Implied Temperature Rise

Aligning your investment strategy with a net-zero world

As investors sharpen their focus on the financial impacts of climate change, they may want to know whether the companies they're investing in today are aligning with the global goal of keeping warming this century to well below 2 degrees Celsius (2°C) to prevent the worst climate harms.[1]

Implied Temperature Rise from MSCI ESG Research is designed to show the temperature alignment of companies, portfolios, funds and indexes with global climate targets.

With its forward-looking estimate of company or portfolio emissions, investors can use Implied Temperature Rise to set decarbonization targets and support engagement on climate risk. The metric, which is designed to support reporting for the Task Force on Climate-related Financial Disclosures (TCFD), is part of a platform of analytical tools from MSCI ESG Research that institutional investors leverage to navigate the transition to net-zero at every stage.

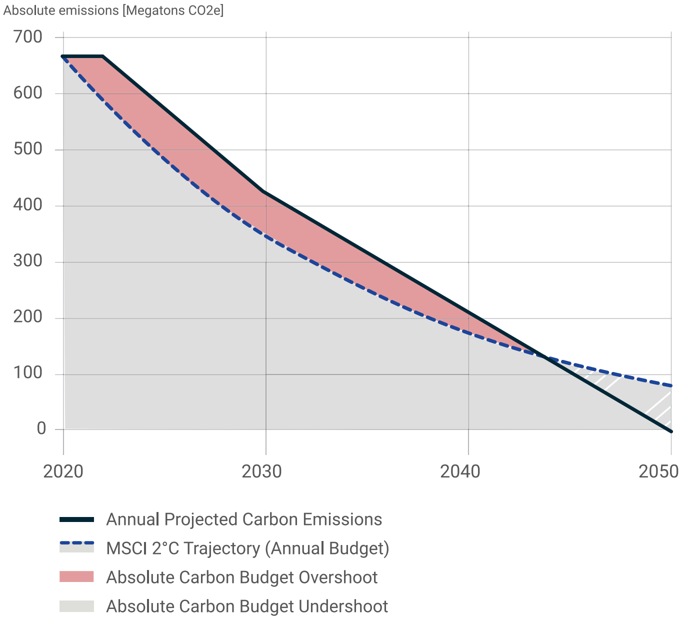
SAMPLE COMPANY

IMPLIED TEMPERATURE RISE **2.1°C**

LAGGING	MISALIGNED	2°C ALIGNED

2°C Trajectory

Absolute emissions [Megatons CO2e]



Key features of Implied Temperature Rise

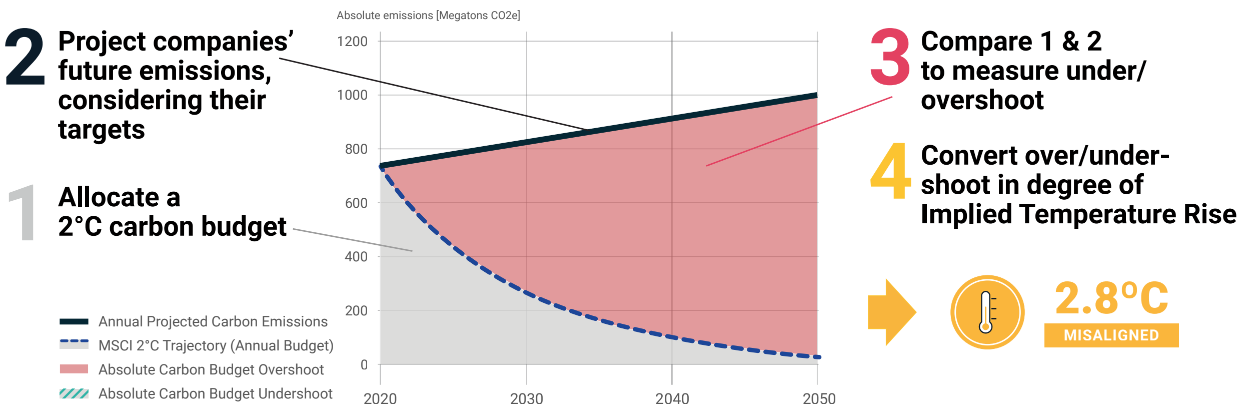
- Easy-to-grasp metric to express portfolio alignment with global temperature targets
- Covers companies' Scope 1, 2 and 3 carbon emissions (may include estimates)
- Available for nearly 10,000 issuers[2]
- Forward-looking estimate developed by MSCI Climate Risk Center based on recommendations published by the TCFD portfolio alignment team[3]
- Based on data that can be easily examined and traced, together with analysis of companies' decarbonization targets
- Supports investors seeking to report to the TCFD
- Supports investors seeking net-zero strategy implementation
- Part of MSCI's climate scenario-analysis solutions, available via MSCI ESG Manager, MSCI Climate Lab, MSCI Analytics and other platforms

