

Consultation on Potential Enhancement of the MSCI Climate Change Indexes methodology to align with the minimum requirements for EU Climate Transition Benchmarks

January 2021

Executive Summary

MSCI presents a consultation on proposals for the Potential Enhancement of the MSCI Climate Change Indexes Methodology to align with the minimum requirements for EU Climate Transition Benchmarks (EU CTBs).

MSCI invites feedback from market participants on or before February 26, 2021 and will announce the results of the consultation on or before March 31, 2021. Changes if any would be implemented with sufficient advance notification.

Summary

- As per announcement dated November 07, 2019, MSCI announced that
“Assuming that the final CTB and PAB requirements do not materially diverge from the recommendation included in the TEG’s Final Report, MSCI intends to transition the methodology of the existing MSCI Climate Change indexes to the MSCI Provisional Climate Change EU Climate Transition indexes methodology by April 30, 2020. This transition will be subject to a global public consultation as per MSCI’s policies.”
- The final delegated acts for the minimum requirements for EU CTBs (EU DA) were published in the Official Journal¹ on December 03, 2020.
- MSCI proposes to enhance the MSCI Climate Change Indexes methodology in order to align with the minimum requirements for EU CTBs.
- The proposed index methodology retains the re-weighting based on the MSCI Low Carbon Transition Assessment framework but adds incremental steps with an aim to align with the minimum requirements for EU CTBs.

Requirements of EU Climate Transition Benchmarks

		Requirement	Effective Date – as per EU DA
Minimum Requirements for CTB as per EU DA	Carbon Intensity Reduction (Articles 9 & 7)	At least 30% reduction relative to Parent Index (Article 9) At least 7% annualized decarbonization (Article 7)	Immediate
	Allocation to High Climate Impact Sector (Article 3)	At least equivalent exposure to High Climate Impact Sector relative to Parent Index	
	<u>ESG Exclusions (Article 10):</u> Starting 2023, EU CTBs are required to exclude companies involved in the activities listed alongside	Controversial Weapons*	2023
		Violation of UNGC/OECD guidelines*	
		Cultivation and manufacturing of Tobacco	
Significant harm to environmental objectives*			
Additional Requirements	Potential Emissions Intensity	At least 30% reduction in Potential Emissions Intensity relative to the Parent Index	Not a requirement as per Delegated Acts but imposed as an additional requirement in the proposed enhancements
	Green Revenues to Brown Revenues Ratio	At least equivalent ratio of Green Revenue to Brown Revenues to that of the Parent Index	

Existing Alignment of MSCI Climate Change Indexes with EU CTB

- Historically MSCI Climate Change Indexes have met many of the minimum requirements for EU CTB

- The below table shows the alignment of the regional MSCI Climate Change Indexes as of the November 2020 Semi-Annual Index Review (SAIR) against the minimum requirements of EU CTBs.

Meets requirement	✓
Nearly meets requirement ¹	◆
Does not meet requirement	✘

		← MSCI Climate Change Indexes →						
		ACWI	World	EM	Europe	EMU	USA	Japan
Requirements for EU CTB (Immediate)	Scope 123 Intensity reduction relative to Parent Index	✓	✓	✓	◆	◆	✓	◆
	Annualized Self-Decarbonization (Scope 1+2) ²	◆	◆	✘	◆	◆	◆	◆
	Active weight in High Climate Impact relative to Parent Index (%)	◆	◆	◆	◆	◆	◆	◆
Requirements for EU CTB (Effective 2023)	Controversial Weapons (%)	✓	✓	✓	✓	✓	✓	✓
	Red Flag ESG Controversies (%)	◆	◆	◆	◆	◆	◆	◆
	Red and Orange Flag Environmental Controversies (%)	◆	◆	◆	◆	◆	◆	◆
Additional Requirements Imposed	Potential Emissions Intensity relative to Parent Index	✓	✓	✓	✓	✓	✓	✓
	Green Revenue to Brown Revenue Ratio as a multiple of Parent Index	✓	✓	✓	✓	✓	✓	✓

- The Proposed Enhancement would modify (usually modestly) the core index tilt methodology with incremental and gradual underweighting of the worst emitters in Transition and Asset Stranding categories until the requirements are met.



1. "Nearly meets requirement" is defined as a deviation of +/- 5% from the asset weight requirement thresholds or a self-decarbonization exceeding 3.5%.
 2. The annualized self-decarbonization is measured relative to the Scope 1+2 Emissions Intensity as of November 27, 2013.

