MSCI ACWI Climate Pathway Select Index Methodology

September 2021
Contents

1 Introduction .............................................................................................................. 3

2 MSCI ESG Research .............................................................................................. 4
   2.1 MSCI Climate Change Metrics ........................................................................ 4
   2.2 MSCI ESG Ratings ......................................................................................... 4
   2.3 MSCI ESG Controversies ............................................................................... 5
   2.4 MSCI ESG Business Involvement Screening Research .............................. 5

3 Index Construction Methodology ......................................................................... 6
   3.1 Applicable Universe ...................................................................................... 6
   3.2 Eligible Universe ........................................................................................... 6
   3.3 Optimization Constraints .............................................................................. 7
   3.4 Determining the Optimized Index .................................................................. 9

4 Maintaining the Index .......................................................................................... 10
   4.1 Semi-Annual Index Reviews ......................................................................... 10
   4.2 Ongoing Event Related Changes .................................................................. 10

Appendix I: MSCI Low Carbon Transition Risk Assessment ............................. 13
Appendix II: Business Exclusions Criteria ............................................................. 15
Appendix III: Calculation of Target Metrics ............................................................ 17
Appendix V: Barra Equity Model Used in The Optimization ............................... 19
Appendix VI: New release of Barra® Equity Model or Barra® Optimizer .......... 20
1 Introduction

The MSCI ACWI Climate Pathway Select Index (the “Index”) aims to maximize exposure to companies that can potentially benefit from opportunities arising from the transition to a lower-carbon economy. The index also aims to increase exposure to companies that are setting science-based emission reduction targets (SBTs) or commit to reduction targets and have a track record of decarbonizing at a rate of at least 7%.

The index is constructed from the MSCI ACWI Index by excluding securities based on certain ESG and Climate Change related criteria, followed by an optimization-based approach, aiming to -

- Increase the weight of companies which are exposed to climate transition opportunities and reduce the weight of companies which are exposed to climate transition risks
- Reduce the weight of companies assessed as high carbon emitters using scope 1, 2 and 3 emissions
- Increase the weight of companies with credible carbon reduction targets through the weighting scheme
- Follow an annualized 7% year-on-year decarbonization trajectory
- Significantly improve the ESG profile of the index
2 MSCI ESG Research

MSCI ESG Research provides in-depth research, ratings and analysis of the environmental, social and governance-related business practices of thousands of companies worldwide. It consists of an integrated suite of tools and products to efficiently manage research, analysis and compliance tasks across the spectrum of ESG factors.

The Index uses company ratings and research provided by MSCI ESG Research. In particular, this index uses the following MSCI ESG Research products: MSCI Climate Change Metrics, MSCI Climate Value-at-Risk, MSCI ESG Sustainable Impact Metrics, 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 is designed to support investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, and factoring climate change research into their risk management processes. It provides Carbon Emissions, Fossil Fuel exposure, environmental impact (i.e., clean technology) data and screens, as well as climate-related risk exposure and management assessment on companies such as Low Carbon Transition scores and categories.

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

2.2 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.
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.
3  **Index Construction Methodology**

3.1  **APPLICABLE UNIVERSE**

The Applicable Universe includes all the existing constituents of the MSCI ACWI index ("Parent Index"). This approach aims to provide an opportunity set with sufficient liquidity and investment capacity.

3.2  **ELIGIBLE UNIVERSE**

The Eligible Universe is constructed from the Applicable Universe by excluding securities of companies based on the exclusion criteria below:

- Controversial, Nuclear, and Conventional Weapons Involvement
- Tobacco Involvement
- Alcohol Involvement
- Civilian Firearms Involvement
- Palm Oil Involvement
- Fossil Fuels Involvement

For further details regarding these exclusion criteria, kindly refer to Appendix II. In addition to the above, companies are also excluded based on their involvement in ESG Controversies and ESG Ratings.

