

**METHODOLOGY BOOK FOR:
-MSCI USA ESG QUALITY SELECT
LOW VOLATILITY INDEX
- MSCI USA ESG QUALITY SELECT
LOW VOLATILITY 10% RISK
CONTROL 2% DECREMENT INDEX**

March 2023

Contents

- 1 Introduction 4
- 2 ESG Research Framework 5
 - 2.1 MSCI ESG Business Involvement Screening Research 5
 - 2.2 MSCI ESG Ratings..... 5
 - 2.3 MSCI ESG Controversies 5
 - 2.4 MSCI Climate Change Metrics..... 6
- 3 Constructing the Index 7
 - 3.1 Defining the Parent Index and base currency for optimization 7
 - 3.2 Eligible Universe Screening 7
 - 3.2.1 Liquidity criteria 7
 - 3.2.2 ESG Ratings Eligibility..... 8
 - 3.2.3 ESG Controversies Score Eligibility 8
 - 3.2.4 Value-Based Exclusions 8
 - 3.2.5 Carbon Emission Intensity Screening..... 9
 - 3.2.6 Quality Screening 9
 - 3.3 Defining the Optimization Constraints..... 10
 - 3.4 Determining the Optimized Index 10
 - 3.5 Applying the MSCI Risk Control and Decrement Indexes Methodology 10
- 4 Maintaining the Index..... 11
 - 4.1 Quarterly Index Reviews 11
 - 4.2 Daily Risk Control and Daily Decrement Application..... 11
 - 4.3 Ongoing Event-Related Changes..... 11
- Appendix 1: New release of Barra® Equity Model or Barra® Optimizer 14
- Appendix 2: Quality Factor Definition 15

Appendix 3: Parameters used for the MSCI USA ESG Quality
Select Low Volatility 10% Risk Control 2% Decrement Index ... 16

Appendix 4: Values-Based Exclusion Criteria..... 18

1 Introduction

The MSCI USA ESG Quality Select Low Volatility Index (herein, “the Index”) aims to represent the performance of a strategy that seeks lower risk¹ than the MSCI USA index along with improvement in the Quality, ESG and Carbon Emission Intensity characteristics.

The MSCI USA ESG Quality Select Low Volatility 10% Risk Control 2% Decrement Index aims to represent the performance of the MSCI USA ESG Quality Select Low Volatility Index, while targeting a specific level of risk and applying a constant markdown (‘synthetic dividend’) expressed as a percentage of performance.

¹ An estimated security co-variance matrix based on the relevant Barra multi-factor equity model is used to forecast lowest risk. Details about the Barra multi-factor risk models are available at <https://www.msci.com/portfolio-management>

2 ESG Research Framework

The MSCI USA ESG Quality Select Low Volatility Index uses research provided by MSCI ESG Research LLC. In particular, the MSCI USA ESG Quality Select Low Volatility 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-investing>

2.1 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

2.2 MSCI ESG RATINGS

MSCI ESG Ratings aim to measure entities’ management of environmental, social and governance risks and opportunities. MSCI ESG Ratings are based on a seven-point scale from ‘AAA’ to ‘CCC’, indicating how an entity manages relevant key issues relative to industry peers.

The MSCI ESG Ratings methodology can be found at: <https://www.msci.com/esg-and-climate-methodologies>

2.3 MSCI ESG CONTROVERSIES

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

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

2.4 MSCI CLIMATE CHANGE METRICS

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

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

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

3 Constructing the Index

The Index is constructed from MSCI USA (the “Parent Index”). The following steps are applied at initial construction of the Index.

- Defining the Parent Index, Eligible Universe, and the base currency for optimization
- Eligible Universe Screening
- Defining the optimization constraints
- Determining the optimized portfolio

The MSCI USA ESG Quality Select Low Volatility 10% Risk Control 2% Decrement Index is constructed from the Index, by applying the following steps sequentially:

- Applying the MSCI Risk Control Indexes methodology
- Applying the MSCI Decrement Indexes methodology

3.1 DEFINING THE PARENT INDEX, ELIGIBLE UNIVERSE, AND THE BASE CURRENCY FOR OPTIMIZATION

Constructing the Index begins with the Parent Index and then applying screens to arrive at the eligible universe to perform total risk minimizing optimization. The optimization is performed from a base currency perspective and does not allow short selling of securities. The optimization base currency is US Dollar.

