MSCI Climate Paris Aligned Indexes

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The MSCI Climate Paris Aligned Indexes are designed to help investors seeking to implement net-zero strategies in their portfolios. The indexes aim to address climate change in a holistic way to minimize their exposure to physical and transition risks of climate change and target exposure to sustainable investment opportunities. The indexes are aligned with a 1.5°C temperature-rise scenario and incorporate the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) as well as the minimum requirements for the EU Paris Aligned Benchmark.

THE ROLE OF INVESTORS IN THE TRANSITION TO NET ZERO

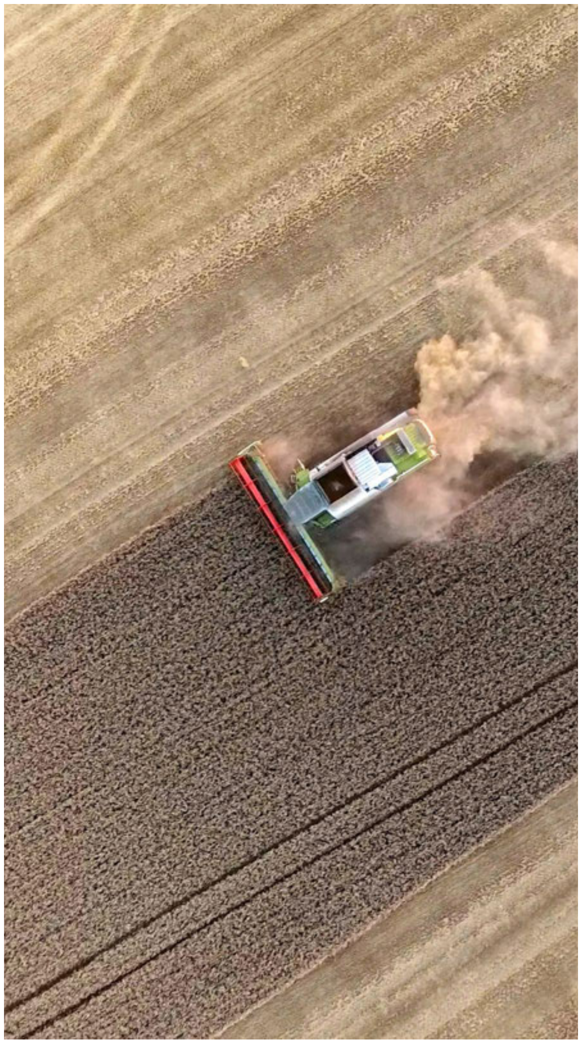
Climate change is the single greatest challenge humankind has faced and its consequences are already all too apparent.

The Paris Agreement aims to keep global temperature rise to well below 2°C, preferably to 1.5°C above preindustrial levels. To achieve this goal, global greenhouse gas emissions need to fall to by nearly half by 2030, and to net-zero no later than 2050, according to the Intergovernmental Panel on Climate Change (IPCC) [1].

Institutional investors are increasingly setting their own net-zero targets. Owners and managers of assets may wish to move to investment policy benchmarks that provide a reference point for the path to decarbonization [2]. Climate indexes can help investors identify climate-related financial risks and novel investment opportunities.

1. IPCC https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter2_Low_Res.pdf
2. The Role of Capital in the Net Zero Revolution (msci.com)

How can MSCI Climate Paris Aligned Indexes support a net-zero strategy?



MSCI has developed a series of indexes to help investors make net-zero part of decision-making throughout their process

