

# **MSCI WORLD SELECT SUSTAINABLE MEGA TRENDS INDEX METHODOLOGY**

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## 1 Introduction

The MSCI World Select Sustainable Mega Trends Index aims to represent the performance of 50 stocks that derive at least a cumulative 25% of revenue from Sustainable Impact <sup>1</sup>activities, as well as exhibit low historical realised volatility and high dividend yield. The index aims to achieve diversification with country and sector constraints.

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<sup>1</sup> <https://www.msci.com/esg-sustainable-impact-metrics>

## **2 MSCI ESG RESEARCH**

The MSCI World Select Sustainable Mega Trends Index uses company ratings and research provided by MSCI ESG Research. The index uses the following MSCI ESG Research products: MSCI ESG Ratings, MSCI ESG Controversies, MSCI Business Involvement Screening Research, and MSCI Climate Change Metrics.

For details on MSCI ESG Research’s full suite of ESG products, please refer to: <https://www.msci.com/esg-integration>

### **2.1 MSCI ESG RATINGS**

MSCI ESG Ratings provides research, analysis and ratings of how well companies manage environmental, social and governance risks and opportunities.

MSCI ESG Ratings provides an overall company ESG rating - a seven-point scale from ‘AAA’ to ‘CCC’. In addition, the product provides scores and percentiles indicating how well a company manages each key issue relative to industry peers.

For more details on MSCI ESG Ratings, please refer to: <https://www.msci.com/esg-ratings>

### **2.2 MSCI ESG CONTROVERSIES**

MSCI ESG Controversies (formerly known as MSCI Impact Monitor) provides assessments of controversies concerning the 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.

For more details on MSCI ESG Controversies, please refer to : <https://www.msci.com/documents/10199/acbe7c8a-a4e4-49de-9cf8-5e957245b86b>

### 2.3 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.

For more details on MSCI ESG Business Involvement Screening Research, please refer to [http://www.msci.com/resources/factsheets/MSCI\\_ESG\\_BISR.pdf](http://www.msci.com/resources/factsheets/MSCI_ESG_BISR.pdf)

### 2.4 MSCI ESG SUSTAINABLE IMPACT METRICS

MSCI ESG Research’s Sustainable Impact Metrics is designed to identify companies that currently offer products or services that address at least one of the major social and environmental challenges as defined by the UN Sustainable Development Goals. Designed as a positive screen, it is designed to highlight companies that are deriving sales from products or services that may have a positive impact on society and the environment under the following categories:

**Figure 1 – MSCI Sustainable Impact Taxonomy**

Pillar	Themes	Categories
Environmental*	Climate Change	<ol style="list-style-type: none"> <li>1. Alternative energy</li> <li>2. Energy efficiency</li> <li>3. Green building</li> </ol>
	Natural capital	<ol style="list-style-type: none"> <li>4. Sustainable water</li> <li>5. Pollution prevention</li> </ol>
Social	Basic needs	<ol style="list-style-type: none"> <li>6. Nutrition</li> <li>7. Major Disease Treatment</li> <li>8. Sanitation</li> <li>9. Affordable Real Estate</li> </ol>
	Empowerment	<ol style="list-style-type: none"> <li>10. SME Finance</li> <li>11. Education</li> </ol>

\* note that the environmental metrics are based on MSCI ESG Research Cleantech Metrics

#### 2.4.1 MSCI SUSTAINABLE IMPACT CATEGORIES

##### ALTERNATIVE ENERGY

This category includes products, services, or infrastructure projects supporting the development or delivery of renewable energy and alternative fuels, including:

- Generation, transmission, and distribution of electricity from renewable sources including wind, solar, geothermal, biomass, small scale hydro (25 MW), waste energy, and wave tidal.
- Fuels, technology, and infrastructure for the production and distribution of cleaner hybrid fuels, hydrogen, fuel cells, and alternative fuels, including biodiesel, biogas, and cellulosic ethanol. Not eligible under this category: large scale hydroelectric plants (>25 MW installed capacity)

