

Consultation on Potential Enhancement of the MSCI Low Carbon Leaders Indexes and MSCI Low Carbon Target Indexes

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 result of the consultation.

January 2022

Summary

MSCI presents a consultation with proposals for the potential enhancement of the MSCI Low Carbon Target Index and MSCI Low Carbon Leaders Index methodologies on a range of topics including the use of Scope 3 emissions and exclusions based on ESG Criteria.

MSCI invites feedback from market participants on or before March 31, 2022, and will announce the results of the consultation on or before April 29, 2022.

Background

- The MSCI Low Carbon Target Index and MSCI Low Carbon Leaders Index methodologies only consider Scope 1+2 emissions.
 - MSCI is using Scope 3 emissions estimates in several flagship indexes such as MSCI Climate Change Indexes and MSCI Climate Paris Aligned Indexes
 - Low Carbon Target and Low Carbon Leaders indexes may include companies facing risks due to indirect emission – Either because they depend on carbon intensive operations, or they sell carbon intensive products.
- The MSCI Low Carbon Target Indexes and MSCI Low Carbon Leaders Indexes may also be exposed to headline risks (ESG Red Flags, Controversial Weapons, Thermal Coal Mining)
- The MSCI Low Carbon Target Indexes and MSCI Low Carbon Leaders Indexes currently use the legacy `INDUSTRY_ENERGY_APPLICATION` field to identify companies with Potential Emissions. The MSCI Global Fossil Fuels Exclusion Indexes are now enhanced to use `FOSSIL_FUEL_RESERVES_ENERGY_APPLICATION`.

Proposed Enhancements to MSCI Low Carbon Target and MSCI Low Carbon Leaders Indexes

Summary of proposed enhancements

Enhancement	Rationale
<p>1 Enhance company level emission calculation by incorporating company's indirect emission measured as company's Scope 3 emission.</p> <ul style="list-style-type: none">• Will require increase in Tracking Error (TE) budget of Low Carbon Target Indexes.• Will require increase in sector market cut-off for exclusions in Low Carbon Leaders indexes.	<p>More comprehensive assessment of carbon footprint and consistency with other MSCI climate indexes.</p>
<p>2 Incorporate minimum ESG Exclusions</p>	<p>Minimize headline risks from indexes by excluding companies which are ESG Red Flag or have ties with Controversial Weapons Business or are involved in Thermal Coal mining.</p>
<p>3 Update Potential Emission Calculation by using ESG Factor FOSSIL_FUEL_RESERVES_ENERGY_APPLICATION ' in place of 'INDUSTRY_ENERGY_APPLICATION'</p>	<p>Enhanced assessment of Potential Emissions and consistency of definition with other climate indexes, including the MSCI Global Fossil Fuels Exclusion Indexes.</p>

MSCI Low Carbon Target Indexes

Companies with high Scope 3 emissions may be overweighted in the Low Carbon Target methodology (Current Methodology)

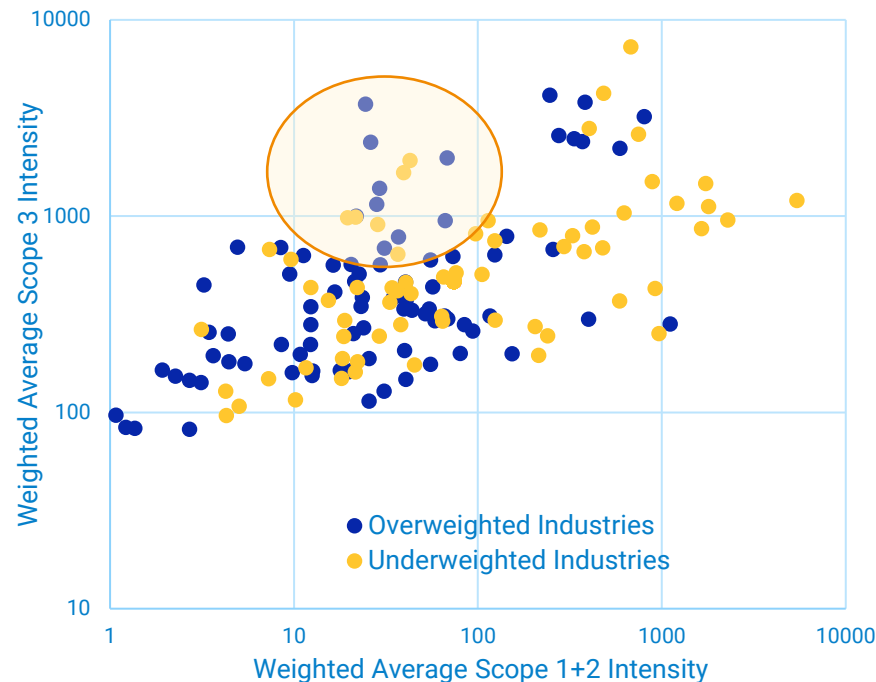
- The below table presents the active weight of constituents by quartiles of Scope 1+2 and Scope 3 Emission Intensities, in a hypothetical index* constructed by applying current methodology on MSCI World as of May 28, 2021.

		Quartiles based on Scope 3 Emission Intensity				Total	
		1 st	2 nd	3 rd	4 th		
Quartiles based on Scope 1+2 Emission Intensity	1 st	0.71%	0.49%	0.49%	0.35%	2.03%	
	2 nd	0.20%	0.38%	0.57%	0.37%	1.51%	
	3 rd	0.13%	0.53%	0.51%	0.77%	1.94%	
	4 th	-0.02%	-0.47%	-0.89%	-4.10%	-5.48%	
	Total	1.02%	0.93%	0.67%	-2.62%		

* Parent Index – MSCI World, Methodology – Current Methodology (without turnover constraint), Rebalance Date – May 28,2021. ESG Data used is as of April 30, 2021.

GICS® Sub-Industries with high Scope 3 emissions may be overweighted in the Current Methodology

- The chart shows weighted average carbon intensity of GICS Subindustries in the hypothetical index* (as explained on the previous slide).
- Sub-Industries (highlighted in the shaded region) like Construction Machinery & Heavy Trucks, which carry high Scope 3 Emissions, are overweighted relative to MSCI World in the hypothetical index.



* Parent Index – MSCI World, Methodology – Current Methodology (without turnover constraint), Rebalance Date – May 28, 2021. ESG Data used is as of April 30, 2021.

Possible effects of adding Scope 3 under the MSCI Low Carbon Target Methodology (Current+S3 Methodology)