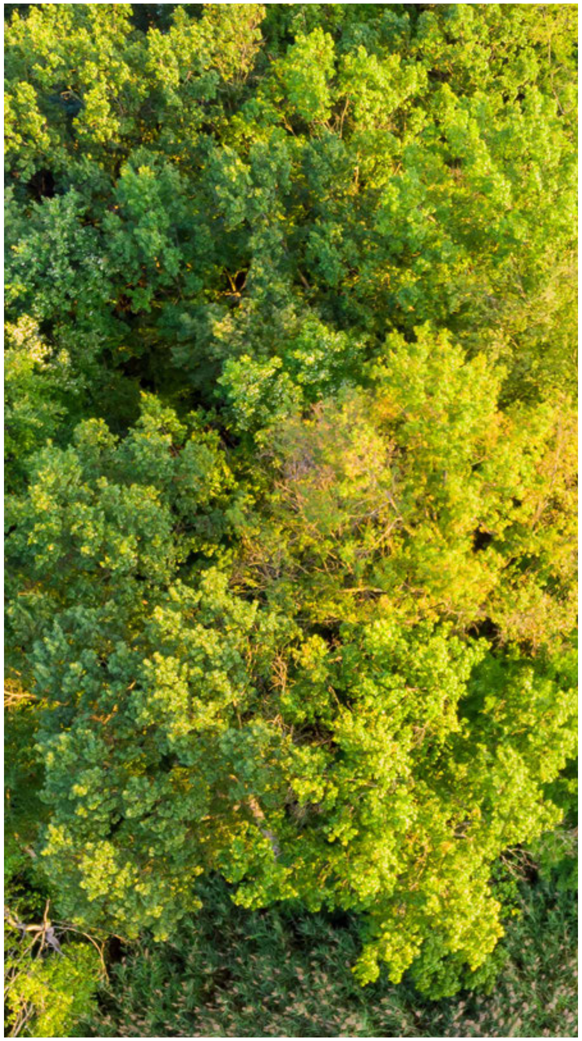
INDEX OBJECTIVES

The MSCI Paris Aligned Climate Indexes follow a rules-based optimized methodology and aim to achieve the following:

- Align with a 1.5°C temperature-rise scenario
- Reduce the weight of companies that are high greenhouse gas emitters based on their complete (Scope 1, 2 and 3) carbon footprint
- Target companies with credible carbon-reduction targets and track records through the weighting scheme
- Shift index wieght toward green revenues and away from fossil-fuel-based businesses with the goal of doubling green-revenue exposure
- Increase the weight of companies that are exposed to climate-transition opportunities and reduce the weight of companies that are exposed to climate-transition risks
- Reduce exposure to physical risk arising from extreme weather events by at least 50%
- Meet the minimum requirements of the EU Paris Aligned Benchmark [3]
- Align with the recommendations of the TCFD

3. The EU Paris Aligned Benchmark is contained in the EU Commission's Technical Expert Group on Sustainable Finance's Final Report on Climate Benchmarks and Benchmarks' ESG Disclosures:
https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-climate-benchmarks-and-benchmarks-esg-disclosures_en

Why MSCI Climate Paris Aligned Indexes?



- Use of state-of-the-art MSCI Climate analytics data, models including forward looking metrics
- Supports a net-zero strategy by aligning with a 1.5°C scenario
- Designed for customization. Can be combined with MSCI's ESG, Sustainable Impact, Factor and Thematic data Indexes and data sets
- Designed towards EU Paris Aligned Benchmarks (PAB) minimum requirements
- MSCI EU PAB Overlay Index methodology available for market cap, factor or ESG indexes -- for investors who are looking for a strict application of the EU regulatory minimum requirements
- Aims to be fully aligned with the TCFD recommendations by accounting for the portfolio's exposure to physical and transition risk, as well as increased exposure to climate opportunities

The MSCI Climate Paris Aligned Indexes aim to meet and exceed the minimum standards of the EU Paris Aligned Benchmarks (PAB) label:

ESG	Transition Risk		Green Opportunity	1.5° Alignment	Physical Risk
Controversial Weapons	Carbon intensity reduction (Scope 1, 2 and 3)	Neutral exposure to high impact sector	At least double the Green Revenue exposure	Self-decarbonization at 10%	Physical Risk Climate VaR is at least 50% lower
Societal norms violators	Immediate Scope 3 phase-in	Higher allocation to companies with credible emission reduction targets	Green/fossil fuel-based ratio – 4x higher than parent	Neutral Aggregate Climate VaR under 1.5°C Scenario	
MSCI ESG Controversy Score	Underweight companies facing transition risk	Significant improvement in Low Carbon Transition (LCT) Score	Overweighting of companies providing solutions		
	Lower fossil fuel exposure	50% minimum reduction in Weighted Average Potential Emissions Intensity			

Minimum requirement by the EU Benchmark Regulation

Additional criteria achieved by the MSCI Climate Paris Aligned Indexes

To view the full methodology, please click here.