Climate Change Index Methodology: Proposal

Exclusions

- Controversial Weapons
- Additional screening for ESG Red Flags (and hence UNGC violators)
- Additional screening for Orange Flag Environmental Controversies¹
- Additional screening for Tobacco Manufacturers (Applied from 2023)

Security Weighting

- As per current MSCI Climate Change Index Methodology

Climate Sector Neutrality

- Renormalize weights with High/Low Impact Sectors²
- Security weights are capped at 5%³ and excess weights would be distributed while retaining climate impact sector weights

EU CTB Compliance Check

- If required, the very worst emitters are further downweighted in steps until the self-decarbonization test and other EU CTB requirements in Slide 4 are passed.

Regional Simulation Summary – Carbon Intensity Reduction

- **Mild downweighting only was required in November 2020 SAIR to meet the 7% year-on-year decarbonization test. No downweighting required to meet the Potential Emissions Intensity or Green Revenue to Brown Revenue Ratio tests.**
- The table shows the alignment metrics for the Proposed Index (Sim)¹ against the Parent Index as of the November 2020 SAIR.

		← Proposed Index (Sim) →						
	Target	ACWI	World	EM	Europe	EMU	USA	Japan
Number of Stocks Downweighted		316	161	126	39	22	75	57
Active Share relative to Climate Sector Neutral Step (%)		2.0	2.1	2.9	3.2	2.7	2.9	7.1
Requirements for EU CTB								
Scope 123 Intensity reduction% relative to Parent Index	30	47.2	46.7	46.3	49.7	47.3	46.6	42.6
Annualized Self-Decarbonization% ¹	7	7.1	7.2	8.6	8.0	7.4	7.2	7.5
Active weight in High Climate Impact relative to Parent Index (%)	0	0	0	0	0	0	0	0
Controversial Weapons (Weight %)	0	0	0	0	0	0	0	0
Red Flag ESG Controversies (Weight %)	0	0	0	0	0	0	0	0
Red and Orange Flag Environmental Controversies (Weight %)	0	0	0	0	0	0	0	0
Additional Requirements Imposed								
Potential Emissions Intensity Reduction% relative to Parent Index	30	95.5	94.7	95.1	97.7	93.5	97.0	64.2
Green Revenue to Brown Revenue Ratio (multiple of Parent Index)	1	11.1	11.0	6.9	13.6	6.2	13.6	7.8

1. "Proposed Index (Sim)" is a simulated index with the Proposed Index Methodology in which the decarbonization is applied using Scope 1+2 Emissions up to November 2019. In the May 2020 SAIR, a "base reset" is applied, Scope 3 emissions are considered in addition to Scope 1+2, and the decarbonization requirement is not applied. In the November 2020 SAIR, the decarbonization is applied using Scope 1+2+3 emissions.
2. As of December 01, 2020. ESG Data as of October 30, 2020

Regional Summary – Low Carbon Transition Assessment

- **The enhancement proposed has little effect on the Low Carbon Transition (LCT) Assessment of the Climate Change Indexes**
- The table¹ below summarizes some of the key LCT Assessment metrics for the Proposed Index (Sim)², compared against the current MSCI Climate Change Indexes.

	ACWI	World	EM	Europe	EMU	USA	Japan
Proposed Index (Sim)							
Weighted Average LCT Score	6.5	6.5	6.4	6.5	6.5	6.5	6.4
Solutions (%)	15.1	15.5	8.3	12.1	13.3	15.5	13.6
Operational Transition (%)	4.3	4.0	6.3	7.3	6.2	2.6	2.9
Product Transition (%)	1.1	1.2	1.3	1.6	2.9	0.5	2.6
Asset Stranding (%)	0.0	0.0	0.1			0.0	
Current MSCI Climate Change Index							
Weighted Average LCT Score	6.5	6.5	6.3	6.4	6.4	6.5	6.4
Solutions (%)	14.3	14.7	7.4	11.3	12.1	14.9	12.2
Operational Transition (%)	4.4	4.2	6.7	7.5	6.3	3.1	4.0
Product Transition (%)	1.8	1.7	2.2	3.2	4.4	1.0	3.2
Asset Stranding (%)	0.0	0.0	0.2			0.0	

1. As of December 01, 2020. ESG Data as of October 30, 2020

2. "Proposed Index (Sim)" is a simulated index with the Proposed Index Methodology in which the decarbonization is applied using Scope 1+2 Emissions up to November 2019. In the May 2020 SAIR, a "base reset" is applied, Scope 3 emissions are considered in addition to Scope 1+2, and the decarbonization requirement is not applied. In the November 2020 SAIR, the decarbonization is applied using Scope 1+2+3 emissions.

Regional Summary – Financial Metrics

- A simulated transition from the Climate Change Index to the Proposed Index (Sim)¹ shows modest turnover. The incremental changes to the methodology also have minimal impact on the Risk/Return characteristics over the simulated period².

