Structure of indicators based on numerical or binary values (metrics). Typically consists of four different levels (metric level, calculation level, Outcome Category level and indicator level).
Metric	A quantitative data point which is either researched and collected by our analysts, provided by third parties, derived via calculations based on Raw Metrics or estimated/predicted by quantitative models. Most of our metrics do not provide an assessment. They are used to measure the outcome of an activity or status based on raw, fact-based information without adding any judgment-call to it.
Minimum Fit	Denotes a case where the data point provided by Morningstar Sustainalytics is covering the EU requirement to a minimum extent, for example in the case of proxy scores.
Minimum Safeguard	Principle under the EU Taxonomy covering minimum requirements in terms of human and labor rights, etc., to be satisfied while performing a certain activity.
Operational Metrics	Operational metrics assess environment- or social-related outcomes associated with a company's operational practices, at the overall company level. The evaluation of the metric as positive or negative depends on the context. They can be classified as raw metrics, derived metrics, or curated metrics. One selected example of an operational metric is the number of employee fatalities that occurred in the company within a given year captured in the metric 'Employee Fatalities – Number'.
Outcome Category	Refers to one out of several possible indicator assessment outcomes that are captured by a pre-defined set of possible outcome categories. An Outcome Category is always composed of an outcome description and an Outcome Score.
Outcome Criteria (Criterion)	Refers to one out of several outcome criteria ('tick boxes') evaluated when assessing an indicator. An outcome criterion is always composed of a criterion description and a criterion score.
Outcome Score	Component of an Outcome Category. Reflects the possible outcome (as captured by the outcome description) in terms of scoring. A higher Outcome Score reflects a better outcome of the indicator assessment.
PAI Fit	A concept describing the coherence with the regulatory definition, or its interpretation, for a given PAI.
Partial Fit	Denotes a case where the data point provided by Morningstar Sustainalytics is covering the EU requirement to a significant extent, but not fully. The case of range-based assessments or usage of different financial metrics is an example for this.
Principal Adverse Impact (PAI)	Negative, material or likely to be material effects on sustainability factors that are caused, compounded by or directly linked to investment decisions and advice performed by the legal entity.[40]

Product Involvement	A Morningstar Sustainalytics product that provides research on a company's involvement in products and services. It allows clients to screen companies according to specific criteria motivated by ethical, impact, compliance or ESG risk considerations.
Ratings Universe	The coverage universe of Morningstar Sustainalytics' ESG Risk Ratings for which an extended set of indicators is researched. It covers approximately 4,500 corporate issuers worldwide that are regarded as being of special interest for investors, either because they are included in a lead index or face scrutiny of investors due to severe events.
Ratings+ Universe	The coverage universe of Morningstar Sustainalytics' ESG Risk Ratings in total. It covers approximately 12,500 corporate issuers worldwide.
Raw Metric	A metric that is either researched and collected by our analysts or provided by third parties, but neither manipulated/adjusted by Morningstar Sustainalytics for data cleaning purpose nor derived by calculations.
Rules for Policy/Programme Indicators	Rules used for PAIs where the regulation requires the disclosure of investment in investee companies that lack a certain policy or certain compliance mechanisms. These PAIs can often be interpreted, from a content perspective, analogously to our Management Indicators although requiring a binary call rather than a deeper assessment of the quality of the policy. In these cases, we generally provide a binary (true/false) data data point point derived from our research to refer to the regulatory requirement. The general interpretation of such data point is to identify cases where a company is completely lacking a certain policy or programme, labelled as 'True', corresponding to cases where the mapped indicator(s) score 0.
Severity Score	In Morningstar Sustainalytics' Country Risk Rating, the Severity Score refers to the incident-based assessment component of the rating. The actual or potential level of negative effects of an incident on the human, institutional, natural and produced capital is measured through depth, breadth and duration.
SFDR PAI Details	A report delivered by Morningstar Sustainalytics Data Services, containing the underlying data points used for calculating the PAI Indicators and extended detail.
SFDR PAI Indicators	A report delivered by Morningstar Sustainalytics Data Services, containing a compilation of PAI Indicators and associated meta data fields per indicator. Also includes key financial data points.
Watch	A signal that indicates a company where no evidence of a breach of UN Global Compact Principles is found, but our findings suggest that additional scrutiny appears appropriate.
Watchlist	In the context of the GSS Product, a company is assessed as Watchlist if it is determined to be at risk of contributing to severe or systemic and/or systematic violations of international norms and standards.
Country's Wealth	In Morningstar Sustainalytics' Country Risk Rating, a Country's Wealth refers to the sum of accounts of a country's natural & produced capital, Human Capital and institutional capital. These three capitals are intended to correspond to the E, S and G pillars, respectively.

