

MSCI WORLD CIRCULAR ECONOMY AND NATURAL CAPITAL SELECT 30 INDEX METHODOLOGY

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1 Introduction

The MSCI World Circular Economy and Natural Capital Select 30 Index aims to represent the performance of a quarterly rebalanced portfolio of 30 stocks which are rated at BB or above by MSCI ESG Research, generate higher revenue from circular economy and MSCI Sustainable Impact metric’s Natural Capital theme related activities. These stocks also exhibit high dividend yield and low volatility characteristics. The MSCI World Circular Economy and Natural Capital Select 30 Index aims to achieve diversification with country and sector constraints.

2 CIRCULAR ECONOMY

The concept of circular economy is that resources are utilized throughout its lifespan, from production to the end stage, where end-of-life products are returned into the economic system to be used as input, as opposed to a linear economy – where resources are used, and waste is discarded. The aim of a circular economy is to maximize the use of resources and minimize waste, and complementary to this goal is the use of cleaner sources of energy.

3 MSCI ESG RESEARCH

The MSCI World Circular Economy and Natural Capital Select 30 Index uses company ratings and research provided by MSCI ESG Research. The MSCI World Circular Economy and Natural Capital Select 30 Index uses the following MSCI ESG Research products: MSCI ESG Ratings, MSCI ESG Controversies, MSCI Business Involvement Screening Research, and MSCI Sustainable Impact Metrics.

For details on MSCI ESG Research's full suite of ESG products, please refer to:

<https://www.msci.com/esg-investing>

3.1 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>

3.2 MSCI ESG CONTROVERSIES

MSCI ESG Controversies 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>

3.3 MSCI ESG BUSINESS INVOLVEMENT SCREENING RESEARCH

MSCI ESG Business Involvement Screening Research 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

3.4 MSCI CLIMATE CHANGE METRICS

MSCI Climate Change Metrics is designed to support investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, and factoring climate change research into their risk management processes. It provides Carbon Emissions, Fossil Fuel exposure, environmental impact (i.e., clean technology) data and screens, as well as climate-related risk exposure and management assessment on companies. For more details on MSCI Climate Change Metrics, please refer to <https://www.msci.com/climate-solutions>

3.5 MSCI ESG SUSTAINABLE IMPACT METRICS

MSCI ESG Research's Sustainable Impact Metrics ¹ 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"> 1. Alternative energy 2. Energy efficiency 3. Green building
	Natural capital	<ol style="list-style-type: none"> 4. Sustainable water 5. Pollution prevention
Social	Basic needs	<ol style="list-style-type: none"> 6. Nutrition 7. Major Disease Treatment 8. Sanitation 9. Affordable Real Estate
	Empowerment	<ol style="list-style-type: none"> 10. SME Finance 11. Education

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

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

3.5.1 MSCI SUSTAINABLE IMPACT CATEGORIES

The MSCI World Circular Economy and Natural Capital Select 30 Index uses the Natural Capital theme from MSCI Sustainable Impact metrics. The index uses Sustainable Water and Pollution prevention categories within the Natural Capital theme.

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

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.

3.5.2 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 companies 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 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.

4 Index Construction

The MSCI World Circular Economy and Natural Capital Select 30 Index is constructed from the MSCI World Index (the “Parent Index”).

4.1 ESG ELIGIBILITY CRITERIA

4.1.1 OVERALL SCORE EXCLUSION

The securities from the parent MSCI World Index above are ranked based on a reference overall² revenue score and top 50% of securities based on the score are selected. In case 2 securities have same revenue score, the security with higher 3-month Average Daily Traded Value (ADTV) is selected.

4.1.2 ESG CONTROVERSIES SCORE ELIGIBILITY

The MSCI World Circular Economy and Natural Capital Select 30 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 Index.

4.1.3 ESG RATINGS ELIGIBILITY

The MSCI World Circular Economy and Natural Capital Select 30 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 the Index.

4.1.4 VALUES AND CLIMATE CHANGE-BASED EXCLUSIONS

The MSCI World Circular Economy and Natural Capital Select 30 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 Circular Economy and Natural Capital Select 30. Please refer to Appendix 1 for details on these criteria.

- Adult Entertainment
- Gambling
- Tobacco
- Controversial Weapons

² Appendix V

- Nuclear Weapons
- Conventional Weapons
- Thermal Coal Mining
- Unconventional Oil & Gas Extraction
- Conventional Oil & Gas Extraction
- Thermal Coal-based Power Generation
- Oil & Gas-based Power Generation

4.2 ADDITIONAL SCREENS

4.2.1 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:

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

Where ATV_{3M} is annualized 3-month Average Traded Volume of the security.

