

# CONSULTATION ON POTENTIAL ENHANCEMENTS TO THE MSCI EX FOSSIL FUELS AND MSCI EX COAL INDEXES

March 2019

Note that this consultation may or may not lead to the implementation of any or all of the proposed changes in the highlighted or any other MSCI indexes. Consultation feedback will remain confidential. MSCI may publicly disclose feedback if specifically requested by specific market participants. In that case, the relevant feedback would be published together with the final results of the consultation.

# OVERVIEW

The MSCI Global Fossil Fuels Exclusion Indexes<sup>(\*)</sup> aim to exclude companies that have proved & probable fossil fuels or coal reserves used for energy purposes

- **Proposal 1:** Enhance the exclusion criteria
  - Use business segment revenues (instead of only GICS®) to determine if fossil fuels or coal reserves are used for energy purposes
  - Exclude companies that hold unknown volume of fossil fuels or coal reserves
  - Avoid potential exclusion of pure metallurgical coal companies
- **Proposal 2:** Apply data coverage requirement
  - Include companies only when fossil fuels data is available from MSCI ESG Research

MSCI welcomes feedback from market participants until April 19, 2019 and will announce the results of the consultation as well as the potential implementation timeline on or before April 30, 2019

# BETTER ACHIEVING THE INDEX OBJECTIVE

- The proposed enhancements aim to better identify and exclude companies that own fossil fuels or coal reserves used for energy purposes, in line with the index objective

## Considerations in establishing a fossil fuel divestment strategy



Source: "Fossil Fuel Divestment: A Practical Introduction", MSCI, Jan 2019

- Applies to MSCI ex Fossil Fuels and MSCI ex Coal Indexes
- Applies to MSCI ex Fossil Fuels Indexes

# PROPOSAL 1

*Enhance the exclusion criteria*

# CURRENT VS. PROPOSED EXCLUSION CRITERIA

	CURRENT	PROPOSED
"High Intensity" GICS	Exclude companies that: <ul style="list-style-type: none"> <li>• Own fossil fuels or coal reserves</li> </ul> <b>AND</b> <ul style="list-style-type: none"> <li>• Reserves volume can be determined</li> </ul>	Exclude companies that: <ul style="list-style-type: none"> <li>• Own fossil fuels or coal reserves <i>EXCEPT metallurgical coal companies</i></li> </ul>
"Low Intensity" GICS	No exclusions	Exclude companies that: <ul style="list-style-type: none"> <li>• Own fossil fuels or coal reserves <i>EXCEPT metallurgical coal companies</i></li> </ul> <b>AND</b> <ul style="list-style-type: none"> <li>• Generate revenue from business segments associated with energy application of fossil fuels (*)</li> </ul>

(\*) Includes revenue from thermal coal mining, oil & gas exploration & production and downstream activities e.g. refining; distribution & retail; pipeline & transportation; trading and fossil fuel based power generation.

- “High Intensity” Global Industry Classification Standard (GICS®) refers to high carbon intensity industries, specifically the following GICS classifications:
  - Energy Sector
  - Utilities Sector
  - Diversified Metals & Mining Sub-Industry
- Any other GICS classification corresponds to “Low Intensity” GICS

# POTENTIAL BENEFITS

The proposed exclusion criteria could bring the following benefits:

✓ Companies that use their fossil fuels or coal reserves for energy purposes would be excluded irrespective of their GICS classification

- Enhances the current screen which assumes that companies with “low intensity” GICS do not use their fossil fuels or coal reserves for energy purposes
- In line with the index objective
- Leverages the data on fossil fuels revenue available from MSCI ESG Research

✓ Companies that do not disclose their volume of fossil fuels or coal reserves would be excluded

- In line with the index objective

✓ Avoid potential exclusion of pure metallurgical coal companies

- Currently, metallurgical coal companies could be excluded if classified in “high intensity” GICS (note: there are currently no such companies in MSCI ACWI Index)

# SUMMARY OF IMPACT (EXCLUSIONS)

The enhanced screens would result in 60 (respectively 44) securities being newly ineligible relative to the existing fossil fuels (respectively coal) screen for the MSCI ACWI universe

	PARENT INDEX (ACWI)		CURRENT INDEX			SIMULATED INDEX		
	# constituents	weight	# exclusions	weight of exclusions	# newly ineligible	# newly eligible	# exclusions	weight of exclusions
ACWI ex Fossil Fuels	2,767	100.00%	119	6.24%	60	-	179	8.62%
ACWI ex Coal	2,767	100.00%	33	0.86%	44	-	77	2.68%