**ENERGY EFFICIENCY**

This category includes products, services, infrastructure, or technologies that proactively address the growing global demand for energy while minimizing effects on the environment, including:

- Technologies and systems that promote efficiency of industrial operations (e.g., turbines, motors, and engines), industrial automation and controls, and optimization systems (e.g., cloud computing, data optimization systems).
- Infrastructure, technology, and systems that increase the efficiency of power management, power distribution, power storage (e.g., batteries), demand-side management (e.g., wireless sensors, advanced meters, smart grid).
- Technologies and systems focused on reducing fuel consumption of transport vehicles and industrial operations (e.g., hybrid/electric vehicles)
- Sustainable transportation infrastructure including urban mass transit, efficiency improvements of public transportation fleets, electric vehicle charging, improved traffic systems.
- Architectural glass, efficient lighting, insulation, building automation and controls, and devices and systems designed to be utilized in the design and construction of environmentally sustainable buildings.

MSCI ESG Research’s Energy Efficiency category does not include:

- Corporate operational energy efficiency efforts, such as efficiency gains in manufacturing, transporting, or distributing standard products or services.
- Energy efficient components of finished goods.

**SUSTAINABLE WATER**

This category includes products, services, and projects that attempt to resolve water scarcity and water quality issues, including minimizing and monitoring current water

use and demand increases, improving the quality of water supply, and improving the availability and reliability of water, including:

- Infrastructure and engineering projects developing new or repairing existing water and sanitation pipelines, including equipment and technology providers, resulting in improved quality and/or water use efficiency
- Technologies and products that reduce, reuse, or recycle water as a means of conservation (smart metering devices, low-flow equipment, and rainwater harvesting systems)
- Advanced materials, equipment, technologies, and services that filter or chemically treat wastewater for consumer or industrial use, including desalination

MSCI ESG Research’s Sustainable Water category does not include:

- Distribution of drinking water without measurable improvements to water quality
- Water efficiency

**GREEN BUILDING**

This category includes design, construction, redevelopment, retrofitting, or acquisition of ‘green’ certified properties – subject to local green building criteria, including:

- Properties that are certified as ‘green’ based on the local country’s environmental performance standard (e.g., based on Energy Star, NABERS >3, or equivalent) or environmental design standards (e.g., LEED Certified, BREEAM, or local equivalent).

MSCI ESG Research’s Green Building category does not include:

- Building materials, equipment, or supplies that are already included in the other themes. Examples include: Solar panels, energy efficient lighting, advanced materials used in construction, smart grids, etc.

**POLLUTION PREVENTION**

This category includes products, services, or projects that support pollution prevention, waste minimization, or recycling as a means of alleviating the burden of unsustainable waste generation, including:

- Technologies, systems, and projects aiming to reduce air pollution (environmental IT, conventional pollution control systems, CCS)



- Projects to salvage, use, reuse, and recycle post-consumer waste products
- Waste treatment and environmental remediation projects, including land treatment and brownfield cleanup, soil washing, chemical oxidation, and bioremediation
- Sustainable alternative materials including raw materials, paints, adhesives, etc. used primarily in the construction of environmentally sustainable buildings.

MSCI ESG Research’s Pollution Prevention category does not include:

- Landfill or incineration waste treatment projects without a specific waste-to-energy component.

**NUTRITION**

This category includes products and services classified under the “basic products” category, as defined by Choices International<sup>2</sup>. According to Choices International, basic products refer to those products that contribute to the daily intakes of essential nutrients while non-basic are not needed to fulfill our daily requirements.