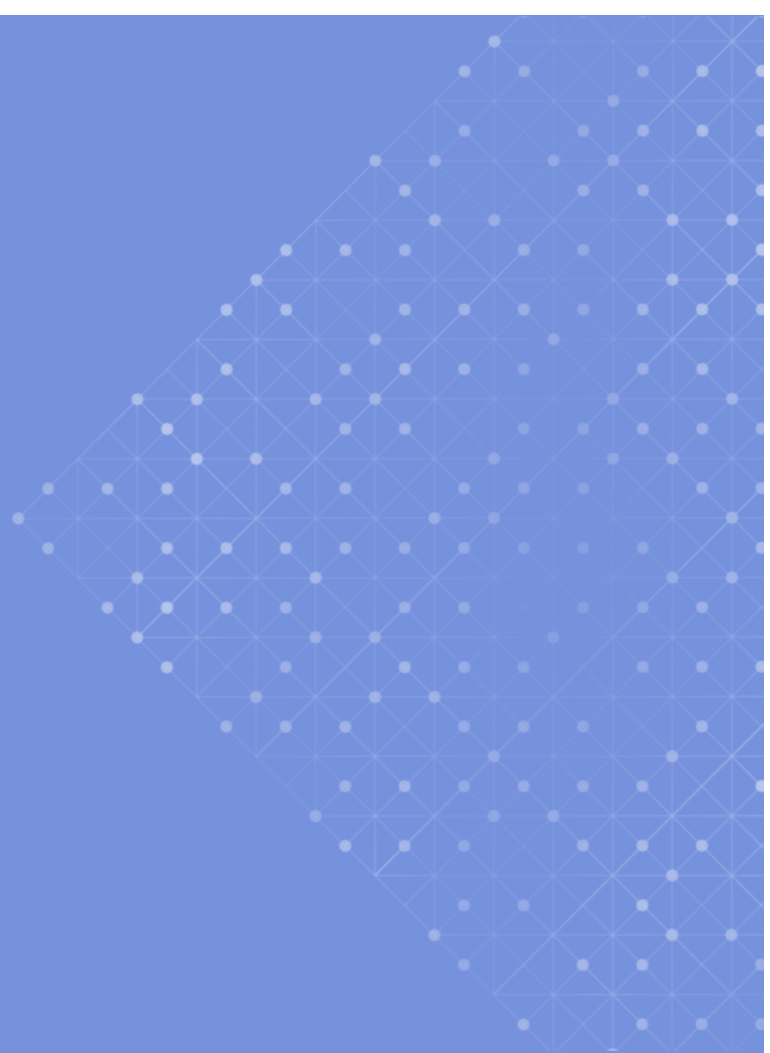
← Proposed Index (Sim) →

	ACWI	World	EM	Europe	EMU	USA	Japan
NOC (June 01, 2020)	2819	1537	1282	411	233	585	319
Proposed Index (Sim) relative to GIMI Parent Index							
Active Return (%)	1.5	1.5	1.0	1.0	1.1	1.9	0.5
Active Risk (%)	1.2	1.2	1.4	1.5	1.1	1.4	1.5
Active Share (%)	16.6	16.7	16.7	18.6	18.0	16.3	13.5
Proposed Index (Sim) relative to Climate Change Index							
Active Return (%)	0.3	0.3	0.2	0.4	0.5	0.4	0.1
Active Risk (%)	0.4	0.4	0.6	0.7	0.8	0.5	0.2
Active Share (%)	8.4	8.2	10.6	9.2	8.9	8.2	3.2
Turnover							
May'20 Climate Change (%)	3.3	2.6	9.4	3.2	4.1	2.9	2.8
May'20 Transition (%)	8.2	7.8	13.5	10.7	9.8	7.2	3.9
Nov'20 Proposed Index (Sim) (%)	5.6	5.7	6.6	6.4	4.7	5.8	8.2
Nov'20 Transition (%)	10.0	9.4	11.4	9.2	10.4	9.4	10.0

1. "Proposed Index (Sim)" is a simulated index with the Proposed Index Methodology in which the decarbonization is applied using Scope 1+2 Emissions up to November 2019. In the May 2020 SAIR, a "base reset" is applied, Scope 3 emissions are considered in addition to Scope 1+2, and the decarbonization requirement is not applied. In the November 2020 SAIR, the decarbonization is applied using Scope 1+2+3 emissions.

2. Simulation Period - Nov 29, 2013 to Oct 30, 2020

Appendix



Existing Alignment of MSCI Climate Change Indexes with EU CTB

The below table summarizes the alignment of the regional MSCI Climate Change Indexes as of the November 2020 Semi-Annual Index Review (SAIR) against the minimum requirements of EU CTBs.