3.2.1.  **ESG CONTROVERSIES**

Companies which meet either of the below exclusion criteria are excluded from the Eligible Universe –

1. All companies having faced very severe controversies pertaining to ESG issues – Defined as companies with an ESG Controversy Score of 0.
2. All companies having faced very severe and severe controversies pertaining to Environmental issues – Defined as companies with an Environment Controversy Score of 0 or 1.
3. All companies that fail to comply with the United Nations Global Compact Principles
4. All companies not assessed by MSCI ESG Research for an MSCI ESG Controversy Score
3.2.2. ESG RATINGS

Companies which meet either of the below exclusion criteria are excluded from the Eligible Universe –

1. All companies with an MSCI ESG Rating of ‘CCC’ or ‘B’.
2. All companies not assessed by MSCI ESG Research for an MSCI ESG Rating.

3.3 OPTIMIZATION CONSTRAINTS

At each Semi-Annual Index Review, the indexes are constructed using an optimization process that aims to achieve replicability and investability as well as maximize the weighted average MSCI Low Carbon Transition Score\(^1\) subject to the following constraints:

1. ESG and Climate Change 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 III.

Table 1: Constraints imposed to meet transition and physical risk objectives

<table>
<thead>
<tr>
<th>No.</th>
<th>Transition and Physical Risk Objective</th>
<th>MSCI ACWI Climate Pathway Select Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Minimum reduction in Greenhouse Gas (GHG) Intensity (Scope 1+2+3(^2)) relative to Parent Index</td>
<td>30%</td>
</tr>
<tr>
<td>2.</td>
<td>Minimum average reduction (per annum) in GHG Intensity relative to GHG Intensity at the Base Date(^3)</td>
<td>7%</td>
</tr>
<tr>
<td>3.</td>
<td>Minimum Increase in aggregate weight in companies setting targets relative to the aggregate weight of such companies in the Parent Index. Companies Setting Targets are defined in Appendix III</td>
<td>100%</td>
</tr>
<tr>
<td>4.</td>
<td>Minimum increase in Weighted Average ESG Score relative to Parent Index</td>
<td>25%</td>
</tr>
</tbody>
</table>

\(^1\) For further details regarding the MSCI Low Carbon Transition Score, kindly refer to Appendix I of this document.

\(^2\) 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.

\(^3\) 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.
Table 2: Constraints imposed to meet diversification objectives

<table>
<thead>
<tr>
<th>No.</th>
<th>Diversification Objective</th>
<th>MSCI ACWI Climate Pathway Select Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Ex-Ante Tracking Error relative to the Parent Index</td>
<td>4%</td>
</tr>
<tr>
<td>6.</td>
<td>Maximum number of constituents</td>
<td>400</td>
</tr>
<tr>
<td>7.</td>
<td>Constituent Active Weight</td>
<td>+/- 2%</td>
</tr>
<tr>
<td>8.</td>
<td>Minimum constituent weight</td>
<td>0.10%</td>
</tr>
<tr>
<td>9.</td>
<td>Security Weight as a multiple of its weight in the Parent Index</td>
<td>20x</td>
</tr>
<tr>
<td>10.</td>
<td>Active Sector Weights (the Energy GICS Sector is not constrained)</td>
<td>+/-5%</td>
</tr>
<tr>
<td>11.</td>
<td>Active Country Weights(^4)</td>
<td>+/-5%</td>
</tr>
<tr>
<td>12.</td>
<td>One Way Turnover</td>
<td>5%</td>
</tr>
<tr>
<td>13.</td>
<td>Common Factor Risk Aversion</td>
<td>0.0075</td>
</tr>
<tr>
<td>14.</td>
<td>Specific Risk Aversion</td>
<td>0.075</td>
</tr>
</tbody>
</table>

During the Semi-Annual Index Review, in the event that there is no optimal solution that satisfies all the optimization constraints, the following constraints will be relaxed, until an optimal solution is found:

- Relax the one-way index turnover constraint in steps of 1% up to 20%
- Relax the active sector weight constraint in steps of 1% up to +/-20%
- The one-way index turnover constraint and the active sector weight constraint are alternately relaxed until a feasible solution is achieved.