**Figure 2 – Examples of “basic” and “non-basic” products**

Examples of Basic products	Examples of non-basic products
<ul style="list-style-type: none"> <li>• fruits and vegetables</li> <li>• beans and legumes</li> <li>• sources of carbohydrates</li> <li>• meat, fish, poultry, eggs, and meat substitutes</li> <li>• dairy products</li> <li>• oils, fats and fat-containing spreads</li> <li>• nuts</li> <li>• water</li> <li>• main meals</li> </ul>	<ul style="list-style-type: none"> <li>• soups</li> <li>• sauces</li> <li>• snacks (including pastry, ice cream, and sweet and savoury snacks)</li> <li>• beverages (excluding water) and fruit juices</li> <li>• bread toppings</li> </ul>

Source: Choices International, MSCI ESG Research

<sup>2</sup> For more information on Choices International refer to <http://www.choicesprogramme.org/public/criteria/international-product-criteria-2015-def.pdf>

### MAJOR DISEASE TREATMENTS

This category includes drugs and healthcare equipment used to treat the world’s major diseases. Major diseases include those diseases with the highest DALY<sup>3</sup> as well as orphan diseases<sup>4</sup> and tropical neglected diseases<sup>5</sup>.

**Figure 3 – Examples of major diseases included in the category’s scope**

Major diseases	Neglected diseases	Orphan diseases
<ul style="list-style-type: none"> <li>• Ischaemic heart disease</li> <li>• Lower respiratory infections</li> <li>• Stroke</li> <li>• Diarrhoeal diseases</li> <li>• Chronic obstructive pulmonary disease</li> <li>• HIV/AIDS</li> <li>• Unipolar depressive disorders</li> <li>• Diabetes mellitus</li> <li>• Malaria</li> <li>• Tuberculosis</li> <li>• Trachea, bronchus, lung cancers</li> <li>• Cirrhosis of the liver</li> <li>• Meningitis</li> <li>• Kidney diseases</li> <li>• Anxiety disorders</li> <li>• Endocrine, blood, immune disorders</li> <li>• Asthma</li> <li>• Hypertensive heart disease</li> <li>• Liver cancer</li> <li>• Epilepsy</li> <li>• Hepatitis B and C</li> </ul>	<ul style="list-style-type: none"> <li>• Schistosomiasis</li> <li>• Leishmaniasis</li> <li>• Lymphatic filariasis</li> <li>• Rabies</li> <li>• Dengue</li> <li>• Trypanosomiasis</li> <li>• Onchocerciasis</li> <li>• Chagas disease</li> <li>• Trachoma</li> <li>• Leprosy</li> <li>• Buruli Ulcer</li> <li>• Yaws</li> </ul>	<ul style="list-style-type: none"> <li>• Cystic fibrosis</li> <li>• Wilson’s disease</li> <li>• Gaucher disease</li> <li>• Pompe disease</li> </ul>

Source: WHO, MSCI ESG Research

<sup>3</sup> The WHO daily adjusted life year (DALY) represents the number of years of life lost due to poor health/disability and earlier death. The sum of these DALYs across the population represents the global burden of disease. More information on DALY can be found here: [http://www.who.int/healthinfo/global\\_burden\\_disease/metrics\\_daly/en](http://www.who.int/healthinfo/global_burden_disease/metrics_daly/en)

<sup>4</sup> Orphan drugs refer to treatments for orphan diseases which affect about 1 in 1500 people, as defined by the FDA. <http://www.fda.gov/ForIndustry/DevelopingProductsforRareDiseasesConditions/HowtoapplyforOrphanProductDesignation/default.htm>

<sup>5</sup> More information on neglected diseases can be found here: [http://www.who.int/neglected\\_diseases/diseases/en/](http://www.who.int/neglected_diseases/diseases/en/)

**SANITATION**

This category includes products and services used for basic sanitation including:

**Figure 4 – Example of sanitation products**

Examples of basic sanitary products	Examples of non basic sanitary products
<ul style="list-style-type: none"> <li>• soaps</li> <li>• oral care (toothbrush, toothpaste)</li> <li>• detergents</li> <li>• water purifier</li> <li>• sanitary napkins (feminine pad)</li> <li>• toilet paper</li> <li>• diapers (adult, child)</li> <li>• toilet basin</li> <li>• washbasins</li> </ul>	<ul style="list-style-type: none"> <li>• hair oil</li> <li>• deodorants</li> <li>• skin care</li> <li>• color cosmetics</li> <li>• perfumes</li> <li>• air care</li> <li>• fragrance</li> <li>• make up</li> <li>• After shave gel</li> <li>• Sunscreen cream</li> <li>• Fabric softener</li> </ul>

Source: MSCI ESG Research

**AFFORDABLE REAL ESTATE**

This category includes low income residential and commercial properties. Residential properties take the form of homes for reconstruction efforts, affordable residences for the elderly and units devoted to be managed under social rent or purchased through shared equity or shared ownership. Low income commercial properties include commercial spaces for Small and Medium Enterprises (SMEs).

