



# Climate Value-at-Risk

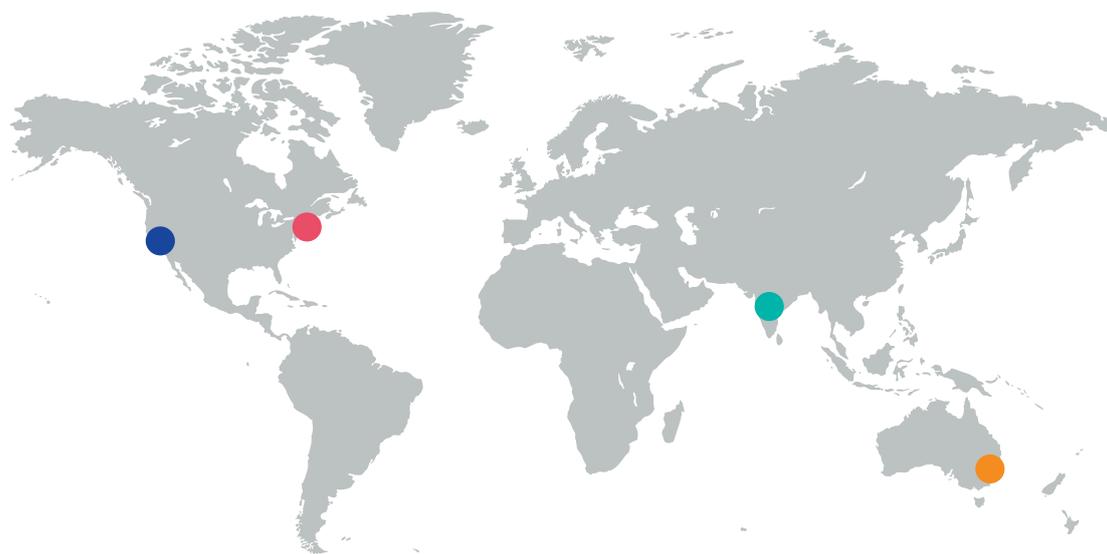
POWERING BETTER INVESTMENT DECISIONS  
FOR A BETTER WORLD



# Climate change – a key risk for institutional investors

Climate change may pose a systemic risk to the financial sector, whilst also producing new investment opportunities. Managing these risks and capturing new opportunities can be crucial to protecting investment and optimizing performance while at the same time reaching sustainability goals.

## Climate-related financial impacts



### California – Clean Energy Act of 2015

US solar installation companies saw their revenues soar between 2013 and 2017.<sup>[1]</sup>

### Massachusetts – tidal flooding

Since 2005, the local real estate market has collectively lost about \$273 million of coastal property value due to flooding from sea level rise.<sup>[2]</sup>

### India – electric vehicles

According to government plans, every car sold in India from 2030 will be electric.<sup>[3]</sup>

### Australia – Wildfires 2019

Insurers have received claims worth of \$480.8million as of January 8, and they expect the number will grow significantly.<sup>[4]</sup>

Focus on

## climate change

MSCI ESG Research has worked with institutional investors for more than 20 years to enable them to incorporate climate change considerations in their investment process by providing an extensive view of climate change risks and opportunities across multiple dimensions: emissions data, fossil fuel exposure, and clean technology exposure.

Our climate change solutions are designed to support investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, and factoring climate change research into their risk management processes.

[1] <https://www.seia.org/solar-industry-research-data>

[2] <https://firststreet.org/press/rising-seas-swallow-403-million-in-new-england-home-values/>

[3] <https://www.ibtimes.co.in/watch-india-unveils-ambitious-plan-have-only-electric-cars-by-2030-724887>

[4] Source: <https://www.insurancejournal.com/news/international/2020/01/08/553871.htm>

# MSCI ESG Research's

# Climate

# Value-at-Risk

Climate Value-at-Risk (Climate VaR) is designed to provide a forward-looking and return-based valuation assessment to measure climate related risks and opportunities in an investment portfolio. The fully quantitative model offers deep insights into how climate change could affect company valuations.

## Investment managers

Actionable insights to evaluate climate-related risks and opportunities. Identify potential alpha factors in low carbon technology innovation.

## Banks

Calculations to identify optimal low carbon investment projects within a loan book or credit portfolio. Access our quantitative model to help establish a process to protect credit portfolios and establish a disclosure framework.

## Asset owners

Identification of long-term, climate-related impacts for asset allocation, external manager evaluation and regulatory disclosure.

## Insurance companies

Deep outlooks into the future physical impacts of climate change and how these changes could affect insurance premiums.

### How Climate VaR can help you to prepare your institution



Scenario analysis on climate risks and opportunities



Systematic tools for disclosure



Automated, streamlined report creation

Your tool to uncover

# climate risks and opportunities

Companies are affected by climate change in different ways. Extreme weather could damage assets at a company facility or the introduction of new climate change policies could require technological change. Both effects have in common their ultimate influence on a company's balance sheet. By calculating the financial risks from climate change per security and per scenario, MSCI ESG Research provides a framework that is designed to help investors identify and understand these risks and take necessary action for portfolio performance optimization, risk management and regulatory reporting purposes.

