

MSCI EU CTB/PAB Index Framework

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Contents

1	Introduction	3
2	Minimum exclusion criteria.....	4
2.1	Common exclusions for EU CTB and EU PAB indexes	4
2.1.1	Controversial Weapons.....	4
2.1.2	Tobacco	4
2.1.3	Violations of UNGC principles or OECD guidelines	5
2.1.4	Significant harm to environmental objectives	5
2.2	Additional exclusions specific to EU PABs.....	5
2.2.1	Thermal Coal.....	6
2.2.2	Oil and Gas	6
2.2.3	Electricity generation	7
3	Climate Impact Sector mapping	8
4	Calculation of the decarbonization trajectory	9
	Appendix I: MSCI ESG Research	11
	MSCI ESG CONTROVERSIES	11
	MSCI ESG BUSINESS INVOLVEMENT SCREENING RESEARCH.....	11
	MSCI CLIMATE CHANGE METRICS	11
	Appendix II: Relevant MSCI ESG Research data fields	13
	Appendix III: Climate Impact Sector GICS mapping table	21

1 Introduction

Commission Delegated Regulation (EU) 2020/1818¹ defines two labels: Climate Transition Benchmarks (CTBs) and Paris Aligned Benchmarks (PABs). These labels aim to provide transparent and credible standards for benchmarks targeting, among other things, a pre-defined decarbonization trajectory. The corresponding minimum requirements are defined in [Commission Delegated Regulation \(EU\) 2020/1818](#) and summarized below:

- Minimum exposure to high climate impact sectors (Article 3, applicable to equity indexes only): For both CTBs and PABs in the equity asset class, the exposure of the benchmark to NACE sections A to H and L has to be at least as high as the corresponding exposure of the underlying investable universe.
- Decarbonization trajectory (Article 7): For both CTBs and PABs, greenhouse gas emissions (measured in terms of weighted-average greenhouse gas intensity per EVIC for equity benchmarks, or weighted-average absolute greenhouse gas emissions for fixed income benchmarks) have to decrease by at least 7% annually, on average.
- Baseline reduction of greenhouse gas emissions (measured as above): At least 30% for CTBs and 50% for PABs, compared to the investable universe (Article 9 and 11).
- Minimum exclusions (Article 10 and 12): Both CTBs and PABs screen for controversial weapons, tobacco, violations of UN Global Compact and OECD guidelines, and significant harm to environmental objectives. PABs additionally screen for involvement in different activities associated with the fossil fuels value chain and power generation.

The average year-on-year decarbonization rate and the fossil fuel exclusions have been chosen to align with the 1.5°C scenario with no or limited overshoot, referred to in the IPCC Special Report on Global Warming². As such, the MSCI equity and fixed income EU CTB/PAB indexes (“the Indexes”) aim for a decarbonization trajectory in line with the objectives of the Paris Agreement³ (pursuing efforts to limit the global temperature increase to 1.5°C above pre-industrial levels).

Identical provisions for CTBs and PABs apply in the UK, since the corresponding technical standards have been retained as part of UK regulation when the UK left the EU.

This MSCI EU CTB/PAB Index Framework (“the Framework”) describes the framework applied by MSCI as benchmark administrator for the Indexes⁴ to meet the minimum requirements required by Commission Delegated Regulation (EU) 2020/1818.

¹ https://eur-lex.europa.eu/eli/reg_del/2020/1818/oj

² <https://www.ipcc.ch/sr15/>

³ <https://unfccc.int/process-and-meetings/the-paris-agreement>

⁴ The Indexes are products of MSCI Inc. that utilize information such as company ratings and research produced and provided by MSCI ESG Research LLC (MSCI ESG Research), a subsidiary of MSCI Inc. In particular, the Indexes use the following MSCI ESG Research products: MSCI Climate Change Metrics, MSCI ESG Controversies and MSCI ESG Business Involvement Screening Research. MSCI Indexes are administered by MSCI Limited and MSCI Deutschland GmbH.

2 Minimum exclusion criteria

Articles 10 and 12 of the [Commission Delegated Regulation \(EU\) 2020/1818](#) require certain companies to be excluded from CTBs and PABs. The following sections describe the framework for determining the resulting minimum exclusions for the Indexes. Note that individual Indexes may apply stricter exclusions as long as the minimum exclusion criteria described below are still met.

2.1 Common exclusions for EU CTB and EU PAB indexes

The minimum exclusions applicable to all Indexes (both CTBs and PABs) are described in Article 10(2), Article 12(1) a-c and Article 12(2) of the [Commission Delegated Regulation \(EU\) 2020/1818](#):

Article 10(2): By 31 December 2022, administrators of EU Climate Transition Benchmarks shall comply with the requirements set out in Article 12(1), points (a), (b) and (c), and Article 12(2).

Article 12(1): Administrators of EU Paris-aligned Benchmarks shall exclude all of the following companies from those benchmarks:

- (a) companies involved in any activities related to controversial weapons;*
- (b) companies involved in the cultivation and production of tobacco;*
- (c) companies that benchmark administrators find in violation of the United Nations Global Compact (UNGC) principles or the Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises;[. . .]*

For the purposes of point (a), controversial weapons shall mean controversial weapons as referred to in international treaties and conventions, United Nations principles and, where applicable, national legislation.

