

MSCI EMU PAB SELECT 50 INDEX AND MSCI EMU PAB SELECT 50 DECREMENT 50 POINT INDEX METHODOLOGY

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1 Introduction

The MSCI EMU PAB Select 50 Index is a semi-annually rebalanced index of 50 stocks designed to meet the minimum standards of the the EU Paris-Aligned Benchmark (PAB)¹. The MSCI EMU PAB Select 50 Index is constructed by following an *optimization-based* approach and aims to:

- Reduce the weighted average greenhouse gas intensity by 50% compared to the underlying investment universe.
- Reduce the weighted average greenhouse gas (GHG) intensity by 7% on an annualized basis
- Minimize ex-ante tracking error relative to the Risk Reference Index²
- Exclude companies based on the following criteria:
MSCI EMU PAB Select 50 Index excludes companies involved in Controversial Weapons businesses, Very Severe ESG Controversies, Severe Environmental Controversies, Tobacco Manufacturing, Thermal Coal, Oil & Gas and Fossil Fuel-based power generation.

The MSCI EMU PAB Select 50 Decrement 50 Point Index aims to represent the gross performance of the MSCI EMU PAB Select 50 Index, while applying a constant markdown of 50 points on MSCI EMU PAB Select 50 Index levels on a daily basis.

¹ In case there are changes in the EU delegated acts and an update to the Index methodology is required, MSCI will issue an announcement prior to implementing the changes in the methodology. MSCI will not conduct a formal consultation for such an update.

² Please refer to Appendix VI for definition of Risk Reference Index

2 MSCI ESG Research

The MSCI EMU PAB Select 50 Index uses company ratings and research provided by MSCI ESG Research LLC. In particular, this index uses the following five MSCI ESG Research products: MSCI ESG Ratings, MSCI Climate Change Metrics, MSCI Climate Value-at-Risk, MSCI ESG Controversies and MSCI ESG Business Involvement Screening Research.

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

2.1 MSCI CLIMATE CHANGE METRICS

MSCI Climate Change Metrics provides climate data & tools to support investors integrating climate risk & opportunities into their investment strategy and processes. It supports investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, align 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.

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

2.2 MSCI CLIMATE VALUE-AT-RISK

Climate Value-at-Risk (Climate VaR) is designed to provide a forward-looking and return-based valuation assessment to measure climate related risks and opportunities in an investment portfolio. The fully quantitative model offers deep insights into how climate change could affect company valuations.

For more details on MSCI Climate Value-At-Risk, please refer to

<https://www.msci.com/climate-data-and-metrics>

2.3 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>.

2.4 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

2.5 MSCI ESG RATINGS

MSCI ESG Ratings provides research, data, 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, as well as underlying data and metrics used to compile the scores and ratings.

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

3 Index Construction Methodology

The MSCI EMU PAB Select 50 Index is constructed from the MSCI EMU (the “Parent Index”).

The following steps are applied at initial construction of the Index.

- Eligible Universe Screening
- Optimization constraints
- Determining the optimized portfolio

In addition to the above steps, the following steps are applied to the MSCI EMU PAB Select 50 Index to construct the MSCI EMU PAB Select 50 Decrement 50 Point Index.

- Applying the MSCI Decrement Indexes methodology³

3.1 ELIGIBLE UNIVERSE

3.1.1 Liquidity criteria

Securities with 3-month ADTV greater than or equal to EUR 5 million are eligible for inclusion in the MSCI EMU PAB Select 50 Index.

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

$$ADTV_{3M} = \frac{ATV_{3M}^4}{252}$$

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

To avoid multiple securities of the same company in the final index, only the most liquid security for each issuer per its 3-month ADTV is eligible for inclusion in the Index. For any issuer, should two securities have the same 3-month ADTV, the one with the higher free float-adjusted market capitalization is included.