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

\(^4\) In case there are countries in the parent index which weigh less than 2.5% in the parent index then for such countries the active country upper bound of +/-5% is not applicable. When a country weighs less than 2.5% in parent index then the upper bound of country weight in the Index is set at three times of the country’s weight in parent index.
3.4 DETERMINING THE OPTIMIZED INDEX

The Index is constructed using the Barra Open Optimizer in combination with the relevant Barra Equity Model. The optimization uses universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of the Indexes.

5 Please refer to Appendix V and VI for more details.
4 Maintaining the Index

4.1 SEMI-ANNUAL INDEX REVIEWS

The 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 Index is in general announced nine business days before the effective date.

In general, MSCI uses MSCI ESG Research data (including MSCI Climate Change Metrics, MSCI ESG Ratings, 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 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

---

6 Certain ESG datapoints required for historical index rebalancing are unavailable. In those cases, the Index used the values of the those datapoints as of the first date they became available. For example, each periodic rebalancing of the Index prior to October 31, 2014 would have applied the “Controversial, Nuclear and Conventional Weapons” value as of October 31, 2014. The table below summarizes the datapoints with their dates of first availability subsequently used in the rebalancing of the Index.

<table>
<thead>
<tr>
<th>Datapoint</th>
<th>First Availability Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controversial, Nuclear and Conventional Weapons</td>
<td>October 31, 2014</td>
</tr>
<tr>
<td>Palm Oil</td>
<td>October 31, 2019</td>
</tr>
<tr>
<td>Fossil Fuels</td>
<td>October 31, 2018</td>
</tr>
<tr>
<td>Active carbon emissions reduction target/s approved by the Science Based Targets initiative (SBTi)</td>
<td>July 30, 2021</td>
</tr>
<tr>
<td>Companies publishing emissions reduction targets</td>
<td>October 31, 2021</td>
</tr>
</tbody>
</table>

The datapoint “Active carbon emissions reduction target/s approved by the Science Based Targets initiative (SBTi)” has only been included in the rebalancing of the Index starting with the May 2020 Semi-Annual Index review and was not used in any index rebalancing prior to that date.
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 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.

<table>
<thead>
<tr>
<th>EVENT TYPE</th>
<th>EVENT DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>New additions to the Parent Index</td>
<td>A new security added to the parent index (such as IPO and other early inclusions) will not be added to the index.</td>
</tr>
<tr>
<td>Spin-Offs</td>
<td>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.</td>
</tr>
<tr>
<td>Merger/Acquisition</td>
<td>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.</td>
</tr>
</tbody>
</table>
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: MSCI Low Carbon Transition Risk Assessment

MSCI ESG Research’s Low Carbon Transition Risk assessment\(^7\) is designed to identify potential leaders and laggards by holistically measuring companies’ exposure to and management of risks and opportunities related to the low carbon transition.

The outputs of this assessment are two company-level factors:

1. **Low Carbon Transition Category**: This factor groups companies in five categories that highlight the predominant risks and opportunities they are most likely to face in the transition (Exhibit 1).

2. **Low Carbon Transition Score**: This score is based on a multi-dimensional risks and opportunities assessment and considers both predominant and secondary risks a company faces. It is industry agnostic and represents an absolute assessment of a company’s position vis-à-vis the transition.