Index Applications

The MSCI Climate Paris Aligned Indexes can be used as:

- The basis for index-based strategies, including indexed funds, ETFs, derivatives and structured products
- Reference or policy benchmarks to support net-zero strategies
- Climate performance benchmarks for actively managed climate-aligned portfolios

The indexes are rules based, transparent and may be used as part of a climate strategy implementation

EXAMPLES OF USE CASES:

ASSET ALLOCATION

- Index can be used as policy benchmark for strategic asset allocation
- Leading Asset Owners have adopted MSCI Climate Indexes in order to align their benchmarks with their climate objectives

FINANCIAL INSTRUMENTS

- Index can be used as underlying for indexed products (e.g. ETF and mutual funds)
- Asset Managers around the world have launched ETFs and indexed funds

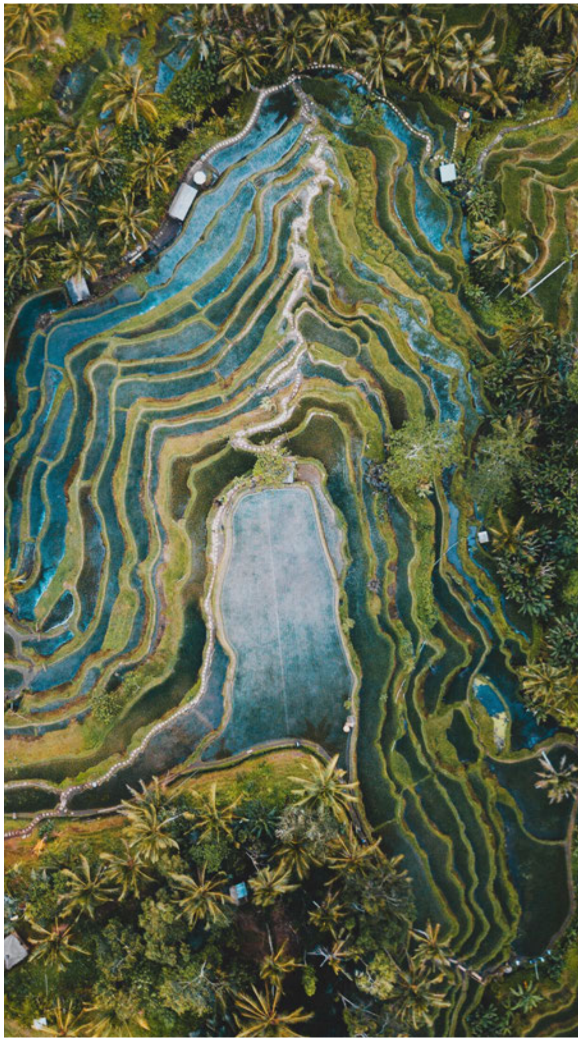
PERFORMANCE BENCHMARKS

- Index can be used as benchmark to measure performance of active managers
- Asset Managers can use MSCI Climate Indexes as a performance benchmark, as a tool to measure the impact of climate on the risk and return of portfolios

ENGAGEMENT TOOL

- index can be used to support engagement
- Investors can use MSCI Climate Indexes to identify companies that need to cut emissions, and engage with companies so they take action

How are MSCI's Climate Paris Aligned Indexes constructed?



The starting universe includes all the existing constituents of the parent market cap weighted index, for example the MSCI ACWI Index, with the aim of providing an opportunity set with sufficient liquidity and replicability.

STEP 1

DEFINE THE ELIGIBLE UNIVERSE

To construct the eligible universe, MSCI removes securities of companies based on the following exclusion criteria:

✗	Controversial Weapons
✗	ESG Controversies
✗	Tobacco
✗	Environmental Harm
✗	Thermal Coal Mining
✗	Oil & Gas
✗	Power Generation (Thermal Coal, Liquid Fuel, Natural Gas)