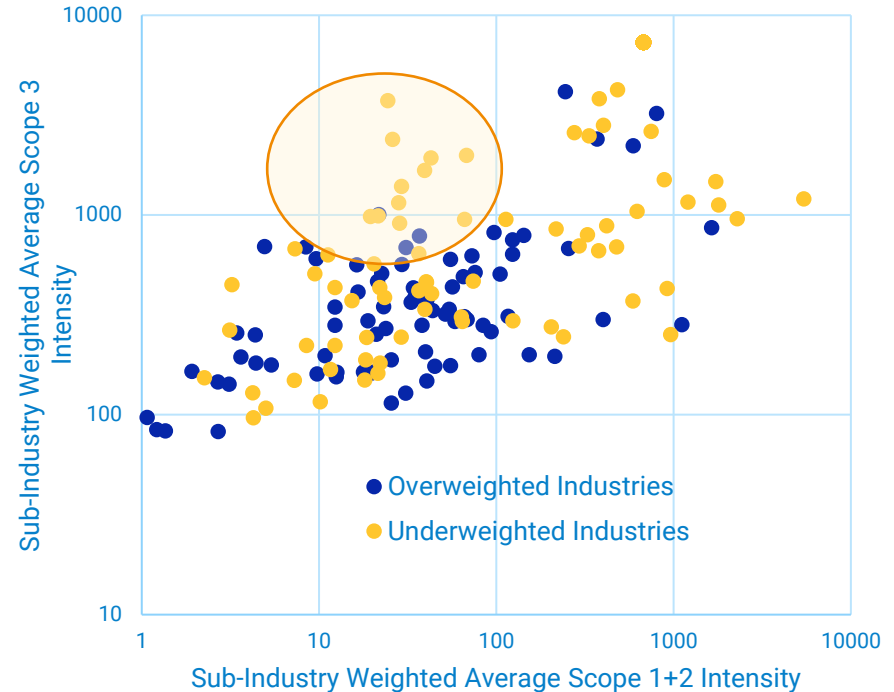
- Current+S3 Methodology – Follows MSCI Low Carbon Target Indexes methodology, with one amendment in Section 3.2.1 - Company greenhouse gas emissions data included emissions from Scope 1, Scope 2 and **Scope 3**. All other rules and optimization parameters of current methodology are left unchanged.
- The below table presents the active weight of constituents by quartiles of Scope 1+2 and Scope 3 Emission Intensities, in a hypothetical index* constructed by applying 'Current+S3 Methodology' on MSCI World as of May 28,2021.

		Quartiles based on Scope 3 Emission Intensity				Total	
		1 st	2 nd	3 rd	4 th		
Quartiles based on Scope 1+2 Emission Intensity	1 st	0.73%	0.40%	0.25%	-0.60%	0.78%	Low Intensity High Intensity
	2 nd	0.32%	0.34%	0.58%	-0.82%	0.42%	
	3 rd	0.44%	0.83%	0.60%	-1.08%	0.80%	
	4 th	0.57%	0.39%	0.10%	-3.06%	-2.00%	
	Total	2.06%	1.96%	1.53%	-5.56%		

* Parent Index – MSCI World, Methodology – Current+S3 Methodology (without turnover constraint), Rebalance Date – May 28,2021. ESG Data used is as of April 30, 2021.

GICS® Sub-Industries with high Scope 3 emissions may be underweighted under 'Current+S3 Methodology'

- The chart shows weighted average carbon intensity of GICS Subindustries in the hypothetical index* (as explained on the previous slide).
- GICS Sub-Industries (highlighted in the shaded region) like Construction Machinery & Heavy Trucks would be underweighted if Scope 3 emissions were also considered



* Parent Index – MSCI World, Methodology – Current+S3 Methodology (without turnover constraint), Rebalance Date – May 28,2021. ESG Data used is as of April 30, 2021.

However, addition of Scope 3 emissions in the 'Current+S3 Methodology' led to lower reduction in emissions intensity

- On a Scope 1+2+3 Intensity basis, the hypothetical index* based on 'Current Methodology' only achieved ~34% reduction in Intensity, despite having ~75% reduction in Scope 1+2 Intensity.
- The hypothetical index based on 'Current+S3 Methodology', would have achieved about 50% reduction in Scope 1+2+3 Intensity, Scope 1+2 intensity and Scope 3 intensity.

Metric	MSCI World	Current Methodology*	Current+S3 Methodology*
Intensity (tCO2/\$M Sales)			
Scope 1+2 Intensity	169.32	41.48	75.90
Scope 3 Intensity	864.16	642.03	438.01
Scope 1+2+3 Intensity	1,033.47	683.51	513.92
%Reduction in Intensity (tCO2/\$M Sales)			
Scope 1+2 Intensity		75.50%	55.17%
Scope 3 Intensity		25.70%	49.31%
Scope 1+2+3 Intensity		33.86%	50.27%

To achieve a comparable level of Intensity reductions, a higher ex ante tracking error budget would be required.

* Parent Index – MSCI World, Rebalanced without turnover constraint, Rebalance Date – May 28,2021. ESG Data used is as of April 30, 2021.

Low Carbon Target Indexes: exposure to headline ESG and climate risks

Index weight (%)	MSCI World	Current Methodology*	Current+S3 Methodology*
Controversial Weapons	0.6	0.7	0.6
ESG Red Flags	2.0	1.5	1.6
Environmental Controversy Red and Orange	2.3	0.7	0.6
Thermal Coal Mining	0.7	0.1	0.1
Unconv. Oil & Gas Exploration	1.5	0.4	0.4
Thermal Coal Power Generation	1.1	0.1	0.3

The above table presents the weight in MSCI World and in hypothetical indexes constructed under 'Current Methodology' and 'Current+S3 Methodology' in select controversial businesses/activities as defined below:

- **Controversial Weapons:** As defined by the MSCI Global ex Controversial Weapons Index Methodology
- **ESG Red Flags:** Companies with an ESG controversy score of 0 as per MSCI ESG Controversies
- **Environmental Controversy Red and Orange:** Companies with an Environmental controversy score of 0 or 1 as per MSCI ESG Controversies
- **Thermal Coal Mining:** Companies deriving 1% or more revenues from Thermal Coal Mining
- **Unconv. Oil & Gas Exploration:** Companies deriving 5% or more revenues from Unconventional Oil and Gas
- **Thermal Coal Power Generation:** Companies deriving 5% or more revenues from Thermal Coal based Power Generation



* Parent Index – MSCI World, Rebalanced without turnover constraint, Rebalance Date – May 28, 2021. ESG Data used is as of April 30, 2021.

Information Classification: GENERAL

ESG Headline Risks in Low Carbon Target Indexes

- The below table* presents the top 10 stocks by weight in MSCI World which are - (1) ESG Red Flag (2) Controversial Weapons Companies (3) ESG Orange Flag on Environmental Controversies (4) Thermal Coal companies.
- Stocks flagged on Thermal Coal mining and Orange-flag Environmental Controversies, highlighted in Orange, typically have high Scope 1+2+3 emissions

Security Name	Parent Index Weight	GICS Sector	Flagged on	Scope 1+2 Intensity	Scope 1+2+3 Intensity
EXXON MOBIL CORP	0.4%	ENERG	Env. Controversy	494.7	2,970.8
WALMART	0.4%	CONST	ESG Red Flag	35.6	239.8
WELLS FARGO & CO	0.3%	FINAN	ESG Red Flag	8.5	665.6
BOEING CO	0.2%	INDUS	ESG Red Flag, Controversial Weapons	17.5	374.8
BHP GROUP (AU)	0.2%	MATER	ESG Red Flag, Thermal Coal	337.2	6,163.1
LOCKHEED MARTIN CORP	0.2%	INDUS	Controversial Weapons	16.2	410.4
BP	0.2%	ENERG	Env. Controversy	179.5	2,286.0
DAIMLER	0.1%	CDISC	Env. Controversy	13.0	2,945.8
ROYAL DUTCH SHELL A	0.1%	ENERG	ESG Red Flag	231.2	1,927.7
BASF	0.1%	MATER	Env. Controversy	291.0	1,159.4

Exclusions, if applied, would bring in ex ante tracking error

- Exclusions, if applied, will likely introduce tracking error (TE) and shrink the TE budget available for carbon footprint minimization.
- TE budget will need to be further relaxed to achieve significant carbon intensity reduction.