Article 12(2): Administrators of EU Paris-aligned Benchmarks shall exclude from those benchmarks any companies that are found or estimated by them or by external data providers to significantly harm one or more of the environmental objectives referred to in Article 9 of Regulation (EU) 2020/852 of the European Parliament and of the Council(8), in accordance with the rules on estimations laid down in Article 13(2) of this Regulation.

The following sections 2.1.1-2.1.4 describe the corresponding minimum exclusion criteria for the Indexes.

2.1.1 Controversial Weapons

The Framework provides for the exclusion of all companies involved in Controversial Weapons as defined by the methodology of the MSCI Global ex Controversial Weapons Indexes. For more details regarding the MSCI Global ex Controversial Weapons Indexes Methodology, please refer to <https://www.msci.com/index/methodology/latest/XCW>.

2.1.2 Tobacco

The Framework provides for the exclusion of all companies involved in the production of tobacco products. Tobacco products include nicotine-containing products, including traditional and alternative tobacco smoking products.

2.1.3 Violations of UNGC principles or OECD guidelines

The Framework provides for the exclusion of all companies assessed as having involvement in ESG controversies that are classified as Red Flags (MSCI ESG Controversy Score of 0). A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations.

MSCI ESG Controversies are intended to reflect all areas of adverse impact covered by the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises general policies. Specifically, MSCI ESG Research flags ESG controversy cases that may suggest violations of global norms such as the OECD guidelines and the UN Global Compact (UNGC), as defined under the MSCI ESG Global Norms screens. A Red Flag (i.e. direct involvement in one or more ongoing, Very Severe controversies) is equivalent to a “Fail” signal under the corresponding MSCI Global Norms Screening factors.⁵

2.1.4 Significant harm to environmental objectives

The Framework provides for the exclusion of all companies assessed as having involvement in environmental controversies that are classified as Red Flags (MSCI ESG Controversy Score of 0) or Orange Flags (score of 1).

- A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations.
- An Orange Flag indicates an ongoing Severe ESG controversy implicating a company directly, or a Very Severe ESG controversy that is either partially resolved or indirectly attributed to the company’s actions, products, or operations.

The Framework uses environmental controversy assessments as a proxy for the company-level assessment of “do no significant harm” to environmental objectives. The use of a proxy is required since the regulatory definitions⁶ of “significant harm to environmental objectives” are limited in scope to isolated economic activities. However, screening investments in companies for the purposes of Commission Delegated Regulation (EU) 2020/1818 Article 12(2) requires an assessment at company-level (not activity-level).

2.2 Additional exclusions specific to EU PABs

The additional minimum exclusions applicable specifically to EU PABs are described in Articles 12(1) d-g of Commission Delegated Regulation (EU) 2020/1818:

Article 12(1): Administrators of EU Paris-aligned Benchmarks shall exclude all of the following companies from those benchmarks:

[. . .]

(d) companies that derive 1 % or more of their revenues from exploration, mining, extraction, distribution or refining of hard coal and lignite;

⁵ See MSCI ESG Controversies and Global Norms methodology, available under <https://www.msci.com/legal/disclosures/esg-disclosures>.

⁶ As per the EU taxonomy regulation (Regulation (EU) 2020/852 referenced in Article 12(2) of the Commission Delegated Regulation (EU) 2020/1818) and its regulatory technical standards

(e) companies that derive 10 % or more of their revenues from the exploration, extraction, distribution or refining of oil fuels;

(f) companies that derive 50 % or more of their revenues from the exploration, extraction, manufacturing or distribution of gaseous fuels;

(g) companies that derive 50 % or more of their revenues from electricity generation with a GHG intensity of more than 100 g CO₂ e/kWh.

The following sections 2.2.1-2.2.3 describe the corresponding minimum exclusion criteria for PABs administered by MSCI (“MSCI EU PAB Indexes”).

2.2.1 Thermal Coal

The Framework provides for the exclusion from MSCI EU PAB Indexes of all companies deriving 1% or more revenue (either reported or estimated) from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It does not consider revenue from metallurgical coal, coal mined for internal power generation (e.g. in the case of vertically integrated power producers), intra-company sales of mined thermal coal, and revenue from coal trading (either reported or estimated).

The Framework provides for the exclusion from MSCI EU PAB Indexes of companies with evidence of involvement in thermal coal distribution. Following enhancements to the underlying data provided by MSCI ESG Research, the Framework foresees the application of this exclusion from February 2025 onwards.

2.2.2 Oil and Gas

The Framework provides for the exclusion from MSCI EU PAB Indexes of all companies deriving 10% or more aggregate revenue (either reported or estimated) from oil-related activities, including:

- Extraction and production of oil and natural gas liquids
- Refining of oil fuels
- Oil and oil products pipelines or natural gas liquids pipelines
- Transportation of oil and oil products
- Distribution of oil and related products
- Exploration as a service to the oil and natural gas industries
- Drilling wells as a service to the exploration and production of oil and natural gas

The Framework provides for the exclusion from MSCI EU PAB Indexes of all companies deriving 50% or more aggregate revenue (either reported or estimated) from gas-related activities, including:

- Extraction and production of natural gas
- Processing of natural gas fuels
- Natural gas pipelines
- Transportation of natural gas
- Distribution of gas and related products
- Exploration as a service to the oil and natural gas industries
- Drilling wells as a service to the exploration and production of oil and natural gas

The above two screens evaluate oil-related revenues and gas-related revenues separately, based on disaggregated oil/gas revenue data (see Appendix II) released by MSCI ESG Research in Q4, 2024. The Framework foresees these screens to be available for potential use from February 2025 onwards, subject to MSCI's consultation policy.

