

**METHODOLOGY
DOCUMENT FOR
-MSCI GLOBAL
DIVERSIFIED ESG LOW
VOL 100 INDEX
- MSCI GLOBAL
DIVERSIFIED ESG LOW
VOL 100 DECREMENT
5% INDEX**

March 2022

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1 Introduction

The MSCI Global Diversified ESG Low Vol 100 Index aims to represent the performance of a quarterly rebalanced portfolio of 100 stocks from the USA, Pacific, Europe and China A Universes with relatively higher ESG Scores and lower volatility

The MSCI Global Diversified ESG Low Vol 100 Decrement 5% Index aims to represent the net performance of the MSCI Global Diversified ESG Low Vol 100 Index while applying a constant markdown ('synthetic dividend') of 5% on an annual basis, expressed as a percentage of performance.

2 MSCI ESG RESEARCH

The MSCI Global Diversified ESG Low Vol 100 Index uses company ratings and research provided by MSCI ESG Research. The MSCI Global Diversified ESG Low Vol 100 Index uses the following MSCI ESG Research products: MSCI ESG Ratings, MSCI ESG Controversies.

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

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 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 Index Construction

The MSCI Global Diversified ESG Low Vol 100 Index is constructed from the MSCI ACWI Index (the “Parent Index”).

From the Parent Index, the securities that belong to the MSCI World Index and the MSCI China A Index are subsequently selected to constitute the Eligible Universe.

3.1 ELIGIBILITY CRITERIA

3.1.1 ESG CONTROVERSIES SCORE ELIGIBILITY

The securities from the Eligible Universe are required to have an MSCI ESG Controversies Score of 1 or above to be eligible for selection.

3.1.2 LIQUIDITY SCREEN

The remaining securities from above are subsequently screened for 3-month ADTV to be greater than USD 10 Million.

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

$$ADTV_{3M} = \frac{ATV_{3M}^1}{252}$$

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

3.1.3 SINGLE SECURITY SELECTION

The securities 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.

3.1.4 ADDITIONAL ESG EXCLUSIONS

The remaining securities from above are subsequently filtered for values and climate based exclusions as described in Appendix 1.

¹ MSCI Index Calculation Methodology at

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

MSCI Global Investable Market Indexes Methodology at

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

3.2 SECURITY SELECTION

The securities remaining from above are subsequently divided into two sub-groups:

No	Sub-Group
1	World
2	China A

3.2.1 ESG SCORE ELIGIBILITY

The securities in each sub-group are subsequently ranked based on their ESG Scores and the top 75% securities that exhibit highest Industry Adjusted ESG Scores are subsequently selected from each sub-group.

3.2.2 REGIONAL SELECTION

From the sub-groups, the following number of securities from each region within a sub-group are selected based on lowest volatility, where volatility is calculated as the maximum of 3-month and 12-month volatility. The calculation process uses EUR as the base currency.

Sub Group	Region	No of Securities
World	USA	70
World	Europe	15
World	Pacific	5
China A	China A	10

3.3 WEIGHTING SCHEME

The securities are inverse volatility weighted. Volatility is calculated as maximum of 3-month and 12-month volatility. The calculation process uses EUR as the base currency.

Additionally, at each rebalance, if the weight of any security in the Index is greater than 5%, its weight will be capped at 5%.

3.1 APPLYING THE MSCI DECREMENT INDEXES METHODOLOGY

The MSCI Decrement Indexes Methodology² is applied on the MSCI Global Diversified ESG Low Vol 100 Index to construct the MSCI Global Diversified ESG 100 Low Vol Decrement 5% Index. The parameters for the application of the decrement methodology in the above index are noted in Appendix 2.

²Please refer to the MSCI Decrement Indexes methodology at www.msci.com/index-methodology

4 Maintenance of the Index

4.1 QUARTERLY INDEX REVIEWS

The MSCI Global Diversified ESG Low Vol 100 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.

4.2 ONGOING EVENT RELATED CHANGES

The following section briefly describes the treatment of common corporate events within the 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 Index.

Spin-Offs

All securities created as a result of the spin-off of an existing Index constituent will not be added to the Index at the time of event implementation.

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 1: Values and Climate Change-Based Exclusion Criteria

The MSCI Global Diversified ESG Low Volatility 100 Index is constructed with an aim to reflect the performance of companies that are consistent with specific values- and climate change-based criteria.

Compliance with all the UN Global Compact Principles

- All companies that fail to comply with the United Nations Global Compact principles are excluded.

