

MSCI ACWI IMI Disruptive Technology ESG Filtered Index

February 2021

Contents	Introduction	3
	1. Constructing the Index	3
	1.1 The set of relevant words and phrases used for constituent selection	3
	1.2 Company level data used for assessing company exposure	4
	1.3 Eligible universe	4
	1.4 Selected business segments	4
	1.5 SIC code selection	4
	1.6 Calculating the stock relevance score	5
	1.7 Selected universe	5
	1.8 Filtered Universe	8
	1.9 Security selection	8
	1.10 Determination of fundamental score	8
	1.11 Final Universe	9
	1.12 ESG Profile Check	10
	2 Maintaining the Index	11
	2.1 Semi-Annual Index Review	11
	2.2 Annual Index Review	11
	2.3 Ongoing event-related maintenance	11
	Appendix 1: Controversial Business Exclusion Criteria	13
	Appendix 2: Calculation of 3-Month Average Daily Traded Value (ADTV)	15
	Appendix 3: Calculation of Fundamental Variables	15
	Appendix 4: ESG Profile Check	16

Introduction

The MSCI ACWI IMI Disruptive Technology ESG Filtered Index (the ‘Index’) aims to represent the performance of companies aligned to themes commonly associated with or described as “disruptive technology” and excludes companies which are Environmental, Social and Governance (ESG) laggards relative to the theme universe¹.

1. Constructing the Index

The index is constructed by selecting stocks from the MSCI ACWI Investable Market Index (IMI) (the ‘Parent Index’) based on rules explained in the following sections.

The index selects companies which are assessed to have high exposure to business activities such as –

- 3D Printing
- Internet of Things
- Cloud Computing
- Fintech
- Digital Payments
- Healthcare Innovation
- Robotics
- Cybersecurity
- Clean Energy and Smart Grids

MSCI may seek input from outside market experts on the ongoing evolution of the theme underlying the index. However, such input is advisory only in nature. Use of any such input is at MSCI’s discretion and may or may not lead to a change to the index or index methodology.

1.1 The set of relevant words and phrases used for constituent selection

MSCI uses a broad set of relevant words and phrases derived from the index objective which are important to describing products and services commonly

¹ Theme universe is defined as the group of securities identified as relevant to the theme using the thematic index framework described in further sections of the methodology document.

associated with or described as “disruptive technology” such as in manufacturing, alternative energy, digital technologies and healthcare sectors.

1.2 Company level data used for assessing company exposure

The following data is used at the company level:

- Business segment information from company annual reports and vendor data sources: business segment names, assigned SIC codes² and related revenue
- An English language summary description of the company’s business activities from public sources.

1.3 Eligible universe

All stocks from the Parent Index which satisfy any of the following criteria are selected for the eligible universe.

1.3.1 Selection on business segments

Company identified business segment names are compared against the set of relevant words. Companies from the Parent Index which include at least one relevant word in their business segment names are included in the eligible universe.

1.3.2 Selection on company’s summary description

The company’s summary business description is compared against the set of relevant words. Companies from the Parent Index which include at least two distinct relevant words in their summary description are included in the eligible universe.

1.4 Selected business segments

‘Selected business segments’ are business segments which include at least one relevant word. These are the business segments based on which stocks are selected in section 1.3.1.

1.5 SIC code selection

Company business segments are mapped to an SIC code. The SIC code selection is a set of all the SIC codes which satisfy the following criteria

² Company’s business segments are assigned with a specific SIC (Standard Industry Classification) description for products and services, used by official agencies within the US government. These descriptions provide additional information on the nature of the segment.

- The SIC code is mapped to at least one of the ‘selected business segments’ as described in section 1.4.
- The SIC code is assigned to the business segments of at least two different stocks from the eligible universe. SIC code 9999 is not selected.

1.6 Calculating the stock relevance score

A relevance score for all stocks in the eligible universe is calculated. The relevance score for a company is calculated by taking into account the portion of company’s revenue which is derived from the selected business segments (as described in section 1.4) filtered via the SIC code selection (as described in section 1.5).

1.6.1 Relevance score discount factor

A stock level relevance score discount factor is calculated by normalizing the cumulative frequency of relevant words in the company’s summary description relative to all companies selected on summary business descriptions as described in section 1.3.2.

At company’s business segment level, the revenue discount factor is applied on revenue from a ‘selected SIC code’. The revenue discount factor is 1 for revenue derived from ‘selected business segment’.