← MSCI Climate Change Indexes →

	Target	ACWI	World	EM	Europe	EMU	USA	Japan
Requirements for EU CTB (Immediate)								
Scope 123 Intensity reduction% relative to Parent Index	30	33.6	32.3	31.3	28.5	25.5	32.0	20.6
Annualized Self-Decarbonization% (Scope 1+2) ¹	7	5.8	6.3	-0.5	5.5	5.0	5.8	4.1
Active weight in High Climate Impact relative to Parent Index (%)	0	-4.4	-3.9	-4.9	-2.8	-2.9	-3.1	-1.7
Requirements for EU CTB (Effective 2023)								
Controversial Weapons (%)	0	0	0	0	0	0	0	0
Red Flag ESG Controversies (%)	0	1.1	1.1	1.0	1.4	1.9	1.1	0.1
Red and Orange Flag Environmental Controversies (%)	0	0.8	0.8	0.8	2.6	3.7	0.3	0.1
Additional Requirements Imposed								
Potential Emissions Reduction% relative to Parent Index	30	80.7	77.0	82.9	75.4	74.6	82.1	63.3
Green Revenue to Brown Revenue Ratio relative to Parent Index	1	6.2	6.2	4.4	6.0	3.9	6.0	4.0

Steps for EU CTB Compliance Check

1. Check whether all targets for the Index are met. If all targets are met, then no downweighting is required.
2. Divide securities in the universe into “Top Half” (Lowest Intensity) and “Bottom Half” (Highest Intensity) based on Scope 1+2+3 Intensity
3. Select the worst stock in the “Bottom Half” and reduce its weight in steps of 25% (free weight) and distribute the free weight among the stocks of “Top Half” in proportion of their weight at step 2.
4. If the weight of worst stock from step 2 has been down weighted by more than 75% then select the next worst stock and repeat step 3.
5. Relaxation Steps :
 - a. If all stocks in the “Bottom Half 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. Relaxation Step If targets are not met at step 5a., then repeat step 3 and 4 by excluding – down weighting by 100%, the worst stock.
6. STOP : If the targets are still not met at step 6 then the index is rebalanced with stock weights at the end of step 6.

Worst Stocks : In Step 1, if targets are not met on emission reduction then the worst stock is the stock with largest Scope 1+2+3 Intensity.



Summary of Regional Index Simulation Results

- The following slides present the simulated historical results of the Proposed Index methodology against the corresponding GIMI Parent Indexes and the Current Climate Change Indexes
- We observe that over the simulation period, the Proposed Index methodology would have outperformed both the corresponding GIMI Parent Index and the corresponding MSCI Climate Change Index, without significantly impacting the tracking error.
- The Indexes also show similar Climate Change metrics compared to that of the MSCI Climate Change Indexes.

Key metrics - ACWI

Key metrics

	MSCI ACWI Index	MSCI ACWI Climate Change Index	ACWI Proposed Index (Sim)
Total return* (%)	7.3	8.5	8.8
Total risk (%)	13.4	13.3	13.3
Return / risk	0.54	0.64	0.66
Sharpe ratio	0.48	0.57	0.60
Active return (%)	0.0	1.2	1.5
Tracking error (%)	0.0	1.0	1.2
Information Ratio	nan	1.17	1.25
Historical beta	1.00	0.99	0.99
Number of constituents***	2620	2465	2395
Turnover** (%)	2.2	4.2	4.9
Price to book***	2.2	2.3	2.4
Price to earnings***	18.6	18.6	18.9
Dividend yield*** (%)	2.5	2.4	2.3

Period: Nov 29, 2013 to Oct 30, 2020. * Gross returns annualized in USD ** Annualized one-way index turnover over index reviews *** Monthly averages

Performance (%)

	MSCI ACWI Index	MSCI ACWI Climate Change Index	ACWI Proposed Index (Sim)
YTD	-0.7	2.5	3.8
1 Yr	5.3	8.9	10.3
3 Yr	6.1	7.7	8.3
5 Yr	8.7	9.8	10.1
10 Yr	nan	nan	nan