The optimization relies on factor exposures for all the securities in the Parent Index and the factor co-variance matrix of the relevant Barra Equity Model².

3.2 ELIGIBLE UNIVERSE SCREENING

3.2.1 LIQUIDITY CRITERIA

Securities with 12-month ADTV greater than or equal to USD 5 million are eligible for inclusion in the Index.

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

² Please refer to Appendix 1 for the detailed information on model usage

$$ADTV_{12M} = \frac{ATV_{12M}^3}{252}$$

Where ATV_{12M} is annualized 12-month Average Traded Value of the security.

To avoid multiple securities of the same company in the Index, only the most liquid security for each issuer per its 12-month ADTV is eligible for inclusion in the Index. For any issuer, should two securities have the same 12-month ADTV, the one with the higher free float-adjusted market capitalization is included.

3.2.2 ESG RATINGS ELIGIBILITY

The 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' or 'BBB' are eligible for inclusion in the Index⁴.

3.2.3 ESG CONTROVERSIES SCORE ELIGIBILITY

The 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 Index⁵.

3.2.4 VALUES-BASED EXCLUSIONS

The Index uses MSCI ESG Business Involvement Screening Research to identify companies that are involved in the following business activities. Companies that meet the following business involvement criteria are excluded from the Index. Please refer to Appendix 4 for details on these criteria.

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 Unrated companies (Companies not assessed by MSCI ESG Research on MSCI ESG Rating) are excluded from the eligible universe. For more details refer to the MSCI ESG Universal Index:

https://www.msci.com/eqb/methodology/meth_docs/ESG_Universal_Index_Methodology.pdf

⁵ Unrated companies (Companies not assessed by MSCI ESG Research on MSCI ESG Controversies Score) are excluded from the eligible universe. For more details refer to the MSCI ESG Universal Index:

https://www.msci.com/eqb/methodology/meth_docs/ESG_Universal_Index_Methodology.pdf

- Controversial Weapons
- Civilian Firearms
- Nuclear Weapons
- Tobacco
- Alcohol
- Adult Entertainment
- Conventional Weapons
- Gambling
- Genetically Modified Organisms
- Nuclear Power
- Thermal Coal

3.2.5 CARBON EMISSION INTENSITY SCREENING

After applying the above liquidity and ESG eligibility criteria, the Index excludes top 20% of the securities from the remaining universe, as ranked in descending order based on their Carbon Emission Intensity. For more details on Carbon Emission Intensity calculation please refer to Appendix I of MSCI Low Carbon Leaders Index methodology at <https://www.msci.com/index-methodology>.

In case of two or more securities having the same Carbon Emission Intensity the security with the higher weight in the Parent Index is given a lower rank.

3.2.6 QUALITY SCREENING

After applying the Carbon Emission Intensity screen, the Index excludes bottom 20% of the securities from the remaining universe, as ranked in descending order based on their Quality factor score derived from the relevant Barra Equity Model. The Barra Equity Model Quality factor score is defined for each security as described in Appendix 2.

In case of two or more securities having the same Quality factor score the security with the higher weight in the Parent Index is given a higher rank.

3.3 DEFINING THE OPTIMIZATION CONSTRAINTS

At each Index Review, the following optimization constraints are employed, which aim to ensure replicability and investability while achieving lower risk⁶.

- The maximum weight of an Index constituent will be 2.5%.
- The minimum weight of an Index constituent will be 0.25%.
- The minimum number of constituents in the Index will be 50.
- The sector weights of the Index will not deviate more than +/-15% from the sector weights of the Parent Index.

3.4 DETERMINING THE OPTIMIZED PORTFOLIO

The Index is constructed using the Barra Open Optimizer in combination with the relevant Barra Equity Model⁷. The optimization uses the Eligible universe, the specified optimization objective and constraints to determine the Index.

3.5 APPLYING THE MSCI RISK CONTROL AND DECREMENT INDEXES METHODOLOGY

The MSCI Risk Control Indexes Methodology⁸ and the MSCI Decrement Indexes Methodology⁹ is applied sequentially on the Index to construct the MSCI USA ESG Quality Select Low Volatility 10% Risk Control 2% Decrement Index. The parameters for the application of the risk control methodology and the decrement methodology in the above index are noted in Appendix 3.