Endnotes

[1]   Acknowledgements: The authors would like to thank the following people for their comments on earlier drafts of this report: Sandra Espinosa, Hendrik Garz, Elisa Gianni, Laura Posdarie, Anne Schoemaker, Claudia Volk, Tim Walton, and Cristina Zabalaga.

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

[3]   For more details on the "EU Green Deal" accessed (04.07.2022) at: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

[4]   For more details about the EU Sustainable Finance Strategy see "Renewed sustainable finance strategy and implementation of the action plan on financing sustainable growth," accessed (04.07.2022) at: https://ec.europa.eu/info/publications/sustainable-finance-renewed-strategy_en

[5]   EU Commission Delegated Regulation supplementing Regulation (EU) 2019/2088 of the European Parliament and of the Council with regard to regulatory technical standards specifying the details of the content and presentation of the information in relation to the principle of 'do no significant harm', specifying the content, methodologies and presentation of information in relation to sustainability indicators and adverse sustainability impacts, and the content and presentation of the information in relation to the promotion of environmental or social characteristics and sustainable investment objectives in pre-contractual documents, on websites and in periodic reports; (06.04.2022), accessed (04.07.2022) at: https://ec.europa.eu/transparency/documents-register/detail?ref=C(2022)1931&lang=en

[6]   For more information on the EU Taxonomy, refer to Bressan, G., Garz, H. (July 2021), "Our EU Taxonomy Solution – Beyond Compliance, version 2.0".

[7]   For more information on the features of our Principal Adverse Impact Data Solution, consult the respective product backgrounder, (September 2022) Morningstar Sustainalytics, "EU Sustainable Finance Disclosure Regulation – Principal Adverse Impact Data Solution – Product Backgrounder".

[8]   Bressan, G., Schäfer, T. (September 2022), "SFDR Principal Adverse Impact Indicators – Mapping to Morningstar Sustainalytics' Data Points".

[9]   Garz H., Volk C. (January 2021), "The ESG Risk Ratings Methodology, version 2.1".

[10] See Morningstar "Principal Adverse Impact Indicators – Methodology", May 2022.

[11] Scope 1, 2 and 3 GHG emissions are defined in points (1)(e)(i) to (iii) of Annex III to Regulation 2016/1011.

[12] See Sustainalytics' "Methodology Clarification: Related Entities", January 2021.

[13] See Sustainalytics' "Carbon Emission Data (Scope 1 and 2) – Research Methodology", August 2021.

[14] Bressan G., Garz H., Ng A. (May 2022), "Methodology Description: Scope 3 Prediction Model, Version 1.1".

[15] We do not cover "trade of fossil fuels", yet we consider this PAI as an Exact Fit.

[16] ANNEX to the Commission Delegated Regulation (EU) .../... supplementing Regulation (EU) 2019/2088 of the European Parliament and of the Council with regard to regulatory technical standards specifying the details of the content and presentation of the information in relation to the principle of 'do no significant harm', specifying the content, methodologies and presentation of information in relation to sustainability indicators and adverse sustainability impacts, and the content and presentation of the information in relation to the promotion of environmental or social characteristics and sustainable investment objectives in precontractual documents, on websites and in periodic reports, 6th April 2022, Annex I – Template principal adverse sustainability impacts statement, Definition (5).

[17] Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (Text with EEA relevance.), 11th December 2022.

[18] See Sustainalytics,' "Product Involvement – Research Methodology", October 2020.