1.6.2 Relevance score

Relevance score for stocks in the eligible universe is calculated as follows:

Relevance score = [revenue from the selected business segments (as described in section 1.4) + relevance score discount factor * revenue from the selected SIC Code (as described in section 1.5)] / Total company revenue.

1.7 Selected universe

Stocks from the eligible universe with a relevance score of 25% or more are included in the selected universe. Further filtering is applied to the selected universe as detailed below. Stocks which satisfy any of the conditions listed below in sections 1.7.1 to 1.7.5 are excluded from the selected universe.

1.7.1 GICS®³ sector and sub industry filtering

Stocks mapped to the following GICS sub industries are excluded from the selected universe.

No.	GICS Sector	GICS Sub Industries
1	Energy	<ul style="list-style-type: none"> Integrated Oil & Gas
2	Industrials	<ul style="list-style-type: none"> Office Services & Supplies
3	Consumer Staples	<ul style="list-style-type: none"> Packaged Foods & Meats
4	Utilities	<ul style="list-style-type: none"> Electric Utilities Multi-Utilities Independent Power Producers & Energy Traders

1.7.2 ESG exclusion criteria

Controversial business exclusion criteria

Securities of companies involved in following businesses are excluded from the selected universe:

- Controversial Weapons
- Conventional Weapons
- Nuclear Weapons
- Civilian Firearms
- Tobacco
- Thermal Coal
- Oil Sands
- UN Global Compact Violators

Please refer to Appendix 1 for more details on these criteria.

³ GICS, the global industry classification standard jointly developed by MSCI and S&P Global.

ESG Controversy Score

- ESG Controversy Score = 0 ('Red Flag' companies) – Companies involved in very severe business controversies as defined by the MSCI ESG Controversies Methodology are excluded from the selected universe.
- Missing Controversy Score – Companies not assessed by MSCI ESG Research's MSCI ESG Controversy Scores are excluded from the selected universe.

ESG Rating

- Missing ESG Rating – Companies which are not rated by MSCI ESG Research for an MSCI ESG Rating are excluded from the selected universe.

1.7.3 Liquidity screening criteria

Securities that have a 3-month average daily trading value (3M ADTV) less than 3 million USD are excluded from the selected universe. For the calculation of ADTV, please refer to Appendix 2.

1.7.4 Size screening criteria

Securities that have a free-float market capitalization less than 200 million USD are excluded from the selected universe.

1.7.5 Emerging Markets (EM) country filter

Emerging Markets (EM) securities from only the below select countries are eligible for inclusion in the final index:

- China
- Taiwan
- South Korea
- South Africa
- Brazil
- Thailand
- Malaysia
- Mexico

1.8 Filtered Universe

Filtered universe is constructed by excluding securities from the selected universe which are in the bottom quartile by ESG Industry Adjusted Score.

1.9 Security selection

Securities in the filtered universe are ranked in descending order of their relevance score as calculated in section 1.6.2. If multiple securities have the same relevance score, then the security having a higher weight in the Parent Index is given a higher rank.

Securities in the top half of the ranked universe are eligible for inclusion in the final index. The final number of securities in the index is determined as:

$N = \text{Minimum} (\text{Maximum} (\text{Securities in the top half of the ranked universe}, 60), 250)$

The top 'N' securities from the ranked universe are selected for inclusion in the Index. If the number of securities in the universe is below 60, all the securities in the universe are selected for inclusion in the index.

1.10 Determination of fundamental score

The fundamental score for each security obtained after screening the filtered universe (as detailed in section 1.9) is calculated by combining Z-Scores of three winsorized fundamental variables, namely Percentage of sales spent on R&D and Capex, Return on Invested Capital and 1-YR Sales growth. The details of the calculation of these fundamental variables are provided in Appendix 3.

1.10.1 Winsorizing the fundamental variables

As part of the standardization process, outlier fundamental variable values are winsorized to ensure that the average values used to standardize the variables are less affected by extreme values. To do this, for a given variable, the values for all securities are first ranked in ascending order within the filtered security universe in section 1.9. Missing values are excluded from the ranking. Then, for securities that lie below the 5th percentile rank or above the 95th percentile rank, their value is set equal to the value of the 5th percentile ranked or 95th percentile ranked security, as applicable. This process is repeated for each of the three fundamental variables.