Values-based Exclusions Criteria

- **Adult Entertainment**

All companies classified as a “Producer” that earn more than 0% in revenue from adult entertainment materials

All companies that earn more than 5% in revenue from the retail sale of adult entertainment products through specialty stores or online sites

- **Genetic Engineering**

All companies generating revenue from genetic engineering related business activities

- **Palm Oil**

All companies generating revenue from cultivating oil palm trees and harvesting fresh fruit bunches (FFBs) used to produce palm oil products

- **Biocides**

All companies generating 5% or more of their revenue from biocides related business activities

- **Gambling**

All companies classified as gambling “Operations” or “Support” that earn more than 5% revenue from gambling-related products

- **Weapons**

All companies deriving more than 5% aggregate revenue from weapons systems, components, and support systems and services

- **Tobacco**

All companies deriving more than 0% aggregate revenue from the production, distribution, retail and supply of tobacco-related products.
- **Nuclear Weapons**

All companies that have an industry tie to nuclear weapons.
- **Nuclear Power Uranium Mining**

All companies that own or operate active uranium mines.
- **Controversial Weapons**

All Companies that have any ties to cluster munitions, landmines, biological / chemical weapons, depleted uranium weapons, blinding laser weapons, incendiary weapons, and/or non-detectable fragments.
- **Oil Sands**

All companies with an industry tie to oil sands, in particular reserve ownership and production activities.
- **Oil and Gas Equipment and Services**

All companies generating more than 0% maximum percentage of revenue (either reported or estimated) 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 excludes revenues from extraction & production.
- **Oil and Gas Extraction**

All companies generating more than 0% maximum percentage of revenue (either reported or estimated) from the extraction and production of oil and gas.
- **Thermal Coal based Power Generation**

All companies generating more than 0% maximum percentage of revenue (either reported or estimated) from the thermal coal based power generation.

- **Oil and Gas based Power Generation**

All companies generating more than 0% maximum percentage of revenue (either reported or estimated) from liquid fuel and natural gas based power generation.

For the Values-based Exclusions Criteria, from the parent index, all the companies that are part of defined 'Scope' are selected. From the securities selected in 'Scope', securities are excluded based on the 'Exclusions' criteria set below.

- **Weapons**

Scope

- All companies deriving more than 50% aggregate revenue from weapons systems, components, and support systems and services
- Companies with any tie to manufacturing conventional weapons and weapons systems, including naval, land-based and aircraft gun and fire-control systems; tactical missiles and their warheads and launchers, long-range strategic missiles; howitzers, torpedoes, bombs, ordnance, mortars, submunitions, grenades, ammunition, and other explosive devices; delivery platforms such as bombers, fighters, combat helicopters and attack aircraft; ships (warships, battleships, submarines, battlecruisers, corvettes, landing craft, destroyers, frigates, minehunters, minesweepers, flotillas, river craft,); armored land vehicles (tactical, assault, tanks, main battle tanks (MBTs)).

Exclusions

- All companies deriving more than 5% aggregate revenue from weapons systems, components, and support systems and services
- Securities that are ranked in bottom 50% in Scope above, based on *Opportunities in Clean Tech Management Score*

- **Coal**

Scope

- All companies that belong to GICS sub industry: Coal and Consumable Fuel
- All companies deriving any 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

Exclusions

- 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. 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
- Securities that are ranked in bottom 50% in Scope above, based on *Low Carbon Transition Management Score*
- All companies that have increased their owned total volume of proved and probable reserves (1P+2P) of thermal coal from previous year.

- **Unconventional Oil & Gas Extraction**

Scope

- 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.
- All companies that belong to GICS Sector: Energy
- All companies deriving maximum percentage of revenue (either reported or estimated) greater than 0% from Arctic Oil production. The definition of Arctic is geographical and includes production activities north of the 66.5 latitude. This factor includes offshore or onshore oil production.
- All companies deriving maximum percentage of revenue (either reported or estimated) greater than 0% from Arctic Gas production. The definition of Arctic is geographical and includes production activities north of the 66.5 latitude. This factor includes offshore or onshore gas production.
- All companies deriving more than or equal to 50% revenue (either reported or estimated) from oil and gas related activities, including distribution / retail, equipment and services, extraction and production, petrochemicals, pipelines and transportation and refining but excluding biofuel production and sales and trading activities.

- All companies deriving more than 0% maximum percentage of revenue (either reported or estimated) 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 excludes revenues from extraction & production.

- **Exclusions**

- All companies deriving more than 5% combined revenue from the following 4 activities:
 - Unconventional Oil Gas Revenue

All companies deriving (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.
 - Arctic Oil Revenue

All companies deriving revenue (either reported or estimated) from Arctic Oil production. The definition of Arctic is geographical and includes production activities north of the 66.5 latitude. This factor includes offshore or onshore oil production.
 - Arctic Gas Revenue

All companies deriving revenue (either reported or estimated) from Arctic Gas production. The definition of Arctic is geographical and includes production activities north of the 66.5 latitude. This factor includes offshore or onshore gas production.
 - Oil and Gas Revenue

All companies deriving revenue (either reported or estimated) from oil and gas related activities, including distribution / retail, equipment and services, extraction and production, petrochemicals, pipelines and transportation and refining but excluding biofuel production and sales and trading activities.