Gross returns for the period ending Oct 30, 2020

Returns are annualized for periods longer than a year

ESG metrics - ACWI

Climate change

	MSCI ACWI Index	MSCI ACWI Climate Change Index	ACWI Proposed Index (Sim)
Climate footprint			
Carbon emissions (t CO2e/\$M invested)	123	60	58
Carbon intensity (t CO2e/\$M sales)	209	116	116
Wtd avg carbon intensity (t CO2e/\$M sales)	161	91	93
Low carbon transition risks			
Low carbon transition score	6.1	6.4	6.4
Solutions (%)	6.3	11.3	11.4
Product & operational transition (%)	13.7	6.4	6.4
Asset stranding (%)	0.3	0.0	0.0
Exposure to asset stranding risks			
Potential carbon emissions (t CO2e/\$M invested)	2801	539	347
Fossil fuel reserves (%)	4.4	1.7	1.4
Thermal coal mining (%)	1.0	0.4	0.3
Thermal coal-based power generation (%)	3.1	1.8	1.8
Unconventional oil & gas extraction (%)	1.8	0.4	0.2
Exposure to clean technology solutions			
Clean technologies solutions (> 20% revenue)	4.8	8.6	9.3
Clean technologies solutions revenue (wtd avg %)	4.4	6.7	7.1
Green/brown net revenue exposure	2.8	12.1	13.3
Other climate metrics			
Exposure to carbon-related assets (%)	5.7	2.1	2.1
Climate-related controversies (% score ≤ 4)	0.2	0.0	0.0
Low carbon transition management score (% top quartile)	69.9	71.9	71.3

As of October 30, 2020

Key metrics - World

Key metrics

	MSCI World Index	MSCI World Climate Change Index	World Proposed Index (Sim)
Total return* (%)	7.7	8.9	9.2
Total risk (%)	13.4	13.4	13.3
Return / risk	0.57	0.66	0.69
Sharpe ratio	0.51	0.60	0.63
Active return (%)	0.0	1.2	1.5
Tracking error (%)	0.0	1.1	1.2
Information Ratio	nan	1.12	1.22
Historical beta	1.00	0.99	0.99
Number of constituents***	1637	1556	1518
Turnover** (%)	1.8	3.8	4.6
Price to book***	2.3	2.4	2.5
Price to earnings***	19.4	19.3	19.6
Dividend yield*** (%)	2.4	2.3	2.3

Period: Nov 29, 2013 to Oct 30, 2020. * Gross returns annualized in USD ** Annualized one-way index turnover over index reviews *** Monthly averages

Performance (%)

	MSCI World Index	MSCI World Climate Change Index	World Proposed Index (Sim)
YTD	-1.0	2.3	3.4
1 Yr	4.7	8.4	9.7
3 Yr	6.6	8.2	8.8
5 Yr	8.7	10.0	10.2
10 Yr	nan	nan	nan

Gross returns for the period ending Oct 30, 2020

Returns are annualized for periods longer than a year

ESG metrics - World

Climate change

	MSCI World Index	MSCI World Climate Change Index	World Proposed Index (Sim)
Climate footprint			
Carbon emissions (t CO2e/\$M invested)	101	51	50
Carbon intensity (t CO2e/\$M sales)	175	102	104
Wtd avg carbon intensity (t CO2e/\$M sales)	148	85	86
Low carbon transition risks			
Low carbon transition score	6.2	6.4	6.4
Solutions (%)	6.8	12.6	12.7
Product & operational transition (%)	13.3	6.1	6.1
Asset stranding (%)	0.1	0.0	0.0
Exposure to asset stranding risks			
Potential carbon emissions (t CO2e/\$M invested)	1766	385	178
Fossil fuel reserves (%)	4.1	1.7	1.4
Thermal coal mining (%)	0.9	0.3	0.3
Thermal coal-based power generation (%)	3.3	1.9	1.9
Unconventional oil & gas extraction (%)	1.8	0.4	0.2
Exposure to clean technology solutions			
Clean technologies solutions (> 20% revenue)	5.0	9.4	10.2
Clean technologies solutions revenue (wtd avg %)	4.4	7.1	7.6
Green/brown net revenue exposure	2.8	12.9	14.4
Other climate metrics			
Exposure to carbon-related assets (%)	5.6	2.2	2.1
Climate-related controversies (% score ≤ 4)	0.2	0.0	0.0
Low carbon transition management score (% top quartile)	72.8	74.3	73.6

As of October 30, 2020

Key metrics – EM (Emerging Markets)

Key metrics

	MSCI EM (Emerging Markets) Index	MSCI EM (Emerging Markets) Climate Change Index	EM Proposed Index (Sim)
Total return* (%)	4.0	4.8	5.0
Total risk (%)	16.8	16.6	16.5
Return / risk	0.24	0.29	0.30
Sharpe ratio	0.19	0.24	0.25
Active return (%)	0.0	0.8	1.0
Tracking error (%)	0.0	1.2	1.4
Information Ratio	nan	0.71	0.72
Historical beta	1.00	0.99	0.98
Number of constituents***	983	909	877
Turnover** (%)	5.9	8.2	9.3
Price to book***	1.6	1.7	1.7
Price to earnings***	13.9	14.3	14.6
Dividend yield*** (%)	2.6	2.5	2.5