### Exhibit 1: Low Carbon Transition Categories and Scores

<table>
<thead>
<tr>
<th>LOW CARBON TRANSITION SCORE</th>
<th>LOW CARBON TRANSITION CATEGORY</th>
<th>LOW CARBON TRANSITION RISK / OPPORTUNITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score = 0</td>
<td>ASSET STRANDING</td>
<td>Potential to experience “stranding” of physical / natural assets due to regulatory, market, or technological forces arising from low carbon transition.</td>
</tr>
<tr>
<td></td>
<td>TRANSITION</td>
<td>Reduced demand for carbon-intensive products and services. Leaders and laggards are defined by the ability to shift product portfolio to low-carbon products.</td>
</tr>
<tr>
<td></td>
<td>OPERATIONAL</td>
<td>Increased operational and/or capital cost due to carbon taxes and/or investment in carbon emission mitigation measures leading to lower profitability of the companies.</td>
</tr>
<tr>
<td></td>
<td>NEUTRAL</td>
<td>Limited exposure to low carbon transition carbon risk. Though companies in this category could have exposure to physical risk and/or indirect exposure to low carbon transition risk via lending, investment etc.</td>
</tr>
<tr>
<td></td>
<td>SOLUTIONS</td>
<td>Potential to benefit through the growth of low-carbon products and services.</td>
</tr>
</tbody>
</table>

---

\(^7\) For more details on MSCI Climate Change Metrics: [https://www.msci.com/climate-change-solutions](https://www.msci.com/climate-change-solutions)
Calculation methodology

The Low Carbon Transition Categories and Scores are determined by a combination of each company's current risk exposure and its efforts to manage the risks and opportunities presented by the low carbon transition. The 3-step process followed by MSCI ESG Research is explained below.

**Step 1: Measure Low Carbon Transition Risk Exposure**

The first step towards measuring the Low Carbon Transition Risk Exposure for a company is the computation of its Carbon Intensity profile – which is informed by its Product Carbon Intensity, Operational Carbon Intensity and Total Carbon Intensity. In the next step, we compute Low Carbon Transition Risk Exposure Category and Score based on Total Carbon Intensity.

**Step 2: Assess Low Carbon Transition Risk Management**

In the second step, we assess a company's management of risks and opportunities presented by the low carbon transition. This assessment is based on policies and commitments to mitigate transition risk, governance structures, risk management programs and initiatives, targets and performance, and involvement in any controversies.

**Step 3: Calculate Low Carbon Transition Category and Score**

In the final step, the Low Carbon Transition Risk Exposure Category and Score that was calculated in Step 1 are adjusted for the strength of management efforts. Following this adjustment, Low Carbon Transition Risk Exposure Score of companies with top or second quartile risk management improves and some top and second quartile companies may move up one category.
Appendix II: Business Exclusions Criteria

The Index excludes securities based on the following ESG and Climate Change related criteria –

1. **Controversial, Nuclear and Conventional Weapons**: All companies that have an industry tie to the manufacture of cluster munitions, landmines, conventional (including depleted uranium), biological/chemical, or nuclear weapons systems and components. This includes companies that provide support systems and services, as well as those with indirect ties to weapons production through ownership.

2. **Tobacco**:
   - All companies that manufacture tobacco products,
   - All companies deriving 5% or more aggregate revenue from the manufacture, distribution, retailing, supply, and/or licensing of tobacco

3. **Alcohol**:
   - All companies that manufacture alcoholic products,
   - All companies deriving 5% or more aggregate revenue from the manufacture, distribution, retailing, supply and/or licensing of alcoholic products

4. **Civilian Firearms**:
   - All companies that manufacture firearms and small arms ammunitions for civilian markets
   - All companies deriving 5% or more aggregate revenue from the production or distribution (wholesale or retail) of firearms or small arms ammunition intended for civilian use
5. **Palm Oil:**
   - All companies with any tie to Palm Oil. The scope of ties covers palm oil production, distribution, and ownership ties

6. **Fossil Fuels:**
   - All companies with evidence of owning proven & probable (thermal and metallurgical) coal reserves and/or prove oil and natural gas reserves
   - All companies deriving any revenue from fossil fuel (coal, oil, natural gas) extraction, oil & gas downstream activities, and fossil fuel-based power generation
Appendix III: 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 = \[
\frac{\text{Scope 1} + \text{Scope 2} + \text{Scope 3 \ Carbon Emissions} \times (1 + EVIAF)}{\text{Enterprise Value} + \text{Cash (in M$)}}
\]

Enterprise Value Inflation Adjustment Factor (EVIAF) = \[
EVIAF = \left(\frac{\text{Average (Enterprise Value} + \text{Cash)}}{\text{Previous (Average (Enterprise Value + Cash))}}\right) - 1
\]