Data as of the November 2018 Semi-Annual Index Review

## Simulated top 10 newly ineligible securities – MSCI ACWI ex Fossil Fuels Index (full list available in Appendix)

Security	Country	ACWI Weight	Sector	Sub-Industry	"Low Intensity" GICS (*)	Reserves Volume Not Available
BERKSHIRE HATHAWAY B	USA	0.643%	Financials	Multi-Sector Holdings	X	
BASF	GERMANY	0.163%	Materials	Diversified Chemicals	X	
SCHLUMBERGER	USA	0.153%	Energy	Oil & Gas Equip. & Services		X
SOUTHERN COMPANY (THE)	USA	0.111%	Utilities	Electric Utilities		X
VALE ON	BRAZIL	0.110%	Materials	Steel	X	
AMERICAN ELECTRIC POWER	USA	0.090%	Utilities	Electric Utilities		X
MITSUBISHI CORP	JAPAN	0.086%	Industrials	Trading Companies & Distr.	X	
BROOKFIELD ASSET MAN A	CANADA	0.085%	Financials	Asset Mgmt & Custody Banks	X	X
CK HUTCHISON HOLDINGS	HONG KONG	0.066%	Industrials	Industrial Conglomerates	X	
MITSUMI & CO	JAPAN	0.062%	Industrials	Trading Companies & Distr.	X	

Data as of the November 2018 Semi-Annual Index Review

(\*) Companies not classified in either the Energy Sector, Utilities Sector or Diversified Metals & Mining Sub-Industry of the GICS

# SIMULATED HISTORICAL IMPACT

- The comparison of MSCI ACWI ex Fossil Fuels Index with current screen vs. simulated MSCI ACWI ex Fossil Fuels Index with new screen shows only a marginal difference in Risk and Return profile (same applies to MSCI ACWI ex Coal Index)

Key Metrics					
	MSCI ACWI Index	MSCI ACWI ex Fossil Fuels Index	MSCI ACWI ex Fossil Fuels (Simulated) Index	MSCI ACWI ex Coal Index	MSCI ACWI ex Coal (Simulated) Index
Total Return* (%)	8.8	8.7	8.7	8.6	8.6
Total Risk (%)	11.2	11.3	11.3	11.2	11.3
Return/Risk	0.78	0.77	0.77	0.77	0.76
Sharpe Ratio	0.68	0.67	0.67	0.66	0.65
Active Return (%)	0.0	-0.1	0.0	-0.1	-0.2
Tracking Error (%)	0.0	0.8	0.9	0.2	0.2
Information Ratio	NaN	-0.09	-0.06	-0.74	-0.85
Historical Beta	1.00	1.00	1.01	1.00	1.01
No of Stocks***	2547	2424	2371	2511	2474
Turnover** (%)	2.8	3.0	3.2	2.9	2.9

Period: 30-Nov-2015 to 31-Jan-2019

The additional exclusions due to the new screens were determined as of the November 2018 Semi-Annual Index Review and applied throughout the full period

\* Gross returns annualized in USD

\*\* Annualized one-way index turnover over index reviews

\*\*\* Monthly averages



# PROPOSAL 2

*Apply data coverage requirement*

# DATA COVERAGE PROPOSAL

**Proposal:** Consider companies for inclusion in MSCI Global Fossil Fuels Exclusion Indexes only once they are covered by MSCI ESG Research for fossil fuels data

- During an Index Review, securities may not yet be covered by MSCI ESG Research for fossil fuels data if they are added to the parent index as part of the Index Review or if they were recently added to the parent index due to corporate events (e.g., IPOs)
- Under the proposal, such companies would be considered for inclusion in the MSCI Global Fossil Fuels Exclusion Indexes only when fossil fuels data is available from MSCI ESG Research (typically by the next Quarterly Index Review)

# SIMULATED HISTORICAL IMPACT

- The table below shows securities in the MSCI ACWI Index not covered for fossil fuels data during the Index Reviews in 2018:

Index Review	# Securities	ACWI Weight
<b>Nov-2018</b>	19	0.086%
<b>Aug-2018</b>	9	0.034%
<b>May-2018</b>	39	0.156%
<b>Feb-2018</b>	1	0.002%

- All such securities started to be covered for fossil fuels data by the next Index Review, hence becoming eligible for index inclusion under the proposal
  - **Example:** the 39 securities not covered for fossil fuels data at the May 2018 Index Review would have been considered for addition to the MSCI Global Fossil Fuels Exclusion Indexes at the August 2018 Index Review

# DISCUSSION POINTS

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- Do you agree that companies with “low intensity” GICS should be excluded if their business segment revenues indicate that they use their fossil fuels or coal reserves for energy purposes?
- Is it appropriate to exclude companies that own fossil fuels reserves used for energy purposes but do not disclose their volume of reserves?
- Do you agree to include companies only once fossil fuels data is available from MSCI ESG Research?