Period: Nov 29, 2013 to Oct 30, 2020. * Gross returns annualized in USD ** Annualized one-way index turnover over index reviews *** Monthly averages

Performance (%)

	MSCI EM (Emerging Markets) Index	MSCI EM (Emerging Markets) Climate Change Index	EM Proposed Index (Sim)
YTD	1.1	2.4	4.8
1 Yr	8.7	10.6	13.3
3 Yr	2.4	3.0	3.7
5 Yr	8.3	8.5	8.9
10 Yr	nan	nan	nan

Gross returns for the period ending Oct 30, 2020

Returns are annualized for periods longer than a year



ESG metrics – EM (Emerging Markets)

Climate change

	MSCI EM (Emerging Markets) Index	MSCI EM (Emerging Markets) Climate Change Index	EM Proposed Index (Sim)
Climate footprint			
Carbon emissions (t CO2e/\$M invested)	274	129	124
Carbon intensity (t CO2e/\$M sales)	394	196	192
Wtd avg carbon intensity (t CO2e/\$M sales)	243	148	151
Low carbon transition risks			
Low carbon transition score	6.0	6.3	6.3
Solutions (%)	2.4	6.3	6.8
Product & operational transition (%)	16.5	9.1	8.9
Asset stranding (%)	1.0	0.2	0.2
Exposure to asset stranding risks			
Potential carbon emissions (t CO2e/\$M invested)	9732	1748	1676
Fossil fuel reserves (%)	6.6	1.9	1.3
Thermal coal mining (%)	1.9	0.7	0.2
Thermal coal-based power generation (%)	1.5	0.9	0.8
Unconventional oil & gas extraction (%)	2.0	0.5	0.6
Exposure to clean technology solutions			
Clean technologies solutions (> 20% revenue)	3.5	6.2	6.9
Clean technologies solutions revenue (wtd avg %)	4.1	5.3	5.8
Green/brown net revenue exposure	2.5	9.5	9.4
Other climate metrics			
Exposure to carbon-related assets (%)	6.2	1.7	1.8
Climate-related controversies (% score ≤ 4)	0.0	0.0	0.0
Low carbon transition management score (% top quartile)	50.5	51.0	52.0

As of October 30, 2020

Key metrics - Europe

Key metrics

	MSCI Europe Index	MSCI Europe Climate Change Index	Europe Proposed Index (Sim)
Total return* (%)	1.4	1.9	2.4
Total risk (%)	14.5	14.5	14.3
Return / risk	0.10	0.13	0.17
Sharpe ratio	0.04	0.08	0.11
Active return (%)	0.0	0.5	1.0
Tracking error (%)	0.0	1.2	1.5
Information Ratio	nan	0.45	0.64
Historical beta	1.00	0.99	0.98
Number of constituents***	441	418	402
Turnover** (%)	1.8	3.6	5.1
Price to book***	1.8	1.9	2.0
Price to earnings***	17.7	17.9	18.4
Dividend yield*** (%)	3.4	3.3	3.2

Period: Nov 29, 2013 to Oct 30, 2020. * Gross returns annualized in USD ** Annualized one-way index turnover over index reviews *** Monthly averages

Performance (%)

	MSCI Europe Index	MSCI Europe Climate Change Index	Europe Proposed Index (Sim)
YTD	-13.6	-11.2	-8.9
1 Yr	-9.0	-6.0	-3.5
3 Yr	-1.9	-1.2	-0.0
5 Yr	2.2	2.5	3.1
10 Yr	nan	nan	nan

Gross returns for the period ending Oct 30, 2020

Returns are annualized for periods longer than a year

ESG metrics - Europe

Climate change

	MSCI Europe Index	MSCI Europe Climate Change Index	Europe Proposed Index (Sim)
Climate footprint			
Carbon emissions (t CO2e/\$M invested)	164	89	90
Carbon intensity (t CO2e/\$M sales)	171	109	119
Wtd avg carbon intensity (t CO2e/\$M sales)	142	91	97
Low carbon transition risks			
Low carbon transition score	6.1	6.4	6.4
Solutions (%)	4.1	10.1	11.1
Product & operational transition (%)	21.8	11.1	11.1
Asset stranding (%)	0.0	0.0	0.0
Exposure to asset stranding risks			
Potential carbon emissions (t CO2e/\$M invested)	3702	876	278
Fossil fuel reserves (%)	6.2	2.0	1.5
Thermal coal mining (%)	1.1	0.3	0.0
Thermal coal-based power generation (%)	3.9	2.4	2.7
Unconventional oil & gas extraction (%)	3.1	0.7	0.4
Exposure to clean technology solutions			
Clean technologies solutions (> 20% revenue)	5.2	9.4	10.4
Clean technologies solutions revenue (wtd avg %)	4.0	6.3	6.8
Green/brown net revenue exposure	3.3	11.9	12.4
Other climate metrics			
Exposure to carbon-related assets (%)	8.6	4.0	4.2
Climate-related controversies (% score ≤ 4)	0.4	0.1	0.0
Low carbon transition management score (% top quartile)	80.4	80.7	80.1