4.3 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 selection is performed using the optimization process described under 4.4 and 4.5 wherein we target to select 30 securities.

³ MSCI Index Calculation Methodology at

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

MSCI Global Investable Market Indexes Methodology at

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

4.4 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 Model⁴. The optimization is performed using EUR as base currency. The optimization objective is to maximize risk adjusted portfolio alpha score (representative of the exposure to dividend yield factor) where the portfolio alpha score equals to the weighted average of stock level alpha scores under various optimization constraints.

CALCULATION OF THE ALPHA SCORE

$$\alpha_{Port} = \sum w(i) * \alpha(i)$$

Where,

α_{Port} = Portfolio alpha score

$w(i)$ = Weight of security i in the portfolio

$\alpha(i)$ = Factor exposure of each security i to the target Barra Equity Model⁵ Dividend Yield factor

4.5 OPTIMIZATION CONSTRAINTS

The MSCI World Circular Economy and Natural Capital Select 30 Index is constructed using the Barra Open Optimizer in combination with the relevant Barra Equity Model. The optimization uses the above selected securities as the universe of eligible securities and the specified optimization objective and constraints to determine MSCI World Circular Economy and Natural Capital Select 30 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 relatively higher dividend yield and lower volatility:

No.	Parameter	Constraint
1	Number of Constituents	30

⁴ Please Refer to Appendix II

⁵ Please Refer to Appendix II

2	Maximum weight of a single security	5%
3	Minimum weight of a single security	0.50%
4	Security Weight as a Multiple of its weight in the Parent Index	10000
5	Maximum Weight to a GICS sector	25%
6	One Way Turnover	100%
7	The portfolio risk currency	EUR
8	Specific Risk Aversion	0.0015
9	Common Factor Risk Aversion	0.015

5 Maintenance of the Index

5.1 QUARTERLY INDEX REVIEWS

The MSCI World Circular Economy and Natural Capital Select 30 Index is reviewed on a quarterly basis, coinciding with the May and November Semi-Annual Index Reviews and the February and August Quarterly Index Reviews of the Parent Index.

The pro forma Index is typically announced nine business days before the effective date.

5.2 ONGOING EVENT RELATED CHANGES

The following section briefly describes the treatment of common corporate events within MSCI World Circular Economy and Natural Capital Select 30 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.

EVENT TYPE

EVENT DETAILS

New additions to the Index

A new security added to the Parent Index (such as IPO and other early inclusions) will not be added to the MSCI World Circular Economy and Natural Capital Select 30 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 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-MSCI 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: Values and Climate Change-Based Exclusion Criteria

The MSCI World Circular Economy and Natural Capital Select 30 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 deriving 10% or more aggregate revenue from the production, distribution, retail and supply of tobacco-related products
- **Controversial Weapons**
 - All companies with any tie to Controversial Weapons (cluster munitions, landmines, depleted uranium weapons, biological/chemical weapons, blinding lasers, non-detectable fragments and incendiary weapons), as defined by the methodology of the MSCI Global Ex-Controversial Weapons Indexes available at https://www.msci.com/eqb/methodology/meth_docs/MSCI_Global_ex_Controversial_Weapons_Indexes_Methodology_Nov2019.pdf
- **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
- **Weapons**
 - All companies deriving 10% or more aggregate revenue from weapons systems, components, and support systems and services

Climate Change-based Exclusions Criteria

- **Thermal Coal Mining**
 - All companies deriving 10% 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 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 0% 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 and are deriving less than 40% revenue from products, services, or infrastructure projects supporting the development or delivery of renewable energy and alternative fuels.

