Consultation on Potential Enhancements of the MSCI Climate Paris Aligned Indexes Methodology

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 result of the consultation.

September 2022

Agenda

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Background on Consultation

- This consultation contains proposals for the potential enhancement of the MSCI Climate Paris Aligned Indexes (**"CPAI"**) methodologies, including the use of Carbon Budgets and Implied Temperature Rise

- **MSCI invites feedback from market participants on or before December 2nd, 2022 and will announce the results of the consultation on or before January 20th, 2023.**

- The proposed enhancements reflect MSCI's latest research on the evolution of climate-aware and net-zero strategies, as well as feedback from market participants.

- This deck is designed to facilitate
  - wide-ranging discussion about the evolution of the MSCI CPAI methodology and net-zero indexed strategies
  - feedback on the use of the latest climate metrics within the MSCI CPAI methodology, including Implied Temperature Rise (ITR), Global Emission Budgets and Science Based Targets (SBT).
  - discussion on reconciling SFDR Article 9/MiFID II Sustainability Preferences with investor user of the MSCI CPAI methodology.

Consultation Summary (1/2): "Fundamental Enhancements" proposals

- MSCI proposes the following "fundamental" enhancements to the MSCI Climate Paris Aligned Indexes (CPAI) methodology to demonstrate following characteristics :
  - The MSCI CPAI methodology exceeds minimum requirements for EU PAB[1] and decarbonize annually by at least 10%[2]. Moreover, consistent with the index objective, the current index holdings ***should at least be aligned with a "2-degrees" world*** based on the MSCI Implied Temperature Rise (ITR)[3].
  - A CPAI's ***decarbonization pathway should be demonstrably consistent with the index's estimated share of the global emission budget*** required to keep global heating at or below a 1.5 degrees scenario.
    - ***Remove the Climate Value-at-Risk (Climate VaR) floor of 0%*** as a constraint as alignment with the objectives of the Paris Agreement is handled better via the preceding two enhancements.
  - A CPAI ***should not hold, and/or inadvertently overweight companies involved in Nuclear Weapons and Civilian Firearms.***

1 - Regulation (EU) 2016/1011 as amended by Regulation (EU) 2019/2089
2 – The weighted average a carbon intensity (WACI) of CPAI follows a trajectory of 10% annual reduction (on compounded bases relative to the WACI on the base date).
3 – Implied Temperature Rise, https://www.msci.com/our-solutions/climate-investing/net-zero-solutions/implied-temperature-rise

Consultation Summary (2/2): “Technical Adjustments”, Supporting Alignment with MiFID II Sustainability Preferences

- MSCI proposes technical enhancements that reflect the increased adoption of Science Based Targets and the availability of more physical risk scenarios for MSCI’s ‘Extreme Weather Equity Climate VaR (%)’.

  - **Companies with approved Science Based Target (SBT)[1] should be overweighted** (in aggregate) in a CPAI.

  - MSCI ESG will deprecate[2] the physical risk scenario labelled ‘Extreme Weather Equity Climate VaR(%)’. ***From May 2023 SAIR, the MSCI CPAI methodology will switch to the ‘aggressive outcome’ of the new ‘4° C IPCC SSP 3-7.0’ Physical Climate-VaR Scenario.***

- MSCI also seeks feedback from market participants on the impact of MiFID II Sustainability Preferences as measured for a fund tracking the CPAI according to the MSCI ESG screening guide – “Navigating Sustainability Preferences under the New MiFID II Rules”[3].
  - Impact ***of the exclusion of all “Orange Flag” companies*** in terms of change in TE and exposures.
  - Potential target levels for the ***weight of Sustainable Investments (%SI) in a CPAI across regions***.
  - Views on the utility of the potential climate-specificity or methodology-linkage of an %SI measure

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1 – Companies with science based targets approved by Science Based Target Initiative. https://sciencebasedtargets.org/
2 - https://support.msci.com/support/esg-news/msci-esg-research-q2-2022/03338837654
3 – MSCI ESG Research Screening guide published on 4th Aug 2022

Rationale & High-level Impact of Proposals (1/3)

No.	Enhancement	Rationale	Impact* (based on transition as of May'22 SAIR)
1A	Enforce an **index-level ITR** of no more than 2 degrees	• Ensure that the index based on its current holdings and their targets/projections is consistent with a 2 degrees world	• Many CPAI on broad regions are already aligned • Misaligned indexes would have rebalanced with slightly higher forecast TE (%) and/or turnover budget
1B	**Remove Climate VaR**(%) as an index constraint. • With the introduction of an ITR target and carbon budgets, can this be dropped?	• At the time of index launch, Climate VaR (%) was the only methodology element linked to an explicit temperature scenario • The constraint refers to the impact of low-carbon transition and not climate impact	• Dropping the constraint would have resulted in significantly lower forecast TE(%) in many regions. • Across a range of regional CPAI, the Climate VaR for the unconstrained CPAI would not have been worse than -5%.

*Impact Analysis : All impact analysis shown in this document are based on a hypothetical index rebalance as per following methodology –
- Hypothetical Rebalance Date – 1st June 2022
- Hypothetical Rebalance Methodology – The CAPI methodology (available here : https://www.msci.com/eqb/methodology/meth_docs/MSCI_Climate_Paris_Aligned_Indexes.pdf) is modified with the specific proposed enhancement. Current CPAI is rebalanced as per the 'Hypothetical Rebalance Methodology' on the 'Hypothetical Rebalance Date'.
- The as of date for data provided by MSCI ESG Research is 29th April 2022, unless stated otherwise.

Rationale & High-level Impact of Proposals (2/3)

	Enhancement	Rationale	Impact* (based on transition as of May'22 SAIR)
2	Introduce **Carbon Emissions Budget Consistency**: Cumulative projected emissions of the index constituents should be lower than their share of the estimated remaining carbon budget[1] consistent with global heating remaining below 1.5 degrees.	• Introduces an explicit control that the index constituents are on a decarbonization pathway consistent with global heating below 1.5 degrees. • On a projected basis, the cumulative index emissions will not be more than the index's share of global emission budget for keeping global heating below 1.5 degrees	• The existing 10% annual 'self-decarbonization' means many CPAI are assessed that they will emit less than their share of global budget for keeping global warming below 1.5 degrees until 2050.
3	**Exclude** companies involved in **Nuclear Weapons and Civilian Firearms** (proposed level of exclusion – Highly Restrictive)	• The inclusion of companies involved in Nuclear Weapons or Civilian Firearms may limit the usability of the standard index within funds.	• Such an exclusion will have minimal impact on the index characteristics of the CPAI.

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1 – Index's share of global emission budget calculation : https://www.msci.com/our-solutions/climate-investing/net-zero-solutions/implied-temperature-rise

Rationale & High-level Impact of Proposals (3/3)

	Enhancement	Rationale	Impact* (based on transition as of May'22 SAIR)
4A	The aggregate weight of companies with approved **Science Based Targets** should be at least 20% higher in a given CPAI.	• Expand the scope of 'Companies Setting Targets' to include companies with approved Science-Based Targets (SBT), given their growing adoption • Ensure companies with SBT are not underweighted (in aggregate).	• Since a larger pool of stocks is over weighted, the enhancement would have resulted in increase in the Ex-Ante TE(%) as more stocks are overweighted.
4B	The **aggregate weight of 'Companies Setting Targets'** should only include companies in the 'Eligible Universe' (companies which are not screened out of the parent index).	• In some cases, the number of 'Companies Setting Targets' is smaller in Eligible Universe compared to the number in the Parent Index. • This is a technical adjustment to limit potential rebalance infeasibility	• Across a range of CPAI, the enhancement would have resulted in lower Ex-Ante TE(%) and more resilient optimization.
5	Update the **Physical Risk** scenario to the 'aggressive outcome' of the new '4° C IPCC SSP 3-7.0' Physical Climate-VaR Scenario	• MSCI ESG has indicated the deprecation of the prior Physical Risk scenario. The proposal is also aligned to reflect risks associated with a world where little action is taken by companies vs status quo	• The choice is motivated to minimize aggregate impact. The Physical Risk Climate VaR[1] under the '4° C IPCC SSP 3-7.0' scenario is equal to or slightly lower across regions.

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- Hypothetical Rebalance Methodology – The CAPI methodology (available here : https://www.msci.com/eqb/methodology/meth_docs/MSCI_Climate_Paris_Aligned_Indexes.pdf) is modified with the specific proposed enhancement. Current CPAI is rebalanced as per the 'Hypothetical Rebalance Methodology' on the 'Hypothetical Rebalance Date'.
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1-Calculated as the weighted average of the 4°C Aggregated Physical Risk Company Climate VaR (IPCC SSP3-7.0 Aggressive outcome) [%]. Index constituent weights as of 1st Sep'22 and Climate VaR data as of 15th Sep'22.

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Supporting Potential Alignment with MiFID II Sustainability Preferences

- The MiFID II Sustainability Preferences do not apply to benchmarks/indexes and as such CPAI themselves (or other EU PAB compliant indexes) are not required to meet the guidelines.

- Client feedback indicates there remains a lack of clarity on certain aspects of the technical guidelines which leads to different interpretations.