No.	Screen	NOC Excluded	Weight in MSCI World (%)	Ex ante TE against MSCI World (%)*
1	Controversial Weapons	5	0.6%	0.14%
2	ESG Red Flags	24	2.0%	0.26%
A	Aggregated: (1) + (2)	28	2.4%	0.28%
3	Thermal Coal Mining	10	0.7%	0.12%
B	Aggregated: (A) + (3)	36	2.8%	0.30%
4	Environmental Controversy Red and Orange	25	2.3%	0.38%
C	Aggregated: (B) + (4)	51	4.1%	0.47%
5	Oil & Gas Exploration	15	1.5%	0.41%
6	Thermal Coal Power Generation	33	1.1%	0.16%
D	Aggregated: (C) + (5,6)	96	6.2%	0.74%

*Ex ante TE is calculated for a hypothetical index which excludes stocks flagged on the corresponding screens and renormalizes parent index weight as of May 28,2021. ESG Data as of 30th April 2021.

Information Classification: GENERAL

Proposed Enhancements* to MSCI Low Carbon Target Indexes

Proposals	Methodology Change Proposed	Rationale
Core Proposal	Exclude stocks based on involvement with <ul style="list-style-type: none"> Controversial Weapons Very Severe ESG Controversies Thermal Coal Mining 	Exclude companies with high ESG and climate headline risk
	Phase – in Scope 3 Emissions	More comprehensive assessment of carbon footprint and consistency with other climate indexes.
	Increased ex ante TE budget (60bps)	To achieve significant carbon intensity reduction
Alternate	No exclusions based on business involvement	May result in lower reduction in carbon footprint because of low TE budget
	Phase – in Scope 3 Emissions	More comprehensive assessment of carbon footprint and consistency with other climate indexes.
	Increased ex ante TE budget (50bps)	To achieve significant carbon intensity reduction

Under both proposals – higher TE budget will be required to achieve significant carbon intensity reduction

Select Climate Metrics* (1/2) – World

Category	Metric	MSCI World	Current Methodology	Current+S3 Methodology	CORE	ALT
					Addition of S3 +Exclusions (B) + TE of 60bps	Addition of S3 + TE of 50bps
1 - Financial Metrics	1 - Number of Stocks	1563	1267	1264	883	961
	2 - Ex Ante TE	0.00	0.30	0.30	0.60	0.50
2 - Carbon Emissions Reduction	1 - Scope 1+2 Emissions		78.0%	64.2%	93.0%	81.7%
	2 - Scope 3 Emissions		33.3%	59.5%	49.4%	76.0%
	3 - Scope 1+2+3 Emissions		40.6%	60.3%	56.6%	77.0%
3 - Carbon Intensity Reduction	1 - Scope 1+2 Intensity		75.5%	55.2%	92.3%	73.6%
	2 - Scope 3 Intensity		25.7%	49.3%	43.9%	65.3%
	3 - Scope 1+2+3 Intensity		33.9%	50.3%	51.8%	66.7%
4 - Clean Technology Metrics	1 - Wtd Avg Green Revenue	4.6	4.8	4.8	4.7	4.9
	2 - Green Revenue >=5	20.2	19.5	19.1	19.4	18.1
	3 - Green Revenue >=20	8.3	8.6	9.0	8.5	9.1
5 - Potential Emissions	1 - Industry Energy Application	1,325.9	0.1	0.2	0.0	0.0

* Parent Index – MSCI World, Rebalanced without turnover constraint, Rebalance Date – May 28,2021. ESG Data used is as of April 30, 2021.



Select Climate Metrics* (2/2) – World

Category	Metric	MSCI World	Current Methodology	Current+S3 Methodology	CORE	ALT
					Addition of S3 +Exclusions (B) + TE of 60bps	Addition of S3 + TE of 50bps
6 - Exposure Metrics	1 - Controversial Weapons	0.6	0.7	0.6	0.0	0.6
	2 - ESG Red Flags	2.0	1.5	1.6	0.0	1.4
	3 - Environmental Controversy Red and Orange	2.3	0.7	0.6	0.2	0.2
	4 - Thermal Coal Mining	0.7	0.1	0.1	0.0	0.0
	5 - Oil & Gas Exploration	1.5	0.4	0.4	0.0	0.6
	6 - Thermal Coal Power Generation	1.1	0.1	0.3	0.3	0.1
	7 - FF Reserves Energy Application	4.7	1.9	1.8	1.0	1.4
7 - Low Carbon Transition	1 - LCT Score	6.1	6.2	6.2	6.3	6.3
	2 - Solutions(%)	6.7	7.4	7.6	7.4	8.1
	3 - Operational Transition(%)	6.5	3.4	5.3	0.9	3.2
	4 - Product Transition(%)	7.2	6.1	3.9	4.4	2.3
	5 - Asset Stranding(%)	0.3	0.1	0.2	0.0	0.0
8 – Additional Climate Metrics	1 - Aggregate Climate VaR - 1.5	-11.1	-6.5	-7.2	-5.5	-5.4
	2 - Implied Temperature Rise	2.8	2.4	2.2	2.1	2.0

* Parent Index – MSCI World, Rebalanced without turnover constraint, Rebalance Date – May 28,2021. ESG Data used is as of April 30, 2021.



Select Climate Metrics* (1/2) – Emerging Markets

Category	Metric	MSCI EM	Current Methodology	Current+S3 Methodology	CORE	ALT
					Addition of S3 +Exclusions (B) + TE of 60bps	Addition of S3 + TE of 50bps
1 - Financial Metrics	1 - Number of Stocks	1424	1161	1165	882	958
	2 - Ex Ante TE	0.00	0.30	0.30	0.60	0.50
2 - Carbon Emissions Reduction	1 - Scope 1+2 Emissions		71.4%	57.2%	71.5%	76.6%
	2 - Scope 3 Emissions		27.3%	53.7%	71.9%	72.2%
	3 - Scope 1+2+3 Emissions		38.2%	54.6%	71.8%	73.3%
3 – Carbon Intensity Reduction	1 - Scope 1+2 Intensity		70.4%	50.7%	61.9%	68.0%
	2 - Scope 3 Intensity		24.7%	46.7%	62.4%	61.9%
	3 - Scope 1+2+3 Intensity		36.1%	47.7%	62.3%	63.4%
4 - Clean Technology Metrics	1 - Wtd Avg Green Revenue	4.3	4.4	4.4	4.5	4.4
	2 - Green Revenue >=5	19.8	20.2	19.9	19.9	19.7
	3 - Green Revenue >=20	3.9	4.0	4.0	4.1	4.0
5 - Potential Emissions	1 - Industry Energy Application	7,815.3	341.1	290.1	31.5	49.8

Select Climate Metrics* (2/2) – Emerging Markets

Category	Metric	MSCI EM	Current Methodology	Current+S3 Methodology	CORE	ALT
					+Exclusions (B) + TE of 60bps	Addition of S3 + TE of 50bps
6 - Exposure Metrics	1 - Controversial Weapons	0.2	0.3	0.3	0.0	0.3
	2 - ESG Red Flags	2.9	3.1	3.0	0.0	3.1
	3 - Environmental Controversy Red and Orange	1.9	1.8	1.8	0.2	1.4
	4 - Thermal Coal Mining	0.6	0.1	0.1	0.0	0.0
	5 - Oil & Gas Exploration	0.1	0.0	0.0	0.0	0.0
	6 - Thermal Coal Power Generation	0.9	0.3	0.4	0.4	0.4
	7 - FF Reserves Energy Application	7.2	5.0	5.0	2.3	3.8
7 - Low Carbon Transition	1 - LCT Score	5.9	6.0	6.0	6.1	6.0
	2 - Solutions(%)	3.5	3.6	3.7	3.8	4.1
	3 - Operational Transition(%)	11.9	10.0	11.7	11.6	10.5
	4 - Product Transition(%)	7.8	7.7	6.7	4.1	5.0
	5 - Asset Stranding(%)	1.2	0.1	0.1	0.0	0.0
8 – Additional Climate Metrics	1 - Aggregate Climate VaR - 1.5	-19.2	-16.5	-16.2	-14.0	-13.4
	2 - Implied Temperature Rise	3.7	3.3	3.0	2.7	2.7