³ Please refer to the MSCI Decrement Indexes methodology at www.msci.com/index-methodology

⁴ MSCI Index Calculation Methodology at <https://www.msci.com/index-methodology>

MSCI Global Investable Market Indexes Methodology at <https://www.msci.com/index-methodology>

3.1.2 ESG Ratings Eligibility

The MSCI EMU PAB Select 50 Index uses MSCI ESG Ratings to identify companies that have demonstrated an ability to manage their ESG risks and opportunities. Companies having MSCI ESG Rating of 'AAA', 'AA', 'A', 'BBB' and 'BB' are eligible for inclusion in the MSCI EMU PAB Select 50 Index.

3.1.3 ESG Controversies Score Eligibility

The MSCI EMU PAB Select 50 Index uses MSCI ESG Controversies Scores to identify those 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 higher to be eligible for inclusion in the MSCI EMU PAB Select 50 Index.

3.1.4 Environmental Controversies Score Eligibility

The MSCI EMU PAB Select 50 Index uses MSCI Environment Controversy Scores to identify those companies facing very severe and severe controversies pertaining to Environmental issues. Companies are required to have an MSCI Environment Controversy Score of 2 or higher to be eligible for inclusion in the MSCI EMU PAB Select 50 Index.

3.1.5 Controversial Business Involvement Criteria

The MSCI EMU PAB Select 50 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 Eligible Universe. Please refer to Appendix II for details on these criteria.

- Compliance with all the UN Global Compact Principles
- Controversial Weapons
- Thermal Coal Mining
- Tobacco
- Oil & Gas
- Power Generation

3.2 OPTIMIZATION CONSTRAINTS

At each Semi-Annual Index Review, the MSCI EMU PAB Select 50 Index is constructed using an optimization process that aims to achieve replicability and

investability as well as minimize ex-ante tracking error relative to the Risk Reference Index⁵ subject to the following constraints:

1. Climate Objectives – constraints detailed in Table 1
2. Diversification objectives – constraints detailed in Table 2

The definitions of the target metrics for the optimization are detailed in Appendix I.

Table 1: Constraints imposed to meet Climate objectives

No.	Climate Objective	MSCI EMU PAB Select 50 Index
1.	Minimum reduction in Greenhouse Gas (GHG) Intensity (Scope 1+2+3 ⁶) relative to Parent Index	50%
2.	Minimum average reduction (per annum) in GHG Intensity relative to GHG Intensity at the Base Date ⁷	7%
3.	Minimum active weight in High Climate Impact Sector relative to Parent Index as defined in Appendix I	0%

Table 2: Constraints imposed to meet diversification objectives

Diversification Objective	MSCI EMU PAB Select 50 Index
Constituent Maximum Weight	7.5%
Minimum constituent weight	0.01%
Target Number of Stocks	50

During the Semi-Annual Index Review, in the event that there is no optimal solution that satisfies all the optimization constraints defined in Table, Constituent Maximum Weight and Target Number of Stocks constraints will be relaxed, to find an optimal solution.

⁵ Please refer to Appendix VI for definition of Risk Reference Index

⁶ Prior to the May 2020 Semi-Annual Index Review (SAIR) of the Indexes, the Weighted Average Carbon Emissions Intensity has been calculated based on Scope 1+2 Emissions.

⁷ Prior to the May 2020 Semi-Annual Index Review (SAIR) of the Indexes, the average reduction in WACI has been calculated using Scope 1+2 Emissions since Inception.

In the event that no optimal solution is found after the above constraint relaxation, the relevant Index will not be rebalanced for that Semi-Annual Index Review.

3.3 DETERMINING THE OPTIMIZED PORTFOLIO

The MSCI EMU PAB Select 50 Index is constructed using the Barra Open Optimizer⁸ in combination with the relevant Barra Equity Model. The weights of the securities are an outcome of the optimization process. The optimization uses universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of the MSCI EMU PAB Select 50 Index.

3.4 APPLYING THE MSCI DECREMENT INDEXES METHODOLOGY

The MSCI Decrement Indexes Methodology⁹ is applied on the MSCI EMU PAB Select to construct the MSCI EMU PAB Select 50 Decrement 50 Point Index. The parameters for the application of the decrement methodology in the above index is noted in Appendix III.