	Discussion Points	Rationale	Impact* (based on transition as of May'22 SAIR)
1	Exclude all 'Orange' flag stocks from a CPAI.	• Required to align with the MSCI ESG "Baseline Criteria Test" which excludes companies failing the test on Good Governance and/or DNSH principles.	• Exclusion of all "Orange" flag companies from CPAI, would have caused an increase in ex-ante TE or led to an emissions 'base reset' decision across most regions.
2	A minimum target for index weight in constituents which pass the 'Economic Activity' test for 'Sustainable Investment' (SI).	• The % of Index weight in Sustainable Investments (%SI) is relatively small based on the current MSCI ESG metrics	• The calculated %SI is low and varies widely across regions • The regulatory guidance for a target for % SI remains unclear based on feedback from institutional investors.

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- Hypothetical Rebalance Date – 1st June 2022
- Hypothetical Rebalance Methodology – The CAPI methodology (available here : https://www.msci.com/eqb/methodology/meth_docs/MSCI_Climate_Paris_Aligned_Indexes.pdf) is modified with the specific proposed enhancement. Current CPAI is rebalanced as per the 'Hypothetical Rebalance Methodology' on the 'Hypothetical Rebalance Date'.
- The as of date for data provided by MSCI ESG Research is 29th April 2022, unless stated otherwise.

Consultation Questions

- ***Core Enhancements*** - Do you agree that
    1. A CPAI should have an index-level ITR of no more than 2 degrees based on the current holdings of the index?
    2. A CPAI should target to limit its cumulative projected emissions to be below its share of the global emissions budget available to restrict global heating at or below 1.5 degrees?
    3. The CPAI constraint that Climate-VaR >= 0% should be removed?
        a. Alternatively, should the Climate-VaR target be relaxed to a small negative value: Climate-VaR >= -5%?
    4. Nuclear Weapons and Civilian Firearms should be excluded from the index on a "Highly Restrictive" basis?
        a. Should a "least restrictive" exclusion also be placed on conventional Weapons manufacturers?

- ***Technical Adjustments*** – Should a CPAI seek to overweight companies with approved Science Based Targets?
    1. Does the proposal to consider the weight of only such stocks if eligible as the reference weight for the target make sense?
    2. Given the large and growing weight of the stocks considered as 'Companies Setting Targets', should the aggregate overweighting be reduced from 20% to 10%?

- Should the ESG screens in MSCI CPAI methodology be applied at quarterly frequency? Should some screens be applied monthly (e.g. UNGC?)
- Should a CPAI index also target a minimum increase in the index-level ESG Score compared to the parent index ?

Supporting MiFID II Sustainability Preferences –
Should all CPAI Indexes have a constraint to support MiFID II Sustainability Preferences?
1. Should all 'Orange Flag' stocks be excluded from the index?
2. Should there be a constraint on the minimum aggregate index weight in constituents flagged as Sustainable Investments?
3. How should that level be set by region (parent index characteristics)

Would an alternate series with such an SI% constraint be a useful addition to the range?

Appendix:

Detailed Proposal Analysis.

Proposal 1a :

Target Index-level ITR <= 2 degrees

ITR of Flagship MSCI Climate Paris Aligned Indexes (CPAI)

- CPAI have substantially lower ITR than their respective cap-weighted parent indexes
- CPAI aim to align with 1.5° trajectory by imposing a self-decarbonization of at least 10% per year.
- The current ITR of CPAI across regions and countries tends to be around 2° – with a few exceptions.
- **Proposal:** Introduce an alignment constraint in the MSCI CPAI methodology to target an ITR of 2° or below on rebalance dates.

	Parent ITR	Parent ITR Alignment	CPAI ITR	CPAI ITR Alignment	Improvement in ITR relative to Parent
CANADA	4.0	Strongly Misaligned	1.9	2° Aligned	2.1
EAFE	2.7	Misaligned	1.9	2° Aligned	0.8
EUROPE SMALL CAP	2.5	Misaligned	1.9	2° Aligned	0.6
NORTH AMERICA	2.8	Misaligned	1.9	2° Aligned	0.9
WORLD	2.8	Misaligned	1.9	2° Aligned	0.9
WORLD ex EMU	2.8	Misaligned	1.9	2° Aligned	0.9
ACWI	2.9	Misaligned	2.0	2° Aligned	0.9
USA	2.7	Misaligned	2.0	2° Aligned	0.7
WORLD ex USA	2.8	Misaligned	2.0	2° Aligned	0.8
ACWI ex USA	3.0	Misaligned	2.1	Misaligned	0.9
CHINA	3.3	Strongly Misaligned	2.1	Misaligned	0.9
EMU	2.5	Misaligned	2.1	Misaligned	0.4
EUROPE	2.5	Misaligned	2.1	Misaligned	0.4
JAPAN	2.7	Misaligned	2.1	Misaligned	0.6
AC ASIA PACIFIC ex JAPAN	3.5	Strongly Misaligned	2.4	Misaligned	1.1
AC ASIA ex JAPAN	3.2	Misaligned	2.4	Misaligned	0.8
EM (EMERGING MARKETS)	3.5	Strongly Misaligned	2.5	Misaligned	1.0
CHINA A	3.7	Strongly Misaligned	2.6	Misaligned	1.1

Constituents as of 1st Jun'22. ESG Data as of 29th Apr'22.

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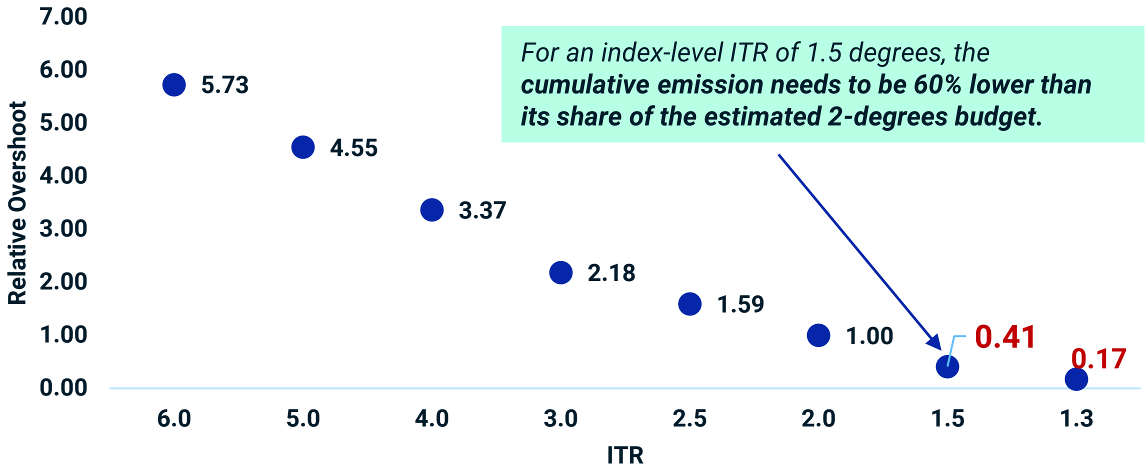
ITR is a function of the ratio between Cumulative Projected Emissions and Available Budget

- The MSCI ITR is calculated with reference to a 2-degree temperature scenario.
- Relative Overshoot = Cumulative Projected Emission / Budget
- The ‘Relative Overshoot’ consistent with an ITR of 1.5 degrees can still be imputed from the ITR calculation methodology.
- A target ‘Relative Overshoot’ can be set as a constraint in the CPAI optimization.



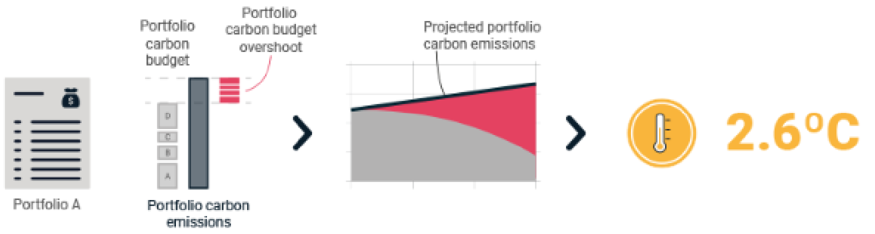
Implied Temperature Rise for Portfolios and Funds

Like the company metric, the Implied Temperature Rise of an investment portfolio provides an indication of how well the underlying holdings align with global climate goals.

Here is how we calculate it:

- We look at what public companies the portfolio holds and the carbon budget allocated to these holdings collectively.
- Then we look at the carbon budget overshoot for these same holdings collectively.
- The portfolio’s relative carbon budget “overshoot” / “undershoot” is then converted to a degree of temperature rise (°C) using the same approach as we do at the company level.

Portfolio Overshoot Example



Impact of Enhancement Proposal 1A (1/2)

Targeting Index-level ITR <= 2 degrees has little impact on key financial and climate metrics.