The Conventional Oil & Gas Extraction revenue includes revenue from the production of deep water, 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 10% or more of their total electricity from thermal coal in a given year
- All companies that have 10% or more of installed capacity attributed to thermal coal in a given year
- All companies deriving 10% or more revenue (either reported or estimated) from thermal coal-based power generation

- **Oil & Gas-based Power Generation**

- All companies generating 30% or more of their total electricity from liquid fuel and natural gas in a given year
- All companies that have 30% or more of installed capacity attributed to liquid fuel and natural gas in a given year
- All companies deriving 30% or more revenue (either reported or estimated) from liquid fuel- and natural gas-based power generation

- **Nuclear Power-based Power Generation**

- All companies generating 30% or more of their total electricity from nuclear power in a given year
- All companies that have 30% or more of installed capacity attributed to nuclear sources in a given fiscal year
- All companies deriving 30% or more revenue (either reported or estimated) from ownership or operation of nuclear power plants

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

The methodology presently uses MSCI Barra Global Equity Model for Long-Term Investors (“GEMTLT”) 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: HANDLING INFEASIBLE OPTIMIZATIONS

During the quarterly Index review, in the event that there is no optimal solution that satisfies all the optimization constraints defined in Section 4.5 the MSCI World Circular Economy and Natural Capital Select 30 Index will not be rebalanced for that Index review.

Appendix IV: Definitions of Dividend Yield Factor in Barra Global Total Market Equity Model for Long Term Investors

The Dividend Yield factor is described using MSCI's Barra Global Equity Model for Long-Term Investors (GEMTLT). 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.

Dividend Yield

Definition = $0.5 \cdot \text{DTOP} + 0.5 \cdot \text{DTOPF}$

Where

DTOP = Dividend Yield

Computed by dividing the trailing 12-month dividend per share by the price at the last month end.

DTOPF = Analyst-Predicted Dividend-to-Price

Computed by dividing the 12-month forward-looking dividend per share (DPS) by the current price. Forward-looking DPS are defined as a weighted average between the average analyst-predicted DPS for the current and next fiscal years.

APPENDIX V: CALCULATING OVERALL REVENUE SCORE

For each security, the relevant Overall Revenue Score is calculated as:

$$\begin{aligned} \text{OverallScore}(i) &= \text{Natural Capital Revenue Score}(i) \\ &+ \text{Sector Relative Management Score}(i) \end{aligned}$$

Calculation of Natural Capital Revenue Score:

$$\begin{aligned} \text{Natural Capital Rev Score}(i) &= \text{Sustainable Water Revenue Score}(i) \\ &+ \text{Pollution Prevention Revenue Score}(i) \end{aligned}$$

Where Sustainable Water Revenue Score and Pollution Prevention Revenue are retrieved from MSCI Sustainable Impact metrics of MSCI ESG Research.

Calculation of Sector Relative Management Score

$$\begin{aligned} \text{Sector Relative Management Score}(i) &= \text{LowestManagementScore}(i) / \text{SectorMax}(i) \end{aligned}$$

Lowest Management Score

Each security is assessed on relevant Natural Capital and/or Pollution & Waste issues, where the “lowest” management score is taken from among five key issues:

- Biodiversity & Land Use
- Raw Material Sourcing
- Toxic Emissions & Waste
- Packaging Material & Waste
- Electronic Waste

In the absence of availability score for any of the five identified issues, the management score for Water Stress (also considered a global issue) is taken.

For each security, a global 'lowest management score' is calculated as:

$$\text{LowestManagementScore}(i) = \text{Min}(\text{KeyIssue}(k, i))$$

Where

KeyIssue(k, i)= Any of the k Key Issues available for security i

Key Issues = Biodiversity & Land Use, Raw Material Sourcing, Toxic Emissions & Waste, Packaging Material & Waste, Electronic Waste key issue score. In the absence of availability of any score, the relevant Water Stress Management Score for security i is considered.

Sector Max

Each GICS® sector is assessed on primary key issues that are most relevant to it. For example, Energy sector companies are assessed on either or both Biodiversity and Toxic Emissions.

For each security, on the basis of the table below, sector max is calculated as:

$$\text{SectorMax}(i, j) = \text{Max}_j(\text{Primary Key Issue Scores}(k))$$

Where,

i = security i

j = GICS sector relevant to security i

k = relevant k Primary Key Issues for a sector j

GICS_SECTOR	PRIMARY KEY ISSUE(S)
Energy	Biodiversity & Land Use /Toxic Emissions & Waste
Materials	Biodiversity & Land Use /Toxic Emissions & Waste
Utilities	Biodiversity & Land Use /Toxic Emissions & Waste
Health Care	Biodiversity & Land Use /Toxic Emissions & Waste
Industrials	Biodiversity & Land Use /Toxic Emissions & Waste
Consumer Discretionary	Raw Material Sourcing / Electronic Waste
Consumer Staples	Raw Material Sourcing /

Packaging Material & Waste / Water Stress	
Communication Services	Water Stress
Financials	Water Stress
Information Technology	Water Stress
Real Estate	Water Stress

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