⁸ Please refer to Appendix IV and V for more details.

⁹ Please refer to the MSCI Decrement Indexes methodology at www.msci.com/index-methodology

4 Maintaining MSCI EMU PAB Select 50 Index

4.1 SEMI-ANNUAL INDEX REVIEWS

The MSCI EMU PAB Select 50 Index is rebalanced on a semi-annual basis, as of the close of the last business day of May and November, coinciding with the May and November Semi-Annual Index Review of the MSCI Global Investable Market Indexes. The pro forma Indexes are in general announced nine business days before the effective date.

In general, MSCI uses MSCI ESG Research data (including MSCI Climate Change Metrics, MSCI Climate Value-at-Risk, MSCI ESG Controversies and MSCI Business Involvement Screening Research) as of the end of the month preceding the Index Reviews for the rebalancing of the Indexes.

4.2 ONGOING EVENT RELATED CHANGES

The general treatment of corporate events in the MSCI EMU PAB Select 50 Index aims to minimize turnover outside of Index Reviews. The methodology aims to appropriately represent an investor’s participation in an event based on relevant deal terms and pre-event weighting of the index constituents that are involved. Further, changes in index market capitalization that occur as a result of corporate event implementation will be offset by a corresponding change in the Variable Weighting Factor (VWF) of the constituent.

Additionally, if the frequency of Index Reviews in the Parent Index is greater than the frequency of Index Reviews in the MSCI EMU PAB Select 50 Index, the changes made to the Parent Index during intermediate Index Reviews will be neutralized in the Index.

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. Parent Index deletions will be reflected simultaneously.

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: Calculation of Target Metrics

Calculation of GHG Intensity

For Parent Index constituents where the Scope 1+2+3 Emissions Intensity is not available, the average Scope 1+2+3 Emissions Intensity of all the constituents of the MSCI ACWI in the same GICS Industry Group in which the constituent belongs is used.

Security Level GHG Intensity =

$$\frac{\text{Scope 1 + 2 + 3 Carbon Emissions} * (1 + EVIAF)}{\text{Enterprise Value} + \text{Cash(in M\%)}}$$

Enterprise Value Inflation Adjustment Factor (EVIAF) =

$$EVIAF = \left(\frac{\text{Average(Enterprise Value} + \text{Cash)}}{\text{Previous (Average(Enterprise Value} + \text{Cash))}} \right) - 1$$

Weighted Average GHG Intensity of Parent Index =

$$\sum (\text{Weight in Parent Index} * \text{Security Level GHG Intensity})$$

Weighted Average GHG Intensity of Derived Index =

$$\sum (\text{Index Weight} * \text{Security Level GHG Intensity})$$

Calculation of Potential Carbon Emissions Intensity

For newly added companies to the index where data is not available yet, MSCI uses zero fossil fuel reserves.

Security Level Potential Carbon Emissions (PCE) Intensity =

$$\frac{\text{Absolute Potential Emissions} * (1 + EVIAF)}{\text{Enterprise Value} + \text{Cash(in M\%)}}$$

Weighted Average Potential Emissions Intensity of Parent Index =

$$\sum (Weight\ in\ Parent\ Index * Security\ Level\ PCE\ Intensity)$$

Weighted Average Potential Emissions Intensity of Derived Index =

$$\sum (Index\ Weight * Security\ Level\ PCE\ Intensity)$$

Calculation of Average Decarbonization

On average, the Indexes follow a 10% decarbonization trajectory since the Base Date. The Weighted Average GHG Intensity at the Base Date (W_1) is used to compute the target Weighted Average GHG Intensity at any given Semi-Annual Index Review (W_t) as per the below formula.

$$W_t = W_1 * 0.90^{\frac{(t-1)}{2}}$$

Where 't' is the number of Semi-Annual Index Reviews since the Base Date.

