

Site level climate risk assessments



Helping you adapt to a changing world

Importance of climate resilience

Natural hazards such as flooding, drought and wildfires are becoming more frequent and severe with climate change. The implications of these climate risks for companies, governments and society are growing in significance even as the world moves towards net-zero.

Building climate resilience will be critical to economic success and social wellbeing throughout the transition, ensuring communities are protected factories and farms continue operating, and supply chains keep flowing.

As of today, the global cost to infrastructure, property, agriculture and human health from physical climate risks with no further adaptation measures is estimated to reach between USD 1.7 to 3.1 trillion per year by 2050¹ while there is no likely scenario ² where climate hazards will not intensify for the foreseeable future, with near term impacts for organizations around the world.

¹World Economic Forum, Climate change is costing the world \$16 million per hour: study 
² IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. In Press 



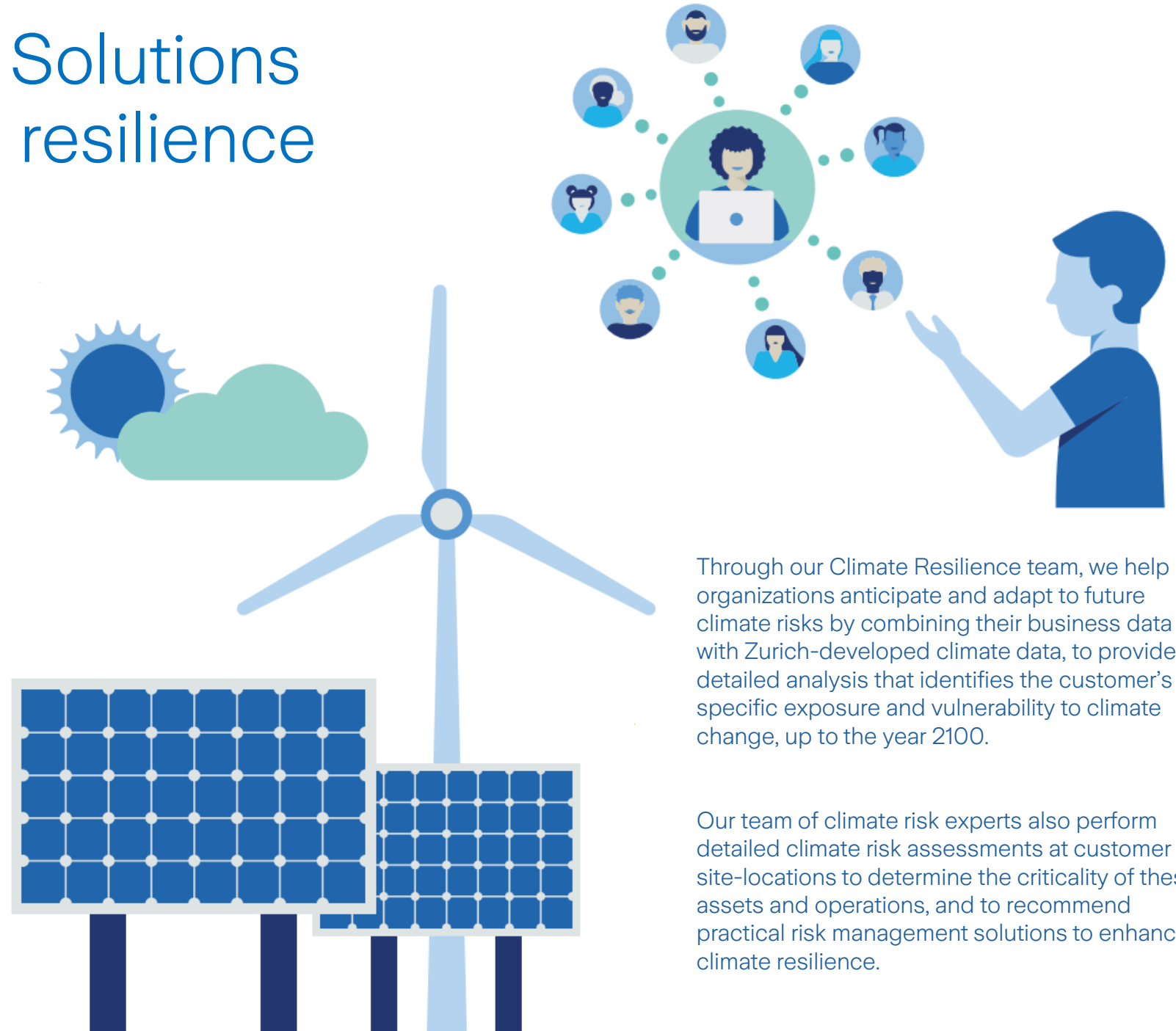
The case for investing in climate resilience is clear: According to the Global Commission on Adaptation, every USD 1 invested in climate resilient infrastructure can yield USD 4 to USD 10 in economic benefits.