# APPENDIX

# IMPACT – NEW FOSSIL FUELS EXCLUSIONS (1/3)

## Simulated newly ineligible securities – MSCI ACWI ex Fossil Fuels Index

Security	Country	ACWI Weight	Sector	Sub-Industry	"Low Intensity" GICS (*)	Reserves Volume Not Available
BERKSHIRE HATHAWAY B	USA	0.643%	Financials	Multi-Sector Holdings	X	
BASF	GERMANY	0.163%	Materials	Diversified Chemicals	X	
SCHLUMBERGER	USA	0.153%	Energy	Oil & Gas Equip. & Services		X
SOUTHERN COMPANY (THE)	USA	0.111%	Utilities	Electric Utilities		X
VALE ON	BRAZIL	0.110%	Materials	Steel	X	
AMERICAN ELECTRIC POWER	USA	0.090%	Utilities	Electric Utilities		X
MITSUBISHI CORP	JAPAN	0.086%	Industrials	Trading Companies & Distr.	X	
BROOKFIELD ASSET MAN A	CANADA	0.085%	Financials	Asset Mgmt & Custody Banks	X	X
CK HUTCHISON HOLDINGS	HONG KONG	0.066%	Industrials	Industrial Conglomerates	X	
MITSUI & CO	JAPAN	0.062%	Industrials	Trading Companies & Distr.	X	
ITOCHU CORP	JAPAN	0.061%	Industrials	Trading Companies & Distr.	X	
WESFARMERS	AUSTRALIA	0.058%	Consumer Discr.	General Merchandise Stores	X	
CLP HOLDINGS	HONG KONG	0.044%	Utilities	Electric Utilities		X
FIRSTENERGY CORP	USA	0.043%	Utilities	Electric Utilities		X
SUMITOMO CORP	JAPAN	0.041%	Industrials	Trading Companies & Distr.	X	X
SASOL	SOUTH AFRICA	0.041%	Materials	Diversified Chemicals	X	
JARDINE MATHESON (USD)	HONG KONG	0.033%	Industrials	Industrial Conglomerates	X	X
FRANCO-NEVADA CORP	CANADA	0.030%	Materials	Gold	X	
MARUBENI CORP	JAPAN	0.028%	Industrials	Trading Companies & Distr.	X	X
ASTRA INTERNATIONAL	INDONESIA	0.028%	Consumer Discr.	Automobile Manufacturers	X	

Data as of the November 2018 Semi-Annual Index Review

(\*) All GICS classifications except Energy Sector, Utilities Sector and Diversified Metals & Mining Sub-Industry

# IMPACT – NEW FOSSIL FUELS EXCLUSIONS (2/3)

## Simulated newly ineligible securities – MSCI ACWI ex Fossil Fuels Index

Security	Country	ACWI Weight	Sector	Sub-Industry	"Low Intensity" GICS (*)	Reserves Volume Not Available
RWE STAMM	GERMANY	0.027%	Utilities	Multi-Utilities		X
TOKYO GAS CO	JAPAN	0.023%	Utilities	Gas Utilities		X
CHUBU ELECTRIC POWER CO	JAPAN	0.022%	Utilities	Electric Utilities		X
CITIC	CHINA	0.022%	Industrials	Industrial Conglomerates	X	
NATURGY ENERGY GROUP	SPAIN	0.022%	Utilities	Gas Utilities		X
SK HOLDINGS	KOREA	0.019%	Industrials	Industrial Conglomerates	X	X
JARDINE STRATEGIC (USD)	HONG KONG	0.018%	Industrials	Industrial Conglomerates	X	
TOYOTA TSUSHO	JAPAN	0.018%	Industrials	Trading Companies & Distr.	X	X
VISTRA ENERGY	USA	0.018%	Utilities	Indt Power Prod. & Energy Traders		X
GRUPO MEXICO B	MEXICO	0.017%	Materials	Diversified Metals & Mining		X
OSAKA GAS CO	JAPAN	0.017%	Utilities	Gas Utilities		X
KEPPEL CORP	SINGAPORE	0.015%	Industrials	Industrial Conglomerates	X	
KEPCO KOREA ELECT. POWER	KOREA	0.015%	Utilities	Electric Utilities		X
CHINA GAS HOLDINGS	CHINA	0.013%	Utilities	Gas Utilities		X
KEYERA	CANADA	0.011%	Energy	Oil & Gas Storage & Transp.		X
FORMOSA PETROCHEMICAL	TAIWAN	0.011%	Energy	Oil & Gas Refining & Mkg		X
ALROSA (RUB)	RUSSIA	0.009%	Materials	Precious Metals & Minerals	X	
JSW STEEL	INDIA	0.009%	Materials	Steel	X	
GENTING	MALAYSIA	0.008%	Consumer Discr.	Casinos & Gaming	X	X
BHARAT PETROLEUM CORP	INDIA	0.008%	Energy	Oil & Gas Refining & Mkg		X