Thus, for the 3rd Semi-Annual Index Review since the Base Date (t=3), the target Weighted Average GHG Intensity will be $W_1 * 0.90$.

Companies Setting Targets

Relative to their corresponding Parent Indexes, the Indexes require a minimum 20% increase in the aggregate weight of companies setting emissions reduction targets

- companies publishing emissions reduction targets
- companies publishing their annual emissions and
- Companies reducing their GHG intensity by 7% over each of the last 3 years

Calculation of Green Revenue to Fossil fuels-based Revenue Multiple

Green Revenue

For each constituent in the Parent Index, the Green Revenue% is calculated as the cumulative revenue (%) from the six Clean Tech themes which are as follows:

- Alternative Energy – products and services that support the transmission, distribution and generation of renewable energy and alternative fuels to reduce carbon and pollutant emissions in supporting affordable and clean energy to combat climate change.

- Energy Efficiency – products, and services that support the maximization of productivity in labor, transportation, power and domestic applications with minimal energy consumption to ensure universal access to affordable, reliable and modern energy services.
- Sustainable Water – products, services, infrastructure projects and technologies that resolve water scarcity and water quality issues, through minimizing and monitoring current water demand, improving the quality and availability of water supply to improve resource management in both domestic and industrial use.
- Green Building – design, construction, redevelopment, retrofitting, or acquisition of green-certified properties to promote mechanisms for raising capacity for effective climate change mitigation and adaptation.
- Pollution Prevention – products, services, infrastructure projects and technologies that reduces volume of waste materials through recycling, minimizes introduction of toxic substances, and offers remediation of existing contaminants such as heavy metals and organic pollutants in various environmental media to significantly address pollution in all levels and its negative effects
- Sustainable Agriculture - revenues from forest and agricultural products that meet environmental and organic certification requirements to address significantly biodiversity loss, pollution, land disturbance, and water overuse

The Weighted Average Green Revenue% is calculated as:

$$= \sum (Weight\ in\ Index * Green\ Revenue\%)$$

Fossil fuels-based Revenue

For each constituent in the Parent Index, the Fossil fuels-based Revenue% is calculated as the cumulative revenue (%) from the following sources:

- 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 (either reported or estimated)
- Revenue% from the extraction, production and refining of Conventional and Unconventional Oil & Gas. Conventional Oil and Gas includes Arctic onshore/offshore, deep water, shallow water and other onshore/offshore.

Unconventional Oil and Gas includes oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane.

- Revenue% from thermal coal based power generation, liquid fuel based power generation and natural gas based power generation.

The Weighted Average Fossil fuels-based Revenue% is calculated as:

$$= \sum (Weight\ in\ Index * Brown\ Revenue\%)$$

The Green Revenues to Fossil fuels-based Revenues multiple for either the Parent Index or the Index is calculated as a ratio of the Weighted Average Green Revenue to the Weighted Average Fossil fuels-based Revenue as per the formula below:

$$= \frac{Weighted\ Average\ Green\ Revenue\%}{Weighted\ Average\ Brown\ Revenue\%}$$

Aggregate Climate Value-at-Risk (VaR)

The Index-level Aggregate Climate Value-at-Risk for any Index is calculated as the sum of the below 3 components:

1. **Policy Risk Climate VaR¹⁰ (1.5 Degrees):** Weighted average of security level 1.5°C Aggregated Policy Risk Equity Climate VaR (AIM CGE) [%]
2. **Technology Opportunities Climate VaR (1.5 Degrees):** Weighted average of security level 1.5°C Technology Opportunity Equity Climate VaR (AIM CGE) [%]
3. **Extreme Weather Climate VaR (Aggressive Scenario):** Weighted average of security level Aggregated Extreme Weather Equity Climate VaR (Aggressive Scenario) [%]

Climate Impact Sectors

NACE¹¹ is the European Union’s classification of economic activities. As per the draft DA, stocks in the NACE Section codes A, B, C, D, E, F, G, H, L are classified as “High

¹⁰ Starting from the May 2020 Semi-Annual Index Review, the Policy Risk Climate VaR used in the Indexes incorporate Scope 2 and Scope 3 emissions as well. The Policy Risk Climate VaR used in the May 2020 Semi-Annual Index Review of the Indexes is as of September 30, 2020.