**SME FINANCE**

This category includes loans provided to small and medium enterprises.

**EDUCATION**

This category includes revenues coming from educational products and services used in a school environment (i.e. training software, educational books and materials used by students and teachers as part of their education programs). General literature, illustrated books, newspaper, magazines and TV programs were not included in our assessment.

## 2.4.2 RESEARCH PROCESS FOR MSCI ESG SUSTAINABLE IMPACT METRICS

MSCI ESG Research includes a team of analysts dedicated to covering the companies involved in sustainable impact themes. On an annual basis, MSCI ESG Research analysts conduct a review of MSCI ACWI constituents to identify those companies that generate revenues from sustainable impact themes. In addition, MSCI ESG Research conducts data verification by engaging with subject companies in order to confirm public data concerning a company's involvement and the nature of such involvement.

### ANNUAL UPDATES

On an annual basis, MSCI ESG Research analysts conduct a review of companies in the MSCI ACWI for involvement. The annual update involves:

1. **Identification of Sustainable Impact Universe:** the Sustainable Impact Universe is first defined by MSCI ESG Research. For more information regarding the Sustainable Impact Universe methodology, please refer to MSCI ESG Research Sustainable Impact Metrics methodology.
2. **The review of company's literature:** for those companies included in the Sustainable Impact Universe analysts review the company regulatory filings, annual reports, company websites, and third party sources to identify potential revenues from sustainable impact categories. For each category, analysts assess the company's product pipeline and only take into account revenues coming from products that match the sustainable impact categories definition outlined above.
3. **Company verification:** all companies in the Sustainable Impact Universe are contacted to verify the level of involvement in the sustainable impact categories.

### **3 Index Construction**

The MSCI World Select Sustainable Mega Trends Index is constructed from the MSCI World Index (the “Parent Index”).

The Index is calculated <sup>6</sup>5 days a week, from Monday to Friday. The following steps are applied at initial construction as well as at subsequent Quarterly Index Reviews of the MSCI World Select Sustainable Mega Trends Index:

- ESG Eligibility Criteria
- Additional Screens
- Security Selection
- Security Weighting

#### **3.1 ESG ELIGIBILITY CRITERIA**

##### **3.1.1 VALUES AND CLIMATE CHANGE-BASED EXCLUSIONS**

The MSCI World Select Sustainable Mega Trends Index uses MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics to identify companies that are involved in the following business activities. Companies that meet the below values- and climate change-based criteria are excluded from the MSCI World Select Sustainable Mega Trends Index. Please refer to Appendix 1 for details on these criteria.

- Adult Entertainment
- Gambling
- Tobacco
- Controversial Weapons
- Nuclear Weapons
- Conventional Weapons
- Thermal Coal Mining
- Unconventional Oil & Gas Extraction
- Conventional Oil & Gas Extraction

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<sup>6</sup> [https://www.msci.com/eqb/methodology/meth\\_docs/MSCI\\_IndexCalcMethodology\\_Jul2019.pdf](https://www.msci.com/eqb/methodology/meth_docs/MSCI_IndexCalcMethodology_Jul2019.pdf)

- Thermal Coal-based Power Generation
- Oil & Gas-based Power Generation

### 3.1.2 ESG CONTROVERSIES SCORE ELIGIBILITY

The MSCI World Select Sustainable Mega Trends Index uses MSCI ESG Controversies Scores to identify companies that are involved in very serious controversies involving the environmental, social, or governance impact of their operations and/or products and services. Companies are required to have an MSCI ESG Controversies Score of 1 or above to be eligible for inclusion in the MSCI World Select Sustainable Mega Trends Index.

