

Carbon Delta AG: Modelling the impact of climate change on the financial risk of investments

Finalist: Investing and financing award

What

Carbon Delta¹ was a data analytics firm based in Zürich. It specialised in identifying and analysing the climate change resilience of publicly traded companies. The company developed an automated, forward-looking climate risk metric called 'Climate Value at Risk' (Climate VaR).

Climate VaR calculates the potential impact of climate change on a company's market value and is aimed primarily at the investment and banking industries. By expressing climate risk in financial terms, Carbon Delta helped financiers to understand what the potential future costs of climate change could mean for valuing investments today.

Carbon Delta used big data and a sophisticated software model to calculate Climate VaR. By automating the process and not relying on company-reported data alone, the company covered more listed companies, enhancing the value of its data to portfolio managers. Carbon Delta's information was aimed to help investors and banks to protect their assets, optimise performance and reach sustainability goals.



¹In October 2019 Carbon Delta was acquired by MSCI, and the company is now acting as MSCI's Climate Risk Center, the focal point for the development of climate change risk analytics and tools:
ir.msci.com/news-releases/news-release-details/msci-completes-acquisition-carbon-delta

Why

Carbon Delta believed that climate change is an urgent global challenge and that the finance sector can – and must – play a critical role. By enhancing the industry’s capacity to factor climate change into its decisions, Carbon Delta aimed to improve the resilience of the financial market and encourage investment in sustainable businesses.

Climate VaR is designed to align with the needs and interests of the finance industry while promoting environmental goals. It was developed to address the limited uptake by financiers of existing approaches for assessing carbon emissions, which has meant that climate risk is not being systematically priced into capital markets. Instead of looking at the impact of an investment portfolio on the environment, Climate VaR looks at the financial risk to a portfolio resulting from climate change. The result is a monetised metric that is more meaningful to a portfolio manager.



‘By considering both physical and transition risks, Carbon Delta developed a platform that considers factors that can lead to financial impacts, including potential future costs or asset valuations. As a result, the judges agreed that Carbon Delta’s approach could help to direct capital to low-carbon business models.’

Finance for the Future Awards judges

How

Climate VaR supports asset managers, asset owners and banks to integrate climate risk into their core investment and financing processes using a range of approaches:

- > The software system at the heart of Climate VaR takes large amounts of data, models risk and generates reports. Datasets come from a range of sources, including financial data, climate change research, data mining and regulatory information for different sectors and countries.
- > Partnerships with organisations such as the Potsdam Institute for Climate Impact Research supports access to high-quality data. To avoid bias, all data is gathered from publicly available information and not from data provided confidentially directly by companies.
- > Carbon Delta collaborated with the United Nations Environment Initiative (UNEP FI) programme. UNEP FI convened twenty institutional investors to develop investor guidance for implementing the recommendations of the Task Force on Climate-Related Financial Disclosures. The programme reviewed Carbon Delta's methodology, discussed how the data could be used and documented its findings in a final report. Carbon Delta used this process to further refine its methodology.
- > The metric can be applied to both equity and bond investments, as well as real estate assets, and every impact is quantified in dollar terms. For different warming scenarios (1.5°C, 2°C and 3°C), users can see a customised analysis including the projected total financial impact, and that impact as a percentage of equity and bond securities or real estate asset value.
- > Climate VaR data can also provide information that helps investors and banks ask potential investees or borrowers how climate change influences their business plans and hold them accountable for bringing climate change into their business strategy and decisions.

'The dilemma of climate change is that we don't have time. We don't have time to wait for each consumer to change their behaviour and have that backtrack into the value chain ... That's why we have to turn everything around and start at the beginning of the value chain – and that's financing. And that's why we think addressing the financial industry is the single most important action on climate change.'

Oliver Marchand,
CEO and Co-founder, Carbon Delta

Calculating Climate VaR

The methodology for calculating Climate VaR involves assessing transition risk and physical risk. The aggregate value of these two risks, expressed in financial terms, is the “Aggregated” Climate VaR – but this aggregated value can be broken down to gain insight into drivers of transition and physical risks.

Transition risk is calculated based on policy risks and technological opportunities. Exposure to policy risk is determined from regulatory conditions by sector and country. For technological opportunities, Carbon Delta used low-carbon revenue and patent databases to identify companies more likely to earn future profits from low carbon activities. The assumption is that companies with currently more low carbon revenues

and/or low carbon patents are innovating and so are better positioned to transition to a low-carbon economy.

Physical risk is calculated for several physical hazards: extreme heat, extreme cold, extreme precipitation, heavy snowfall, severe wind conditions, coastal flooding, fluvial flooding and tropical cyclones. First, Carbon Delta used data mining to find where a company’s facilities are located. Then it used climate data to look at how physical hazards are expected to affect those locations in the future. Risks are examined under two ‘business as usual’ scenarios – an average and a worst case.

www.msci.com/climate-solutions



DISCLAIMER

This case study presents **Carbon Delta AG** entry for the Finance for the Future Awards 2019. The case study only includes information that was part of the organisation’s 2019 entry. Some of this information may now be out of date. For a current view of the organisation’s work, please visit their website at the link given above.



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