1.10.2 Calculating the z-scores

After winsorizing all the three fundamental variables, the Z-Score for each of the three variables for each security can be calculated using the mean and standard deviation of the relevant variable. Computing a Z-Score is a widely used method of standardizing a variable in order to combine it with other variables that may have a

different unit of measurement or a different scale. Because it has a mean value of zero and a standard deviation of 1, the value of a z-score shows how many standard deviations a given value lies from the mean.

The Z-Score is defined as follows:

$$z = \frac{(x - \mu)}{\sigma}$$

Where:

- x is the winsorized variable for a given security
- μ is the mean of the winsorized variable, excluding missing values
- σ is the standard deviation of the winsorized variable, excluding missing values

Additionally, the Z-score for all three fundamental variables are winsorized at +/- 3.

1.10.3 Calculating the fundamental score

After standardizing each of the three fundamental variable values for each security in the filtered universe, a composite fundamental Z-Score is calculated for each security. The composite fundamental Z-Scores are computed by averaging the Z scores of all the three fundamental variables as calculated in section 1.9.2.

The Fundamental Score is then computed from the composite fundamental Z-Score as follows:

$$\text{Fundamental Score} = \begin{cases} 1 + Z, & Z > 0 \\ (1 - Z)^{-1}, & Z < 0 \end{cases}$$

Where Z is the composite fundamental Z-Score.

1.11 Final Universe

At each rebalancing, all the securities eligible for inclusion are assigned weights in proportion to the Fundamental Score calculated in the previous step.

1.11.1 Emerging Markets (EM) weight capping

Aggregate weight of Emerging Markets (EM) securities in the final index is capped at aggregate weight of Emerging Markets (EM) in the Parent Index + 10% to limit the geographical exposure of the index to Emerging Markets.

1.11.2 Security weight capping

Additionally, index constituents’ weights are capped at 15% at the security level to mitigate concentration risk.

1.12 ESG Profile Check

The final universe calculated in Section 1.11 is assessed against the minimum requirements detailed in the below table.

In case the final universe is found deficient on any of the minimum requirements, then the weights of the securities in the final universe are determined through an iterative process as described in Appendix 4. The ESG profile check process also maintains capping at 15% security level to mitigate concentration risk.

Minimum Requirements	Values	Reference Index
Carbon Emission Intensity relative to the Reference Index	Target Carbon Emission Intensity lower than the Reference Index	MSCI ACWI IMI Disruptive Technology Index
Weighted Average Board Independence relative to the Reference Index	Target Weighted Average Board Independence higher than the Reference Index	MSCI ACWI IMI Disruptive Technology Index

2 Maintaining the Index

2.1 Semi-Annual Index Review

The index is reviewed on a Semi-Annual basis in May and November to coincide with the May and November Semi-Annual Index Reviews of the Parent Index, and the changes are implemented at the end of May and November. In general, the pro forma index is announced nine business days before the effective date.

During the Semi-Annual Index Review, the eligible universe and selected universe are updated.

In general, MSCI uses the company business segment names, business description and revenue data as of the end of the month preceding the semi-annual index review.

2.1.1 Security selection buffer rules

To reduce index turnover and enhance index stability, a buffer rule of 25% is applied during the on-going semi-annual index reviews. For example, if the 'index' targets 60 securities, buffers are applied between rank 46 and 75. The securities in the ranked universe (as detailed in section 1.8) with a relevance score rank at or above 45 will be added to the final index on a priority basis. The existing constituents that have a relevance score rank between 46 and 75 are then successively added until the number of securities in the final index reaches 60. If the number of securities is below 60 after this step, the remaining securities in the ranked universe with the highest relevance score rank are added until the number of securities in the final index reaches 60.

2.2 Annual Index Review

The set of relevant words (as described in section 1.1) are reviewed by MSCI during the May Semi-Annual Index Review.

2.3 Ongoing event-related maintenance

The general treatment of corporate events in the 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.

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.

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

Appendix 1: Controversial Business Exclusion Criteria

Companies whose activities meet the following values and climate change-based criteria, as evaluated by MSCI ESG Research, are excluded from the MSCI ACWI IMI Disruptive Technology ESG Filtered Index.

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), as defined by the methodology of the MSCI Ex-Controversial Weapons Indexes available at <https://www.msci.com/index-methodology>.

- **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.