As of October 30, 2020

Key metrics - EMU

Key metrics

	MSCI EMU Index	MSCI EMU Climate Change Index	EMU Proposed Index (Sim)
Total return* (%)	1.5	2.1	2.6
Total risk (%)	16.3	16.3	16.0
Return / risk	0.09	0.13	0.16
Sharpe ratio	0.04	0.08	0.11
Active return (%)	0.0	0.6	1.1
Tracking error (%)	0.0	0.8	1.1
Information Ratio	nan	0.72	0.99
Historical beta	1.00	1.00	0.98
Number of constituents***	242	228	220
Turnover** (%)	2.1	4.6	6.4
Price to book***	1.6	1.6	1.7
Price to earnings***	17.8	18.2	18.6
Dividend yield*** (%)	3.2	3.0	3.0

Period: Nov 29, 2013 to Oct 30, 2020. * Gross returns annualized in USD ** Annualized one-way index turnover over index reviews *** Monthly averages

Performance (%)

	MSCI EMU Index	MSCI EMU Climate Change Index	EMU Proposed Index (Sim)
YTD	-13.5	-12.1	-10.4
1 Yr	-9.7	-7.9	-6.0
3 Yr	-3.3	-2.7	-1.2
5 Yr	2.5	3.0	3.8
10 Yr	nan	nan	nan

Gross returns for the period ending Oct 30, 2020

Returns are annualized for periods longer than a year

ESG metrics - EMU

Climate change

	MSCI EMU Index	MSCI EMU Climate Change Index	EMU Proposed Index (Sim)
Climate footprint			
Carbon emissions (t CO2e/\$M invested)	210	126	131
Carbon intensity (t CO2e/\$M sales)	192	130	147
Wtd avg carbon intensity (t CO2e/\$M sales)	176	116	123
Low carbon transition risks			
Low carbon transition score	6.0	6.4	6.4
Solutions (%)	4.6	11.9	12.9
Product & operational transition (%)	22.3	10.6	10.4
Asset stranding (%)	0.0	0.0	0.0
Exposure to asset stranding risks			
Potential carbon emissions (t CO2e/\$M invested)	1788	447	490
Fossil fuel reserves (%)	5.6	2.3	2.6
Thermal coal mining (%)	0.0	0.0	0.0
Thermal coal-based power generation (%)	6.5	4.1	4.6
Unconventional oil & gas extraction (%)	2.2	0.6	0.6
Exposure to clean technology solutions			
Clean technologies solutions (> 20% revenue)	7.1	13.2	14.3
Clean technologies solutions revenue (wtd avg %)	5.1	7.7	8.1
Green/brown net revenue exposure	3.1	9.1	8.4
Other climate metrics			
Exposure to carbon-related assets (%)	10.6	6.4	7.1
Climate-related controversies (% , score ≤ 4)	0.0	0.0	0.0
Low carbon transition management score (% top quartile)	79.8	82.9	83.5

As of October 30, 2020

Key metrics - USA

Key metrics

	MSCI USA Index	MSCI USA Climate Change Index	USA Proposed Index (Sim)
Total return* (%)	11.4	12.9	13.3
Total risk (%)	13.9	13.9	14.0
Return / risk	0.82	0.92	0.95
Sharpe ratio	0.76	0.86	0.89
Active return (%)	0.0	1.5	1.9
Tracking error (%)	0.0	1.3	1.4
Information Ratio	nan	1.18	1.36
Historical beta	1.00	1.00	1.00
Number of constituents***	627	584	572
Turnover** (%)	1.8	4.1	4.7
Price to book***	3.1	3.3	3.4
Price to earnings***	21.4	21.0	21.3
Dividend yield*** (%)	2.0	1.9	1.9

Period: Nov 29, 2013 to Oct 30, 2020. * Gross returns annualized in USD ** Annualized one-way index turnover over index reviews *** Monthly averages

Performance (%)