## Modeling approach



Impact modeling



Cost / profit calculation



Security valuation

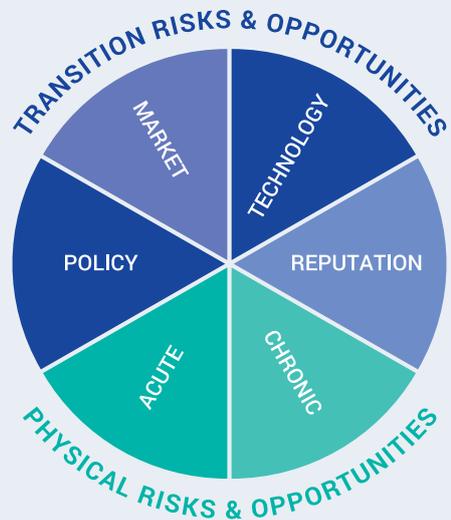


Portfolio aggregation

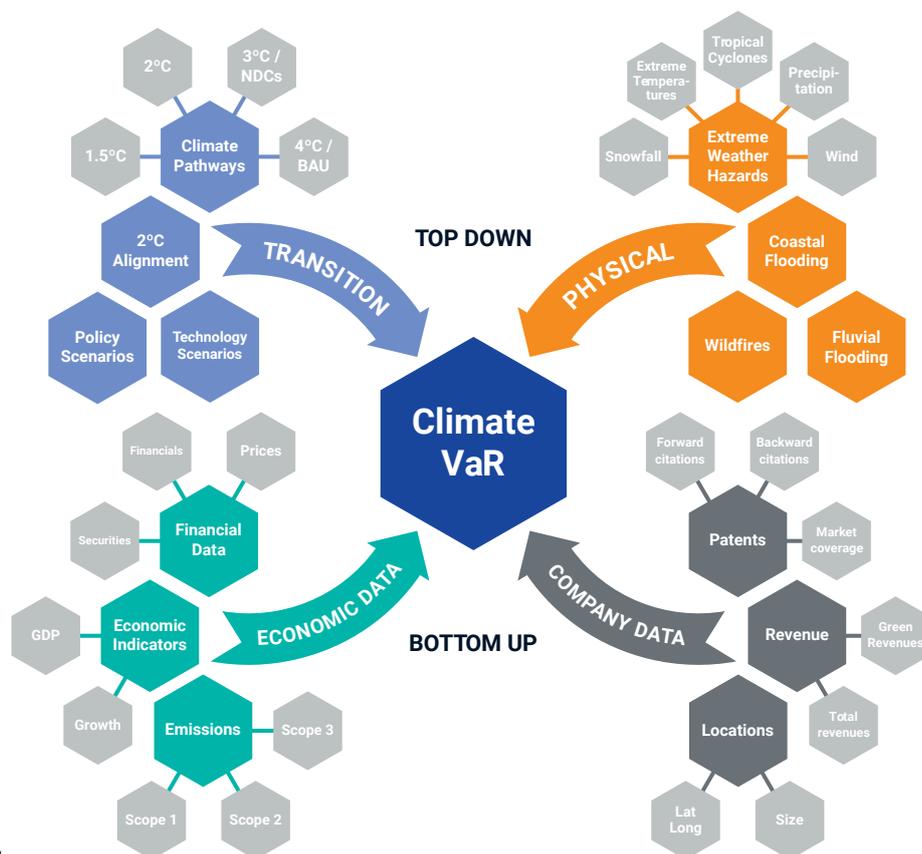
## TCFD alignment

The G20 Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) released recommendations in June 2017, which highlighted the importance of using scenario analysis to assess climate change related impacts within the financial sector.

It calls for the assessment of both the risk and opportunity side of transition and physical climate change impacts, and creates a reporting framework that allows institutions to prepare themselves for upcoming regulations.



MSCI ESG Research's Climate VaR financial metric helps investors to better assess potential future costs and/or profits relating to their portfolio's exposure to future climate change impacts. MSCI ESG Research supports clients when they want to understand company and portfolio wide risk exposure, and what that might mean towards the current valuation of security holdings. Climate VaR provides a stressed market valuation of a security in relation to aggregated transition and physical cost and profit projections until the end of the century.



# Security-specific modeling results

## Transition risks and opportunities

The policy scenarios aggregate future policy costs based on an end of the century time horizon. By overlaying climate policy outlooks and future emission reduction price estimates onto company data, MSCI ESG Research's model provides insights into how current and forthcoming climate policies may affect companies. With the expansion of MSCI ESG Research's new Scope 3 emissions estimation data, the model now includes the integration of policy risk from electricity use (scope 2) and from value chain GHG emissions (Scope 3), alongside policy risk from direct GHG emissions (Scope 1). In this way, the Climate VaR framework is designed to help investors to understand the potential climate-related downside risk and/or upside opportunity in their investment portfolios.