- **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.
- 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.
- Conventional Weapons
 - All companies deriving 10% or more revenue from the production of conventional weapons and components

Climate Change- based Exclusions Criteria:

- Thermal Coal
 - All companies deriving 5% 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 5% or more revenue (either reported or estimated) from the thermal coal based power generation.
- Oil Sands
 - All companies deriving 5% or more revenue from oil sands extraction, which own oil sands reserves and disclose evidence of deriving revenue from oil sands extraction. Companies that derive revenue from non-extraction activities (e.g. exploration, surveying, processing, refining) or intra-company sales are not excluded. Additionally, companies that own oil sands reserves with no associated revenue are also not excluded.
- Global Norms – United Nations Global Compact Compliance
 - All companies that fail to comply with the United Nations Global Compact principles.

Appendix 2: Calculation of 3-Month Average Daily Traded Value (ADTV)

$$ADTV = ATV / 252$$

Where:

- ADTV = 3-month Average Daily Traded Value
- ATV = 3-month Annualized Traded Value

For details on the calculation of ATV, please refer to the MSCI Fundamental Data Methodology (<https://www.msci.com/index-methodology>).

Appendix 3: Calculation of Fundamental Variables

Fundamental Variable	Calculation Details
Percentage of % Sales spent on R&D and Capex	$\% \text{ Sales spent on R\&D and Capex} = \text{Capital Expenditures to Sales Ratio}_t + \text{Research and Development Expenses to Sales Ratio}_t$
Return on Invested Capital	$ROIC = \frac{\text{Operating Income}_t}{\text{Invested Capital}_t}$ <p>Where:</p> <ul style="list-style-type: none"> • $\text{Operating Income}_t$ = Operating income before unusual expense • $\text{Invested Capital}_t$ = Shareholder's equity + Total Debt + Minority Interest
1-YR Sales Growth	$\text{Sales Growth} = \frac{\text{Sales in USD}_t}{\text{Sales in USD}_{t-1}} - 1$

For more details on the fundamental data, please refer to the MSCI Fundamental Data Methodology (<https://www.msci.com/index-methodology>).

Appendix 4: ESG Profile Check

The ESG Profile check is applied on the securities of the final universe with the objective of meeting all the minimum requirements detailed in the table in Section 1.12.

Starting with the Final Universe, an iterative down weighting process is applied in order to meet with the minimum requirements for the Indexes. The iterative down weighting stops when all the requirements defined in above are met. The steps followed in the iterative downweighting are outlined below:

Step 1. Check whether all targets for the Index are met. If all targets are met, then no downweighting is required.

Step 2. Identify stocks that are either in bottom quartile by Board Independence (%) (i.e. with lowest scores) or are in the top quartile by Carbon Emissions Intensity (i.e. with highest carbon intensity). These stocks form the “downweighting group”. Rest of the stocks from the Final Universe form the “upweighting group”.

Step 3. Select the worst stock in the “downweighting group” and reduce its weight in steps of 25% (free weight) and distribute the free weight among the stocks of the “upweighting group” in proportion of their weight at Step 2. A stock cannot be down weighted by more than 75% of its weight in Step 2. Stock weight in ‘upweighting group’ is capped at 15%.

Step 4. If the targets are still not met, then select the next worst stock and repeat Step 3.

Step 5. Relaxation Steps:

- a. If all stocks in the “downweighting group” have been down weighted by 75% and targets are still not met, then repeat Step 3 and 4 by down weighting worst stock by 90% of its weight from Step 2.
- b. If targets are not met at Step 5a, then repeat Step 3 and 4 by excluding the worst stock – down weighting the worst stock by 100%.

Worst Stocks:

- a. In Step 1, if targets are not met on Carbon Emissions Intensity, then the worst stock is the stock with largest Carbon Emissions Intensity.
- b. If in Step 1, the target on Carbon Emissions Intensity is met, and the target on Weighted Average Board Independence is not met, then the worst stock is the stock with lowest Board Independence (%).

The following sections have been modified as of February 2021:

Section 1.8: Filtered Universe

- Added a section on the ESG industry adjusted score filtering criteria.

Appendix 1: Controversial Business Involvement Criteria

- Added a conventional weapons screen

Section 1.12 and Appendix 4: ESG Profile Check

- Added the section on ESG Profile Check to meet Carbon Emissions Intensity and Weighted Average Board Independence targets.

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:

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

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. All rights in the Information are reserved by MSCI and/or its Information Providers.

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, please refer to our Privacy Notice at <https://www.msci.com/privacy-pledge>.