Zurich Resilience Solutions

Experts in climate resilience

Established in 2020, Zurich Resilience Solutions (ZRS) is the risk consultancy business of the Zurich Insurance Group, providing organizations with specialist insights and advice on how to minimize and prevent the risks they face – including climate change.

We have been built from 75 years of risk engineering experience, and 150 years of risk and insurance knowledge and expertise. We have a global team of more than 950 risk experts and consultants, carrying out 60,000 risk assessments per year, with a specialist team focused specifically on Climate Resilience.



Through our Climate Resilience team, we help organizations anticipate and adapt to future climate risks by combining their business data with Zurich-developed climate data, to provide a detailed analysis that identifies the customer's specific exposure and vulnerability to climate change, up to the year 2100.

Our team of climate risk experts also perform detailed climate risk assessments at customer site-locations to determine the criticality of these assets and operations, and to recommend practical risk management solutions to enhance climate resilience.

Identify, assess, mitigate and adapt to climate change-related risks

Your Challenges

Risk of physical impact from extreme climate events

There is a potential increase in both likelihood & severity for climate related events. These can be modelled for different climate scenarios and time horizons, underpinned by Zurich's proprietary climate data.

Climate adaptation measures to prevent financial loss

It is important to identify and protect the critical parts of your operations against these events and build resilience for the future.

Regulatory requirements and stakeholder expectations

Apart from the regulatory demands, your customers, investors and employees expect organizations to demonstrate their ability to adapt and protect against climate risks, to protect the financial sustainability of the business in the long-term.



Our Solutions

Bring clarity and simplification through our own climate models

We assist you in navigating complex climate data and help you to understand the specific hazards and perils at your facilities.

Combine climate adaptation measures and financial impact

We quantify the potential cost of different loss scenarios and provide recommendations to mitigate these risks by adapting your assets and operations.

Insights to support regulatory reporting

Our Climate Resilience assessment output can be used as an input to fulfil your climate-related regulatory reporting requirements.



Site-level climate risk assessments

Bringing together a team of Climate Resilience experts, we offer a suite of site-level climate risk assessment solutions for our customers. These are designed to help you develop an in-depth understanding of the potential impacts that present-day natural hazards, and forward-looking climate risks may have on your assets, operations, people and critical infrastructure. Our experts provide customized and practical recommendation to adapt your assets and mitigate risk.

Outputs from our reports not only help inform you on what climate resilience measures are required to build resilience to climate change, but can also be utilized in your sustainability and climate risk reporting requirements.



Climate risk quantification per location and proposed adaptation measures

Bespoke site-level assessments, desktop reviews or onsite visits by specialized climate risk consultants

Practical recommendations to adapt your assets and operations to climate change.

A comprehensive approach to climate data analysis for site-level risk assessments

Climate Data Analysis: This is the foundational step for all site-level assessments.

Utilization of ZRS Climate Hazard Data Models**:

- Identify material hazards specific to the site.
- Tailor assessments to understand exposure, vulnerabilities, and necessary controls.

Incorporation of Climate Scenarios and Time Horizons**:

- Use selected climate scenarios.
- Consider both current and future climate conditions.
- Integrate climate resilience measures based on these scenarios.

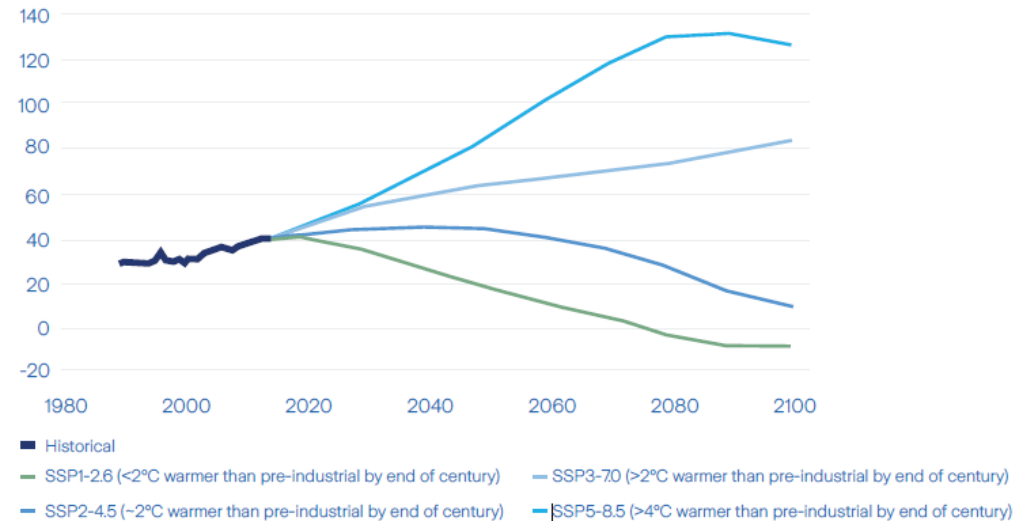
This approach ensures a thorough understanding of a site's physical climate risks and helps to devise effective resilience strategies.