### 3.1.3 ESG RATINGS ELIGIBILITY

The MSCI World Select Sustainable Mega Trends Index uses MSCI ESG Ratings to rate companies based on the environmental, social, or governance impact of their operations and/or products and services. Companies are required to have an MSCI ESG Ratings of BB or above to be eligible for inclusion in the MSCI World Select Sustainable Mega Trends Index

## 3.2 ADDITIONAL SCREENS

### 3.2.1 LIQUIDITY SCREEN

The remaining securities from above are subsequently screened for 3-month ADTV to be greater than USD 5 Million.

ADTV is defined as Average Daily Traded Volume and is calculated as:

$$ADTV_{3M} = \frac{ATV_{3M}^7}{252}$$

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<sup>7</sup> MSCI Index Calculation Methodology at [https://www.msci.com/eqb/methodology/meth\\_docs/MSCI\\_IndexCalcMethodology\\_Apr2019.pdf](https://www.msci.com/eqb/methodology/meth_docs/MSCI_IndexCalcMethodology_Apr2019.pdf)  
[https://www.msci.com/documents/10199/7366222/MSCI\\_GIMIMethodology\\_Jun2019.pdf/5dc8116b-6d0f-bdd2-7f51-1882b4470059](https://www.msci.com/documents/10199/7366222/MSCI_GIMIMethodology_Jun2019.pdf/5dc8116b-6d0f-bdd2-7f51-1882b4470059)

### 3.3 SECURITY SELECTION

The securities from the eligible universe are subsequently filtered to include a single security per issuer. For issuers having multiple securities which are part of the eligible universe, the security with the highest 3-month ADTV is selected. From the securities remaining post screenings, the following steps are followed:

- Step 1  
Select the Top 50% securities that have highest contribution of sustainable impact revenue to the total revenue of the company. If two or more securities have the same revenue share, the one with higher total market capitalization is selected.
- Step 2  
From the remaining universe, select the Top 50% securities based on dividend yield factor of the relevant Barra Equity Model<sup>8</sup>.
- Step 3  
The selection of constituents from the securities remaining after Step 2 is done using the optimization process wherein we target to select 50 securities.

### 3.4 WEIGHTING SCHEME

The weights of the securities are an outcome of the optimization process. The optimization relies on factor exposures for all the securities in the remaining universe and the factor covariance matrix of the relevant Barra Equity Model<sup>9</sup>. The optimization is performed using EUR as base currency. The optimization objective is to maximize the alpha score (representative of the exposure to dividend yield factor) under various optimization constraints.

#### CALCULATION OF THE ALPHA SCORE

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<sup>8</sup> Please Refer to Appendix II

<sup>9</sup> Please Refer to Appendix II

$$\alpha(i) = F(i)$$

Where,

$F_i$  = Factor exposure of each security  $i$  to the target Dividend Yield factor

### 3.5 OPTIMIZATION CONSTRAINTS

The Index is constructed using the Barra Open Optimizer in combination with the Barra Equity Model<sup>10</sup>. The optimization uses the above selected securities in Step 2 as the universe of eligible securities and the specified optimization objective and constraints to determine the MSCI World Select Sustainable Mega Trends Index.

The Barra Open Optimizer determines the optimal solution, to achieve relatively high exposure to dividend yield factor by maximizing the exposure to the dividend yield factor less a penalty for the common factor and stock-specific risk characteristics of each potential constituent.