	MSCI USA Index	MSCI USA Climate Change Index	USA Proposed Index (Sim)
YTD	4.5	8.1	9.2
1 Yr	11.2	15.3	16.5
3 Yr	11.1	13.0	13.7
5 Yr	12.0	13.6	14.0
10 Yr	nan	nan	nan

Gross returns for the period ending Oct 30, 2020

Returns are annualized for periods longer than a year

ESG metrics - USA

Climate change

	MSCI USA Index	MSCI USA Climate Change Index	USA Proposed Index (Sim)
Climate footprint			
Carbon emissions (t CO2e/\$M invested)	67	32	31
Carbon intensity (t CO2e/\$M sales)	167	89	89
Wtd avg carbon intensity (t CO2e/\$M sales)	147	83	84
Low carbon transition risks			
Low carbon transition score	6.2	6.5	6.5
Solutions (%)	8.5	13.8	14.2
Product & operational transition (%)	9.3	4.1	4.1
Asset stranding (%)	0.0	0.0	0.0
Exposure to asset stranding risks			
Potential carbon emissions (t CO2e/\$M invested)	732	130	50
Fossil fuel reserves (%)	2.9	1.4	1.2
Thermal coal mining (%)	0.2	0.1	0.1
Thermal coal-based power generation (%)	3.4	1.9	1.8
Unconventional oil & gas extraction (%)	1.4	0.3	0.1
Exposure to clean technology solutions			
Clean technologies solutions (> 20% revenue)	5.1	9.9	10.7
Clean technologies solutions revenue (wtd avg %)	4.7	7.7	8.3
Green/brown net revenue exposure	3.0	13.8	15.7
Other climate metrics			
Exposure to carbon-related assets (%)	4.8	1.7	1.6
Climate-related controversies (% score ≤ 4)	0.0	0.0	0.0
Low carbon transition management score (% top quartile)	72.2	73.7	72.9

As of October 30, 2020

Key metrics - Japan

Key metrics

	MSCI Japan Index	MSCI Japan Climate Change Index	Japan Proposed Index (Sim)
Total return* (%)	5.0	5.4	5.5
Total risk (%)	12.6	12.5	12.5
Return / risk	0.40	0.43	0.44
Sharpe ratio	0.33	0.37	0.38
Active return (%)	0.0	0.4	0.5
Tracking error (%)	0.0	1.4	1.5
Information Ratio	nan	0.27	0.34
Historical beta	1.00	0.99	0.98
Number of constituents***	319	316	313
Turnover** (%)	1.8	3.0	3.3
Price to book***	1.3	1.4	1.4
Price to earnings***	15.1	15.7	15.8
Dividend yield*** (%)	2.1	2.0	2.0

Period: Nov 29, 2013 to Oct 30, 2020. * Gross returns annualized in USD ** Annualized one-way index turnover over index reviews *** Monthly averages

Performance (%)

	MSCI Japan Index	MSCI Japan Climate Change Index	Japan Proposed Index (Sim)
YTD	-1.9	-3.2	-3.2
1 Yr	1.5	0.2	0.3
3 Yr	2.0	2.0	2.1
5 Yr	5.5	5.6	5.7
10 Yr	nan	nan	nan

Gross returns for the period ending Oct 30, 2020

Returns are annualized for periods longer than a year

ESG metrics - Japan

Climate change

	MSCI Japan Index	MSCI Japan Climate Change Index	Japan Proposed Index (Sim)
Climate footprint			
Carbon emissions (t CO2e/\$M invested)	193	118	83
Carbon intensity (t CO2e/\$M sales)	168	115	84
Wtd avg carbon intensity (t CO2e/\$M sales)	78	60	55
Low carbon transition risks			
Low carbon transition score	6.1	6.4	6.4
Solutions (%)	3.9	10.3	10.6
Product & operational transition (%)	16.2	7.3	7.0
Asset stranding (%)	0.0	0.0	0.0
Exposure to asset stranding risks			
Potential carbon emissions (t CO2e/\$M invested)	433	85	22
Fossil fuel reserves (%)	4.8	2.5	2.5
Thermal coal mining (%)	3.9	2.2	2.2
Thermal coal-based power generation (%)	2.6	1.6	1.5
Unconventional oil & gas extraction (%)	0.9	0.3	0.3
Exposure to clean technology solutions			
Clean technologies solutions (> 20% revenue)	4.3	8.1	8.4
Clean technologies solutions revenue (wtd avg %)	4.7	6.3	6.5
Green/brown net revenue exposure	6.2	19.2	25.7
Other climate metrics			
Exposure to carbon-related assets (%)	1.9	0.7	0.5
Climate-related controversies (% score ≤ 4)	0.0	0.0	0.0
Low carbon transition management score (% top quartile)	73.4	73.9	73.9

As of October 30, 2020

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