As an alternative approach, the required exclusions can also be implemented through a combined oil & gas screen, excluding all companies deriving 10% or more aggregate revenue from oil and gas related activities, including distribution / retail, equipment and services, extraction and production, pipelines and transportation and refining but excluding biofuel production and sales and trading activities (see Appendix II for details).

Note that the combined oil & gas screen is stricter than the separate oil and gas screens detailed above, i.e., Indexes that use the combined oil & gas screen exceed the minimum exclusion criteria. While the combined oil & gas screen may result in additional exclusions beyond the minimum regulatory requirements, it may nevertheless be appropriate depending on Index objectives and the need for a consistent data history.

Given that existing Indexes using the combined oil & gas screen remain compliant with the minimum exclusion requirements, the introduction of this Framework does not imply or necessitate any changes to the oil & gas screens in existing Indexes. Any switch between the separate oil and gas screens and the combined oil & gas screen, in the context of a specific Index, would be treated as a methodology change subject to MSCI's consultation policy.

In addition, the Framework provides for the use in MSCI EU PAB Indexes of the combined oil & gas screen for all companies where the disaggregated oil/gas revenue data underlying the separate oil and gas screens is not available or not consistent (see Appendix II for details).

2.2.3 Electricity generation

The Framework provides for the exclusion from MSCI EU PAB Indexes of all companies deriving 50% or more aggregate revenue from thermal coal based power generation, liquid fuel based power generation and natural gas based power generation.

The Framework uses the power generation technology as a proxy to evaluate the 100g CO₂/kWh threshold in Article 12(1) g. Based on third party analyses⁷, thermal coal based power generation, liquid fuel based power generation and natural gas based power generation have typical lifecycle emissions exceeding 100gCO₂/kWh.

⁷ See e.g. https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter7.pdf

3 Climate Impact Sector mapping

This section describes MSCI's approach to determining the high climate impact sectors for the purposes of the equity allocation constraint in Article 3 of the Commission Delegated Regulation (EU) 2020/1818. Since this constraint applies only to the equity asset class, this section is not relevant for MSCI fixed income indexes.

Article 3 of the Commission Delegated Regulation (EU) 2020/1818 considers the high climate impact sectors to be those listed in Sections A to H and Section L of the NACE Rev 2 statistical classification (Annex I to Regulation (EC) No 1893/2006 of the European Parliament and of the Council).

MSCI determines which securities map to relevant sections in the NACE Rev 2 structure, based on companies' sub-industry assignments according to the Global Industry Classification Standard (GICS®)⁸:

- For each GICS Sub-Industry, the number of NACE classes which fall under the High Climate Impact Sector (say the number of classes is N_H) and Low Climate Impact Sector (say the number of classes is N_L) is identified
- If all the NACE classes for a given GICS Sub-Industry are identified in the High Climate Impact Sector ($N_L = 0$), then the GICS Sub-Industry is mapped to the High Climate Impact Sector. Conversely, if all the NACE classes for a given GICS Sub-Industry are identified in the Low Climate Impact Sector ($N_H = 0$) then the GICS Sub-Industry is mapped to the Low Climate Impact Sector
- In case a GICS Sub-Industry is mapped to some NACE classes in the High Climate Impact Sector and the others in the Low Climate Impact Sector, the GICS Sub-Industry is mapped to the Climate Impact Sector in the following manner:
 - $N_H \geq N_L$: If the number of NACE classes in the High Climate Impact Sector is at least equivalent to the number of NACE classes in the Low Climate Impact Sector, the GICS Sub-Industry is mapped to the High Climate Impact Sector
 - $N_H < N_L$: If the number of NACE classes in the High Climate Impact Sector is less than the number of NACE classes in the Low Climate Impact Sector, the GICS Sub-Industry is mapped to the Low Climate Impact Sector

The resulting GICS Sub-Industry to Climate Impact Sector mapping table is provided in Appendix III.

Securities are classified in either High Climate Impact Sector or Low Climate Impact Sector by applying this mapping table to the security-level GICS Sub-Industry.

⁸ GICS, the global industry classification standard jointly developed by MSCI Inc. and S&P Global Market Intelligence.

4 Calculation of the decarbonization trajectory

This section describes the calculation of the decarbonization trajectory for the Indexes, as per the requirements of Commission Delegated Regulation (EU) 2020/1818 Article 7(1) and (2):

Article 7(1) The decarbonisation trajectory for EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks shall have the following targets:

- (a) for equity securities admitted to a public market in the Union or in another jurisdiction, at least 7 % reduction of GHG intensity on average per annum;*
- (b) for debt securities other than those issued by a sovereign issuer, where the issuer of those debt securities has equity securities admitted to a public market in the Union or in another jurisdiction, at least 7 % reduction of GHG intensity on average per annum or at least 7 % reduction of absolute GHG emissions on average per annum;*
- (c) for debt securities other than those issued by a sovereign issuer, where the issuer of those debt securities does not have equity securities admitted to a public market in the Union or in another jurisdiction, at least 7 % reduction of absolute GHG emissions on average per annum.*

Article 7(2): The targets referred to in paragraph 1 shall be calculated geometrically, which shall mean that the annual minimum 7 % reduction of GHG intensity or of absolute GHG emissions for year 'n' shall be calculated based on the GHG intensity or absolute GHG emissions for the year n-1, in a geometric progression from the base year.