¹¹ For further details regarding NACE, please refer to https://ec.europa.eu/eurostat/statistics-explained/index.php?title=NACE_background

Climate Impact” sector and other stocks are classified ‘Low Climate Impact’ sector. The GICS¹² Sub-Industry code for each security is mapped to the corresponding “Climate Impact Sector” using a mapping. This mapping is constructed in the following steps:

1. MSCI has published a mapping¹³ between the NACE classes and GICS Sub-Industry.
2. 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
3. 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
4. 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 Industry is mapped to the Climate Impact Sector in the following manner:
 - a. **$N_H \geq N_L$** : 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
 - b. **$N_H < N_L$** : 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
5. Using the GICS Sub-Industry to Climate Impact Sector mapping created in Step 4, and the security-level GICS Sub-Industry, each security in the Parent Index is classified in either High Climate Impact Sector or Low Climate Impact Sector

¹² For further information regarding GICS, please refer to <https://www.msci.com/gics>

¹³ This mapping is available in the [Handbook of Climate Transition Benchmarks, Paris-Aligned Benchmark and Benchmarks’ ESG Disclosures](#)

Appendix II: Values- and Climate Change-Based Exclusion Criteria

The MSCI EMU PAB Select 50 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. In this filter, activities are not classified under any specific tolerance level

Values-based Exclusions Criteria

- **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) according to MSCI Ex-Controversial Weapons Indexes are excluded.

- **Tobacco**

- All companies classified as a “Producer”.
- All companies deriving any revenue from the production, distribution, retail and supply of tobacco-related products.

Climate Change-based Exclusions Criteria

- **Thermal Coal Mining**

- 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 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 (either reported or estimated)

- **Oil & Gas**

- All companies deriving any 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

- **Power Generation**

- All companies deriving any revenue from thermal coal-based power generation, liquid fuel based power generation and natural gas based power generation¹⁴.

- **Unconventional Oil & Gas**

- All companies deriving any revenue from unconventional oil and gas. It includes revenues from oil sands, shale gas, and shale oil. It excludes all types of conventional oil and gas production including Arctic onshore/offshore, deep-water, shallow water and other onshore/offshore.

¹⁴ As per https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter7.pdf, thermal coal based power generation, liquid fuel based power generation and natural gas based power generation have median lifecycle emissions exceeding 100gCO₂/kWh.

Appendix III: Parameters used for MSCI EMU PAB Select 50 Decrement 50 Point Index

- The following parameters are used for the calculation of MSCI EMU PAB Select 50 Decrement 50 Point Index

	MSCI Decrement Indexes Methodology Parameters	Parameters
1	Currency of Calculation	EUR
2	Return Variant of the MSCI EMU PAB Select 50 Index	Daily Gross Total Return
3	Decrement Type	Fixed Index Points
4	Decrement Application	Geometric
5	Decrement Value	50 points
6	Day-count Convention	Actual / 365
7	Index Floor	0
8	Decrement Frequency	Daily

Appendix IV: Barra Equity Model Used in The Optimization

The MSCI EMU PAB Select 50 Index currently use an optimization setup using the MSCI Barra Global Equity Model for Long-Term Investors (GEMTLT).

Appendix V: New release of Barra® Equity Model or Barra® Optimizer

A major new release of the relevant Barra Equity Model or Barra Optimizer may replace the former version within a suitable timeframe.

Appendix VI: Definition of Risk Reference Index

At each rebalance, the Risk Reference Index is constructed by selecting top 50 securities from the MSCI EMU Index based on their free float market capitalization. The securities selected for inclusion in the Risk Reference Index assigned weights in proportion to their free-float adjusted market capitalization.

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To learn more, please visit www.msci.com

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