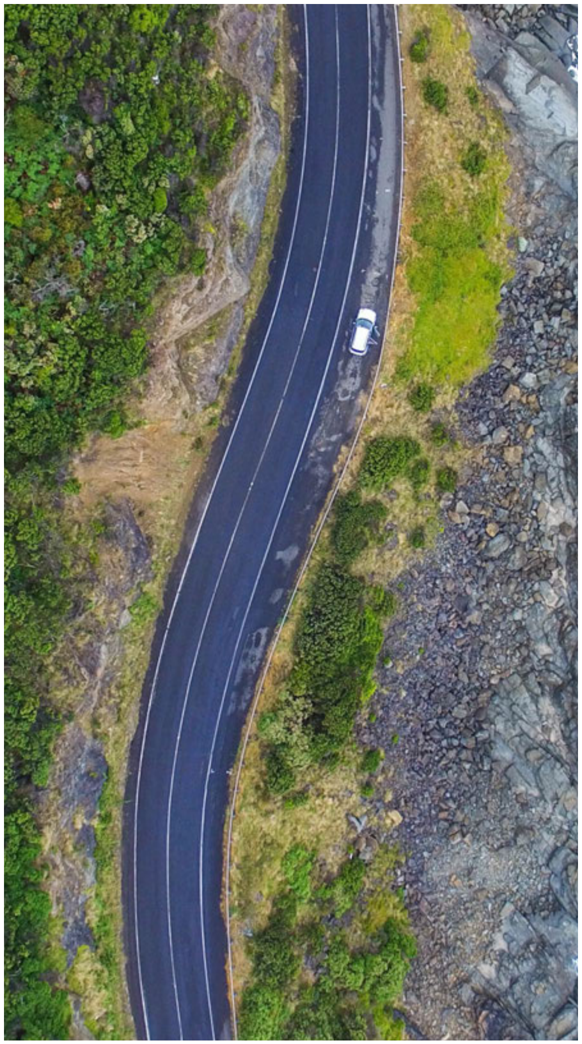
STEP 2

SET THE INDEX OBJECTIVES AND OPTIMIZATION PARAMETERS

Three sets of objectives determine the construction of the MSCI Climate Paris Aligned indexes:

The first set consists of transition and physical risk objectives.

The optimizer targets a reduction of at least 50% in greenhouse gas (GHG) intensity (Scopes 1, 2 and 3) and potential emissions. The index is designed to reduce its GHG intensity by 10% every year; achieved through re-weighting and selection of companies during rebalancing. As required by the EU PAB standards, the weight of high-climate impact sector is set to equal its weight in the underlying index to avoid reducing carbon intensity purely through divestment.



The indexes aim to achieve alignment with a 1.5°C temperature rise threshold via a decarbonization rate of 10% each year based on the forward-looking MSCI Climate Value-at-Risk (Climate VaR).[4]

The optimizer aims to reduce exposure to climate-related physical risk by at least 50%, based on Climate VaR.

The second set of objectives aim to increase exposure to climate transition opportunities. The optimization parameters target an increased weight for companies based on their Low Carbon Transition Score (+10%), emission reduction targets (+20%) and green revenues (x4/100% minimum increase).

Third, in order to enable the use of these indexes in core portfolio construction, the optimization parameters include a set of diversification objectives that are designed to minimize the risk of significant constituent, country or sector bets while aiming to control for turnover and minimize tracking error.

The Indexes are constructed using MSCI's Barra Open Optimizer, with constituents selected based on the universe of eligible securities and optimization objectives and constraints described above.

The MSCI Climate Paris Aligned indexes benefit from the use of proprietary climate metrics, including MSCI ESG Research's Climate VaR and Low Carbon Transition Score.[5]

STEP 3

MAINTAINING THE INDEX

The Indexes are generally rebalanced twice yearly, as of the close of the last business day of May and November. The rebalancing coincides with the May and November semiannual review of the MSCI Global Investable Market Indexes.

For more information on the methodology, please visit https://www.msci.com/index-methodology and https://www.msci.com/our-solutions/climate-investing/climate-indexes

4. This 10% self-decarbonization significantly exceeds the minimum standards for the EU Paris-aligned Benchmark.
5. For more information please refer to visit msci.com/climate-data.

Conclusion

As investors adapt their strategies to consider the financial impacts of climate change, they may seek a holistic approach to portfolio construction that embeds forward-looking measures of climate risk and return to help them achieve their objectives. The MSCI Climate Paris Aligned Indexes, whether used as a benchmark or for the basis of indexed allocations, are designed to support better informed decision-making in the transition to a net-zero economy.

About MSCI ESG Research Products and Services

MSCI ESG Research products and services are provided by MSCI ESG Research LLC, and are designed to provide in-depth research, ratings and analysis of environmental, social and governance-related business practices to companies worldwide. ESG ratings, data and analysis from MSCI ESG Research LLC. are also used in the construction of the MSCI ESG Indexes. MSCI ESG ResearchLLC is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc.

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MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process.

To learn more, please visit **www.msci.com/esg-investing**.