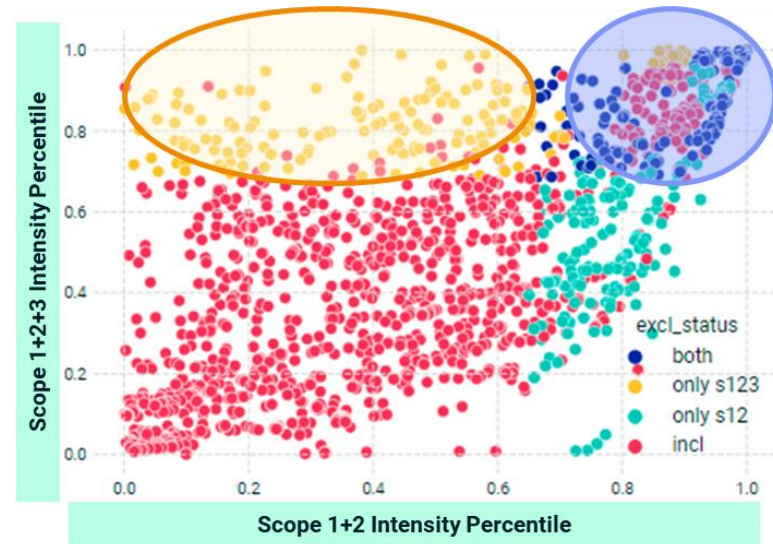


* Parent Index – MSCI EM, Rebalanced without turnover constraint, Rebalance Date – May 28,2021. ESG Data used is as of April 30, 2021.

MSCI Low Carbon Leaders Indexes

Intensity-based screening in MSCI Low Carbon Leaders Methodology (Current Methodology) does not exclude all high Scope 3 emitters

- As shown in the chart, companies with high Scope 1+2+3 emission intensity (region shaded in orange) would not be excluded under the 'Current Methodology'*
- However, if the 'Current Methodology' is amended to consider company's Scope 1+2+3 intensity (Current+S3 Methodology^*), then stocks in orange shaded region would be excluded.
- The region shaded in blue shows that some stocks with high Scope 1+2 intensity and high Scope 1+2+3 intensity are not excluded because of the cap on maximum number of stocks that can be excluded from a GICS Sector.



Legends : Red – Stocks which are not excluded, Blue – Stocks which are excluded under both 'Current Methodology' and 'Current+S3 Methodology', Turquoise – Stocks only excluded under 'Current Methodology', Yellow – Stocks only excluded under 'Current+S3 Methodology'.

* Parent Index – MSCI World, Rebalance Date – May 28,2021 (without turnover constraint). ESG Data used is as of April 30, 2021

^ Amend Section 3.2.1 of the MSCI Low Carbon Leaders Index methodology to consider GHG emission from Scope 1, 2 and 3. Parent Index – MSCI World, Rebalance Date – May 28,2021(without turnover constraint). ESG Data used is as of April 30, 2021

Possible impact of Addition of Scope 3 emissions on screening* (in 'Current+S3 Methodology')

- The “Top 10 High Intensity which would not be screened” represent stocks which fall in the bottom quartile on Scope 1+2+3 Intensity but would not be excluded as 30% of sector market cap was already excluded
- The “Top 10 Low Intensity stocks which would be screened” represent stocks which fall in the 3rd quartile on Scope 1+2+3 Intensity but would be excluded as higher intensity stocks were in GICS sectors where the 30% sector market cap cutoff was reached.

Top 10 High Intensity stocks which would not be screened

Security Name	Parent Index Weight	Sector	Scope 1+2 Intensity	Scope 1+2+3 Intensity
CHEVRON CORP	0.3%	ENERG	387.8	3,691.0
NEXTERA ENERGY	0.3%	UTILS	2,483.4	3,528.7
EXXON MOBIL CORP	0.4%	ENERG	494.7	2,970.8
TOTAL	0.2%	ENERG	254.2	2,883.6
BP	0.2%	ENERG	179.5	2,286.0
LINDE (NEW)	0.3%	MATER	1,327.5	2,084.7
IBERDROLA	0.1%	UTILS	701.3	2,026.7
AIR LIQUIDE	0.1%	MATER	1,131.8	2,025.4
ROYAL DUTCH SHELL A	0.1%	ENERG	231.2	1,927.7
ENEL	0.1%	UTILS	867.7	1,229.9

Top 10 Low Intensity stocks which would be screened

Security Name	Parent Index Weight	Sector	Scope 1+2 Intensity	Scope 1+2+3 Intensity
INFINEON TECHNOLOGIES	0.1%	ITECH	106.1	887.5
ANZ BANKING GROUP	0.1%	FINAN	6.5	870.6
EATON CORP PLC	0.1%	INDUS	52.4	861.6
CP RAILWAY	0.1%	INDUS	529.1	841.1
MEDTRONIC PLC	0.3%	HCARE	9.7	823.4
MICRON TECHNOLOGY	0.2%	ITECH	258.5	778.3
RECKITT BENCKISER GROUP	0.1%	CONST	24.3	769.6
BANK MONTREAL	0.1%	FINAN	5.0	755.6
PROCTER & GAMBLE CO	0.6%	CONST	70.2	752.6
ABBOTT LABORATORIES	0.4%	HCARE	32.9	695.4

Comparison of Carbon Footprint Reduction after Intensity screen

- Below table shows the carbon footprint reduction due to intensity screening in a hypothetical index* under 'Current Methodology' and 'Current+S3 Methodology' (corresponding to section 3.3.1 of MSCI Low Carbon Leaders methodology).
- Under 'Current+S3 Methodology', only 36% reduction in Scope 1+2+3 intensity was achieved, as some of the stocks with high emission intensity are retained due to sector market cap cut off.
- If the sector market cap cutoff was relaxed to 50%, we would have observed ~50% Scope 1+2+3 Intensity reduction relative to MSCI World, comparable to the reduction achieved in the 'Current Methodology' based on Scope 1+2 emissions.

Metric	MSCI World	Current Methodology*	Current+S3 Methodology*	Current+S3 Methodology (sector mcap cutoff – 50%)*
Intensity (tCO2/\$M Sales)				
Scope 1+2 Intensity	169.3	81.6	116.1	85.3
Scope 3 Intensity	864.0	807.7	541.7	461.0
Scope 1+2+3 Intensity	1,033.3	889.3	657.9	546.2
%Reduction in Intensity (tCO2/\$M Sales)				
Scope 1+2 Intensity		51.8%	31.4%	49.6%
Scope 3 Intensity		6.5%	37.3%	46.6%
Scope 1+2+3 Intensity		13.9%	36.3%	47.1%

Impact of relaxing the sector market cap cutoff under 'Current+S3 Methodology'

- Once the sector market cap cutoffs were relaxed, exclusions continued in carbon intensive sectors such as Energy, Materials, Industrials and Utilities, before dipping into less carbon intensive sectors

GICS Sector	Total Excluded in 30%	Total Excluded in 50%	Excluded in both	Excluded only in 30%	Excluded only in 50%
NOC Excluded	313	313			
ENERG	22	30	22		8
MATER	29	43	29		14
INDUS	77	81	77		4
CDISC	58	49	49	9	
CONST	31	25	25	6	
HCARE	11	8	8	3	
FINAN	37	27	27	10	
ITECH	16	11	11	5	
COMMS	0	0			
UTILS	27	35	27		8
RESTA	5	4	4	1	

Possible impact of Expanding Sector Market Cap Cutoff under 'Current+S3 Methodology'

- The below table presents the bottom quartile stocks based on Scope 1+2+3 Intensity which were excluded once the sector market cap cutoff was relaxed to 50%
- Relaxing the sector market cap cutoffs favored the exclusion of high intensity stocks like CHEVRON and LINDE (NEW).
- Note, GLENCORE derives ~4% revenues from Thermal Coal Mining and would be flagged as per Exclusions (B).