The technology scenarios identify current green revenues as well as the low carbon patents held by companies, calculate the relative quality score of each patent over time and forecast green revenues and profits of corporations based on their low carbon innovative capacities.

## Coverage

MSCI ESG Research's climate change risk and opportunity calculations cover more than 10,000 companies, assessing all of their associated equities and corporate bonds as part of the analysis.

## Physical risks and opportunities

The physical scenarios evaluate the impact and financial risk relating to several extreme weather hazards, such as extreme heat and cold, heavy snowfall and precipitation, wind gusts, tropical cyclones, coastal flooding/sea level rise and fluvial flooding. Our data sources and assessment methods have been established with input from the renowned Potsdam Institute for Climate Impact Research (PIK).

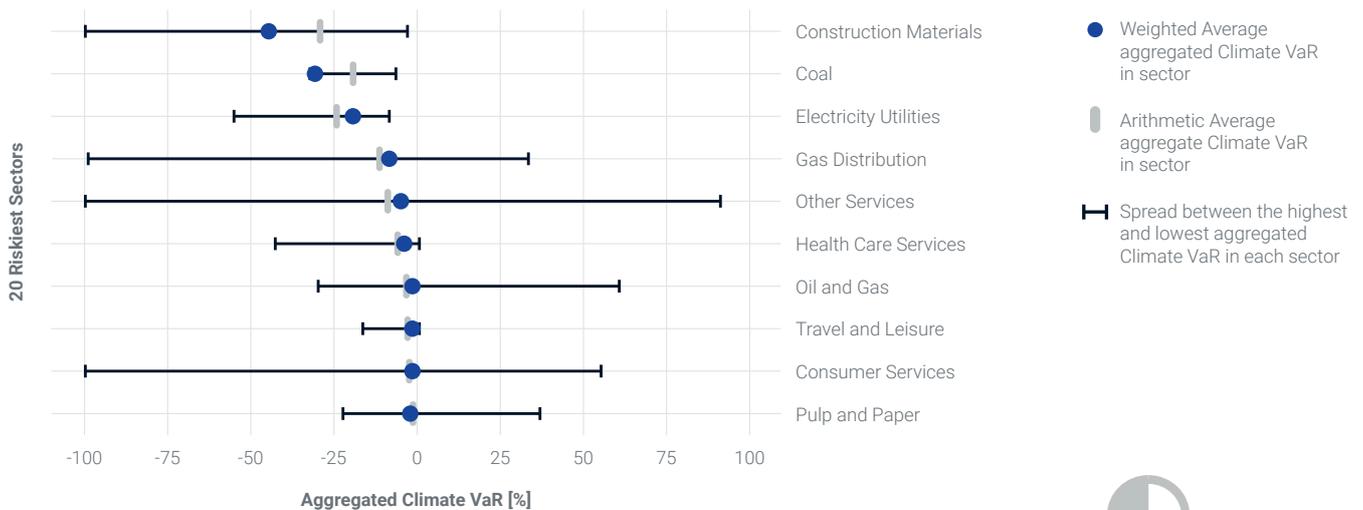
## Financial impact modeling

Climate VaR provides insights into the potential climate-stressed market valuation of investment portfolios and downside risks. MSCI ESG Research's financial modeling approach translates climate-related costs into valuation impacts on companies and their publicly tradable securities. In this way, the Climate VaR framework is designed to help investors to understand the potential climate-related downside risk and/or upside opportunity in their investment portfolios.

# Which sectors in your portfolio are most affected by climate risks?

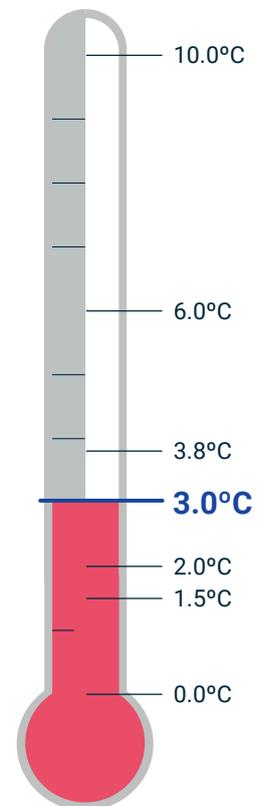
The below chart displays sector-level risks found within a portfolio. Use this graphic to identify the sectors where Climate VaR optimization is possible.

## Climate VaR spread by primary sectors of activity



## How aligned is your portfolio with the Paris Climate Target?

The thermometer shows the warming trajectory of a portfolio, and relates it to important target temperatures in global climate change regulations.



# Climate Value-at-Risk

Schedule a demo today at [msci.com/climate-solutions](https://msci.com/climate-solutions)



## About 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 45 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](http://www.msci.com).

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