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# IMPACT – NEW FOSSIL FUELS EXCLUSIONS (3/3)

## Simulated newly ineligible securities – MSCI ACWI ex Fossil Fuels Index

Security	Country	ACWI Weight	Sector	Sub-Industry	"Low Intensity" GICS (*)	Reserves Volume Not Available
SEVERSTAL (RUB)	RUSSIA	0.008%	Materials	Steel	X	X
ALFA	MEXICO	0.008%	Industrials	Industrial Conglomerates	X	
ALTAGAS	CANADA	0.007%	Utilities	Gas Utilities		X
TOHO GAS CO	JAPAN	0.007%	Utilities	Gas Utilities		X
MITSUBISHI MATERIALS	JAPAN	0.007%	Materials	Diversified Metals & Mining		X
JARDINE CYCLE & CARRIAGE	SINGAPORE	0.006%	Consumer Discr.	Distributors	X	
POLSKA GRUPA ENER	POLAND	0.006%	Utilities	Electric Utilities		X
GS HOLDINGS CORP	KOREA	0.006%	Energy	Oil & Gas Refining & Mkg		X
KOC HOLDING	TURKEY	0.005%	Industrials	Industrial Conglomerates	X	X
INTER RAO UES(RUB)	RUSSIA	0.004%	Utilities	Electric Utilities		X
ALUMINUM CORP OF CHINA H	CHINA	0.003%	Materials	Aluminum	X	X
GRUPO ARGOS	COLOMBIA	0.003%	Materials	Construction Materials	X	X
KOREA GAS CORPORATION	KOREA	0.003%	Utilities	Gas Utilities		X
JASTRZEBSKA SPOLKA WEGL	POLAND	0.002%	Materials	Steel	X	
CHINA POWER INTL	CHINA	0.002%	Utilities	Indt Power Prod. & Energy Traders		X
DMCI HOLDINGS	PHILIPPINES	0.002%	Industrials	Industrial Conglomerates	X	
POSCO DAEWOO	KOREA	0.002%	Industrials	Trading Companies & Distr.	X	X
DATANG INTL POWER H	CHINA	0.002%	Utilities	Indt Power Prod. & Energy Traders		X
TEBIAN ELEC APP A (HK-C)	CHINA	0.000%	Industrials	Electrical Components & Equip.	X	X
SHANXI XISHAN A (HK-C)	CHINA	0.000%	Energy	Coal & Consumable Fuels		X

Data as of the November 2018 Semi-Annual Index Review

(\*) All GICS classifications except Energy Sector, Utilities Sector and Diversified Metals & Mining Sub-Industry