At each quarterly rebalance, the following optimization constraints are applied which aim to ensure investability while achieving high dividend yield and low volatility:

No.	Parameter	Constraint
1	Number of Constituents	50
2	The Sustainable Impact revenue percentage of the portfolio	>=25%
3	Maximum weight of a single security	5%
4	Security Weight as a Multiple of its weight in the Parent Index	1000
5	Maximum Weight to a GICS sector	25%
6	Maximum Weight to a Region <sup>11</sup>	50%
7	One Way Turnover	100%
8	The portfolio risk currency	EUR
9	Specific Risk Aversion	0.015
10	Common Factor Risk Aversion	0.0015

<sup>10</sup> Please Refer to Appendix II

<sup>11</sup> Appendix IV



11	Active Exposure to Momentum and Size <sup>12</sup> Barra style factors	(-0.25%, +0.75%)
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## 4 Maintenance of the Index

### 4.1 QUARTERLY INDEX REVIEWS

The MSCI World Select Sustainable Mega Trends Index is reviewed on a quarterly basis. The quarterly index rebalance is staggered over a period of 5 days from the 1st business day to the 5th business day of the months of June, September, December and March.

The pro forma index is in general announced five business days before the first effective date, continuing for the next 5 business days.

#### 4.1.1 STAGGERED REBALANCE

The quarterly Index rebalance is staggered over a period of 5 days starting on the 1st business day of each June, September, December and March. 5 versions of the Index are calculated, based on the steps described above, having their effective date from the 1st to 5<sup>th</sup> business day respectively. These indexes are then equal weighted on the 5<sup>th</sup> business day to arrive at the final index.

### 4.2 ONGOING EVENT RELATED CHANGES

The following section briefly describes the treatment of common corporate events within the MSCI World Select Sustainable Mega Trends Index.

No new securities will be added (except where noted below) to the Index between Index Reviews. For cases where additions are noted below, securities will be added to the Index only if added to the Parent Index. Parent Index deletions will be reflected simultaneously.

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<sup>12</sup> Appendix I

**EVENT TYPE**

**EVENT DETAILS**

**New additions to the Parent Index**

A new security added to the Parent Index (such as IPO and other early inclusions) will not be added to the index.

**Spin-Offs**

All securities created as a result of the spin-off of an existing Index constituent will be added to the Index at the time of event implementation. Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

**Merger/Acquisition**

For Mergers and Acquisitions, the acquirer's post event weight will account for the proportionate amount of shares involved in deal consideration, while cash proceeds will be invested across the Index.

If an existing Index constituent is acquired by a non-Index constituent, the existing constituent will be deleted from the Index and the acquiring non-constituent will not be added to the Index.

**Changes in Security Characteristics**

A security will continue to be an Index constituent if there are changes in characteristics (country, sector, size segment, etc.) Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

Further detail and illustration regarding specific treatment of corporate events relevant to this Index can be found in the MSCI Corporate Events Methodology book under the sections detailing the treatment of events in Capped Weighted and Non-Market Capitalization Weighted indexes.

The MSCI Corporate Events methodology book is available at:  
<https://www.msci.com/index-methodology>

## Appendix I: Definitions of Size and Momentum Style Factors in Barra Global Total Market Equity Model for Long Term Investors

These factors are described using MSCI Barra Global Equity Model for Long-Term Investors (GEMLTL). The precise choice of component factors used to represent each broad factor group is governed by the current model used for the optimization, which may change with a new release of the Barra Equity Model.

### Momentum

Differentiates stocks based on their performance over the trailing 12 months. When computing Momentum exposure, we exclude the most recent returns in order to avoid the effects of short-term reversal.

$$\text{Momentum} = 0.5 \cdot \text{RSTR} + 0.5 \cdot \text{HALPHA}$$

Where

RSTR = Relative Strength

The non-lagged Relative Strength is first computed from the returns from the trailing 252 days:

$$RS(t) = \sum_{\tau=0}^{251} w_{\tau} [\ln(1 + r_{t-\tau}) - \ln(1 + r_{m,t-\tau})]$$

where,  $r_t$  is the stock excess return, and  $r_{m,t}$  is the capitalization-weighted market excess return on day t, and  $w_{\tau}$  is the exponential weight with a 126-day half-life. The final RSTR descriptor is then computed as the equal-weighted average of the RS from an 11-day window lagged by 11 days.

HALPHA = Historical Alpha

First, non-lagged values of historical alpha are computed by the time-series regression of HBETA. Historical alpha is then computed as the equal-weighted average of non-lagged values over the previous 11 to 21 trading days. This treatment introduces a lag while avoiding undue jumps in historical alpha exposures when large returns enter the estimation window.