Region		ITR	Ex-Ante TE(%)	Turnover (%)	NOC	Mcap Coverage (%)	Active Share Relative to Current (%)	WACI	Companies Setting Targets (%)	Climate VaR(%)	Physical Risk	LCT Score Uplift (%)
WORLD	**Current**	1.9	1.8	5	633	65	NA	184	28	0	-4	11
	Proposed	1.9	1.8	5	633	65	0	184	28	0	-4	11
EM	**Current**	2.5	2.7	6	469	58	NA	256	3	0	-10	14
	Proposed	2.0	2.5	8	448	57	7	229	4	0	-10	13
ACWI ex USA	**Current**	2.1	1.8	6	905	65	NA	256	20	0	-8	12
	Proposed	2.0	1.8	6	907	65	0	256	20	0	-8	12

- Current : respective CPAI constituents as of 1st June. Proposed : constituents of hypothetical index which follows hypothetical rebalance (slide 6).
- ITR – Index ITR, Ex-Ante TE(%) – calculated relative to market cap weighted parent index, Turnover – turnover used to rebalance the index, NOC – Number of constituents, Mcap Coverage – Weight of index constituents in the market cap weighted parent index
- WACI – Weighted average GHG Intensity, Companies Setting Targets, Climate VaR(%), Physical Risk as defined in the MSCI Climate Paris Aligned Indexes Methodology.
- LCT uplift – The % change in index's weighted average Low Carbon Transition Score relative to the market cap weighted parent index.

Impact of Enhancement Proposal 1A (2/2)

Region		ITR	Ex-Ante TE(%)	Turnover (%)	NOC	Mcap Coverage (%)	Active Share Relative to Current (%)	WACI	Companies Setting Targets (%)	Climate VaR(%)	Physical Risk	LCT Score Uplift (%)
China	Current	2.1	3.2	7	220	67	NA	104	0.1	0	-10	14
	Proposed	2.0	3.2	9	220	68	6	104	0.1	0	-10	14
AC ASIA PACIFIC ex JAPAN	Current	2.4	2.8	7	435	62	NA	235	3.9	0	-10	14
	Proposed	2.0	2.4	8	433	62	7	232	3.9	0	-10	13
Europe	Current	2.1	2.4	7	254	70	NA	219	35.9	0	-6	11
	Proposed	2.0	2.4	7	254	70	0.8	201	35.9	0	-6	11
USA	Current	2.0	2.1	5	298	67	NA	169	29	0.00	-3	7
	Proposed	2.0	2.1	5	300	67	0.5	169	29	0.00	-3	7

- Current : respective CPAI constituents as of 1st June. Proposed : constituents of hypothetical index which follows hypothetical rebalance (slide 6).
- ITR – Index ITR, Ex-Ante TE(%) – calculated relative to market cap weighted parent index, Turnover – turnover used to rebalance the index, NOC – Number of constituents, Mcap Coverage – Weight of index constituents in the market cap weighted parent index
- WACI – Weighted average GHG Intensity, Companies Setting Targets, Climate VaR(%), Physical Risk as defined in the MSCI Climate Paris Aligned Indexes Methodology.
- LCT uplift – The % change in index's weighted average Low Carbon Transition Score relative to the market cap weighted parent index.

Proposal 1b:

Remove Climate Value At Risk as an Optimization constraint

Enhancement Proposal 1B: Drop Climate VaR (%) as an index optimization constraint

- At the time of index launch, Climate VaR (%) was added as an alignment constraint
    - To act as a reference for investor interest in the impact of TCFD climate stress-testing scenarios
    - As the only methodology element that could be explicitly linked to a specific temperature outcome
    - As a control on the estimated impact on the index through the low-carbon transition
- The proposed ITR constraint and projected emissions budget would directly address Index's alignment with the Paris Agreement which underlies the index objective.
    - We would still retain a constraint for index-level improvement of the MSCI Low Carbon Transition Score
- Even in absence of a Climate VaR (%) constraint, the range of CPAI were calculated to have a climate VaR of no worse than -5%.
- The removal of the Climate VaR (%) constraint would have resulted in significantly lower Ex-Ante TE (%) across a range of CPAI indexes.
- **Proposal - Remove Climate VaR (%) as an alignment constraint from the MSCI CPAI methodology.**

Metrics – Proposal 1B

Region		Climate VaR(%)	Parent Climate VaR(%)	ITR	Ex-Ante TE(%)	Turnover (%)	NOC	Mcap Coverage (%)	Active Share Relative to Current Methodology (%)	WACI	Companies Setting Targets (%)	Physical Risk	LCT Score Uplift (%)
WORLD	Current	0	-15	1.9	1.8	5	633	65	NA	184	28	-4	11
	Proposed	-2	-15	2.0	1.7	5	639	65	3	184	28	-4	10
EM	Current	0	-33	2.5	2.7	6	468	58	NA	257	3	-10	14
	Proposed	-5	-33	2.0	2.2	6	465	59	8	257	3	-10	11
ACWI ex USA	Current	0	-25	2.1	1.8	6	905	65	NA	256	20	-8	12
	Proposed	-3	-25	2.0	1.6	6	924	66	5	256	20	-8	11
China	Current	0	-29	2.1	3.2	7	220	68	NA	104	0.1	-10	14
	Proposed	-5	-29	2.0	2.7	6	212	67	8	104	0.1	-10	12
AC ASIA PACIFIC ex JAPAN	Current	0	-31	2.4	2.8	7	435	62	NA	235	4	-10	14
	Proposed	-6	-31	2.0	1.9	6	445	65	9	219	4	-10	11
Europe	Current	0	-22	2.1	2.4	7	254	70	NA	219	36	-6	11
	Proposed	-3	-22	2.0	2.2	7	267	71	5	203	36	-6	10
USA	Current	0	-12	2.0	2.1	5	298	67	NA	169	29	-3	7
	Proposed	-1	-12	2.0	2.1	5	304	68	3	169	29	-3	7

- Current : respective CPAI constituents as of 1st June. Proposed : constituents of hypothetical index which follows hypothetical rebalance (slide 6).
- ITR – Index ITR, Ex-Ante TE(%) – calculated relative to market cap weighted parent index, Turnover – turnover used to rebalance the index, NOC – Number of constituents, Mcap Coverage – Weight of index constituents in the market cap weighted parent index
- WACI – Weighted average GHG Intensity, Companies Setting Targets, Climate VaR(%), Physical Risk as defined in the MSCI Climate Paris Aligned Indexes Methodology.
- LCT uplift – The % change in index's weighted average Low Carbon Transition Score relative to the market cap weighted parent index.

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Proposal 2:

1.5-degree Carbon Emissions Budget Consistency

Consistency with The MSCI Net Zero Tracker* Approach

Source: MSCI, based on the emissions trajectory of the MSCI ACWI IMI, as of May 31, 2021

Burning through the emissions budget

Companies in the MSCI ACWI IMI emit an estimated 10.9 billion tons (gigatons) of direct (Scope 1) greenhouse gases annually, putting them on a trajectory to exceed their carbon budgets as soon as 2026.*

The calculation reflects listed companies' share of the global budget, which is the total amount of greenhouse gases that humans can put into the atmosphere without undermining the Paris Agreement goal of keeping global warming well below 2°C, preferably no more than 1.5°C, by the end of the century.

- MSCI CPAI methodology follow a 'self-decarbonization' target of 10% annualized reduction in index index's emission intensity.
- **Proposal :** Introduce an alignment objective in MSCI CPAI Indexes methodology to restrict the 'cumulative projected emission' of CPAI below the share of total amount of GHG that can be put in atmosphere to keep global temperature rise below 1.5 degrees.

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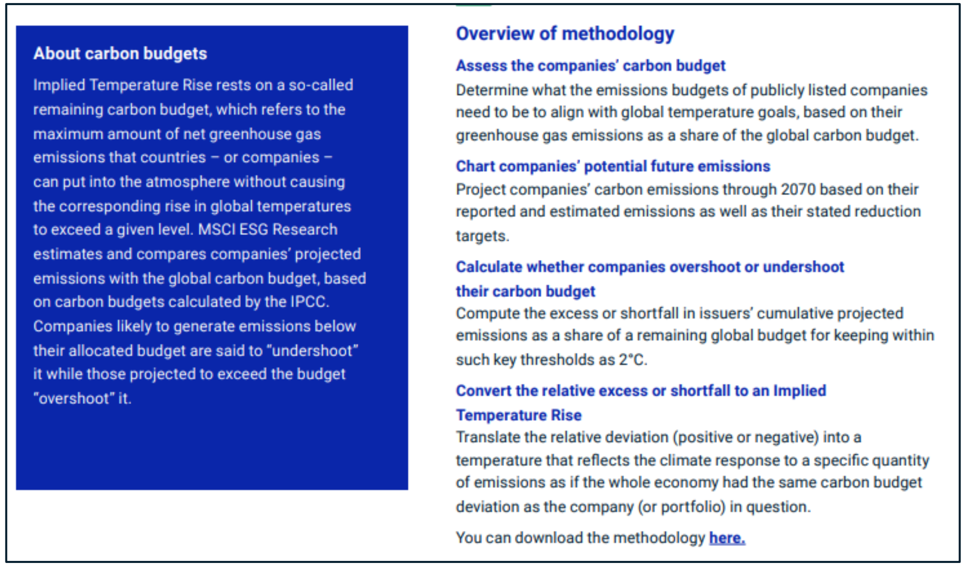
* https://www.msci.com/documents/1296102/26195050/MSCI-Net-Zero-Tracker.pdf

Cumulative Future Emission of MSCI CPAI

- Emission trajectory of a CPAI is set via the YoY self-decarbonization rule[1].
- Based on this, the cumulative projected emission of a CPAI to a future year can be calculated (2070 as per the MSCI ITR model).
- Projected Emission = Cumulative Emissions to a future year.
- ***A CPAI may be considered aligned with a 1.5 degrees trajectory if the cumulative projected emissions of the index from today and 2070 is less than the budget available to keep global warming below 1.5 degrees.***



About carbon budgets

Implied Temperature Rise rests on a so-called remaining carbon budget, which refers to the maximum amount of net greenhouse gas emissions that countries – or companies – can put into the atmosphere without causing the corresponding rise in global temperatures to exceed a given level. MSCI ESG Research estimates and compares companies' projected emissions with the global carbon budget, based on carbon budgets calculated by the IPCC. Companies likely to generate emissions below their allocated budget are said to "undershoot" it while those projected to exceed the budget "overshoot" it.