# IMPACT – NEW COAL EXCLUSIONS (1/2)

## Simulated newly ineligible securities – MSCI ACWI ex Coal Index

Security	Country	ACWI Weight	Sector	Sub-Industry	"Low Intensity" GICS (*)	Reserves Volume Not Available
BERKSHIRE HATHAWAY B	USA	0.643%	Financials	Multi-Sector Holdings	X	
SOUTHERN COMPANY (THE)	USA	0.111%	Utilities	Electric Utilities		X
VALE ON	BRAZIL	0.110%	Materials	Steel	X	
AMERICAN ELECTRIC POWER	USA	0.090%	Utilities	Electric Utilities		X
MITSUBISHI CORP	JAPAN	0.086%	Industrials	Trading Companies & Distr.	X	
MITSUMI & CO	JAPAN	0.062%	Industrials	Trading Companies & Distr.	X	
ITOCHU CORP	JAPAN	0.061%	Industrials	Trading Companies & Distr.	X	
WESFARMERS	AUSTRALIA	0.058%	Consumer Discr.	General Merchandise Stores	X	
CLP HOLDINGS	HONG KONG	0.044%	Utilities	Electric Utilities		X
FIRSTENERGY CORP	USA	0.043%	Utilities	Electric Utilities		X
HONGKONG CHINA GAS	HONG KONG	0.042%	Utilities	Gas Utilities		X
SUMITOMO CORP	JAPAN	0.041%	Industrials	Trading Companies & Distr.	X	X
SASOL	SOUTH AFRICA	0.041%	Materials	Diversified Chemicals	X	
JARDINE MATHESON (USD)	HONG KONG	0.033%	Industrials	Industrial Conglomerates	X	X
FRANCO-NEVADA CORP	CANADA	0.030%	Materials	Gold	X	X
MARUBENI CORP	JAPAN	0.028%	Industrials	Trading Companies & Distr.	X	X
ASTRA INTERNATIONAL	INDONESIA	0.028%	Consumer Discr.	Automobile Manufacturers	X	
RWE STAMM	GERMANY	0.027%	Utilities	Multi-Utilities		X
CHUBU ELECTRIC POWER CO	JAPAN	0.022%	Utilities	Electric Utilities		X
CITIC	CHINA	0.022%	Industrials	Industrial Conglomerates	X	X
NATURGY ENERGY GROUP	SPAIN	0.022%	Utilities	Gas Utilities		X
SK HOLDINGS	KOREA	0.019%	Industrials	Industrial Conglomerates	X	X

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(\*) All GICS classifications except Energy Sector, Utilities Sector and Diversified Metals & Mining Sub-Industry

# IMPACT – NEW COAL EXCLUSIONS (2/2)

## Simulated newly ineligible securities – MSCI ACWI ex Coal Index

Security	Country	ACWI Weight	Sector	Sub-Industry	"Low Intensity" GICS (*)	Reserves Volume Not Available
JARDINE STRATEGIC (USD)	HONG KONG	0.018%	Industrials	Industrial Conglomerates	X	
TOYOTA TSUSHO	JAPAN	0.018%	Industrials	Trading Companies & Distr.	X	X
VISTRA ENERGY	USA	0.018%	Utilities	Indt Power Prod. & Energy Traders		X
GRUPO MEXICO B	MEXICO	0.017%	Materials	Diversified Metals & Mining		X
KEPCO KOREA ELECT. POWER	KOREA	0.015%	Utilities	Electric Utilities		X
IDEMITSU KOSAN CO	JAPAN	0.011%	Energy	Oil & Gas Refining & Marketing		X
JSW STEEL	INDIA	0.009%	Materials	Steel	X	
SEVERSTAL (RUB)	RUSSIA	0.008%	Materials	Steel	X	X
MITSUBISHI MATERIALS	JAPAN	0.007%	Materials	Diversified Metals & Mining		X
JARDINE CYCLE & CARRIAGE	SINGAPORE	0.006%	Consumer Discr.	Distributors	X	
POLSKA GRUPA ENER	POLAND	0.006%	Utilities	Electric Utilities		X
KOC HOLDING	TURKEY	0.005%	Industrials	Industrial Conglomerates	X	X
INTER RAO UES(RUB)	RUSSIA	0.004%	Utilities	Electric Utilities		X
ALUMINUM CORP OF CHINA H	CHINA	0.003%	Materials	Aluminum	X	X
GRUPO ARGOS	COLOMBIA	0.003%	Materials	Construction Materials	X	X
JASTRZEBSKA SPOLKA WEGL	POLAND	0.002%	Materials	Steel	X	
CHINA POWER INTL	CHINA	0.002%	Utilities	Indt Power Prod. & Energy Traders		X
DMCI HOLDINGS	PHILIPPINES	0.002%	Industrials	Industrial Conglomerates	X	
POSCO DAEWOO	KOREA	0.002%	Industrials	Trading Companies & Distr.	X	X
DATANG INTL POWER H	CHINA	0.002%	Utilities	Indt Power Prod. & Energy Traders		X
TEBIAN ELEC APP A (HK-C)	CHINA	0.000%	Industrials	Electrical Components & Equip.	X	X
SHANXI XISHAN A (HK-C)	CHINA	0.000%	Energy	Coal & Consumable Fuels		X