⁶ An estimated security co-variance matrix based on the relevant Barra multi-factor equity model is used to forecast lowest risk. Details about the Barra multi-factor risk models are available at <https://www.msci.com/portfolio-management>

⁷ Please refer to Appendix 1 for the detailed information on model usage

⁸Please refer to the MSCI Risk Control Indexes methodology at www.msci.com/index-methodology

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

4 Maintaining the Index

4.1 INDEX REVIEWS

The Index is reviewed on a quarterly basis as per the steps described in Section 3, coinciding with the February, May, August, and November Quarterly Index Reviews of the Parent Index.

For each rebalance, the Barra Equity Model data as of the end of the month preceding the Index Review are used. This approach aims to capture timely updates to the risk characteristics of the companies and coincide with the rebalancing frequency of the relevant Parent Index.

In general, MSCI uses MSCI ESG Research data (including MSCI ESG Ratings, MSCI ESG Controversies Scores, MSCI Climate Change Metrics) as of the end of the month preceding the Index Reviews for the rebalancing of the Index. For some securities, such data may not be published by MSCI ESG Research by the end of the month preceding the Index Review. For such securities, MSCI will use ESG data published after the end of month, when available, for the rebalancing of the Index.

The pro forma index is in general announced nine business days before the effective date.

4.2 DAILY RISK CONTROL AND DAILY DECREMENT APPLICATION

The MSCI USA ESG Quality Select Low Volatility 10% Risk Control 2% Decrement Index is rebalanced on a daily basis, in accordance with the MSCI Risk Control Indexes Methodology and the MSCI Decrement Indexes Methodology with the parameters detailed in Appendix 3.

4.3 ONGOING EVENT-RELATED CHANGES

The following section briefly describes the treatment of common corporate events within the MSCI USA ESG Quality Select Low Volatility Index. Changes in index market capitalization that occur because of corporate event implementation will be offset by a corresponding change in the Variable Weighting Factor (VWF) of the constituent.

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 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 not 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 1: 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 2: Quality Factor Definition

The quality factor score for each security is calculated by combining in equal proportion the security-level exposures to five factors - Profitability, Investment Quality, Earnings Quality, Leverage and Earnings Variability - from GEMTL model. A sector-relative score is derived from the combined score by standardizing the latter within each sector and winsorizing at +/- 3

$$\text{Quality}_i = (0.2) * \text{Profitability}_i + (0.2) * \text{Investment Quality}_i + (0.2) * \text{Earnings Quality}_i + (-1) * (0.2) * \text{Earnings Variability}_i + (-1) * (0.2) * \text{Leverage}_i$$

Appendix 3: Parameters used for the MSCI USA ESG Quality Select Low Volatility 10% Risk Control 2% Decrement Index

The MSCI Risk Control Indexes Methodology¹⁰ is applied on the MSCI USA ESG Quality Select Low Volatility Index using the following parameters:

	MSCI Risk Control Indexes Methodology Parameters	Parameters
1	Calendar Rule	Daily
2	Return Variant of MSCI USA ESG Quality Select Low Volatility Index	Gross Total Return
3	Risk Free Rate	LIBOR up to 31-Aug-2021 and SOFR effective 01-Sep-2021
4	Risk Free Maturity Rate	1D
5	Closed Market Threshold	10
6	Rebalancing Type	Volatility
	Volatility Rebalancing Parameters	
7	Risk Control Level	10%
8	Base Currency of MSCI USA ESG Quality Select Low Volatility Index and the cash component	USD
9	Maximum Leverage	150%
10	Buffer	5%
11	Volatility Calculation Type	Equal Weighted Volatility
	Estimator Parameters	
12	Lag Between Rebalancing Date and Effective Date	2 business days
13	Short Term number of days estimate	20
14	Long Term number of days estimate	60
15	Exchange Holiday Rule Threshold ¹¹	10%

¹⁰Please refer to the MSCI Risk Control Indexes methodology at www.msci.com/index-methodology

¹¹ This screen is applied from May 22,2020

The MSCI Decrement Indexes methodology is then applied using the parameters below, to construct the MSCI USA ESG Quality Select Low Volatility 10% Risk Control 2% Decrement Index.

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

Appendix 4: VALUES-BASED EXCLUSION CRITERIA

MSCI ESG Research has developed a framework designed to define significant involvement in controversial activities. According to this framework, there are three tolerance levels: Zero Tolerance, Minimal Tolerance and Low Tolerance.