### Size

Represents strong source of equity return covariance, and captures return differences between large-cap stocks and small-cap stocks. We measure Size by the log of market capitalization.

## **Appendix II: New Release of BARRA® EQUITY MODEL or BARRA® OPTIMIZER**

The methodology presently uses MSCI Barra Global Equity Model for Long-Term Investors (“GEMTL”) for the optimization. A new release of the relevant Barra Equity Model or Barra Optimizer may replace the former version within a suitable timeframe.

## Appendix III: Values and Climate Change-Based Exclusion Criteria

The MSCI World Select Sustainable Mega Trends Index is constructed with an aim to reflect the performance of companies that are consistent with specific values- and climate change-based criteria.

### Values-based Exclusions Criteria

- **Adult Entertainment**
  - All companies that have an industry tie to adult entertainment, including the producer, distributor, retailer, or ownership categories. In particular, the screen excludes companies that produce, direct, publish, retail, or distribute adult entertainment materials, as well as have ownership ties.
- **Gambling**
  - All companies that have an industry tie to gambling through the operation, support, licensing, or ownership categories. In particular, the screen excludes companies that own or operate gambling facilities, provide key products or services fundamental to gambling operations, license their company name or brand name to gambling products, or have ownership ties.
- **Tobacco**
  - All companies classified as a “Producer”
  - All companies deriving 5% or more aggregate revenue from the production, distribution, retail and supply of tobacco-related products
- **Controversial Weapons**
  - All companies that manufacture cluster munitions, essential components of these products, and delivery platforms capable of carrying and deploying cluster munitions.
  - All companies that manufacture anti-personnel landmines, anti-vehicle landmines, and essential components of anti-personnel landmines.
  - All companies that manufacture weapons, ammunition, and armor made with depleted uranium (DU) and DU alloys.

- All companies that manufacture biological or chemical weapons, and essential components of these products.
  - All companies that manufacture weapons utilizing laser technology to cause permanent blindness.
  - All companies that manufacture weapons using non-detectable fragments to inflict injury.
  - All companies that manufacture weapons using white phosphorus.
  - All companies with ownership of 20% or more of a weapons, components, or delivery platforms producer for the above-mentioned controversial weapons. The minimum limit is raised to 50% for financial companies having an ownership in a company that manufactures controversial weapons, key components, or delivery platforms of controversial weapons
  - All companies owned 50% or more by a company involved in weapons, components, or delivery platforms production for the above-mentioned controversial weapons.
- **Nuclear Weapons**
    - All companies that manufacture nuclear warheads and/or whole nuclear missiles
    - All companies that manufacture components that were developed or are significantly modified for exclusive use in nuclear weapons (warheads and missiles)
    - All companies that manufacture or assemble delivery platforms that were developed or significantly modified for the exclusive delivery of nuclear weapons
    - All companies that provide auxiliary services related to nuclear weapons
    - All companies that manufacture components that were not developed or not significantly modified for exclusive use in nuclear weapons (warheads and missiles) but can be used in nuclear weapons
    - All companies that manufacture or assemble delivery platforms that were not developed or not significantly modified for the exclusive delivery of nuclear weapons but have the capability to deliver nuclear weapons
    - All companies that manufacture components for nuclear-exclusive delivery platforms

- **Conventional Weapons**

- All companies deriving 5% or more revenue from the production of conventional weapons and components
- All companies deriving 15% or more aggregate revenue from weapons systems, components, and support systems and services

**Climate Change-based Exclusions Criteria**

- **Thermal Coal Mining**

- All companies deriving more than 10% 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 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

- **Unconventional Oil & Gas Extraction**

- All companies deriving more than 10% revenue (either reported or estimated) from unconventional oil and gas production. It includes revenue from the production of oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane, as well as revenue from onshore or offshore oil and gas production in the Arctic region. It excludes revenue from conventional oil and gas production including deepwater, shallow water, and other onshore/offshore oil and gas.