Overview of methodology

Assess the companies' carbon budget
Determine what the emissions budgets of publicly listed companies need to be to align with global temperature goals, based on their greenhouse gas emissions as a share of the global carbon budget.

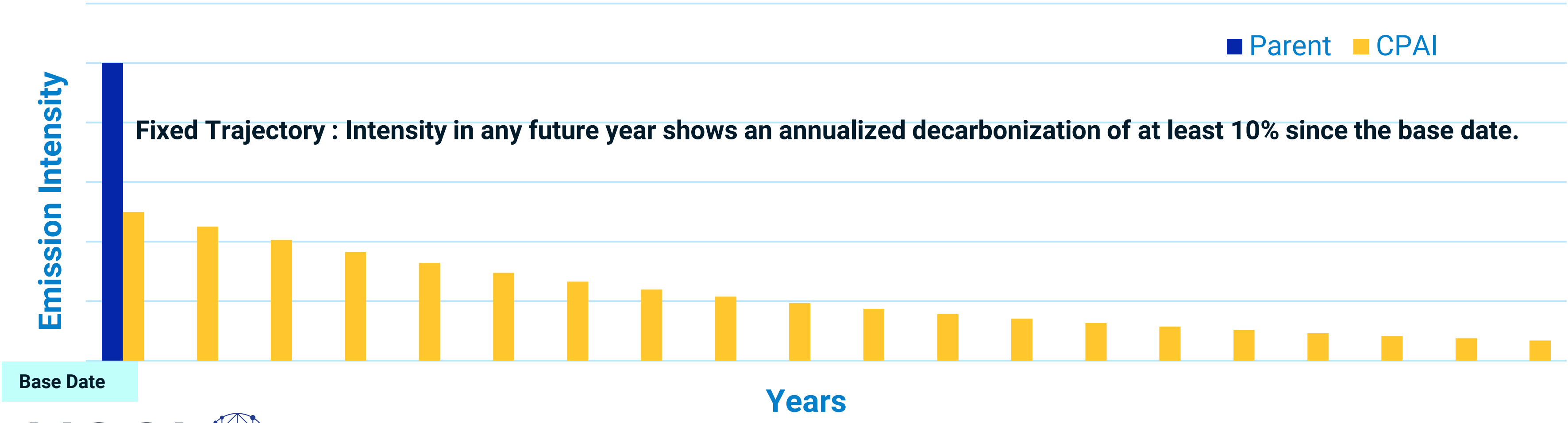
Chart companies' potential future emissions
Project companies' carbon emissions through 2070 based on their reported and estimated emissions as well as their stated reduction targets.

Calculate whether companies overshoot or undershoot their carbon budget
Compute the excess or shortfall in issuers' cumulative projected emissions as a share of a remaining global budget for keeping within such key thresholds as 2°C.

Convert the relative excess or shortfall to an Implied Temperature Rise
Translate the relative deviation (positive or negative) into a temperature that reflects the climate response to a specific quantity of emissions as if the whole economy had the same carbon budget deviation as the company (or portfolio) in question.

You can download the methodology here.

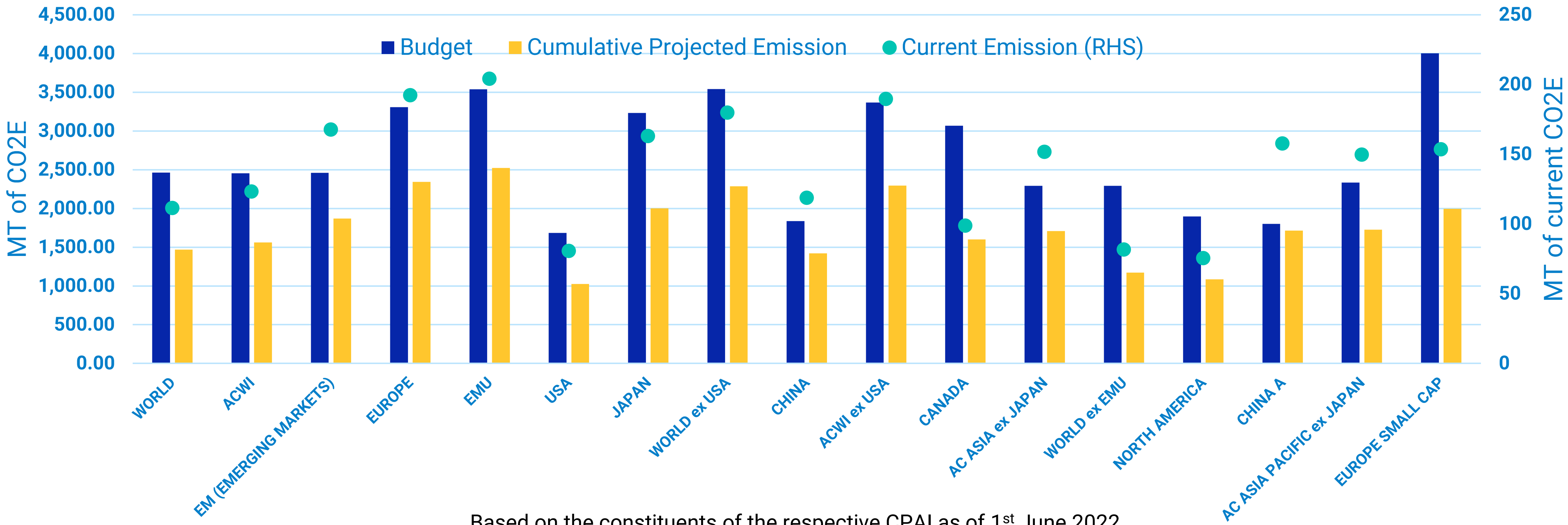
Source :
https://www.msci.com/documents/1296102/27422075/ImpliedTemperatureRise-cfs-en.pdf
https://www.msci.com/documents/1296102/31997292/Implied-Temperature-Rise-Methodology-Summary.pdf/38022da2-647f-15be-d367-524f351038f2?t=1653405935387



1 - As per Section 3.3 of the MSCI Climate Paris Aligned Indexes methodology, the Indexes maintain a minimum year-on-year self-decarbonization of 10%.

Existing MSCI Climate Paris Aligned Indexes (CPAI) are projected to emit less than the 1.5 degrees budget between 2021 and 2070.

- Existing CPAI as of May 2022 are projected to emit less than share of global budget between 2022 and 2070.
- Proposed Enhancement would have minimal impact on the index characteristics of some CPAI.



Based on the constituents of the respective CPAI as of 1st June 2022.

Index Constituent Weights as of 1st June 2022. Stock level emission budget and cumulative emissions are as of 29th April 2022

Calculation of Cumulative Projected Emission

- Index Cumulative Emission is an aggregate of company-level cumulative emissions between 2021 and 2070.

- To achieve 10% year on year decarbonization, we assume that each constituent company of a CPAI will have to reduce its emission at the rate of 10% year on year with some caveats
  - Companies that are projected to decarbonize at a faster "rate_1" than 10% will be expected to follow their own decarbonization targets
  - Companies will not be expected to decarbonize further if its cumulative emissions are less than or equal to a company's share of global budget required to restrict global heating at 1.3 degrees.
  - The MSCI ITR caps the company-level ITR at 10 degrees; company-level cumulative emissions are therefore capped at a level of budget consistent with ITR of 10 degrees.

- For our calculation, Company-Level Cumulative Emissions are calculated as follows
  - Calculate O1 = Cumulative Emissions published by MSCI ESG Research (as used in the calculation of ITR)
  - Calculate O2 = Cumulative Emissions Cap (imputed from Max ITR = 10 degrees)
  - Calculate O3 = Cumulative Emissions based on committed decarbonization rate
  - Calculate O4 = Cumulative Emissions Floor (imputed from Min ITR = 1.3 degrees)

- Company level Cumulative Emission is calculated as : Max (Min (O1, O2, O3), O4)

Index-Level Calculations

Index Level Calculation (Portfolio Aggregation)

- For i^{th} stock in the index, assume
  - Cumulative Emission: CE_i , Budget: B_i, Company Level EVIC: $EVIC_i$, Stock's weight in index: W_i
  - Stock-level Cumulative Emission calculated as per the steps explained on previous slide.