Throughout a calendar year, different Indexes may undergo index reviews at different dates and with different frequencies. Hence, the decarbonization trajectory for each Index is anchored at a specific Index Base Date, which provides additional precision compared to only specifying a base year.

The Framework provides for a targeted decarbonization trajectory that is calculated in a geometric progression from the index base date:

$$W_t = W_1 * (1 - r)^{\frac{t-1}{f}}$$

The variables entering this equation are:

Variable	Explanation
t	Number of index reviews since (and including) the base date. The base date of the index corresponds to $t = 1$.
f	Frequency of index reviews <ul style="list-style-type: none"> Semi-annual: $f = 2$ Quarterly: $f = 4$ Monthly: $f = 12$
r	Targeted average annual decarbonization rate. For each Index, r must be larger or equal to 7% i.e. 0.07
W_1	For equity indexes: Weighted average GHG intensity on the base date

Variable	Explanation
	For fixed income indexes: Weighted average absolute GHG emissions on the base date
W_t	Decarbonization trajectory for the index review number t . For equity indexes: Expressed in terms of weighted average GHG intensity For fixed income indexes: Expressed in terms of weighted average absolute GHG emissions

The calculation of the weighted average GHG intensity (for equity Indexes) or absolute GHG emissions (for fixed income Indexes) is specific to each index methodology and described in the corresponding index methodology sets⁹.

The decarbonization trajectory W_t provides an upper bound for the weighted average GHG intensity / absolute GHG emissions of the Index.

The base date, the targeted average annual decarbonization rate, as well as the weighted average GHG intensity on the base date (for equity Indexes) or the weighted average absolute GHG emissions on the base date (for fixed income Indexes) are published for each Index on the MSCI Index Profile Tool¹⁰.

⁹ Available under <https://www.msci.com/index-methodology>

¹⁰ Available under <https://www.msci.com/our-solutions/indexes/index-profile-tool/>

Appendix I: MSCI ESG Research

The Indexes are products of MSCI Inc. that utilize information such as company ratings and research produced and provided by MSCI ESG Research LLC (MSCI ESG Research), a subsidiary of MSCI Inc. In particular, the Indexes use the following MSCI ESG Research products to meet the minimum requirements of Commission Delegated Regulation (EU) 2020/1818: MSCI ESG Ratings, MSCI ESG Controversies, MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics. MSCI Indexes are administered by MSCI Limited and MSCI Deutschland GmbH.

MSCI ESG CONTROVERSIES

MSCI ESG Controversies provide assessments of controversies concerning the potential negative environmental, social, and/or governance impact of company operations, products and services. The evaluation framework used in MSCI ESG Controversies is designed to be consistent with international norms represented by the UN Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, and the UN Global Compact. MSCI ESG Controversies Score falls on a 0-10 scale, with “0” being the most severe controversy.

The MSCI ESG Controversies methodology can be found at:
<https://www.msci.com/legal/disclosures/esg-disclosures>.

MSCI ESG BUSINESS INVOLVEMENT SCREENING RESEARCH

MSCI ESG Business Involvement Screening Research (BISR) aims to enable institutional investors to manage environmental, social and governance (ESG) standards and restrictions reliably and efficiently.

The MSCI Business Involvement Screening Research methodology can be found at:
<https://www.msci.com/legal/disclosures/esg-disclosures>.

MSCI CLIMATE CHANGE METRICS

MSCI Climate Change Metrics provides climate data and tools to support institutional investors seeking to integrate climate risk and opportunities into their investment strategy and processes. This includes investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, alignment with temperature pathways and factoring climate change research into their risk management processes, in particular through climate scenario analysis for both transition and physical risks.

The dataset spans across the four dimensions of a climate strategy: transition risks, green opportunities, physical risks and 1.5° alignment.

- Fossil Fuels and Power Generation Metrics

MSCI ESG Research identifies companies involved in fossil fuel-related assets and activities including fossil fuel reserves, resource extraction, power generation and generation capacity, revenue from such assets and activities and capital investments in such assets and activities. The metrics are based on disclosed activities, disclosed revenue and estimates of revenue that are extrapolated from company disclosures and eligible third-party sources (such as NGOs).



For more details on MSCI Climate Change Metrics, please refer to <https://www.msci.com/legal/disclosures/climate-disclosures>.