[19]   Ibidem, Annex I, Table 1 – Statement on principal adverse impacts of investment decisions on sustainability factors, Metric 5.

[20]   Ibidem, Annex I, Table 1, Metric 6.

[21]   The NACE classification represents the Nomenclature statistique des activités économiques dans la Communauté européenne, or Statistical classification of economic activities in the European Community. Accessed (13.09.2022) at: NACE background - Statistics Explained (europa.eu).

[22]   Ibidem, Annex I, Table 1, Metric 7.

[23]   Ibidem, Annex I, Definition 19.

[24]   European Commission, "Natura 2000", accessed (13.09.2022) at: https://ec.europa.eu/environment/nature/natura2000/index_en.htm

[25]   UNESCO, "World Heritage List", accessed (13.09.2022) at: https://whc.unesco.org/en/list/

[26]   KBA, "Key Biodiversity Areas", accessed (13.09.2022) at: http://www.keybiodiversityareas.org/

[27]   Ibidem, Annex 1, Table 1, Metric 8 and Definition 12.

[28]   Ibidem, Annex I, Table 1, Metric 9.

[29]   Ibidem, Annex I, Table 1, Metric 10.

[30]   For the methodology of Event Indicators, see Sustainalytics' "Controversies Research – Methodology", January 2021.

[31]   For the methodology of Global Standards Screening (GSS), see "Global Standards Screening – Methodology", 2020.

[32]   Ibidem, Annex I, Definition 23.

[33]   Ibidem, Annex I, Definition 24.

[34]   Ibidem, Annex I, Table 1, Metric 14.

[35]   See Sustainalytics' "Weapons Radar – Methodology version 2.2", 2021.

[36]   EDGAR denotes the Emissions Database for Global Atmospheric Research from the Joint Research Centre of the EU Commission. Accessed (13.09.2022) at: https://edgar.jrc.ec.europa.eu/

[37]   Ibidem, Annex I, Table 1, Metric 16.

[38]   A country's national wealth is comprised of Natural and Produced Capital, Human Capital, and Institutional Capital. Country events are one part of the assessment how well a country manages its national wealth and consider relevant news that is expected to have material negative environmental and/social implications to at least one of the country's three capitals

[39]   See Morningstar Sustainalytics' "Country Risk Rating – Backgrounder and Methodology", July 2022.

[40]   Regulation (EU) 2019/2088 of the European Parliament and of the Council, 27 November 2019.

[1] Acknowledgements: The authors would like to thank the following people for their comments on earlier drafts of this report: Sandra Espinosa, Hendrik Garz, Anne Schoemaker For more details on the "EU Green Deal" accessed (04.07.2022) at: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en., Claudia Volk, Tim Walton, and Cristina Zabalaga.

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

[3] For more details on the "EU Green Deal" accessed (04.07.2022) at: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en.

[4] For more details about the EU Sustainable Finance Strategy see "Renewed sustainable finance strategy and implementation of the action plan on financing sustainable growth," accessed (04.07.2022) at: https://ec.europa.eu/info/publications/sustainable-finance-renewed-strategy_en.

[5] COMMISSION DELEGATED REGULATION (EU) …/… supplementing Regulation (EU) 2019/2088 of the European Parliament and of the Council with regard to regulatory technical standards specifying the details of the content and presentation of the information in relation to the principle of 'do no significant harm', specifying the content, methodologies and presentation of information in relation to sustainability indicators and adverse sustainability impacts, and the content and presentation of the information in relation to the promotion of environmental or social characteristics and sustainable investment objectives in pre-contractual documents, on websites and in periodic reports

. Published on the 6th April 2022, latest accessed on 4th July 2022. Available at: https://ec.europa.eu/transparency/documents-register/detail?ref=C(2022)1931&lang=en.

[6] For more information on the EU Taxonomy, please refer to Bressan Giacomo, Garz Dr. Hendrik, Our EU Taxonomy Solution – Beyond Compliance, version 2.0, July 2021.

[7] For more information on the features of our Principal Adverse Impact Data Solution, please consult the respective product backgrounder: Morningstar Sustainalytics, EU Sustainable Finance Disclosure Regulation – Principal Adverse Impact Data Solution – Product Backgrounder, September 2022.