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# SCREENING FORMULAS

- The MSCI Global ex Fossil Fuels Indexes use data from MSCI ESG Research to screen out companies with fossil fuels or coal reserves

	Screening formulas	
	Current	Proposed
<b>MSCI ex Fossil Fuels Indexes</b>	Industry - Energy Application = TRUE <b>AND</b> Total Potential Emissions (MtCO <sub>2</sub> ) > 0	Fossil Fuel Reserves – Energy Application = TRUE
<b>MSCI ex Coal Indexes</b>	Industry - Energy Application = TRUE <b>AND</b> Total Coal - Potential Emissions (MtCO <sub>2</sub> ) > 0	Fossil Fuel Reserves – Energy Application = TRUE <b>AND</b> Evidence of Total Coal Reserves = TRUE

# NEW MSCI ESG RESEARCH FACTOR

## “Fossil Fuel Reserves – Energy Application”

- Launched by MSCI ESG Research in October 2018
- Used in the proposed screening formula
- For companies with “low intensity” GICS, the factor considers revenues from the following activities to determine if fossil fuels reserves are used for energy application:
  - ✓ Thermal coal mining
  - ✓ Oil & Gas exploration & production and downstream activities e.g. refining; distribution & retail; pipeline & transportation; trading.
  - ✓ Fossil fuel based power generation
- Revenues from other activities are not considered:
  - ✓ Oil & Gas equipment & services
  - ✓ Oil & Gas petrochemicals
  - ✓ Other activities not related to Fossil fuel businesses

# ESG DATA DEFINITIONS

Factor Name	Description
Industry - Energy Application	Companies with fossil fuel reserves used for energy application. This includes companies with reserves in the Oil & Gas industries, Utilities and Diversified Metals and Mining.
Fossil Fuel Reserves – Energy Application	This factor identifies companies, regardless of their industries, with evidence of owning fossil fuel reserves used most likely for energy applications. For high intensity industries (Energy, Utilities, Diversified Metals & Mining), this factor flags companies with evidence of fossil fuel reserves (excluding metallurgical coal). For other industries, it flags companies with evidence of fossil fuel reserves (excluding metallurgical coal) and deriving revenue from business segments associated with energy application of fossil fuels such as thermal coal mining, oil & gas exploration & production and downstream activities e.g. refining; distribution & retail; pipeline & transportation; trading and fossil fuel based power generation. Fossil fuel reserves are defined as proved and probable reserves (i.e. 2P) for coal and proved reserves (i.e. 1P) for oil and natural gas. Evidence of owning reserves includes companies providing the exact volume of reserves, and companies making a statement about their ownership of reserves.
Total Potential Emissions (MtCO2)	This field represents the potential carbon emissions of the coal, oil and gas reserves owned by a company. It is computed as the sum of the potential carbon emissions of the total coal, total oil and total gas reserves owned by the company.
Total Coal - Potential Emissions (MtCO2)	This field represents the potential carbon emissions of the coal reserves owned by a company. It is computed as the sum of the potential carbon emissions of the metallurgical coal reserves and thermal coal reserves owned by the company.
Evidence of Total Coal Reserves	This field identifies companies that provide evidence of owning coal reserves, including those that own less than 50% of a reserves field. Evidence of owning reserves includes companies providing the exact volume of reserves, and companies making a statement about their ownership of reserves.

# ESG METRICS (ACWI EX FOSSIL FUELS)

## ESG Metrics

	MSCI ACWI Index	MSCI ACWI ex Fossil Fuels Index	MSCI ACWI ex Fossil Fuels Index (Sim)
<b>Integration</b>			
Key Integration Metrics			
ESG Score	5.7	5.7	5.7
ESG Leaders (AAA-AA) (%)	23.0	23.8	23.9
ESG Laggards (B-CCC) (%)	11.2	10.5	10.4
ESG Trend Positive (%)	16.5	16.5	16.6
ESG Trend Negative (%)	6.2	6.6	6.5
ESG Pillars			
Environmental Score	5.5	5.7	5.8
Social Score	4.6	4.6	4.6
Governance Score	5.2	5.2	5.2
Key Governance Metrics			
Lack of Independent Board Majority (%)	15.6	15.9	15.0
Deviation from One Share One Vote (%)	24.6	24.9	24.5
No Female Directors (%)	7.1	7.1	7.2
<b>Values</b>			
Tobacco Producers (%)	0.9	1.0	1.0
Civilian Firearms Producers (%)	0.2	0.2	0.2
Ties to Controversial Weapons (%)	0.9	0.9	1.0
Global Compact Compliance Violation or Watch List (%)	13.9	11.4	11.4
Red Flag Controversies (%)	3.5	2.1	2.0
Orange Flag Controversies (%)	24.5	24.3	24.6