- **Conventional Oil & Gas Extraction**

- All companies deriving more than 0% revenue (either reported or estimated) from conventional oil and gas production. It includes revenue from the production of deepwater shallow water, and other onshore/offshore oil and gas. It excludes revenue from unconventional oil and gas production (oil sands, shale oil, shale gas) and onshore/offshore oil and gas production in the Arctic region.

- **Thermal Coal-based Power Generation**

- All companies generating more than 10% of their total electricity from thermal coal in a given year

- All companies that have more than 10% of installed capacity attributed to thermal coal in a given year
- All companies deriving more than 10% revenue (either reported or estimated) from thermal coal-based power generation
- **Oil & Gas-based Power Generation**
  - All companies generating more than 30% of their total electricity from liquid fuel and natural gas in a given year
  - All companies that have more than 30% of installed capacity attributed to liquid fuel and natural gas in a given year
  - All companies deriving more than 30% revenue (either reported or estimated) from liquid fuel- and natural gas-based power generation
- **Nuclear Power-based Power Generation**
  - All companies generating more than 30% of their total electricity from nuclear power in a given year
  - All companies that have more than 30% of installed capacity attributed to nuclear sources in a given fiscal year
  - All companies deriving more than 30% revenue (either reported or estimated) from ownership or operation of nuclear power plants

**TIMELINE OF SCREEN ADJUSTMENT**

Some criteria from the above-mentioned screens for the MSCI World Select Sustainable Mega Trends Index, including Tobacco, Thermal Coal Mining, Thermal Coal-based Power Generation, and Unconventional Oil & Gas Extraction, will be adjusted between 2020 and 2025 to reflect the adoption of stricter thresholds over time. The changes will be implemented at the November Index Review of the preceding year, so that the index reflects the thresholds for the relevant calendar year.

**Screens that will be modified**

- **Tobacco**

<b>2019 to 2024</b>	<b>2025 onwards</b>
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<p>All companies classified as a “Producer”;</p> <p>All companies deriving 5% or more aggregate revenue from the production, distribution, retail and supply of tobacco-related products</p>	<p>All companies that have an industry tie to tobacco products through the distributor, licensor, retailer, supplier, or ownership categories.</p>
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- **Thermal Coal Mining**

2019 to 2021	2022 to 2024	2025 onwards
<p>All companies deriving more than 10% revenue (either reported or estimated) from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties.</p>	<p>All companies deriving more than 5% revenue (either reported or estimated) from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties.</p>	<p>All companies deriving more than 0% revenue (either reported or estimated) from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties.</p>

- **Thermal Coal-based Power Generation**

2019 to 2024	2025 onwards
<p>All companies generating more than 10% of their total electricity from thermal coal in a given year;</p> <p>All companies that have more than 10% of installed capacity attributed to thermal coal in a given year;</p> <p>All companies deriving more than 10% revenue (either reported or estimated) from thermal coal-based power generation</p>	<p>All companies generating more than 0% of their total electricity from thermal coal in a given year;</p> <p>All companies that have more than 0% of installed capacity attributed to thermal coal in a given year;</p> <p>All companies deriving more than 0% revenue (either reported or estimated) from thermal coal-based power generation</p>

- **Unconventional Oil & Gas Extraction**

2019 to 2021	2022 to 2024	2025 onwards
All companies deriving more than 10% revenue (either reported or estimated) from unconventional oil and gas production.	All companies deriving more than 5% revenue (either reported or estimated) from unconventional oil and gas production.	All companies deriving more than 0% revenue (either reported or estimated) from unconventional oil and gas production.

## Appendix IV: Definition of Regions

For the MSCI World Select Sustainable Mega Trends Index, we define the following 3 custom regions:

No.	Region	Countries
1	USA	USA
2	Europe	Denmark, Netherlands, Austria, Sweden, Portugal, Ireland, United Kingdom, Spain, Norway, Finland, Belgium, Italy, France, Germany, Switzerland, Israel
3	Asia	Australia, Singapore, New Zealand, Hong Kong, Japan

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\* = toll free

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