[8] Morningstar Sustainalytics, SFDR Principal Adverse Impact Indicators – Mapping to Morningstar Sustainalytics' Data Points, September 2022.

[9] For more information on the ESG Risk Ratings, please refer to Garz Dr. Hendrik, Volk Claudia, The ESG Risk Ratings Methodology, version 2.1, January 2021.

[10] Morningstar, Principal Adverse Impact Indicators – Methodology, May 2022.

[11] Scope 1, 2 and 3 GHG emissions are defined in points (1)(e)(i) to (iii) of Annex III to Regulation 2016/1011.

[12] Sustainalytics, Methodology Clarification: Related Entities, January 2021.

[13] Sustainalytics, Sustainalytics' Carbon Emission Data (Scope 1 and 2) – Research Methodology, August 2021.

[14] Ng Anabel, Bressan Giacomo, Garz Dr. Hendrik, Methodology Description: Scope 3 Prediction Model, Version 1.1, May 2022.

[15] Though we do not cover "trade of fossil fuels" we consider this PAI as an Exact Fit.

[16] ANNEX to the Commission Delegated Regulation (EU) .../... supplementing Regulation (EU) 2019/2088 of the European Parliament and of the Council with regard to regulatory technical standards specifying the details of the content and presentation of the information in relation to the principle of 'do no significant harm', specifying the content, methodologies and presentation of information in relation to sustainability indicators and adverse sustainability impacts, and the content and presentation of the information in relation to the promotion of environmental or social characteristics and sustainable investment objectives in precontractual documents, on websites and in periodic reports, 6th April 2022, Annex I – Template principal adverse sustainability impacts statement, Definition (5).

[17] Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (Text with EEA relevance.), 11th December 2022.

[18] Sustainalytics, Sustainalytics' Product Involvement – Research Methodology, October 2020.

[19] Ibidem, Annex I, Table 1 – Statement on principal adverse impacts of investment decisions on sustainability factors, Metric 5.

[20] Ibidem, Annex I, Table 1, Metric 6.

[21] The NACE classification represents the Nomenclature statistique des activités économiques dans la Communauté européenne, or Statistical classification of economic activities in the European Community. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_(NACE).

[22] Ibidem, Annex I, Table 1, Metric 7.

[23] Ibidem, Annex I, Definition (19).

[24] European Commission, Natura 2000, available at: https://ec.europa.eu/environment/nature/natura2000/index_en.htm

[25] UNESCO, World Heritage List, available at: https://whc.unesco.org/en/list/

[26] KBA, Key Biodiversity Areas, available at: http://www.keybiodiversityareas.org/

[27] Ibidem, Annex 1, Table 1, Metric 8 and Definition (12).

[28] Ibidem, Annex I, Table 1, Metric 9.

[29] Ibidem, Annex I, Table 1, Metric 10.

[30] For the methodology of Event Indicators, see Sustainalytics' Controversies Research – Methodology, January 2021.

[31] For the methodology of Global Standards Screening (GSS), see Global Standards Screening - Methodology Document, 2020.

[32] Ibidem, Annex I, Definition (23).

[33] Ibidem, Annex I, Definition (24).

[34] Ibidem, Annex I, Table 1, Metric 14.

[35] Sustainalytics, Controversial Weapons Radar – Methodology version 2.2, 2021.

[36] EDGAR denotes the Emissions Database for Global Atmospheric Research from the Joint Research Centre of the EU Commission. Access to the database is available from https://edgar.jrc.ec.europa.eu/

[37] Ibidem, Annex I, Table 1, Metric 16.

[38] A country's national wealth is comprised of Natural and Produced Capital, Human Capital, and Institutional Capital. Country events are one part of the assessment how well a country manages its national wealth and consider relevant news that is expected to have material negative environmental and/social implications to at least one of the country's three capitals.

[39] Sustainalytics, Sustainalytics' Country Risk Rating – Backgrounder and Methodology, July 2022.

[40] Regulation (EU) 2019/2088 of the European Parliament and of the Council, 27 November 2019.