

The Climate Change Challenge



Foreword

We are facing up to the immediate challenges of a global emergency. The climate change emergency. While the COVID-19 pandemic is urgent and immersive, it is not the only global emergency public service organisations are acting on now.

A UN climate statement on 23 April 2020 contained an important reminder: 'The climate emergency has not taken time off for the coronavirus ... 2020 remains critical for making progress on climate change'.

The cost of inaction far exceeds the cost of action. We want this whitepaper to start a conversation in all organisations on what is being done, and what can be done, to manage this risk and address the human and environmental impacts of climate change.

Globally 2019 was the second-hottest year on record. From the extensive wildfires in Australia, to devastating flooding in Britain, the manifestations of climate change are evident and are continuing in 2020.

As a global insurance business, Zurich has witnessed more extreme weather and climate related events – and the increased costs. In 2019, hurricanes, wildfires and floods cost the world \$150 billion. Yet even these catastrophic events do not fully express the extent of environmental risk facing the world today.

Climate change related risks are dynamic. Over the past year many aspects have shifted rapidly: particularly policy-making and public sentiment. All organisations are now considering the climate impact of decisions and are developing holistic strategies to build resilience.

Organisational culture should embed de-carbonising services, building resilience and managing physical risks. We have to respond well to extreme events through consistent, effective recovery plans.

Zurich is a company with sustainability at the heart of its business. Within our organisation we make a difference through our responsible investment approach and we are swiftly reducing our carbon footprint. **We are proud to be the first insurer to commit to the UN Global Compact's Business Ambition for 1.5°C.**

We work with our customers to enable them to respond to the climate agenda through risk reduction, preparedness and resilience. We continue to help our public service customers and their communities become more resilient to natural disasters and extreme weather.

Andrew Jepp,
Managing Director, Zurich Municipal



Climate change action failure is the number one risk by impact in the **World Economic Forum's Global Risks Report 2020**, up from number two in 2019. It is also the number two risk by likelihood, with extreme weather as the top risk, as it has been every year since 2017.

Climate risk action

Climate change is interconnected with other global risks and is a multistakeholder challenge. Its long-term and systemic nature can make it difficult for organisations to take immediate and urgent risk management actions, even though they are crucial.



Risk management responses to climate change risks can be grouped into four overarching categories:

- Responses to physical risks;
- Transition risks;
- Liability risk (which is evolving quickly);
- Opportunities to do things differently.

A solid, climate protecting foundation enables organisations to change over time. It informs business strategy, resource allocations, good practices and new ways of working. A review of upcoming operational, investment and policy decisions will identify immediate opportunities to embed climate action.

Today's risks must be considered, but just as important are those of tomorrow and what may emerge in the future. It is difficult to plan thirty years ahead, but all climate change strategies require advanced thinking well into this century.

“
Identify and prioritise climate change risks and develop metrics and strategies to manage them.”

The climate change imperative has been with us for some time. By now organisations may have developed and agreed a strategic plan. In 2020, all organisations should be considering and acting on:

1. Exposure and impact;
2. A transition timetable;
3. A framework to talk to other organisations;
4. Future resource and funding requirements;
5. Procurement and compliance changes;
6. Investment opportunities and alignments;
7. Asset and infrastructure updates;
8. Supply chain implications;
9. A changing risk profile;
10. Risk transfer options.

The pandemic crisis has shown just what can be done, and how quickly, locally and nationally, in reaction to a global emergency. What we may have viewed as unthinkable just six months ago may be achievable now. We need to mobilise with equal vigour on climate change.

Zurich advocates three crucial steps for organisations to develop a climate resilience adaptation strategy:

1. Identify the broad organisational and strategic risks – understand where your vulnerabilities are and your exposure to hazards, or risk triggers;
2. Develop a granular view of the risks involved – involve modelling of both physical and transition risk impacts; like individual locations, or specific activities, including services and outputs;
3. Develop a mitigation strategy – involve insurance if appropriate. Develop resilience strategies, either through physical risk adaptation, or by changing business models and activities to address transition risks.

Physical resilience

Risk activity can be used to inform and develop adaptation strategies to the physical risks of climate change. This has a broad reach, encompassing an understanding of the physical impacts on other elements, including supply chain risks, future funding and investment choices.



Adapting to the physical consequences of climate change is a responsibility for all organisations. The tangible implications of climate change, such as flooding, extreme weather, coastal erosion, wildfires, drought and subsequent damage to the environment are felt locally. Localised environmental risks will heighten, along with the need for communities to display resilience.

Extreme reaction

Modelling from governmental, meteorological and climate change bodies is vital to frame risk analysis at a local level. Traditional methods of calculating physical risk, especially flood threat, should be considered alongside

the impacts of extreme weather events in recent years. Storms and flooding will be top of mind in the UK after the long, wet autumn and winter of 2019-20.

We will experience more frequent and more extreme weather events, with longer periods of rain and drought. Spring and summer will become drier and hotter, while autumn and winter are predicted to become milder and wetter. These changes provoke environmental stress and human hardship. For example, the record-breaking hot summer of 2018 gave us a glimpse of increasing heating trends, with accompanying risk of outdoor fires, recurrent droughts, environmental damage and public health issues.