Weighted Average GHG Intensity of Parent Index = \[
\sum (\text{Weight in Parent Index} \times \text{Security Level GHG Intensity})
\]

Weighted Average GHG Intensity of Derived Index = \[
\sum (\text{Index Weight} \times \text{Security Level GHG Intensity})
\]

Calculation of Average Decarbonization

On average, the Indexes follow a 7% 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.

\[W_t = W_1 \times 0.93^{(t-1)/2}\]

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 \(W_1\times 0.93\).
Companies Setting Targets

Relative to their corresponding Parent Indexes, the Indexes require a minimum 100% increase in the aggregate weight of companies setting emissions reduction targets. These companies are identified if they meet either of the following criteria:

1. The company has one or more active carbon emissions reduction target/s approved by the Science Based Targets initiative (SBTi)
2. The company meets each of the following three criteria:
   - 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
Appendix V: Barra Equity Model Used in The Optimization

The MSCI ACWI Climate Pathway Select Index currently uses an optimization setup using the MSCI Barra Global Equity Model for Long-Term Investors (GEMLTL).
Appendix VI: 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.
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: www.msci.com/index-regulation.

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

* = toll free

Contact us

clientservice@msci.com

AMERICAS

<table>
<thead>
<tr>
<th>Location</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas</td>
<td>1 888 588 4567 *</td>
</tr>
<tr>
<td>Atlanta</td>
<td>+ 1 404 551 3212</td>
</tr>
<tr>
<td>Boston</td>
<td>+ 1 617 532 0920</td>
</tr>
<tr>
<td>Chicago</td>
<td>+ 1 312 675 0545</td>
</tr>
<tr>
<td>Monterrey</td>
<td>+ 52 81 1253 4020</td>
</tr>
<tr>
<td>New York</td>
<td>+ 1 212 804 3901</td>
</tr>
<tr>
<td>San Francisco</td>
<td>+ 1 415 836 8800</td>
</tr>
<tr>
<td>São Paulo</td>
<td>+ 55 11 3706 1360</td>
</tr>
<tr>
<td>Toronto</td>
<td>+ 1 416 628 1007</td>
</tr>
</tbody>
</table>

EUROPE, MIDDLE EAST & AFRICA

<table>
<thead>
<tr>
<th>Location</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Town</td>
<td>+ 27 21 673 0100</td>
</tr>
<tr>
<td>Frankfurt</td>
<td>+ 49 69 133 859 00</td>
</tr>
<tr>
<td>Geneva</td>
<td>+ 41 22 817 9777</td>
</tr>
<tr>
<td>London</td>
<td>+ 44 20 7618 2222</td>
</tr>
<tr>
<td>Milan</td>
<td>+ 39 02 5849 0415</td>
</tr>
<tr>
<td>Paris</td>
<td>0800 91 59 17 *</td>
</tr>
</tbody>
</table>

ASIA PACIFIC

<table>
<thead>
<tr>
<th>Location</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>China North</td>
<td>10800 852 1032 *</td>
</tr>
<tr>
<td>China South</td>
<td>10800 152 1032 *</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>+ 852 2844 9333</td>
</tr>
<tr>
<td>Mumbai</td>
<td>+ 91 22 6784 9160</td>
</tr>
<tr>
<td>Seoul</td>
<td>00798 8521 3392 *</td>
</tr>
<tr>
<td>Singapore</td>
<td>800 852 3749 *</td>
</tr>
<tr>
<td>Sydney</td>
<td>+ 61 2 9033 9333</td>
</tr>
<tr>
<td>Taipei</td>
<td>008 0112 7513 *</td>
</tr>
<tr>
<td>Thailand</td>
<td>0018 0015 6207 7181 *</td>
</tr>
<tr>
<td>Tokyo</td>
<td>+ 81 3 5290 1555</td>
</tr>
</tbody>
</table>

* = toll free
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 redistributed 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 is caused by 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 investible 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 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.