Appendix II: Relevant MSCI ESG Research data fields

The screening criteria described in section 2 can be summarized as follows:

Commission Delegated Regulation (EU) 2020/1818 Reference	Screen	Formula
12 (1) a	Controversial Weapons	<p>CWEAP_TIE = T,</p> <p>which as of December 2024 is equivalent to any of the following flags being set:</p> <p>CB_TIE, LM_TIE,</p> <p>DU_WEAP, WEAP_OWNBYDU, WEAP_OWNOFDU,</p> <p>WEAP_BIO_CHEM_SYSTEM,</p> <p>WEAP_BIO_CHEM_COMPONENT, WEAP_OWNBYBIOCHEM,</p> <p>WEAP_OWNOFBIOCHEM,</p> <p>WEAP_BLINDING_LASER,</p> <p>WEAP_BLINDING_LASER_OWN_BY,</p> <p>WEAP_BLINDING_LASER_OWN_OF,</p> <p>WEAP_NONDETECTABLE_FRAGMENTS,</p> <p>WEAP_NDF_OWN_BY, WEAP_NDF_OWN_OF,</p> <p>WEAP_INCENDIARY_OWN_BY,</p> <p>WEAP_INCENDIARY_OWN_OF,</p> <p>WEAP_INCENDIARY_WP</p>
12 (1) b	Tobacco	TOB_PRODUCER = T
12 (1) c	Violations of UNGC principles or OECD guidelines	OVERALL_SCORE = 0
12 (2)	Significant harm to environmental objectives	ENVIRONMENT_CONTROVERSY_SCORE = 0 or 1
12 (1) d	Thermal Coal	<p>THERMAL_COAL_MAX_REV_PCT >= 1</p> <p>THERMAL_COAL_STORAGE_INVLVMT = Yes</p>
12 (1) e	Oil	<p>OIL_EXT_PRO_MAX_REV_PCT + OIL_PIP_MAX_REV_PCT +</p> <p>OIL_TRA_MAX_REV_PCT + OIL_REF_MAX_REV_PCT +</p>



Commission Delegated Regulation (EU) 2020/1818 Reference	Screen	Formula
		$OIL_DIS_MAX_REV_PCT + OIL_GAS_EXP_MAX_REV_PCT + OIL_GAS_DRIL_MAX_REV_PCT \geq 10$
12 (1) f	Gas	$GAS_EXT_PRO_MAX_REV_PCT + GAS_PIP_MAX_REV_PCT + GAS_TRA_MAX_REV_PCT + GAS_REF_MAX_REV_PCT + GAS_DIS_MAX_REV_PCT + OIL_GAS_EXP_MAX_REV_PCT + OIL_GAS_DRIL_MAX_REV_PCT \geq 50$
12 (1) e and f	Oil & Gas – combined screen	<p>Under the combined oil & gas screen, companies are excluded if:</p> $OG_REV_DISTRIBUTION + OG_REV_EQUIPMT_SERVICES + OG_REV_EXTRACTION_PROD + OG_REV_PIPELINES_TRANSP + OG_REV_REFINING \geq 10$ <p>The combined oil & gas screen is stricter than the separate oil and gas screens listed in the two rows above, and may be used as an alternative to meet (and exceed) the minimum exclusion requirements, depending on the specific index objectives.</p> <p>In addition, the combined oil & gas screen must be applied for companies where the disaggregated oil/gas revenue data is not available or not consistent, i.e. if the following two sums are not equal:</p> <ul style="list-style-type: none"> $OIL_EXT_PRO_MAX_REV_PCT + OIL_PIP_MAX_REV_PCT + OIL_TRA_MAX_REV_PCT + OIL_REF_MAX_REV_PCT + OIL_DIS_MAX_REV_PCT + OIL_RET_MAX_REV_PCT + GAS_EXT_PRO_MAX_REV_PCT + GAS_PIP_MAX_REV_PCT + GAS_TRA_MAX_REV_PCT + GAS_REF_MAX_REV_PCT + GAS_DIS_MAX_REV_PCT + GAS_RET_MAX_REV_PCT + OIL_GAS_EXP_MAX_REV_PCT + OIL_GAS_DRIL_MAX_REV_PCT + OIL_GAS_SER_MAX_REV_PCT$ $OG_REV_DISTRIBUTION + OG_REV_EQUIPMT_SERVICES + OG_REV_EXTRACTION_PROD + OG_REV_PIPELINES_TRANSP + OG_REV_REFINING$

Commission Delegated Regulation (EU) 2020/1818 Reference	Screen	Formula
12 (1) g	Electricity generation	$\text{GENERAT_MAX_REV_THERMAL_COAL} + \text{GENERAT_MAX_REV_LIQUID_FUEL} + \text{GENERAT_MAX_REV_NATURAL_GAS} \geq 50$

As of November 2024, the relevant underlying data fields as provided by MSCI ESG Research are:

Data Field	MSCI ESG Research Product	Description as provided by MSCI ESG Research as of November 2024
CWEAP_TIE	BISR	Indicates whether the company is involved in the production of whole weapon systems, delivery platforms or components of cluster munitions; production of whole weapon systems or components of landmines and biological or chemical weapons; production of depleted uranium weapons, blinding laser weapons, incendiary weapons, or weapons with non-detectable fragments; or is involved indirectly through ownership ties to companies involved in such products. Nuclear weapons are not considered for this screen. The value is "True" if one or more of the underlying involvement factors is "True."
CB_TIE	BISR	Indicates whether the company is involved in the production of cluster munitions, components for such products, or is involved indirectly through ownership ties to companies involved in production of such goods. Cluster Munitions - Smart Weapon is excluded from Cluster Munitions - Any Tie. The value is "True" if one or more of the underlying involvement factors is "True."
LM_TIE	BISR	Indicates whether the company is involved in the production of anti-personnel or anti-vehicle landmines, essential intended or dual-use components of such products or is involved indirectly through ownership ties to companies involved in such products. Landmines - Smart Weapon involvement is excluded from Landmines - Any Tie. The value is "True" if one or more of the underlying involvement factors is "True."