HIGH EMITTERS EXCLUDED ONCE MARKET CAP CUTOFF WAS INCREASED

Security Name	Parent Index Weight	Sector	Scope 1+2 Intensity^	Scope 1+2+3 Intensity^
DOMINION ENERGY	0.1%	UTILS	1,934.8	3,729.6
CHEVRON CORP	0.3%	ENERG	387.8	3,691.0
NEXTERA ENERGY	0.3%	UTILS	2,483.4	3,528.7
MARATHON PETROLEUM	0.1%	ENERG	362.5	3,207.9
CRH	0.1%	MATER	1,297.0	2,338.8
LINDE (NEW)	0.3%	MATER	1,327.5	2,084.7
AIR LIQUIDE	0.1%	MATER	1,131.8	2,025.4
NUTRIEN	0.1%	MATER	668.2	1,992.8
GLENCORE	0.1%	MATER	135.8	1,936.0
CANADIAN NATL RAILWAY	0.1%	INDUS	519.8	835.5

Proposed Enhancements* to MSCI Low Carbon Leaders Indexes

Proposals	Methodology Change Proposed	Rationale
Core	Exclude based on involvement in <ul style="list-style-type: none"> • Controversial Weapons • Very Severe ESG Controversies • Thermal Coal Mining 	Exclude companies with high ESG and climate headline risk
	Phase – in Scope 3 Emissions	More comprehensive assessment of carbon footprint and consistency with other climate indexes.
	Relax sector market cap cutoff to 50%	Excludes stocks with carbon headline risk with minimal TE impact
Alternate	No exclusions based on business involvement	Exclusions may build additional ex ante tracking error
	Phase – in Scope 3 Emissions	More comprehensive assessment of carbon footprint and consistency with other climate indexes.
	Relax sector market cap cutoff to 50%	Excludes stocks with carbon headline risk with minimal TE impact

Select Climate Metrics (1/2) – World

Category	Metric	MSCI World	Current Methodology	Current+S3 Methodology	CORE	ALT
					Addition of Scope 3 +Exclusions (B)+ 50% Excl	Addition of S3 + 50% Excl
1 - Financial Metrics	1 - Number of Stocks	1563	1239	1227	1243	1270
	2 - Ex Ante TE	0.00	0.38	0.48	0.55	0.50
2 – Carbon Emission Reduction	1 - Scope 1+2 Emissions		48.4%	47.7%	50.5%	50.9%
	2 - Scope 3 Emissions		3.0%	47.9%	49.5%	48.6%
	3 - Scope 1+2+3 Emissions		10.5%	47.9%	49.7%	49.0%
3 - Carbon Intensity Reduction	1 - Scope 1+2 Intensity		50.0%	49.8%	50.8%	51.9%
	2 - Scope 3 Intensity		6.1%	50.0%	49.8%	49.6%
	3 - Scope 1+2+3 Intensity		13.3%	50.0%	50.0%	50.0%
4 - Clean Technology Metrics	1 - Wtd Avg Green Revenue	4.6	4.6	4.7	4.8	4.8
	2 - Green Revenue >=5	20.2	20.4	19.7	20.1	20.0
	3 - Green Revenue >=20	8.3	8.2	8.8	8.8	8.7
5 - Potential Emissions	1 - Industry Energy Application	1,325.9	567.0	525.4	389.3	445.7

*As of a hypothetical initial construction in the May 2021 Semi-Annual Index Review. ESG Data used is as of April 30, 2021.

* As defined on Slide 18



Select Climate Metrics (2/2) – World

Category	Metric	MSCI World	Current Methodology	Current+S3 Methodology	CORE	ALT
					Addition of Scope 3 +Exclusions (B)+ 50% Excl	Addition of S3 + 50% Excl
6 - Exposure Metrics	1 - Controversial Weapons	0.6	0.7	0.6	0.0	0.6
	2 - ESG Red Flags	2.0	1.7	1.7	0.0	1.7
	3 - Environmental Controversy Red and Orange	2.3	1.4	1.3	0.8	1.3
	4 - Thermal Coal Mining	0.7	0.4	0.3	0.0	0.2
	5 - Oil & Gas Exploration	1.5	0.9	1.1	0.7	0.7
	6 - Thermal Coal Power Generation	1.1	0.6	0.5	0.4	0.3
	7 - FF Reserves Energy Application	4.7	3.2	3.4	2.9	3.2
7 - Low Carbon Transition	1 - LCT Score	6.1	6.2	6.2	6.3	6.2
	2 - Solutions(%)	6.7	6.8	7.5	7.7	7.6
	3 - Operational Transition(%)	6.5	3.6	4.2	3.9	3.7
	4 - Product Transition(%)	7.2	7.4	3.8	3.4	3.5
	5 - Asset Stranding(%)	0.3	0.0	0.0	0.0	0.0
8 – Additional Climate Metrics	1 - Aggregate Climate VaR - 1.5	-11.1	-8.4	-9.1	-8.6	-8.7
	2 - Implied Temperature Rise	2.8	2.7	2.2	2.2	2.2

Select Climate Metrics (1/2) – Emerging Markets

Category	Metric	MSCI World	Current Methodology	Current+S3 Methodology	CORE	ALT
					Addition of Scope 3 +Exclusions (B)+ 50% Excl	Addition of S3 + 50% Excl
1 - Financial Metrics	1 - Number of Stocks	1424	933	1036	945	1000
	2 - Ex Ante TE	0.00	1.76	0.74	0.88	0.84
2 – Carbon Emission Reduction	1 - Scope 1+2 Emissions		65.9%	55.4%	54.0%	55.3%
	2 - Scope 3 Emissions		14.0%	44.1%	49.1%	50.0%
	3 - Scope 1+2+3 Emissions		26.9%	46.9%	50.3%	51.3%
3 - Carbon Intensity Reduction	1 - Scope 1+2 Intensity		69.9%	58.0%	56.8%	57.6%
	2 - Scope 3 Intensity		24.1%	47.4%	52.2%	52.6%
	3 - Scope 1+2+3 Intensity		35.5%	50.0%	53.3%	53.8%
4 - Clean Technology Metrics	1 - Wtd Avg Green Revenue	4.3	4.5	3.3	3.3	3.3
	2 - Green Revenue >=5	19.8	15.9	18.2	18.3	18.3
	3 - Green Revenue >=20	3.9	4.7	2.7	2.8	2.7
5 - Potential Emissions	1 - Industry Energy Application	7,815.3	1,916.8	1,323.5	416.2	414.6