As of 31-Jan-2019

The definitions of all statistical parameters are available in the Appendix

# CARBON EXPOSURE (ACWI EX FOSSIL FUELS)

## Carbon Exposure

	MSCI ACWI Index	MSCI ACWI ex Fossil Fuels Index	MSCI ACWI ex Fossil Fuels Index (Sim)
Carbon Emissions (t CO2e/\$M Invested)	144	115	96
Carbon Intensity (t CO2e/\$M Sales)	227	188	159
Wtd Avg Carbon Intensity (t CO2e/\$M Sales)	211	178	153
Potential Carbon Emissions (t CO2e/\$M Invested)	3320	37	38
Fossil Fuel Reserves (%)	6.2	0.0	0.0
Coal Reserves (%)	0.9	0.0	0.0
Thermal Coal Mining (%)	1.7	0.9	0.0
Thermal Coal-based Power Generation (%)	3.3	0.0	1.9
Oil Sands Production (%)	3.3	0.0	0.0
Shale Oil & Gas Production (%)	3.6	0.0	0.0
Arctic Oil & Gas Production (%)	1.8	0.0	0.0

As of 31-Jan-2019

The definitions of all statistical parameters are available in the Appendix

Fossil Fuel Reserves (%) and Coal Reserves (%) metrics are based on the current screens used in the MSCI Global ex Fossil Fuels Indexes



# ESG METRICS (ACWI EX COAL)

## ESG Metrics

	MSCI ACWI Index	MSCI ACWI ex Coal Index	MSCI ACWI ex Coal Index (Sim)
<b>Integration</b>			
Key Integration Metrics			
ESG Score	5.7	5.7	5.7
ESG Leaders (AAA-AA) (%)	23.0	23.2	23.4
ESG Laggards (B-CCC) (%)	11.2	11.2	11.2
ESG Trend Positive (%)	16.5	16.4	16.4
ESG Trend Negative (%)	6.2	6.3	6.3
ESG Pillars			
Environmental Score	5.5	5.6	5.6
Social Score	4.6	4.6	4.6
Governance Score	5.2	5.2	5.2
Key Governance Metrics			
Lack of Independent Board Majority (%)	15.6	15.7	14.8
Deviation from One Share One Vote (%)	24.6	24.7	24.3
No Female Directors (%)	7.1	7.1	7.1
<b>Values</b>			
Tobacco Producers (%)	0.9	0.9	0.9
Civilian Firearms Producers (%)	0.2	0.2	0.2
Ties to Controversial Weapons (%)	0.9	0.9	0.9
Global Compact Compliance Violation or Watch List (%)	13.9	13.3	13.4
Red Flag Controversies (%)	3.5	3.2	3.2
Orange Flag Controversies (%)	24.5	24.3	24.7

As of 31-Jan-2019

The definitions of all statistical parameters are available in the Appendix

# CARBON EXPOSURE (ACWI EX COAL)

## Carbon Exposure

	MSCI ACWI Index	MSCI ACWI ex Coal Index	MSCI ACWI ex Coal Index (Sim)
Carbon Emissions (t CO <sub>2</sub> e/\$M Invested)	144	134	117
Carbon Intensity (t CO <sub>2</sub> e/\$M Sales)	227	214	188
Wtd Avg Carbon Intensity (t CO <sub>2</sub> e/\$M Sales)	211	201	178
Potential Carbon Emissions (t CO <sub>2</sub> e/\$M Invested)	3320	2190	2227
Fossil Fuel Reserves (%)	6.2	5.3	5.4
Coal Reserves (%)	0.9	0.0	0.0
Thermal Coal Mining (%)	1.7	0.9	0.0
Thermal Coal-based Power Generation (%)	3.3	3.2	2.1
Oil Sands Production (%)	3.3	3.3	3.4
Shale Oil & Gas Production (%)	3.6	3.7	3.7
Arctic Oil & Gas Production (%)	1.8	1.8	1.9

As of 31-Jan-2019

The definitions of all statistical parameters are available in the Appendix

Fossil Fuel Reserves (%) and Coal Reserves (%) metrics are based on the current screens used in the MSCI Global ex Fossil Fuels Indexes