Physical risk analysis

- Think about current and future risk and ensure your resilience measures can respond;
- Ensure all strategies, plans and programmes of work are future proofed against physical risks;
- Confer with local partners on physical resilience solutions and ensure they are community based;
- Review design and build and material use for physical resilience.



Community first

Extreme events do not abide by civic boundaries and the effects are not limited to certain types of organisation. Cross-agency, cross-border and supply chain resilience planning is fundamental. Community resilience is everyone's responsibility and can be strengthened by individuals, organisations and sectors working together.

Local government sits at the heart of this, with executive teams and councillors ensuring commitments are met, driving culture change. The public sector, along with companies (like water utilities), grassroots organisations (like voluntary groups) and education institutions (like universities) can take action together on every level of resilience. Essential action should be led by community needs. It can include elements as wide in scope as: targeted advice to vulnerable groups, effective warning systems, discreet allocation of resources, smart technology and equipment, and at its foundation, local level partnership working.

There is some evidence that the most disadvantaged and disconnected communities will suffer the most harm from climate warming. Current disparities in wealth, health, lifespan and lifestyle will increase without intervention. Geographical areas and the people within them will become disconnected on every level.

Public service organisations and charities are in prime positions to help, but they may have to do something different to make a difference for the deprived and the vulnerable. They may need additional assistance with heat poverty, health issues and the cost of food. For example, what kind of engagement, incentives and practical solutions will increase the uptake of alternative energy solutions in homes?

A first step is to find out how the needs of the hard-to-reach are being met by your organisation. Importantly, how visible is this work and how is it being used to influence in your area?

Organisations can lead the way with exemplary behaviour, and importantly, share knowledge and experiences with partners, showing what is transferable across services and areas.

The physical assets and built environments of every organisation providing services should help create community resilience. Future-proofing property and landscapes can be complex and costly but long-term benefits will outweigh current investment. The new norm of COVID-19 measures may provide opportunities to rekindle projects to this end. Government impetus, with legislation like **Future Homes**, the **25 Year Environment Plan** and the **Environment Bill** and post-Brexit mechanisms, along with incentives to support the green economy (like **RHI schemes**) frame the direction of travel.

Climate change liability

Liability is the risk of actions initiated by claimants suffering loss and damage from climate change. Climate change related liability risk is evolving as awareness of issues and impacts increase. Litigation has been tested in the US, with numerous cases claiming damages in product liability and nuisance against fossil fuel companies. Elsewhere there are cases claiming damages in tort, violation of fundamental rights, and greenwashing.

In September 2019 **ClientEarth** warned 100 UK local authorities of possible litigation. The **National Planning Policy Framework** requirement is to: "adopt proactive strategies to mitigate and adapt to climate change, taking into account flood risk, coastal change and water supply and demand. Each and every planning decision taken today must be in line with long-term climate goals, because what and how we build today will determine our climate impact and resilience in the crucial decades to come".

Organisations must consider short, medium and long-term risks and consequences of decisions regarding climate change impacts. As we saw with the **Heathrow third runway decision**, failure to pay due regard to regulations and legislation has the potential for increased judicial reviews on planning, environmental and development projects.

Transition challenges

Transition risk centres on mitigation of greenhouse gas emissions and revaluation of assets and policy adjustments. Risks can be acute if shifts occur hastily, with short-term goals, without inbuilt sustainability, and without proper safety nets for vulnerable communities.

Any transition is difficult to manage. Transitions can be resource intensive – especially those requiring a societal shift. The changes needed to decarbonise are fundamental and affect every part of our lives. Those delivering public services and providing community infrastructures have a broad role, from helping to change attitudes on how we live our lives, to changing the way we heat our homes. A clear understanding of the goals of transition and the unintended consequences of even well-meaning policies, helps focus and mitigate transition risks.

The zero-carbon transition

The zero-carbon transition is driven by changes in public awareness of carbon footprints, perceptions of carbon intensive industries, new public policy, new technologies and changing consumer sentiment. Transitioning to a low-carbon economy brings risks and opportunities.

The climate action impetus accelerated in 2019, driven by youth activism and global consciousness. It continues, regardless of or even because of the pandemic. Given the generally accepted decade deadline to act, public expectations are to see economic and societal transitional progress within a short time frame.

“Organisations must decarbonise and innovate to address transition risks, while building resilience to physical risk.”

Doing things differently

It could be said the biggest transition challenge is gaining social understanding and acceptance. Social housing providers, for example, will need to influence partners (like development companies) and stakeholders (like local and central government), as well as residents, to adapt to not only new housing, but new ways of living. Education is essential but goes much further than handing a resident a leaflet on how to use their new home.

The pandemic has shown us that we can do things differently if it is urgent, obvious and personal, but it is more difficult to make longer term commitments to wholesale lifestyle changes. Life and death emergencies can impose behaviour changes on people, while climate change transition will need to be supported by meaningful incentives. Undoing centuries of how we build and live in homes will require both carrot and stick mechanisms.