Select Climate Metrics (2/2) – Emerging Markets

Category	Metric	MSCI World	Current Methodology	Current+S3 Methodology	CORE	ALT
					Addition of Scope 3 + Exclusions (B)+ 50% Excl	Addition of S3 + 50% Excl
6 - Exposure Metrics	1 - Controversial Weapons	0.2	0.3	0.3	0.0	0.3
	2 - ESG Red Flags	2.9	3.1	3.0	0.0	1.6
	3 - Environmental Controversy Red and Orange	1.9	1.7	1.4	0.5	0.5
	4 - Thermal Coal Mining	0.6	0.3	0.1	0.0	0.1
	5 - Oil & Gas Exploration	0.1	0.2	0.0	0.0	0.0
	6 - Thermal Coal Power Generation	0.9	0.4	0.4	0.3	0.3
	7 - FF Reserves Energy Application	7.2	6.1	5.4	3.4	3.6
7 - Low Carbon Transition	1 - LCT Score	5.9	6.0	6.0	6.0	6.0
	2 - Solutions(%)	3.5	4.3	2.4	2.2	2.4
	3 - Operational Transition(%)	11.9	8.9	8.7	10.0	9.8
	4 - Product Transition(%)	7.8	8.4	6.2	4.6	4.5
	5 - Asset Stranding(%)	1.2	0.1	0.0	0.0	0.0
8 – Additional Climate Metrics	1 - Aggregate Climate VaR - 1.5	-19.2	-19.2	-16.5	-16.2	-17.1
	2 - Implied Temperature Rise	3.7	3.7	3.3	2.8	3.0



*As of a hypothetical initial construction in the May 2021 Semi-Annual Index Review. ESG Data used is as of April 30, 2021. Implied Temperature Rise data as of October 29, 2021
 ^ As defined on Slide 18

Assessment of Potential Emissions

USE OF FOSSIL_FUEL_RESERVES_ENERGY_APPLICATION

Change in assessment of Potential Emissions

- The Legacy factor (INDUSTRY_ENERGY_APPLICATION) applies a GICS based filter, ignoring Potential Emissions in other GICS Sub-Industries
- The below table presents the securities in MSCI World which would incrementally be marked as having Potential Emissions using the updated factor (FF_RESERVES_ENERGY_APPLICATION)
- There are no securities in MSCI World, marked as having Potential Emissions based on the legacy factor, which would not be marked as having Potential Emissions with the new factor

Security Name	GICS Sector	Weight in MSCI World	Potential Emissions per dollar of Market Cap	Contribution to Potential Emissions of MSCI World
BERKSHIRE HATHAWAY B	Financials	0.70%	46.6	0.3
ITOCHU CORP	Industrials	0.06%	17,149.6	10.6
MITSUI & CO	Industrials	0.06%	14,091.5	8.3
MITSUBISHI CORP	Industrials	0.06%	117,843.4	69.2
CK HUTCHISON HOLDINGS	Industrials	0.04%	8,186.0	3.1
KEPPEL CORP	Industrials	0.01%	307.6	0.0
EVRAZ GROUP	Materials	0.01%	375,290.3	31.1

INDUSTRY_ENERGY_APPLICATION - Companies with fossil fuel reserves used for energy application. This includes companies with reserves in the following industries (GICS): Oil & Gas and Consumable Fuels; Metals and Mining; Energy Equipment & Services and Utilities.

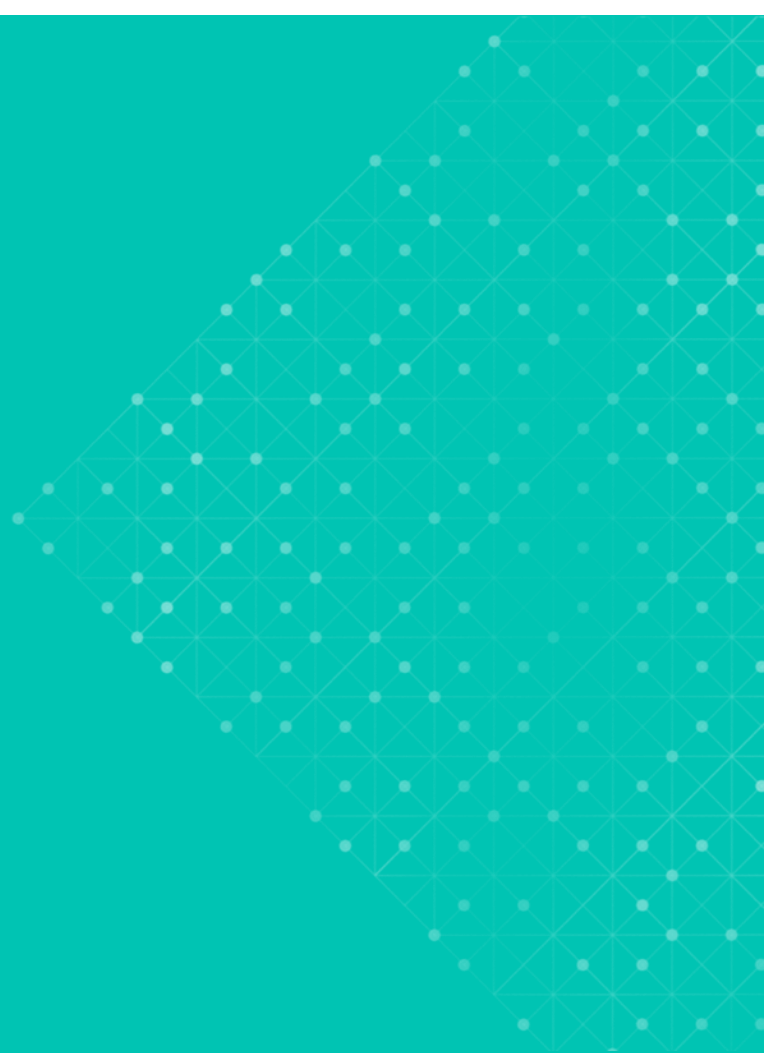
FF_RESERVES_ENERGY_APPLICATION - This factor identifies companies, regardless of their industries, with evidence of owning fossil fuel reserves used most likely for energy applications. For high intensity industries (Energy, Utilities, Diversified Metals & Mining), this factor flags companies with evidence 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.



*As of a hypothetical initial construction in the May 2021 Semi-Annual Index Review. ESG Data used is as of April 30, 2021.

Information Classification: GENERAL

Consultation Questions



Consultation Questions

QUESTIONS ON METHODOLOGY PROPOSALS

- Do you agree the MSCI Low Carbon Target/Leaders Indexes should incorporate Scope 3 emissions?
 - Should the Low Carbon Target indexes then use a tracking error budget of 60 bps?
 - Should Low Carbon Leader indexes then relax sector market cap cut off to 50%?
- Are the new exclusions (companies involved in Very Severe ESG Controversies, Controversial Weapons, Thermal Coal Mining) for the MSCI Low Carbon Target /Leaders Indexes consistent with their objectives?
- Does the proposal to change the factor used in assessing Potential Emissions make sense?
- Should the MSCI Low Carbon Target and MSCI Low Carbon Leaders indexes also exclude companies involved in Severe Environmental Controversies (Orange Flag on Environmental Controversies) ?