Data Field	MSCI ESG Research Product	Description as provided by MSCI ESG Research as of November 2024
DU_WEAP	BISR	Companies involved in the production of depleted uranium weapons, ammunition and armor.
WEAP_OWNBYDU	BISR	Companies that are 50 percent or more owned by a company with depleted uranium weapons involvement.
WEAP_OWNOFDU	BISR	Companies that own 20 to 49.99 percent of a company with involvement. When a company owns 50 percent or more of a subsidiary with involvement, MSCI treats it as a consolidated subsidiary.
WEAP_BIO_CHEM_SYSTEM	BISR	Companies that produce biological or chemical weapons systems.
WEAP_BIO_CHEM_COMPONENT	BISR	Companies that produce critical components for biological and chemical weapons systems.
WEAP_OWNBYBIO_CHEM	BISR	Companies that are 50 percent or more owned by a company with biological and chemical weapons involvement.
WEAP_OWNOFBIO_CHEM	BISR	Companies that own 20 to 49.99 percent of a company with involvement. When a company owns 50 percent or more of a subsidiary with involvement, MSCI treats it as a consolidated subsidiary.
WEAP_BLINDING_LASER	BISR	Companies that produce blinding laser weapons, that cause permanent blindness to the target.
WEAP_BLINDING_LASER_OWN_BY	BISR	Ownership by a Blinding Laser Manufacturer
WEAP_BLINDING_LASER_OWN_OF	BISR	Ownership of a Blinding Laser Manufacturer
WEAP_NONDETECTABLE_FRAGMENT	BISR	Companies that produce weapons that use non-detectable fragments.
WEAP_NDF_OWN_BY	BISR	Ownership by a Non-detectable Weapons Manufacturer
WEAP_NDF_OWN_OF	BISR	Ownership of a Non-detectable Weapons Manufacturer
WEAP_INCENDIARY_OWN_BY	BISR	Ownership By a Incendiary Weapons Manufacturer.

Data Field	MSCI ESG Research Product	Description as provided by MSCI ESG Research as of November 2024
WEAP_INCENDIARY_OWNING_OF	BISR	Ownership Of a Incendiary Weapons Manufacturer.
WEAP_INCENDIARY_WP	BISR	Companies that produce incendiary weapons using white phosphorus.
TOB_PRODUCER	BISR	Companies involved in the production of tobacco products. Tobacco products include nicotine-containing products, including traditional and alternative tobacco smoking products.
OVERALL_SCORE	Controversies	The overall company assessment signals whether a company has a notable controversy related to a company's operations and/or products, and the severity of the social or environmental impact of the controversy.
ENVIRONMENT_CONTROVERSY_SCORE	Controversies	This ESG pillar is an assessment of controversies (if any) related to a firm's impact on the environment. Factors affecting this evaluation include whether a company is involved in controversies related to land use and biodiversity, toxic spills and releases, energy and climate change, water management, operational non-hazardous waste, and management of supply chain environmental impact.
THERMAL_COAL_MAX_REV_PCT	Climate Change Metrics	This factor identifies the maximum percentage of revenue (either reported or estimated) greater than 0% that a company derives from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It excludes: revenue from metallurgical coal; coal mined for internal power generation (e.g. in the case of vertically integrated power producers); intra-company sales of mined thermal coal; and revenue from coal trading.
THERMAL_COAL_STORAGE_INVOLVEMENT	SFDR	Identifies companies with evidence of thermal coal distribution involvement.
OIL_EXT_PRODUCTION_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the extraction and production of oil and natural gas liquids. The data point includes revenue from conventional and unconventional oil extraction and production.

Data Field	MSCI ESG Research Product	Description as provided by MSCI ESG Research as of November 2024
OIL_PIP_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from oil and oil products or natural gas liquids pipelines.
OIL_TRA_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the transportation of oil and oil products. The data point does not include revenue from oil/ oil products pipelines.
OIL_REF_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the refining of oil fuels.
OIL_DIS_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the distribution of oil and related products. The data point includes revenues from crude and petroleum products storage facilities and terminals and bulk stations.
OIL_GAS_EXP_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the exploration as a service to the of oil and natural gas industries. The data point includes revenues from oil and gas exploration services and seismic surveys and does not include revenues from extraction & production.
OIL_GAS_DRILL_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from drilling wells as a service to the exploration and production of oil and natural gas. The data point does not include revenues from extraction & production.
GAS_EXT_PROD_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the extraction and production of natural gas. The data point includes revenue from conventional and unconventional gas extraction and production.
GAS_PIP_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from natural gas pipelines.

Data Field	MSCI ESG Research Product	Description as provided by MSCI ESG Research as of November 2024
GAS_TRA_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the transportation of natural gas. The data point does not include revenue from natural gas pipelines.
GAS_REF_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the processing of natural gas fuels.
GAS_DIS_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the distribution of gas and related products. The data point includes revenues from liquefied petroleum gas and natural gas distribution.
OIL_RET_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the retailing of oil and oil products. The data point includes revenues from crude and petroleum products gasoline and fuel oil retail stations.
GAS_RET_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from gas retail sales and liquefied petroleum gas (bottled gas) dealers.
OIL_GAS_SERVICES_MAX_REV_PCT	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from equipment and services for the exploration and production of oil and natural gas. The data point includes revenues from oil and gas exploration related equipment, manufacturing, engineering services and heavy construction related to oil and gas exploration activities.
OG_REV_DISTRIBUTION	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from the distribution and retailing of oil and gas and related products. It includes revenues from crude and petroleum products storage facilities and terminals, bulk stations, gasoline and fuel oil retail stations as well as liquefied petroleum gas stations natural gas distribution and gas retail sales.