- Index ownership (share of company represented in the index): O_i =($ Invested * **W_i**) / $EVIC_i$

- Index ITR Calculation :
  - Aggregate Cumulative Emission: $CEp = \sum CE_i * Oi$
  - Aggregate Budget: $Bp = \sum BE_i * Oi$
  - **ITR = 2+0.545*1.551*(CE_p – B_p) / B_p**[1]

- *For a target ITR : ITR = 1.5 degrees, stock's weight* ***W_i*** *is the only variable term in the above expression. The expression can be set as a linear constraint in the optimization process.*

1- The equation 1 is based on the relationship established by IPCC that links each additional unit of emissions emitted beyond the available remaining global 2°C carbon budget to degrees of additional warming. The relationship is called 'Transient Climate Response to Cumulative Carbon Emissions'. More details are available at : https://www.msci.com/documents/1296102/27422075/Implied-Temperature-Rise-Methodology-Summary.pdf

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Metrics – Impact of Proposal 2

Region		Ex-Ante TE(%)	Turnover (%)	NOC	Mcap Coverage (%)	Active Share Relative to Current Methodology (%)	WACI	Companies Setting Targets (%)	CVAR	Physical Risk	LCT Score Uplift (%)
WORLD	Current	1.78	5	633	65	0.00	184	28	0.00	-4	11
	Proposed	1.78	5	633	65	0.00	184	28	0.00	-4	11
EM	Current	2.67	6	468	58	0.00	257	3	0.00	-10	14
	Proposed	2.68	6	468	58	0.16	257	3	0.00	-10	14
ACWI ex USA	Current	1.79	6	905	65	0.00	256	20	0.00	-8	12
	Proposed	1.77	6	906	65	0.47	256	20	0.00	-8	12
China	Current	3.23	7	220	68	0.00	104	0.1	0.00	-10	14
	Proposed	3.22	7	219	68	1.05	104	0.1	0.00	-10	14
AC ASIA PACIFIC ex JAPAN	Current	2.78	7	435	62	0.00	235	4	0.00	-10	14
	Proposed	2.78	7	434	62	0.11	235	4	0.00	-10	14
Europe	Current	2.35	7	254	70	0.00	219	36	0.00	-6	11
	Proposed	2.34	7	254	70	0.53	219	36	0.00	-6	11
USA	Current	2.12	5	298	67	0.00	169	28	0.00	-3	7
	Proposed	2.12	5	298	67	0.00	169	28	0.00	-3	7

- Current : respective CPAI constituents as of 1st June. Proposed : constituents of hypothetical index which follows hypothetical rebalance (slide 6).
- ITR – Index ITR, Ex-Ante TE(%) – calculated relative to market cap weighted parent index, Turnover – turnover used to rebalance the index, NOC – Number of constituents, Mcap Coverage – Weight of index constituents in the market cap weighted parent index
- WACI – Weighted average GHG Intensity, Companies Setting Targets, Climate VaR(%), Physical Risk as defined in the MSCI Climate Paris Aligned Indexes Methodology.
- LCT uplift – The % change in index's weighted average Low Carbon Transition Score relative to the market cap weighted parent index.

Proposal 3:

Exclude companies involved in Nuclear Weapons and Civilian Firearms (Highly Restrictive)

Proposed Screens

- Core Proposal: Highly restrictive screen for Nuclear Weapons and Civilian Firearms.

- Alternate Proposal:
  - Highly restrictive screen for Nuclear Weapons and Civilian Firearms.
  - ***AND*** Least restrictive screen for Conventional Weapons.

	ACWI	China	EM	EMU	Europe	Japan	USA	World
Nuclear Weapons - High	15	0	0	4	5	0	10	15
Nuclear Weapons - Any Tie	21	0	1	4	7	0	12	20
Conventional Weapons - Least	15	2	5	1	3	0	7	10
Conventional Weapons - Moderate	30	5	8	5	8	1	10	22
Conventional Weapons - Any Tie	80	7	28	16	23	7	20	52
Civilian Firearms - Moderate	0	0	0	0	0	0	0	0
Civilian Firearms - High	1	0	0	0	1	0	0	1
Civilian Firearms - Any Tie	3	0	0	0	1	0	1	3

NOC Excluded as of April 29,2022

	ACWI	China	EM	EMU	Europe	Japan	USA	World
Nuclear Weapons - High	1.3	0.0	0.0	2.6	1.5	0.0	1.7	1.5
Nuclear Weapons - Any Tie	1.6	0.0	0.0	2.6	1.7	0.0	2.1	1.7
Conventional Weapons - Least	0.9	0.1	0.1	0.1	0.4	0.0	1.3	1.0
Conventional Weapons - Moderate	1.4	0.1	0.1	2.2	1.5	0.3	1.8	1.6
Conventional Weapons - Any Tie	3.2	0.3	1.8	8.2	5.2	3.3	3.2	3.3
Civilian Firearms - Moderate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Civilian Firearms - High	0.1	0.0	0.0	0.0	0.6	0.0	0.0	0.1
Civilian Firearms - Any Tie	0.5	0.0	0.0	0.0	0.6	0.0	0.6	0.6

Weight (%) Excluded as of April 29,2022

Actual Screen Implementation

Proposed Screens		Screen Implementation
Alternate Screen: ▪ **Nuclear Weapons High** ▪ **Civilian Firearms High** ▪ **Conventional Weapons Least**	**Core Screen:** ▪ **Nuclear Weapons High**	(#WEAP_NUC_MISSILE == TRUE) | (#WEAP_NUC_EXCL_COMPONENT == TRUE) | (#WEAP_NUC_EXCL_DELIVERY == TRUE) | (#WEAP_NUC_SUPPORT == TRUE) | (#WEAP_NUC_DUAL_COMPONENT == TRUE) | (#WEAP_NUC_DUAL_DELIVERY == TRUE) | (#WEAP_NUC_EXCL_DELIVERY_PART == TRUE)
	Core Screen: ▪ **Civilian Firearms High**	(#PROD_CIV_ARMS == TRUE) | (#FIREARM_MAX_REV_PCT >= 5)
	Alternate Screen: ▪ **Conventional Weapons Least**	(#WEAP_CONV_MAX_REV_PCT >= 10)

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Top Names flagged by Proposed Screens on ACWI

- There are 16 companies in ACWI that would have been excluded as of 1st June 2022 due to core screens and 7 additional companies would have been excluded via the alternate screen.
- The table below shows the 8 companies that would have been excluded from ACWI CPAI due to core screens and 2 additional companies that get excluded due to alternate screen.

Proposed Screen		Security Name	ACWI Weight[1]	ACWI CPAI Weight
Alternate Screen: ▪ **Nuclear Weapons High** ▪ **Civilian Firearms High** ▪ **Conventional Weapons Least**	**Core Screen:** ▪ **Nuclear Weapons High** ▪ **Civilian Firearms High**	HONEYWELL INTERNATIONAL	0.22%	0.47%
		RAYTHEON TECHNOLOGIES	0.23%	0.43%
		FIN RICHEMONT NAMEN A	0.10%	0.16%
		SAFRAN	0.06%	0.12%
		JACOBS ENGINEERING GROUP	0.03%	0.10%
		AIRBUS	0.11%	0.04%
		LEIDOS HOLDINGS	0.02%	0.03%
		THALES	0.02%	0.02%
	▪ **Conventional Weapons Least**	BHARAT ELECTRONICS	0.01%	0.05%
		ASELSAN ELEKTRONIK	0.00%	0.03%

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1 – Index constituents as of 1st June 2022,.

Impact of Proposal Core Exclusions on Ex-Ante Active Risk

Regional CPAI	Ex-Ante TE(%)	
	Current	Proposed
WORLD	1.78	1.78
EM	2.67	2.46
ACWI ex USA	1.79	1.75
China	3.23	3.29
AC ASIA PACIFIC ex JAPAN	2.78	2.68
Europe	2.35	2.57
USA	2.12	2.19

Proposal 4a: Aggregate weight of companies with approved SBT should be at least 20% higher in a CPAI.