# APPENDIX

Key Metrics	Definition
Total Return	Annualized Total Return is a measure of gain or loss on the index.
Total Risk	Total Risk (also called Volatility) is a measure of index return dispersion. Annualized volatility is computed as the standard deviation of monthly index Total Returns.
Return/Risk	Return/Risk is the index return per unit of index risk, computed as the ratio of Total Return to Total Risk.
Sharpe Ratio	The Sharpe Ratio is computed as the ratio of index Excess Return to risk where Excess Return is the difference between the Total Index Return (annualized) and the corresponding risk-free rate.
Active Return	Active return is the Total Return of a factor index relative to its parent.
Tracking Error	Tracking Error (also called Active Risk) measures the dispersion of Active Returns between a factor index and its parent, and is calculated as the annualized standard deviation of Active Returns.
Information Ratio	Information Ratio measures Return/Risk in Active space, calculated as the ratio of Active Return to Tracking Error.
Historical Beta	Beta is a measure of the level of co-movement between a factor index and its parent.
Turnover	Turnover measures the percentage change in the composition of an index at each index rebalancing.

# APPENDIX

ESG Metrics	Definition
ESG Score	The ESG Score indicates how well the index companies manage their most material ESG risks relative to sector peers. Scores range from 10 (best) to 0 (worst).
ESG Leaders (AAA-AA) (%)	Exposure to companies with an ESG rating of AAA or AA (best in class relative to peers).
ESG Laggards (B-CCC) (%)	Exposure to companies with an ESG rating of B or CCC (worst in class relative to peers).
ESG Trend Positive (%)	Exposure to companies with a rating upgrade in the year prior to the most recent ESG rating.
ESG Trend Negative (%)	Exposure to companies with a rating downgrade in the year prior to the most recent ESG rating.
Environmental Score	The Environmental Score indicates how well the index companies manage their most material environment risks. Scores range from 10 (best) to 0 (worst).
Social Score	The Social Score indicates how well the index companies manage their most material social risks. Scores range from 10 (best) to 0 (worst).
Governance Score	The Governance Score indicates how well the index companies manage their most material governance risks. Scores range from 10 (best) to 0 (worst).
Lack of Independent Board Majority (%)	Exposure to companies lacking an independent board majority.
Deviation from One Share One Vote (%)	Exposure to companies flagged for limitations on voting rights.
No Female Directors (%)	Exposure to companies with no female directors.
Tobacco Producers (%)	Exposure to tobacco producers.
Civilian Firearms Producers (%)	Exposure to civilian firearms producers.
Ties to Controversial Weapons (%)	Exposure to companies with ties to controversial weapons.
Global Compact Compliance Violation or Watch List (%)	Exposure to companies in violation of the UN Global Compact principles, or on MSCI's "Watch List" for potential violations.
Red Flag Controversies (%)	Exposure to companies with very severe customer, environment, governance, human rights, or labor controversies.
Orange Flag Controversies (%)	Exposure to companies with serious customer, environment, governance, human rights, or labor controversies.

# APPENDIX

Carbon Exposure	Definition
Carbon Emissions	Carbon emissions normalized for the size of the portfolio tracking the index. (Unit: tons of CO2/ million \$ invested)
Carbon Emissions Intensity	Efficiency of a portfolio tracking the index in terms of total carbon emissions divided by total sales. (Unit: tons of CO2/ million \$ of sales)
Weighted Average Carbon Intensity	Exposure to carbon intensive companies. (Unit: tons of CO2/ million \$ of sales)
Potential Carbon Emissions	Carbon potential emissions normalized for the size of the portfolio tracking the index. (Unit: tons of CO2/ million \$ invested)
Fossil Fuel Reserves (%)	Exposure to companies that own fossil fuel reserves
Coal Reserves (%)	Exposure to companies that own coal reserves.
Thermal Coal Mining (%)	Exposure to companies that derive more than 0% revenue from thermal coal mining.
Thermal Coal-based Power Generation (%)	Exposure to companies that derive more than 0% revenue from thermal coal-based power generation.
Oil Sands Production (%)	Exposure to companies that derive more than 0% revenue from oil sands extraction.
Shale Oil & Gas Production (%)	Exposure to companies that derive more than 0% revenue from shale oil & gas production.
Arctic Oil & Gas Production (%)	Exposure to companies that derive more than 0% revenue from offshore or onshore oil & gas production in the Arctic region.

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