Data Field	MSCI ESG Research Product	Description as provided by MSCI ESG Research as of November 2024
OG_REV_EQUIPMENT_SERVICES	Climate Change Metrics	Identifies the maximum percentage of revenue (either reported or estimated) that a company derives from equipment and services for the exploration and production of oil and natural gas. It includes revenues from oil and gas exploration services, related equipment manufacturing, seismic surveys, engineering services and heavy construction related to oil and gas exploration activities. It does not include revenues from extraction & production.
OG_REV_EXTRACTION_PROD	Climate Change Metrics	Identifies the maximum percentage of revenue (either reported or estimated) that a company derives from the extraction and production of oil and gas.
OG_REV_PIPELINE_S_TRANSP	Climate Change Metrics	Identifies the maximum percentage of revenue (either reported or estimated) that a company derives from oil and gas pipelines and transportation. It includes revenues from mid-stream operations but excludes revenues from terminals and storage facilities.
OG_REV_REFINING	Climate Change Metrics	The maximum percentage of revenue (either reported or estimated) that a company derives from refining oil and processing natural gas.
GENERAT_MAX_REVENUE_THERMAL_COAL	Climate Change Metrics	This factor identifies the maximum percentage of revenue (either reported or estimated) that a company derives from the thermal coal based power generation.
GENERAT_MAX_REVENUE_LIQUID_FUEL	Climate Change Metrics	This factor identifies the maximum percentage of revenue (either reported or estimated) that a company derives from the liquid fuel based power generation.
GENERAT_MAX_REVENUE_NATURAL_GAS	Climate Change Metrics	This factor identifies the maximum percentage of revenue (either reported or estimated) that a company derives from the natural gas based power generation.

Appendix III: Climate Impact Sector GICS mapping table

The below table shows the mapping of GICS Sub-Industries to Climate Impact Sectors, as of September 2024, and based on the GICS structure effective March 2023.

GICS Sub-Industry Code	GICS Sub-Industry Name	Climate Impact Sector ¹¹	GICS Sub-Industry Code	GICS Sub-Industry Name	Climate Impact Sector
10101010	Oil & Gas Drilling	HCI	10101020	Oil & Gas Equipment & Services	HCI
10102010	Integrated Oil & Gas	HCI	10102020	Oil & Gas Exploration & Production	HCI
10102030	Oil & Gas Refining & Marketing	HCI	10102040	Oil & Gas Storage & Transportation	HCI
10102050	Coal & Consumable Fuels	HCI	15101010	Commodity Chemicals	HCI
15101020	Diversified Chemicals	HCI	15101030	Fertilizers & Agricultural Chemicals	HCI
15101040	Industrial Gases	HCI	15101050	Specialty Chemicals	HCI
15102010	Construction Materials	HCI	15103010	Metal, Glass & Plastic Containers	HCI
15103020	Paper & Plastic Packaging Products & Materials	HCI	15104010	Aluminum	HCI
15104020	Diversified Metals & Mining	HCI	15104025	Copper	HCI
15104030	Gold	HCI	15104040	Precious Metals & Minerals	HCI
15104045	Silver	HCI	15104050	Steel	HCI
15105010	Forest Products	HCI	15105020	Paper Products	HCI
20101010	Aerospace & Defense	HCI	20102010	Building Products	HCI
20103010	Construction & Engineering	HCI	20104010	Electrical Components & Equipment	HCI
20104020	Heavy Electrical Equipment	HCI	20105010	Industrial Conglomerates	LCI
20106010	Construction Machinery & Heavy Transportation Equipment	HCI	20106015	Agricultural & Farm Machinery	HCI
20106020	Industrial Machinery & Supplies & Components	HCI	20107010	Trading Companies & Distributors	HCI
20201010	Commercial Printing	HCI	20201050	Environmental & Facilities Services	HCI
20201060	Office Services & Supplies	LCI	20201070	Diversified Support Services	LCI
20201080	Security & Alarm Services	LCI	20202010	Human Resource & Employment Services	LCI