ADDITIONAL QUESTIONS

- *Should the definition of intensity move to a definition based on a weighted average and a denominator based on Enterprise Value including Cash (EVIC)?*
- *Should the MSCI Low Carbon Target and MSCI Low Carbon Leaders indexes also aim to increase index's weight in companies with Green Revenues?*
- *Should the MSCI Low Carbon Target and MSCI Low Carbon Leaders indexes follow a decarbonization trajectory or be considered net-zero in themselves?*
- *Should the MSCI Low Carbon Target/Leaders Indexes meet with the minimum requirements of the EU CTB?*

Appendix

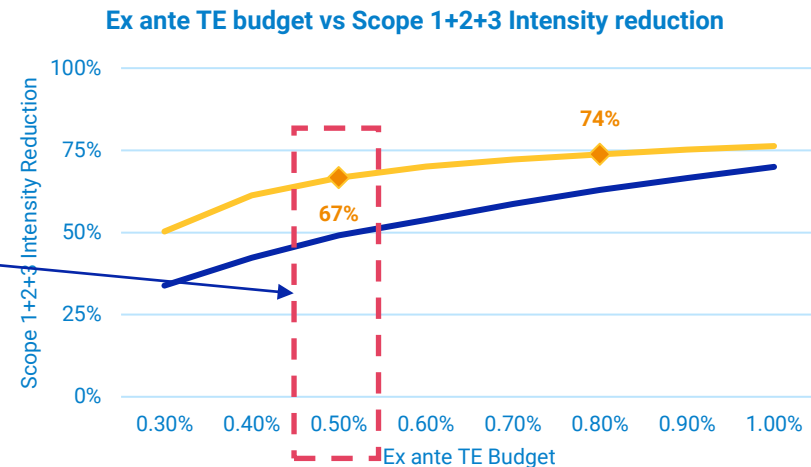
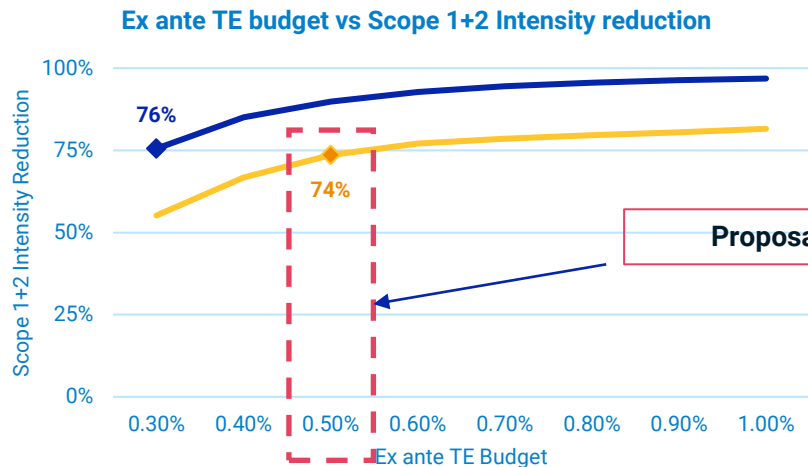
INTERNAL SLIDES

Summary : Current Methodology and Key Proposals

	Current Methodology	Proposed Changes
Exclusions	No exclusions applied	Apply exclusions to exclude companies with headline risk
Carbon Intensity Definition	$\frac{\text{Aggregated Scope 1 + 2 Emissions}}{\text{Aggregated Sales}}$	$\frac{\text{Aggregated Scope 123 Emissions}}{\text{Aggregated Sales}}$
Potential Emissions Definition	$\sum \frac{\text{Potential Emissions}}{\text{Issuer market capitalization}}$ <p>Only stocks marked on INDUSTRY_ENERGY_APPLICATION considered in above formula</p>	$\sum \frac{\text{Potential Emissions}}{\text{Issuer market capitalization}}$ <p>Only stocks marked on FOSSIL_FUEL_RESERVES_ENERGY_APPLICATION considered in above formula</p>
Optimization Objective	Minimize Carbon Intensity and Potential Emissions	Minimize Carbon Intensity and Potential Emissions
Tracking Error Constraint	30bps	Increased TE Budget

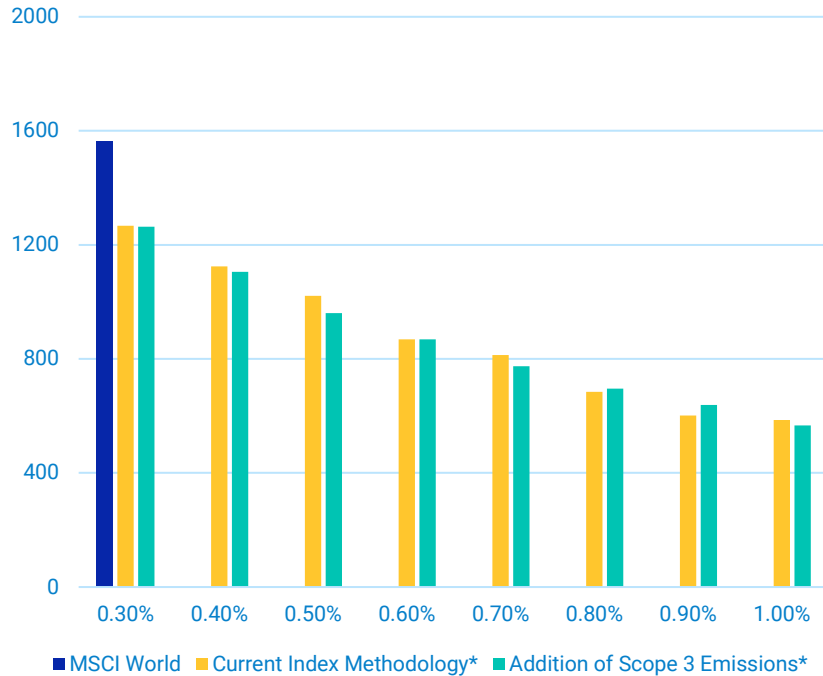
Impact of ex ante TE budget on footprint reduction

- The below schematics present the impact of ex ante TE budget on the Scope 1+2 and Scope 1+2+3 Intensities
- Once Scope 3 emissions are added, ~75% reduction in Scope 1+2 Intensity is achieved with 50bps TE budget
- For a 75% reduction in Scope 1+2+3 Intensity, the ex ante TE budget would need to be raised to 80bps

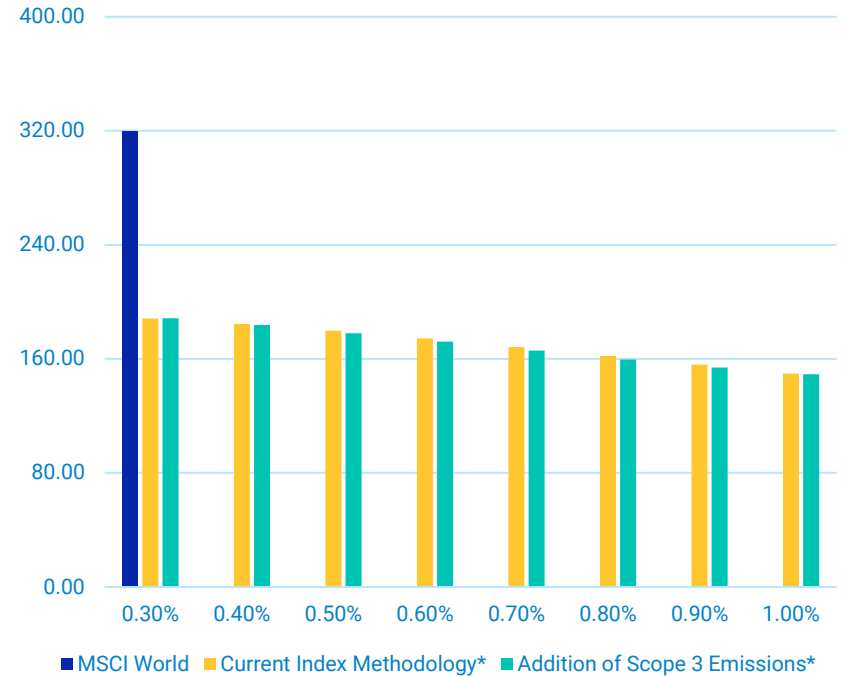


Addition of Scope 3 emissions has minimal impact on NOC

Number of constituents vs ex ante TE



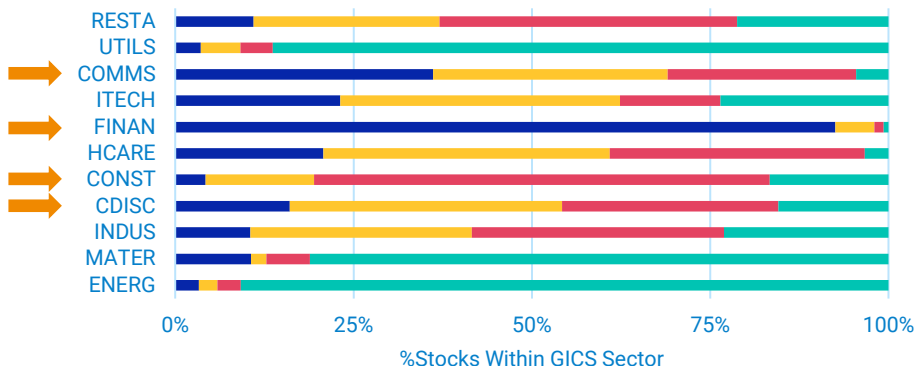
Effective Number of constituents vs ex ante TE