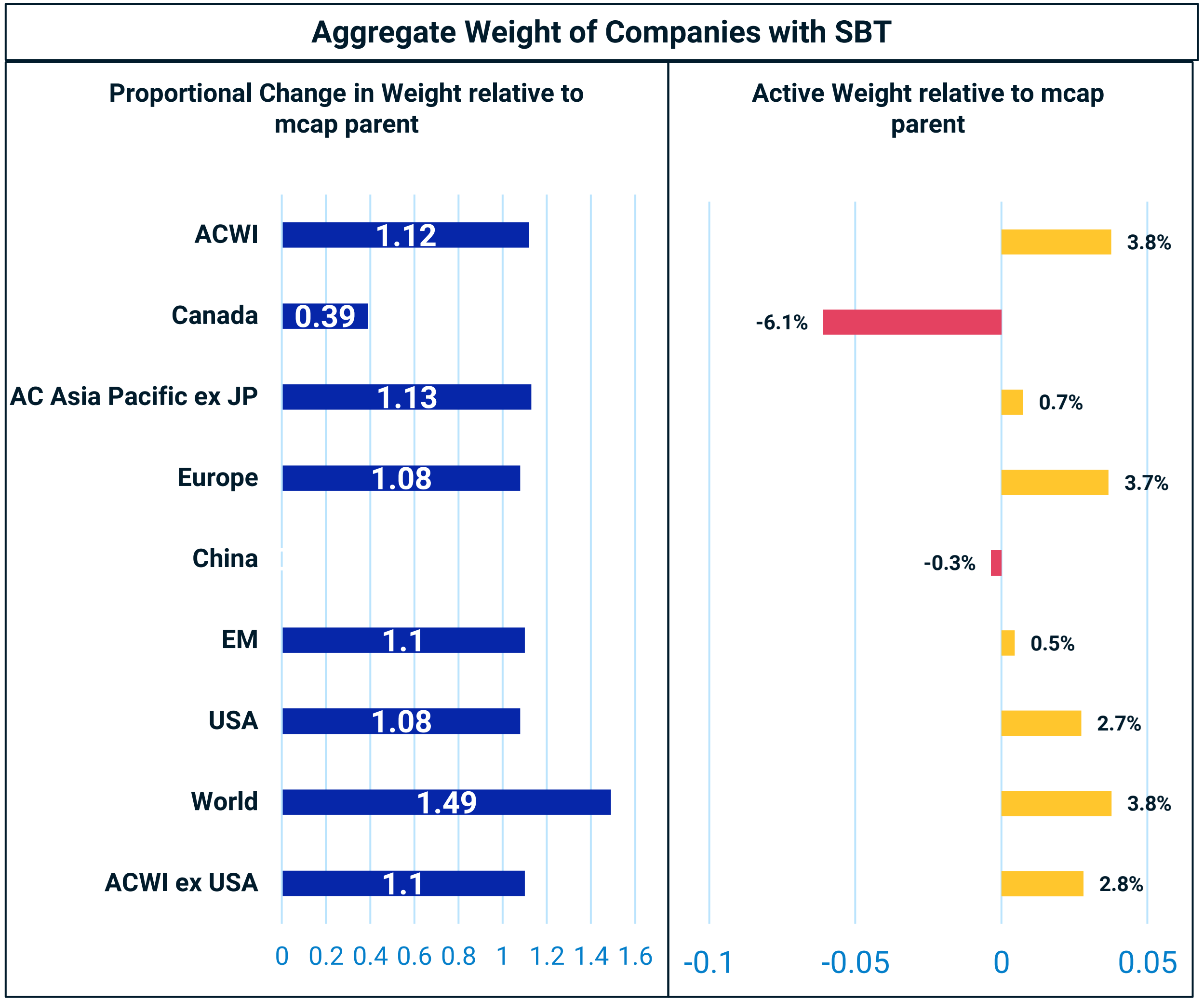
Proposal 4b: Aggregate weight of ‘Companies Setting Targets’ should be only based on ‘eligible’ securities

Companies with Science Based Targets

- The MSCI CPAI methodology aims to increase the aggregate weight of companies setting targets by 20%.

> **Companies Setting Targets**
>
> Relative to their corresponding Parent Indexes, the Indexes require a minimum 20% increase in the aggregate weight of companies setting emissions reduction targets
>
> - companies publishing emissions reduction targets
> - companies publishing their annual emissions and
> - Companies reducing their GHG intensity by 7% over each of the last 3 years

- However, the current methodology doesn't currently include companies with approved Science-Based Targets (SBT) in that group
  - As of 1st June 2022, 403 companies in MSCI ACWI have set approved Science Based Targets[1].
- Some CPAI are currently underweight on companies with approved SBT in aggregate
- **Proposal – Include companies with approved SBT in the group of 'Companies Setting Targets'.**



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Index constituent weights are as of 1st June 2022. Company's SBT data is as of 29th April 2022.

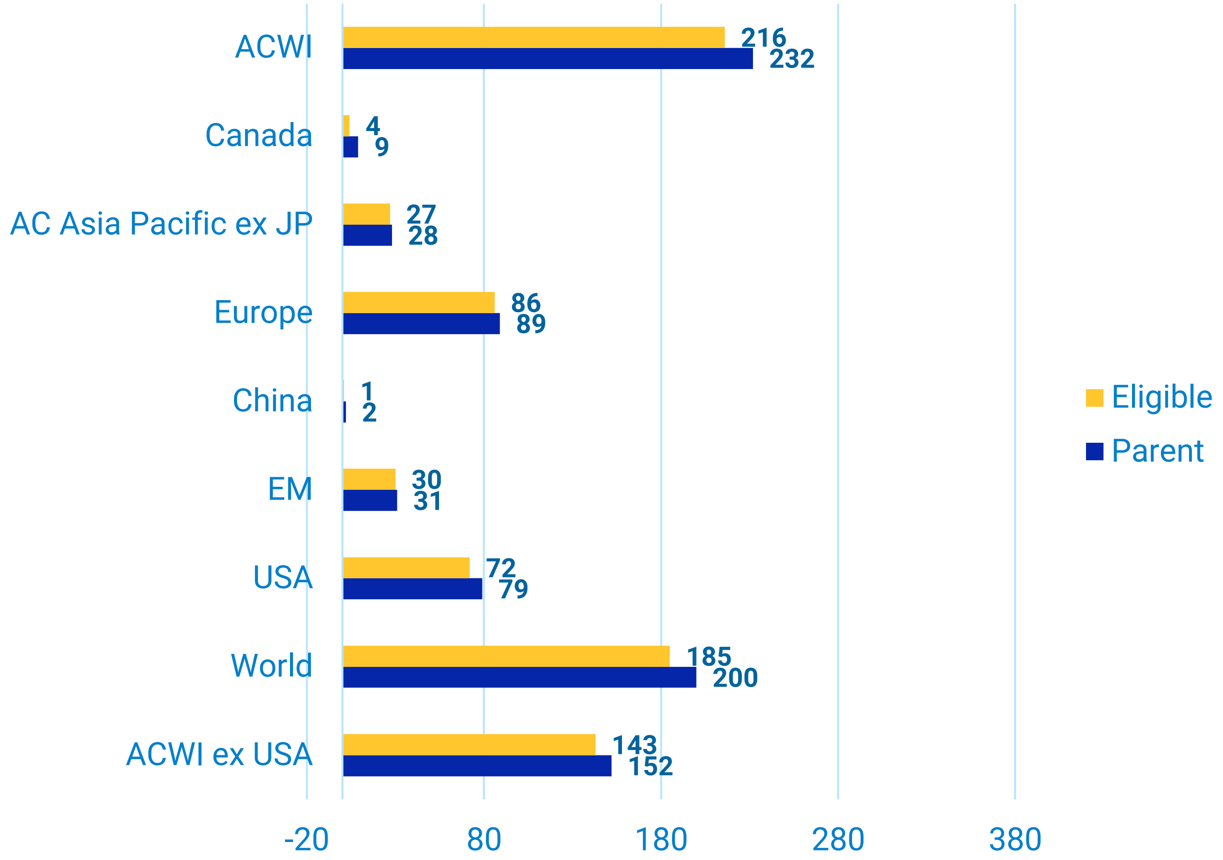
‘Eligible’ Companies Setting Targets

- “Companies Setting Targets” can fail one or more screening criteria and hence may not be included in the Eligible Universe.

- If many companies which satisfy the criteria of ‘Companies Setting Targets’ are excluded from the eligible universe, then the optimization process may be infeasible or require relaxations to satisfy the objective of increasing the aggregate weight of ‘Companies Setting Targets’ by 20%.

- **Proposal – Aggregate Weight of ‘Companies Setting Targets’ will be calculated after removing those stocks which are screened out.**

Number of Companies Setting Targets[1]



1- As per the description of current description of ‘Companies Setting Targets’ in the MSCI CPAI methodology. Index constituents as of 1st June 2022.