How Implied Temperature Rise works

Implied Temperature Rise compares the current and projected greenhouse gas emissions of nearly every publicly listed company across all emissions scopes (based on the company's track record and stated reduction targets) with its share of the remaining global carbon budget for keeping warming this century well below 2°C[4]. A company projected to emit carbon below budget can be said to "undershoot" the budget; a company projected to exceed the budget "overshoots" it.

Implied Temperature Rise converts the overshoot or undershoot to an implied rise in average global temperatures this century, expressed in degrees Celsius (°C). An implied temperature of 1.5°C, for instance, indicates that a company is projected to remain within its share of a carbon budget that would keep warming this century to 1.5°C. An implied temperature of 2.5°C or 3°C, in contrast, would show that the company's emissions align with temperatures that keep rising, bringing greater harms.

The portfolio-level Implied Temperature Rise compares the sum of projected greenhouse gas emissions against the sum of carbon budgets for the underlying constituents or holdings. The estimated carbon budget overshoot or undershoot for the portfolio in question converts to a degree of temperature rise.



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 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.**

Create a cohesive net-zero strategy

Path to net-zero emissions. Implied Temperature Rise equips investors to assess the progress of companies, portfolios, funds and benchmarks toward driving down greenhouse gas emissions to net-zero by the middle of this century.

Target-setting and climate risk management. Investors can use Implied Temperature Rise to inform their climate risk management, set evidence-based decarbonization targets and optimize portfolios.

Engagement. Implied Temperature Rise can support dialogue with companies on climate risk.

Client communication. Asset and wealth managers can use Implied Temperature Rise to show clients how investment portfolios align with global climate goals.

Facilitates reporting. Implied Temperature Rise is designed to align with the reporting recommendations by the Task Force on Climate-related Financial Disclosures (TCFD)[3]. With its coverage of nearly 10,000 issuers and all greenhouse gas emissions scopes, the tool supports reporting in line with evolving disclosure requirements.

Powering better investment decisions

Innovation

MSCI's Climate Risk Center is an industry leader in climate change risk analytics, modeling and methodology. Carbon Delta, which MSCI acquired in 2019, has pioneered a series of state-of-the-art models for climate-scenario analysis.

A powerful platform

MSCI Net-Zero Solutions is powerful platform for building climate-resilient portfolios at every stage, from risk management and benchmark selection to reporting.

Forward-looking

Our solutions consider a of range climate risk and opportunities, based on forward-looking analysis of both transition and physical risks.

The highest-quality data

Industry-leading datasets from MSCI cover more than 10,000 issuers and greater than 95% of global equity, fixed income and real-estate markets.

Decision-useful

Scenario-analysis tools from MSCI assess the impact of climate-related risks and opportunities for each issuer on the valuation of its equity and debt.

1 The Paris Agreement, United Nations (2015)

2 The company-level dataset will cover nearly 10,000 publicly listed companies based on the MSCI ACWI Investable Market Index, as of August 2021

3 "Measuring Portfolio Alignment: Technical Supplement," Task Force on Climate-related Financial Disclosures, June 2021.

4 MSCI uses IPCC (Intergovernmental Panel on Climate Change) guidance to calculate a global 2°C carbon budget: "The IPPC Special Report on Global Warming of 1.5 °C," sets the remaining global carbon budget for varying temperature rises and probabilities (Table 2.2 at page 108 of the report).

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 Research LLC. is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc.

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About MSCI

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.

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