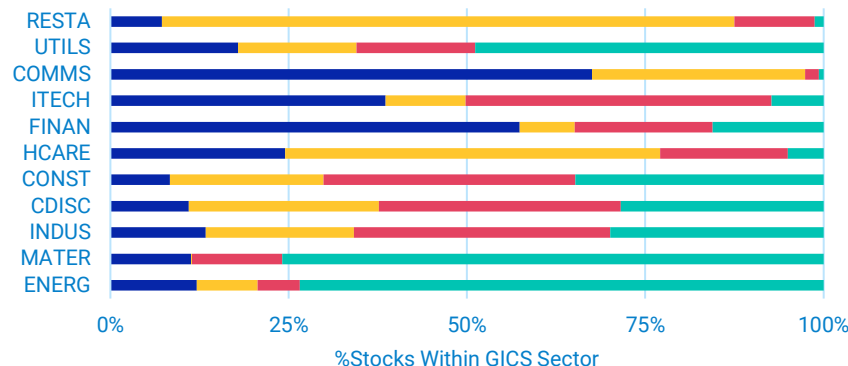
Sectors with low Scope 1+2 emissions can have high Scope 3 emissions

- The below schematics represent the breakdown of the number of stocks in each GICS Sector based on Quartiles of Intensity (Q4 denotes stocks with high intensity)
- While sectors such as Communication Services, FINAN, CONST and CDISC have very few stocks with high Scope 1+2 Intensity (Q4), the proportion of stocks in these sectors with high Scope 3 Intensity is much higher

Scope 1+2 Intensity Distribution by GICS Sector



Scope 3 Intensity Distribution by GICS Sector



Why are some high Intensity Energy Stocks not Excluded

- In the current Index Exxon is just at the margin of 30% sector market cap cutoff and gets excluded.
- When stocks are sorted by Scope 1+2+3 intensity, Exxon moves lower in the sorted list and is not excluded.
- Increasing the sector market cut off to 50% can help exclude some high intensity companies (by Scope 1+2+3 emission intensity) like CHEVRON.

	Intensity Percentile Scope 1+2	Intensity Percentile Scope 1+2+3	Cumulative Sector Mcap Coverage (%) Scope 1+2	Cumulative Sector Mcap Coverage (%) Scope 1+2+3
CHEVRON CORP	50	56	56	45
EXXON MOBIL CORP	62	34	39	68
TOTAL	32	32	76	75
BP	16	20	94	84
ROYAL DUTCH SHELL A	23	17	82	88
ROYAL DUTCH SHELL B	23	17	86	92

Impact of Scope 3 on Pre-Optimization Emissions Screening

GICS Sector	Total Excluded in Scope 1+2	Total Excluded in Scope 1+2+3	Excluded in both	Excluded only in Scope 1+2	Excluded only in Scope 1+2+3
NOC Excluded	313	313			
ENERG	20	22	14	6	8
MATER	30	29	14	16	15
INDUS	77	77	31	46	46
CDISC	44	58	16	28	42
CONST	36	31	19	17	12
HCARE	17	11	2	15	9
FINAN	4	37		4	37
ITECH	26	16	10	16	6
COMMS	9	0		9	
UTILS	22	27	18	4	9
RESTA	28	5	5	23	

Impact of Scope 3 on Pre-Optimization Emissions Screening

GICS Sector	Total Excluded in Scope 1+2	Total Excluded in Scope 1+2+3	Excluded in both	Excluded only in Scope 1+2	Excluded only in Scope 1+2+3
Weight Excluded	14.4%	16.8%			
ENERG	1.2%	1.1%	0.7%	0.5%	0.4%
MATER	1.5%	1.5%	0.6%	0.9%	0.9%
INDUS	3.3%	3.3%	1.0%	2.3%	2.3%
CDISC	1.2%	2.6%	0.5%	0.7%	2.1%
CONST	2.2%	2.2%	1.2%	1.0%	1.0%
HCARE	0.9%	1.1%	0.2%	0.6%	0.9%
FINAN	0.8%	2.5%		0.8%	2.5%
ITECH	1.4%	1.5%	0.5%	0.9%	1.0%
COMMS	0.2%	0.9%		0.2%	
UTILS	0.9%	0.2%	0.8%	0.1%	0.1%
RESTA	0.8%	1.1%	0.2%	0.7%	

Impact of relaxing the sector market cap cutoff

GICS Sector	Total Excluded in 30%	Total Excluded in 50%	Excluded in both	Excluded only in 30%	Excluded only in 50%
Weight Excluded	16.8%	16.7%			
ENERG	1.1%	1.6%	1.1%		0.5%
MATER	1.5%	2.4%	1.5%		0.9%
INDUS	3.3%	3.5%	3.3%		0.2%
CDISC	2.6%	2.3%	2.3%	0.2%	
CONST	2.2%	1.4%	1.4%	0.8%	
HCARE	1.1%	0.7%	0.7%	0.5%	
FINAN	2.5%	1.9%	1.9%	0.5%	
ITECH	1.5%	1.3%	1.3%	0.2%	
COMMS					
UTILS	0.9%	1.5%	0.9%		0.6%
RESTA	0.2%	0.1%	0.1%	0.0%	

Low Carbon Leaders – Proposed Methodology summary

	Current Methodology	Proposed Changes
Exclusions	<ul style="list-style-type: none"> Exclude 20% companies with high Carbon Intensity (subject to 30% sector market cap cutoff) Exclude Top 50% contributors to Potential Emissions 	<ul style="list-style-type: none"> Exclude 20% companies with high Carbon Intensity (subject to 50% sector market cap cutoff) Exclude Top 50% contributors to Potential Emissions Apply exclusions to exclude companies with headline risk
Carbon Intensity Definition	$\frac{\text{Aggregated Scope 1 + 2 Emissions}}{\text{Aggregated Sales}}$	$\frac{\text{Aggregated Scope 123 Emissions}}{\text{Aggregated Sales}}$
Potential Emissions Definition	$\sum \frac{\text{Potential Emissions}}{\text{Issuer market capitalization}}$ <p>Only stocks marked on INDUSTRY_ENERGY_APPLICATION considered in above formula</p>	$\sum \frac{\text{Potential Emissions}}{\text{Issuer market capitalization}}$ <p>Only stocks marked on FOSSIL_FUEL_RESERVES_ENERGY_APPLICATION considered in above formula</p>
Optimization Objective	Minimize ex-Ante Tracking Error	Minimize ex-Ante Tracking Error
Carbon Intensity/Potential Emissions Reduction	50%	50%

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Atlanta	+ 1 404 551 3212	Frankfurt	+ 49 69 133 859 00	China South	10800 152 1032 *
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