Impact of Proposals 4a and 4b (1/2)

Region		Companies Setting Targets (%) In Result	Companies Setting Targets (%) In Parent	Count of Companies Setting Targets	Active Risk	Turnover (%)	NOC	Mcap Coverage (%)	Active Share Relative to Current Methodology (%)	WACI	CVAR	Physical Risk	LCT Score Uplift (%)
WORLD	**Current**	28	23	200	1.78	5	633	65	NA	184	0.00	-4	11
	Proposed-4A	54	45	489	1.80	6	632	65	4	184	0.00	-4	10
	Proposed-4B	57	42	489	$\boxed{1.67}$	10	621	65	8	184	0.00	-4	10
EM	**Current**	3	3	31	2.67	6	468	58	NA	257	0.00	-10	14
	Proposed-4A	8	7	62	2.76	6	461	58	2	257	0.00	-10	14
	Proposed-4B	9	7	62	$\boxed{2.40}$	7	472	58	3	257	0.00	-10	13
ACWI ex USA	**Current**	20	17	152	1.79	6	905	65	NA	256	0.00	-8	12
	Proposed-4A	42	35	383	2.03	6	882	63	5	256	0.00	-8	12
	Proposed-4B	44	32	383	$\boxed{1.82}$	8	881	64	6	256	0.00	-8	11

- Current : respective CPAI constituents as of 1st June. Proposed : constituents of hypothetical index which follows hypothetical rebalance (slide 6).
- ITR – Index ITR, Ex-Ante TE(%) – calculated relative to market cap weighted parent index, Turnover – turnover used to rebalance the index, NOC – Number of constituents, Mcap Coverage – Weight of index constituents in the market cap weighted parent index
- WACI – Weighted average GHG Intensity, Companies Setting Targets, Climate VaR(%), Physical Risk as defined in the MSCI Climate Paris Aligned Indexes Methodology.
- LCT uplift – The % change in index's weighted average Low Carbon Transition Score relative to the market cap weighted parent index.

Impact of Proposals 4a and 4b (2/2)

Region		Companies Setting Targets (%) In Result	Companies Setting Targets (%) In Parent	Count of Companies Setting Targets	Active Risk	Turnover (%)	NOC	Mcap Coverage (%)	Effective NOC	Active Share Relative to Current Methodology (%)	WACI	CVAR	Physical Risk	LCT Score Uplift (%)
China	**Current**	0.1	0.1	2	3.23	7	220	68	27	NA	104	0.00	-9	14
	Proposed-4A	0.5	0.4	3	3.20	9	228	66	28	4	104	0.00	-9	14
	Proposed-4B	0.5	0.4	3	3.22	9	227	66	27	4	104	0.00	-9	14
AC ASIA PACIFIC ex JAPAN	**Current**	4	3	28	2.78	7	435	62	71	NA	235	0.00	-10	14
	Proposed-4A	10	8	64	2.59	7	433	62	72	3	235	0.00	-10	14
	Proposed-4B	11	8	64	2.62	7	428	62	69	4	235	0.00	-10	14
Europe	**Current**	36	30	89	2.35	7	254	70	101	NA	219	0.00	-6	11
	Proposed-4A	74	61	214	2.38	9	261	71	102	7	219	0.00	-6	11
	Proposed-4B	79	57	214	2.37	14	249	68	100	12	219	0.00	-6	11
USA	**Current**	28	24	79	2.12	5	298	67	60	NA	169	0.00	-3	7
	Proposed-4A	52	43	88	2.14	6	284	66	60	5	169	0.00	-3	7
	Proposed-4B	56	42	104	2.01	10	293	69	62	8	169	0.00	-3	7

- Current : respective CPAI constituents as of 1st June. Proposed : constituents of hypothetical index which follows hypothetical rebalance (slide 6).
- ITR – Index ITR, Ex-Ante TE(%) – calculated relative to market cap weighted parent index, Turnover – turnover used to rebalance the index, NOC – Number of constituents, Mcap Coverage – Weight of index constituents in the market cap weighted parent index
- WACI – Weighted average GHG Intensity, Companies Setting Targets, Climate VaR(%), Physical Risk as defined in the MSCI Climate Paris Aligned Indexes Methodology.
- LCT uplift – The % change in index's weighted average Low Carbon Transition Score relative to the market cap weighted parent index.

Proposal 5:

MSCI Climate Paris Aligned Indexes methodology will consider company's Climate VaR under the 'aggressive outcome' of the 'Remind 1.5 degrees Orderly' Physical Risk Scenario.

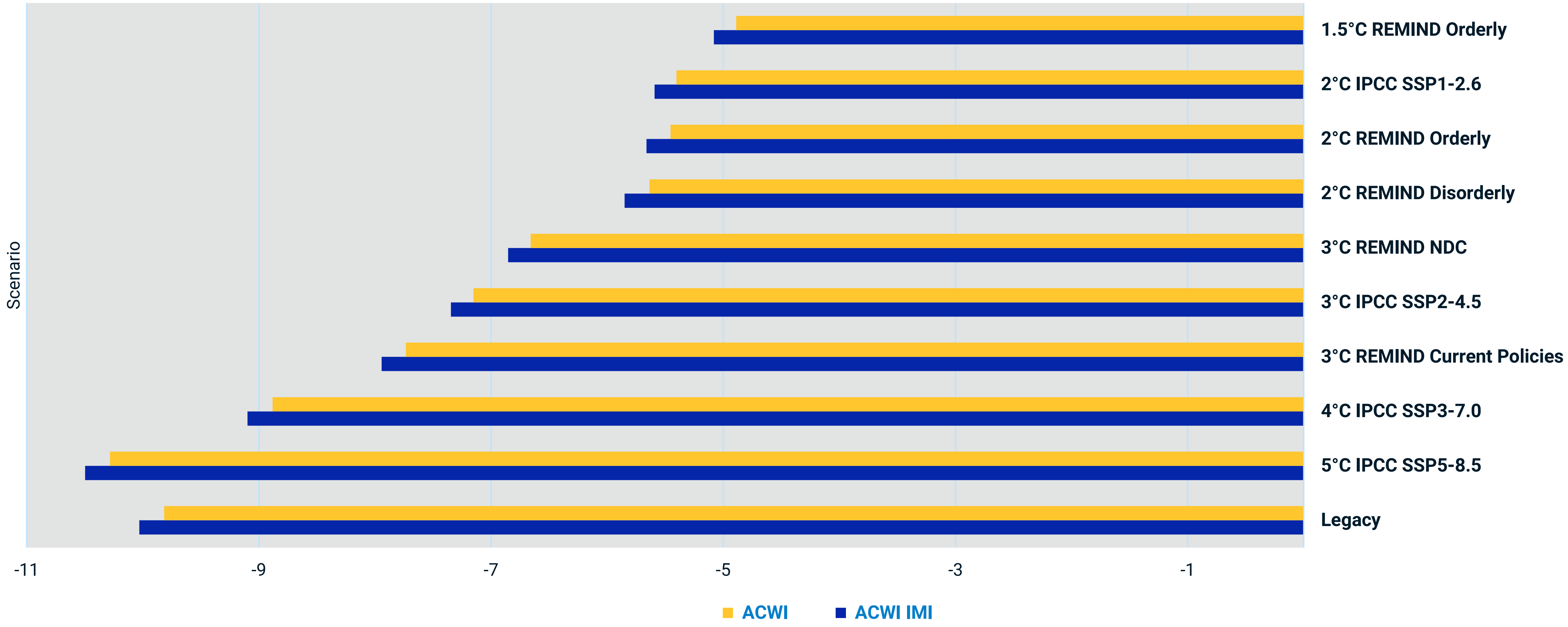
Physical Risk Scenarios

- **Current Scenarios (Legacy Scenarios)**
  - MSCI Physical Risk is calculated under two scenarios – “aggressive” and “average”
  - The MSCI Climate Paris Aligned Indexes methodology currently constrains the optimization to target 50% lower Extreme Weather Climate VaR (Aggressive Scenario) relative to their parent indexes.

- **New Scenarios**
  - MSCI ESG will publish Physical Risk exposures under a range of NGFS and IPCC physical climate change risk scenarios.
  - The legacy scenarios will therefore be deprecated and then phased out.
  - MSCI ESG suggest consideration of the 5°C IPCC SSP5-8.5 or the 4°C IPCC SSP3-7.0 scenario as a suitable replacement for the legacy “aggressive” scenario.

- Proposal - Replace the use of the Extreme Weather Climate VaR metric in the CPAI with the “aggressive outcome” of the “4° C IPCC SSP 3-7.0” Physical Climate-VaR Scenario.

Weighted Average Physical Risk Climate VaR under "aggressive outcome"[1]