Each controversial activity screened by the MSCI SRI Indexes (except Thermal Coal) is assigned to one of these tolerance levels.

Activities classified under “Zero Tolerance”

• Controversial Weapons

- All companies with any tie to Controversial Weapons (cluster munitions, landmines, depleted uranium weapons, biological/chemical weapons, blinding lasers, nondetectable fragments and incendiary weapons), as defined by the methodology of the MSCI Ex-Controversial Weapons indexes available at:

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

Activities classified under “Minimal Tolerance”

• Civilian Firearms

- All companies classified as “Producer” of firearms and small arms ammunitions for civilian markets. It does not include companies that cater to the military, government, and law enforcement markets.

- All companies deriving 5% or more revenue from the distribution (wholesale or retail) of firearms or small arms ammunition intended for civilian use

• 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)

- All companies that manufacture or assemble delivery platforms that were not developed or not significantly modified for the exclusive delivery of nuclear weapons

- All companies that manufacture components for nuclear-exclusive delivery platforms

- **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

Activities classified under “Low Tolerance”

- **Alcohol**

- All companies deriving 5% or more revenue from the production of alcohol-related products
- All companies deriving 15% or more aggregate revenue from the production, distribution, retail and supply of alcohol-related products

- **Adult Entertainment**

- All companies deriving 5% or more revenue from the production of adult entertainment materials
- All companies deriving 15% or more aggregate revenue from the production, distribution and retail of adult entertainment materials

- **Conventional Weapons**

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

- **Gambling**

- All companies deriving 5% or more revenue from ownership of operation of gambling-related business activities
- All companies deriving 15% or more aggregate revenue from gambling-related business activities

- **Genetically Modified Organisms (GMO)**

- All companies deriving 5% or more revenue from activities like genetically modifying plants, such as seeds and crops, and other organisms intended for agricultural use or human consumption

• Nuclear Power

- All companies generating 5% or more of their total electricity from nuclear power in a given year
- All companies that have 5% or more of installed capacity attributed to nuclear sources in a given fiscal year
- All companies deriving 15% or more aggregate revenue from nuclear power activities

Activities not classified under any specific tolerance level**• Thermal Coal**

- All companies deriving 30% 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
- All companies deriving 30% or more revenue (either reported or estimated) from the thermal coal-based power generation

Contact us

clientservice@msci.com

AMERICAS

Americas	1 888 588 4567 *
Atlanta	+ 1 404 551 3212
Boston	+ 1 617 532 0920
Chicago	+ 1 312 675 0545
Monterrey	+ 52 81 1253 4020
New York	+ 1 212 804 3901
San Francisco	+ 1 415 836 8800
São Paulo	+ 55 11 3706 1360
Toronto	+ 1 416 628 1007

EUROPE, MIDDLE EAST & AFRICA

Cape Town	+ 27 21 673 0100
Frankfurt	+ 49 69 133 859 00
Geneva	+ 41 22 817 9777
London	+ 44 20 7618 2222
Milan	+ 39 02 5849 0415
Paris	0800 91 59 17 *

ASIA PACIFIC

China North	10800 852 1032 *
China South	10800 152 1032 *
Hong Kong	+ 852 2844 9333
Mumbai	+ 91 22 6784 9160
Seoul	00798 8521 3392 *
Singapore	800 852 3749 *
Sydney	+ 61 2 9033 9333
Taipei	008 0112 7513 *
Thailand	0018 0015 6207 7181 *
Tokyo	+ 81 3 5290 1555

* = toll free

ABOUT MSCI

MSCI is a leader provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process.

The process for submitting a formal index complaint can be found on the index regulation page of MSCI's website at:

[Index regulation - MSCI](#)

To learn more, please visit www.msci.com.