Our analysis is based on:

- 11 climate perils: these include Flood (pluvial and fluvial), Windstorm, Precipitation, Storm Surge, Hail, Heat, Cold, Drought, Tornado, Wildfire and Sea Level Elevation. (All based on Zurich Climate Data).
- 3 non-Climate perils can be included: Earthquake, Tsunami, Volcano (ash).
- As part of physical on-site assessments, we can also expand the analysis to include subsidence and landslide. (This will be dependent on availability of good quality reliable open-source and local hazard maps or from site findings).

Available climate scenarios and time horizons

Four climate scenarios



Four time horizons

Current	
Near	2015-2045; average 2030
Medium	2045-2075; average 2060
Far	2070-2100; average 2085

Site-level solutions to adapt to climate change

Greenfield Sites

The assessment will allow you to understand the impact both current natural hazards and future climate hazards (based on the selected climate scenarios and time horizons) may have on a planned acquisition or investment.

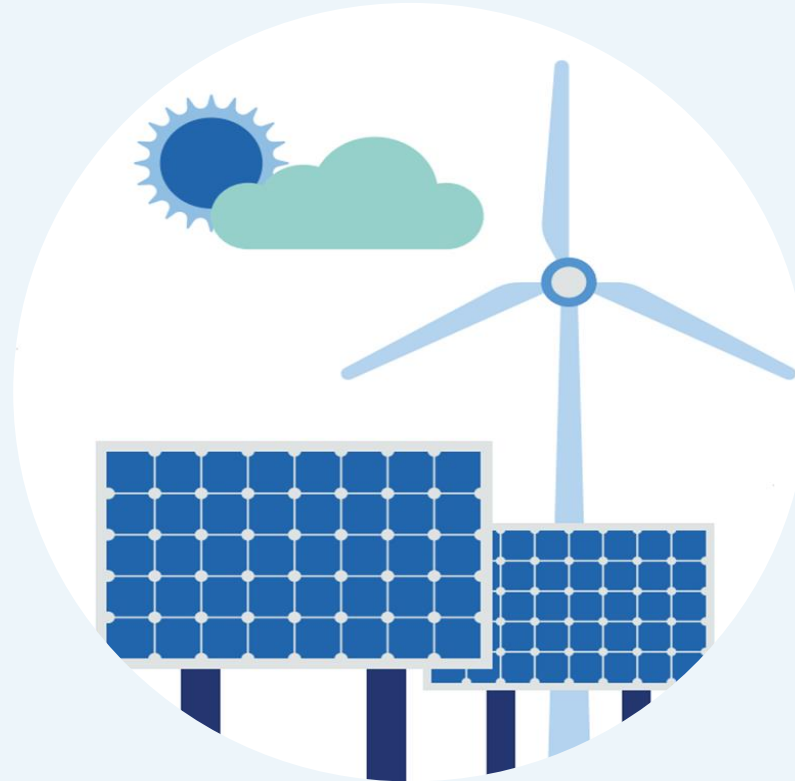
The study will help inform site selection, design of new buildings, operations, infrastructure resilience measures required across the planned lifespan of the development.

Desktop Assessments:

The desktop assessments are the starting point for understanding and assessing what is exposed to the current natural hazards and future climate hazards, assessing adequacy of controls, and what resilience measures may be required both now and in the future.

The assessment is a remote analysis which considers the highest hazard levels material to the value chain and how these may impact the site-specific criticalities. The assessment utilises available property fire reports, site information provided by you and where applicable and available open-source data.

We can develop high level loss scenarios and loss estimates to assist your in decision making and prioritization of climate adaptation and resilience measures.



Physical On-Site Assessments

The on-site assessments allows you to fully understand the impact of physical climate hazards on the specific site. It allows for an in-depth analysis of your sites value chain, criticalities, and controls.

Loss scenarios and estimates are incorporated and are based on the identified site criticalities. Scenarios and estimates are considered for both current natural hazards and future climate related scenarios and time horizons.

Climate resilience and adaptation measures are based on this detailed assessment.

Climate Hazard Snapshot:

The assessment shows the evolution of the hazard level from the baseline (year 2020), over the selected time horizons and climate scenarios. The snapshot can be used to identify those hazards which may require further investigation to determine the property's vulnerability and resilience levels.

The Climate Hazard Snapshot only provides an overview of the climate hazards associated with this location; however, it does not consider the vulnerabilities or controls which exist for the location.

Take the next step on your climate resilience journey today.

Get in touch with one of our Climate Resilience experts for a free consultation.

Contact us [here](#)

You can find more information about our Climate Resilience solutions on our website.

Visit our website [here](#)

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