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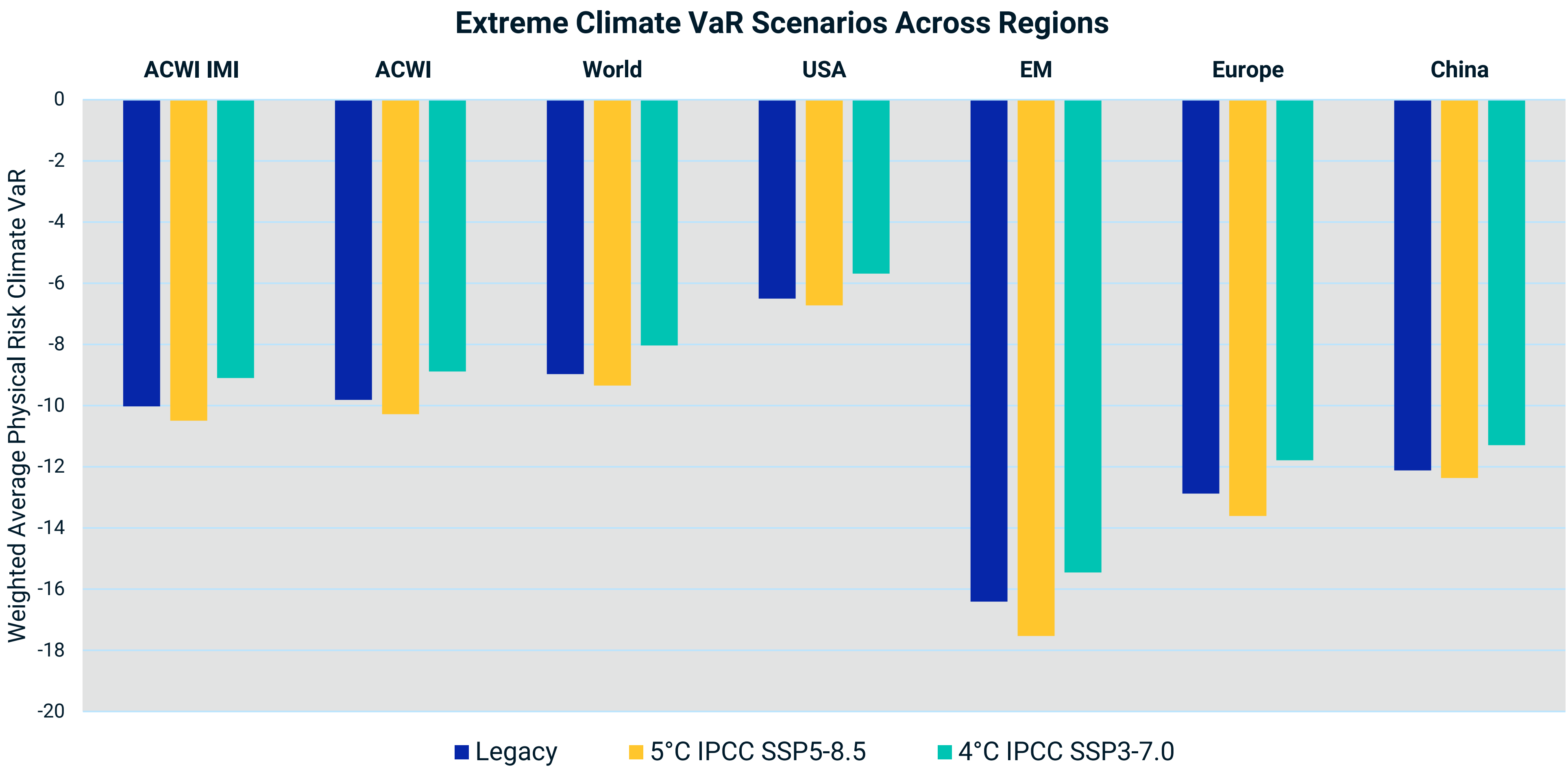
1 – Index constituent weights as of 1st Sep'22 and Climate VaR data as of 15th Sep'22.

Weighted Average Physical Risk Climate VaR under “aggressive outcome”[1] – across select regional market cap weighted indexes.



1 – Index constituent weights as of 1st Sep’22 and Climate VaR data as of 15th Sep’22.

Analysis : Aligning CPAI with the screening guide for MiFID II Sustainability Preferences

Companies Flagged on Sustainable Investment Criteria

Sustainable Investment Criteria	
Baseline Criteria Test (% Fail) • Good Governance • DNSH	• ESG Rating >= BB • Thermal Coal Revenue < 1% • Tobacco Revenue <= 5% • Tobacco Producer = False • Controversial Weapons = 0 • ESG Controversies – Red & Orange
Economic Activities Test	• Sustainable Impact Revenue >= 20%
Sustainable Investment Test	• Company passes both Baseline Criteria Test and Economic Activities Test

MSCI CPAI methodology doesn't explicitly target these criteria

Companies Flagged on Sustainable Investment Criteria

Regional CPAI		Sustainable Investment Test	Baseline Criteria Test (% Fail)	Economic Activities Test	ESG Laggards
World	Current	22.34%	29.49%	31.88%	2.96%
	Proposal 4b	21.52%	29.02%	31.35%	3.06%
EM	Current	15.28%	25.21%	22.15%	14.97%
	Proposal 4b	14.95%	25.88%	21.90%	15.52%
ACWI ex USA	Current	18.52%	19.07%	25.88%	3.63%
	Proposal 4b	18.97%	18.05%	26.27%	3.30%
China	Current	23.46%	18.12%	28.58%	14.06%
	Proposal 4b	23.56%	19.54%	29.09%	16.23%
AC Asia Pacific ex Japan	Current	22.32%	25.42%	28.21%	9.27%
	Proposal 4b	21.74%	25.11%	27.62%	8.77%
Europe	Current	21.48%	19.59%	33.72%	0.00%
	Proposal 4b	21.23%	20.25%	33.86%	0.00%
USA	Current	20.86%	32.45%	30.00%	5.15%
	Proposal 4b	21.61%	31.89%	31.24%	4.80%

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Index constituent weights are as of 1st June 2022 and ESG data is as of 29th April.

Impact of Exclusion of Orange Flag ESG Controversies

Regional CPAI	Count of Securities Flagged on Orange ESG Controversies	Weight (%) of Companies Flagged on Orange ESG Controversy[1]	Ex-Ante TE (current methodology)	Ex-Ante TE (proposed methodology)
WORLD	69	28.14%	1.78	Infeasible[2]
EM	19	10.80%	2.67	3.19
ACWI ex USA	58	15.61%	1.79	1.87
China	4	4.07%	3.23	3.60
AC ASIA PACIFIC ex JAPAN	24	16.62%	2.78	Infeasible
Europe	28	19.59%	2.35	Infeasible
USA	36	29.60%	2.12	Infeasible

1- Index constituents as of 1st June 2022. ESG Controversy as of 29th April 2022.
2- The hypothetical rebalance encountered optimization infeasibility after relaxing relevant constraints as per section 3.3 of the MSCI Climate Paris Aligned Indexes methodology.

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Analysis: Cumulative Impact of Proposals 1-4 :

Impact Analysis* - introducing all enhancements in the MSCI CPAI methodology[1]

Region		Ex Ante TE(%)	Turnover (%)[2]	NOC	Mcap Coverage (%)	Active Share Relative to Current Methodology (%)	WACI	Companies Setting Targets (%)	Climate VAR	Physical Risk	LCT Score Uplift (%)
WORLD	**Current**	1.78	5	633	65	NA	184	28	0.00	-4	11
	Proposed	1.69	10	635	65	9	184	58	-1.60	-4	10
EM	**Current**	2.67	6	468	58	NA	257	3	0.00	-10	14
	Proposed	2.16	6	461	59	8	257	9	-5.21	-10	11
ACWI ex USA	**Current**	1.79	6	905	65	NA	256	20	0.00	-8	12
	Proposed	1.72	8	903	65	8	256	45	-4.31	-8	10
China	**Current**	3.23	7	220	68	NA	104	0.1	0.00	-10	14
	Proposed	2.49	7	223	69	8	104	0.5	-5.72	-10	12
AC ASIA PACIFIC ex JAPAN	**Current**	2.78	7	435	62	NA	235	4	0.00	-10	14
	Proposed	1.89	6	440	65	9	235	11	-5.66	-10	11
Europe	**Current**	2.35	7	254	70	NA	219	36	0.00	-6	11
	Proposed	2.33	16	253	69	15	219	80	-3.09	-6	10
USA	**Current**	2.12	5	298	67	NA	169	28	0.00	-3	7
	Proposed	1.95	11	311	70	10	169	57	-2.73	-3	6

*Impact Analysis : Based on a hypothetical index rebalance as per following methodology –

- Hypothetical Rebalance Date – 1st June 2022
- Hypothetical Rebalance Methodology –The CAPI methodology (available here : https://www.msci.com/eqb/methodology/meth_docs/MSCI_Climate_Paris_Aligned_Indexes.pdf) is modified with the enhancements 1a,1b,2,3,4a and 4b – as explained on slides 6 to 8. Current CPAI is rebalanced as per the 'Hypothetical Rebalance Methodology' on the 'Hypothetical Rebalance Date'.
- The as of date for data provided by MSCI ESG Research is 29th April 2022, unless stated otherwise.

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Contact Us

AMERICAS	EUROPE, MIDDLE EAST & AFRICA	ASIA PACIFIC
Americas +1 888 588 4567 *	Cape Town + 27 21 673 0100	China North 10800 852 1032 *
Atlanta + 1 404 551 3212	Frankfurt + 49 69 133 859 00	China South 10800 152 1032 *
Boston + 1 617 532 0920	Geneva + 41 22 817 9777	Hong Kong + 852 2844 9333
Chicago + 1 312 675 0545	London + 44 20 7618 2222	Mumbai + 91 22 6784 9160
Monterrey + 52 81 1253 4020	Milan + 39 02 5849 0415	Seoul 00798 8521 3392 *
New York + 1 212 804 3901	Paris 0800 91 59 17 *	Singapore 800 852 3749 *
San Francisco + 1 415 836 8800		Sydney + 61 2 9033 9333
São Paulo + 55 11 3706 1360		Taipei 008 0112 7513 *
Toronto + 1 416 628 1007		Thailand 0018 0015 6207 7181 *
* = toll free msci.com clientservice@msci.com esgclientservice@msci.com		Tokyo +81 3 5290 1555

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