- Securities that are ranked in bottom 50% in Scope above, based on *Low Carbon Transition Score*³
- All companies that have had an increase from previous year in the combined owned volume of proved reserves of oil shale & tar sands and the owned volume of proved reserves of shale gas and/or shale oil

- **Conventional Oil & Gas Extraction**

- **Scope**

- All companies that belong to GICS Sector: Energy
 - All companies deriving any revenue greater than 0% from below:
($CONV_OIL_GAS_MAX_REV_PCT - ARCTIC_OIL_MAX_REV_PCT - ARCTIC_GAS_MAX_REV_PCT$)

Where:

$CONV_OIL_GAS_MAX_REV_PCT$

This factor identifies the maximum percentage of revenue (either reported or estimated) greater than 0% that a company derives from conventional oil and gas. It includes all types of conventional oil and gas production including Arctic onshore/offshore, deepwater, shallow water and other onshore/offshore. It excludes revenues from unconventional oil & gas (oil sands, shale oil, shale gas).

$ARCTIC_OIL_MAX_REV_PCT$

This factor identifies the maximum percentage of revenue (either reported or estimated) greater than 0% that a company derives from Arctic Oil production. The definition of Arctic is geographical and includes production activities north of the 66.5 latitude. This factor includes offshore or onshore oil production.

$ARCTIC_GAS_MAX_REV_PCT$

This factor identifies the maximum percentage of revenue (either reported or estimated) greater than 0% that a company derives from Arctic Gas production. The definition of Arctic is geographical and includes production activities north of the 66.5 latitude. This factor includes offshore or onshore gas production.

³ 1 Please refer to <https://www.msci.com/climate-change-solutions> for further details regarding the MSCI Low Carbon Transition score

- All companies deriving more than or equal to 50% revenue (either reported or estimated) from oil and gas related activities, including distribution / retail, equipment and services, extraction and production, petrochemicals, pipelines and transportation and refining but excluding biofuel production and sales and trading activities.

- **Exclusions**

- All companies deriving any revenue greater than or equal to 5% from below:

$$((\text{CONV_OIL_GAS_MAX_REV_PCT} - \text{ARCTIC_OIL_MAX_REV_PCT} - \text{ARCTIC_GAS_MAX_REV_PCT}) + \text{OG_REV})$$

Where:

CONV_OIL_GAS_MAX_REV_PCT

This factor identifies the maximum percentage of revenue (either reported or estimated) greater than 0% that a company derives from conventional oil and gas. It includes all types of conventional oil and gas production including Arctic onshore/offshore, deepwater, shallow water and other onshore/offshore. It excludes revenues from unconventional oil & gas (oil sands, shale oil, shale gas).

ARCTIC_OIL_MAX_REV_PCT

This factor identifies the maximum percentage of revenue (either reported or estimated) greater than 0% that a company derives from Arctic Oil production. The definition of Arctic is geographical and includes production activities north of the 66.5 latitude. This factor includes offshore or onshore oil production.

ARCTIC_GAS_MAX_REV_PCT

This factor identifies the maximum percentage of revenue (either reported or estimated) greater than 0% that a company derives from Arctic Gas production. The definition of Arctic is geographical and includes production activities north of the 66.5 latitude. This factor includes offshore or onshore gas production.

OG_REV

All companies deriving revenue (either reported or estimated) from oil and gas related activities, including distribution / retail, equipment and services, extraction and production, petrochemicals, pipelines and transportation and refining but excluding biofuel production and sales and trading activities.

- Securities that are ranked in bottom 50% in Scope above, based on *Low Carbon Transition Management Score*

- **Power Generation**

- Scope**

- All companies that belong to GICS Industry: Electric Utilities
- All companies that belong to GICS Industry: Gas Utilities
- All companies that belong to GICS Industry: Multi-Utilities
- All companies that belong to GICS Sub-Industry: Independent Power Producers & Energy Traders
- All companies that derive more than 0% maximum percentage of revenue (either reported or estimated) from the fossil fuel (thermal coal, liquid fuel and natural gas) based power generation.
- All companies that derive more than 50% recent-year percent of revenue, or maximum estimated percent, from nuclear power activities.
- All Companies that own or operate nuclear power plants.

- Exclusions**

- All companies that have increased the combined Output in MWh from thermal coal or nuclear power from previous 3-year average.
- All companies that have decreased their combined Output in MWh from hydro or renewables from previous year.
- All companies that derive less than 50% combined maximum percentage of revenue from hydropower generation and renewable energy based power generation.
- Securities that are ranked in bottom 50% in Scope above, based on *Low Carbon Transition Management Score*

Appendix 2: Parameters used for the MSCI Global Diversified ESG Low Vol 100 Decrement 5% Index

The following parameters are used for the calculation of MSCI Global Diversified ESG Low Vol 100 Decrement 5% Index

	MSCI Decrement Indexes Methodology Parameters	Parameters
1	Currency of Calculation	EUR
2	Return Variant of the Parent Index	Daily Net Total Return
3	Decrement Type	Fixed Percentage
4	Decrement Application	Geometric
5	Decrement Value	5%
6	Day-count Convention	Actual / 360
7	Index Floor	0
8	Decrement Frequency	Daily

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