Notice and disclaimer

This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the "Information") is the property of MSCI Inc. or its subsidiaries (collectively, "MSCI"), or MSCI's licensors, direct or indirect suppliers or any third party involved in making or compiling any Information (collectively, with MSCI, the "Information Providers") and is provided for informational purposes only. The Information may not be modified, reverse-engineered, reproduced or disseminated in whole or in part without prior written permission from MSCI. The Information may not be used to create derivative works or to verify or correct other data or information. For example (but without limitation), the Information may not be used to create indexes, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other MSCI data, information, products or services. The user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. NONE OF THE INFORMATION PROVIDERS MAKES ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EACH INFORMATION PROVIDER EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NON-INFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION. Without limiting any of the foregoing and to the maximum extent permitted by applicable law, in no event shall any Information Provider have any liability regarding any of the Information for any direct, indirect, special, punitive, consequential (including lost profits) or any other damages even if notified of the possibility of such damages. The foregoing shall not exclude or limit any liability that may not by applicable law be excluded or limited, including without limitation (as applicable), any liability for death or personal injury to the extent that such injury results from the negligence or willful default of itself, its servants, agents or sub-contractors. Information containing any historical information, data or analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. Past performance does not guarantee future results. The Information should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. All Information is impersonal and not tailored to the needs of any person, entity or group of persons. None of the Information constitutes an offer to sell (or a solicitation of an offer to buy), any security, financial product or other investment vehicle or any trading strategy.

It is not possible to invest directly in an index. Exposure to an asset class or trading strategy or other category represented by an index is only available through third party investable instruments (if any) based on that index. MSCI does not issue, sponsor, endorse, market, offer, review or otherwise express any opinion regarding any fund, ETF, derivative or other security, investment, financial product or trading strategy that is based on, linked to or seeks to provide an investment return related to the performance of any MSCI index (collectively, "Index Linked Investments"). MSCI makes no assurance that any Index Linked Investments will accurately track index performance or provide positive investment returns. MSCI Inc. is not an investment adviser or fiduciary and MSCI makes no representation regarding the advisability of investing in any Index Linked Investments. Index returns do not represent the results of actual trading of investable assets/securities. MSCI maintains and calculates indexes, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the index or Index Linked Investments. The imposition of these fees and charges would cause the performance of an Index Linked Investment to be different than the MSCI index performance. The Information may contain back tested data. Back-tested performance is not actual performance, but is hypothetical. There are frequently material differences between back tested performance results and actual results subsequently achieved by any investment strategy. Constituents of MSCI equity indexes are listed companies, which are included in or excluded from the indexes according to the application of the relevant index methodologies. Accordingly, constituents in MSCI equity indexes may include MSCI Inc., clients of MSCI or suppliers to MSCI. Inclusion of a security within an MSCI index is not a recommendation by MSCI to buy, sell, or hold such security, nor is it considered to be investment advice. Data and information produced by various affiliates of MSCI Inc., including MSCI ESG Research LLC and Barra LLC, may be used in calculating certain MSCI indexes. More information can be found in the relevant index methodologies on www.msci.com

MSCI receives compensation in connection with licensing its indexes to third parties. MSCI Inc.'s revenue includes fees based on assets in Index Linked Investments. Information can be found in MSCI Inc.'s company filings on the Investor Relations section of www.msci.com. MSCI ESG Research LLC is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc. Except with respect to any applicable products or services from MSCI ESG Research, neither MSCI nor any of its products or services recommends, endorses, approves or otherwise expresses any opinion regarding any issuer, securities, financial products or instruments or trading strategies and MSCI's products or services are not intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such. Issuers mentioned or included in any MSCI ESG Research materials may include MSCI Inc., clients of MSCI or suppliers to MSCI, and may also purchase research or other products or services from MSCI ESG Research. MSCI ESG Research materials, including materials utilized in any MSCI ESG Indexes or other products, have not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body. Any use of or access to products, services or information of MSCI requires a license from MSCI. MSCI, Barra, RiskMetrics, IPD and other MSCI brands and product names are the trademarks, service marks, or registered trademarks of MSCI or its subsidiaries in the United States and other jurisdictions. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and Standard & Poor's. "Global Industry Classification Standard (GICS)" is a service mark of MSCI and Standard & Poor's. MIFID2/MIFIR notice: MSCI ESG Research LLC does not distribute or act as an intermediary for financial instruments or structured deposits, nor does it deal on its own account, provide execution services for others or manage client accounts. No MSCI ESG Research product or service supports, promotes or is intended to support or promote any such activity. MSCI ESG Research is an independent provider of ESG data, reports and ratings based on published methodologies and available to clients on a subscription basis. We do not provide custom or one-off ratings or recommendations of securities or other financial instruments upon request.

Privacy notice: For information about how MSCI collects and uses personal data concerning officers and directors, please refer to our Privacy Notice at <https://www.msci.com/privacy-pledge>