¹¹ HCI = High Climate Impact, LCI = Low Climate Impact

GICS Sub-Industry Code	GICS Sub-Industry Name	Climate Impact Sector ¹¹	GICS Sub-Industry Code	GICS Sub-Industry Name	Climate Impact Sector
20202020	Research & Consulting Services	LCI	20202030	Data Processing & Outsourced Services	LCI
20301010	Air Freight & Logistics	HCI	20302010	Passenger Airlines	HCI
20303010	Marine Transportation	HCI	20304010	Rail Transportation	HCI
20304030	Cargo Ground Transportation	HCI	20304040	Passenger Ground Transportation	HCI
20305010	Airport Services	HCI	20305020	Highways & Railtracks	HCI
20305030	Marine Ports & Services	HCI	25101010	Automotive Parts & Equipment	HCI
25101020	Tires & Rubber	HCI	25102010	Automobile Manufacturers	HCI
25102020	Motorcycle Manufacturers	HCI	25201010	Consumer Electronics	HCI
25201020	Home Furnishings	HCI	25201030	Homebuilding	HCI
25201040	Household Appliances	HCI	25201050	Housewares & Specialties	HCI
25202010	Leisure Products	HCI	25203010	Apparel, Accessories & Luxury Goods	HCI
25203020	Footwear	HCI	25203030	Textiles	HCI
25301010	Casinos & Gaming	LCI	25301020	Hotels, Resorts & Cruise Lines	LCI
25301030	Leisure Facilities	LCI	25301040	Restaurants	LCI
25302010	Education Services	LCI	25302020	Specialized Consumer Services	LCI
25501010	Distributors	HCI	25503030	Broadline Retail	HCI
25504010	Apparel Retail	HCI	25504020	Computer & Electronics Retail	HCI
25504030	Home Improvement Retail	LCI	25504040	Other Specialty Retail	HCI
25504050	Automotive Retail	HCI	25504060	Homefurnishing Retail	HCI
30101010	Drug Retail	HCI	30101020	Food Distributors	HCI
30101030	Food Retail	HCI	30101040	Consumer Staples Merchandise Retail	HCI
30201010	Brewers	HCI	30201020	Distillers & Vintners	HCI
30201030	Soft Drinks & Non-alcoholic Beverages	HCI	30202010	Agricultural Products & Services	HCI
30202030	Packaged Foods & Meats	HCI	30203010	Tobacco	HCI
30301010	Household Products	HCI	30302010	Personal Care Products	HCI
35101010	Health Care Equipment	HCI	35101020	Health Care Supplies	HCI
35102010	Health Care Distributors	HCI	35102015	Health Care Services	LCI
35102020	Health Care Facilities	LCI	35102030	Managed Health Care	LCI
35103010	Health Care Technology	LCI	35201010	Biotechnology	LCI
35202010	Pharmaceuticals	HCI	35203010	Life Sciences Tools & Services	HCI

GICS Sub-Industry Code	GICS Sub-Industry Name	Climate Impact Sector ¹¹	GICS Sub-Industry Code	GICS Sub-Industry Name	Climate Impact Sector
40101010	Diversified Banks	LCI	40101015	Regional Banks	LCI
40201020	Diversified Financial Services	LCI	40201030	Multi-Sector Holdings	LCI
40201040	Specialized Finance	LCI	40201050	Commercial & Residential Mortgage Finance	LCI
40201060	Transaction & Payment Processing Services	LCI	40202010	Consumer Finance	LCI
40203010	Asset Management & Custody Banks	LCI	40203020	Investment Banking & Brokerage	LCI
40203030	Diversified Capital Markets	LCI	40203040	Financial Exchanges & Data	LCI
40204010	Mortgage REITs	LCI	40301010	Insurance Brokers	LCI
40301020	Life & Health Insurance	LCI	40301030	Multi-line Insurance	LCI
40301040	Property & Casualty Insurance	LCI	40301050	Reinsurance	LCI
45102010	IT Consulting & Other Services	LCI	45102030	Internet Services & Infrastructure	LCI
45103010	Application Software	LCI	45103020	Systems Software	LCI
45201020	Communications Equipment	HCI	45202030	Technology Hardware, Storage & Peripherals	HCI
45203010	Electronic Equipment & Instruments	HCI	45203015	Electronic Components	HCI
45203020	Electronic Manufacturing Services	HCI	45203030	Technology Distributors	HCI
45301010	Semiconductor Materials & Equipment	HCI	45301020	Semiconductors	HCI
50101010	Alternative Carriers	LCI	50101020	Integrated Telecommunication Services	LCI
50102010	Wireless Telecommunication Services	LCI	50201010	Advertising	LCI
50201020	Broadcasting	LCI	50201030	Cable & Satellite	LCI
50201040	Publishing	LCI	50202010	Movies & Entertainment	LCI
50202020	Interactive Home Entertainment	LCI	50203010	Interactive Media & Services	LCI
55101010	Electric Utilities	HCI	55102010	Gas Utilities	HCI
55103010	Multi-Utilities	HCI	55104010	Water Utilities	HCI
55105010	Independent Power Producers & Energy Traders	HCI	55105020	Renewable Electricity	HCI
60101010	Diversified REITs	HCI	60102510	Industrial REITs	HCI
60103010	Hotel & Resort REITs	HCI	60104010	Office REITs	HCI

GICS Sub-Industry Code	GICS Sub-Industry Name	Climate Impact Sector ¹¹	GICS Sub-Industry Code	GICS Sub-Industry Name	Climate Impact Sector
60105010	Health Care REITs	HCI	60106010	Multi-Family Residential REITs	HCI
60106020	Single-Family Residential REITs	HCI	60107010	Retail REITs	HCI
60108010	Other Specialized REITs	HCI	60108020	Self-Storage REITs	HCI
60108030	Telecom Tower REITs	HCI	60108040	Timber REITs	HCI
60108050	Data Center REITs	HCI	60201010	Diversified Real Estate Activities	HCI
60201020	Real Estate Operating Companies	HCI	60201030	Real Estate Development	HCI
60201040	Real Estate Services	HCI			

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