Technology will underpin the transition to zero carbon communities. Climate change technologies are developing at pace and transition strategies should be agile in their response. However, it is crucial when choosing the next generation of technology, to accept it may be transitional, and to factor in realistic lifetimes to new investments.

Procurement will have a great influence on an evolving green economy. Commissioning partnerships across sectors and regions can back new ideas, research and development, and product lines. Partnerships can be a significant force for good, encouraging niche industries, supporting new skills development and home-grown supply chains.

Alongside the risks, the next decade brings tremendous opportunities. Strategies can capitalise on breakthroughs like climate-proofing infrastructure, closing the insurance protection gap, and scaling up public and private adaptation finance.

Part of the challenge of decarbonising is that the most complex and costly strategies tend to be those that make the most difference. Creating enough carbon neutral affordable public transport systems to permanently reduce private journeys by at least 20% (from pre-COVID-19 levels), plus investing in housing insulation and heat pump technology innovation and manufacture, for example, are long-term goals. These will have significant impact on a community's total carbon footprint.

Mitigation activities may initially include relatively low hanging fruit, including switching to green energy tariffs, introducing low-energy street lighting, installing motion detectors on lights, and insulating buildings; but these are relatively small steps.

Some public service organisations lead the way, with ambitious large-scale, long-term projects, from renewables-based district-wide heating, to hydrogen vehicle refuelling stations. Some are focusing on changing behaviours, with far-reaching communications and influencing campaigns, so amenities like cycleways and offers like subsidised solar panels are used better.

Opportunity knocks

UK organisations play a crucial role in delivering carbon emission reductions. Big savings can be made on transport and buildings, development and planning, energy production and use, waste and green spaces, and procurement and compliance.

Education

Younger generations are the conscience and the influencers on climate change. Educators need to reflect their students' understandable concerns about the state of the world and their futures in it. Education institutions – at all levels – should be resilient and embed climate change transition into their operation and their teaching. Education should be the driving force to change behaviours.

Higher education is leading the way through extensive consultation exercises and inter-connected strategies, using research resources and academic tools.

With an informed and active young customer base, universities are primed to fulfil action plans and meet stretching targets. They have to be environmentally sustainable and climate change resilient to retain and recruit students and to attract research funding in a competitive market.

Business advantages include additional student recruitment and importantly, reputational gain among staff, students and alumni, as well as partners. In fact, the reputational cost of not engaging in the climate change agenda properly, quickly and

visibly, could be considerable for universities.

All education institutions should act now to meet climate change challenges, as well as the expectations and demands of young people. They can reap the practical rewards of long-term savings from mitigation and adaptation, and work with multi-sector partners, sharing expertise, procurement and resources to support place-based strategies.

Educators have a once-in-a-lifetime opportunity to create a new legacy.

Sustainable buildings

All buildings provide decarbonising opportunities, but the spotlight is on homes, where the most obvious gains can be made. Residential activity across all sectors is under scrutiny for effective and timely climate change action. Owners and developers can meet the challenge, re-imagining housing – old and new – while improving lives and regenerating communities. Exemplary homes' strategies limit emissions, adapt fast and prioritise resilience against present and future extreme weather risks.

With a decarbonising mitigation strategy of improved energy efficiency and emission reduction comes adaptation prospects to make homes warmer in the winter, cooler in the summer, and flood and storm resilient. The nascent Future Homes Standard sets out what is required, with new build implementation by 2025. Any new home deemed to be standing in 2050 (when the UK will become a net zero carbon emitter) will need to conform now. It makes sense for any refurbishment or retrofitting planned in 2020 to exceed minimum standards and be future-proofed.





Property potential

The UK's internationally agreed climate change targets will not be met without almost complete elimination of greenhouse gas emissions from UK buildings. For any organisation with a property portfolio, the move to non-carbon heating and energy systems is the biggest single transitional investment risk.

There are operational considerations:

- Fitting appropriate technology to specific buildings;
- Contractual agreements with new supply chains (including start-ups);
- Commissioning installations – with minimal knowledge and skills shortages;
- Building supporting infrastructure;
- Teaching new systems to tenants, employees and citizens



In 2018 residential properties were responsible for producing around 15% of the UK's greenhouse gas emissions.”

Modern Methods of Construction (MMC)

Housing providers should be having realistic conversations about the best ways of building. Traditional brick and block construction is being superseded by MMC. The speed and cost of build is alluring, and MMC's carbon credentials appear persuasive, but just how safe and sustainable is it?

Look at all aspects of risk inherent in MMC through all phases of a building's lifecycle.

Consider the total cost of sustainability, including:

- Build standards – lack of evidence on long-term quality, skills and knowledge shortages, lack of technical oversight;
- Longevity – relatively short lifetimes of MMC buildings. Factor in rebuild costs – financial, societal and environmental;
- Combustibility – timber framed structures, hidden voids, greater destruction and disruption;
- Escape of water – lightweight materials less resilient to water, replacement of pre-fabricated components, poor detection in pods, greater disruption;
- Weather-related risks – lightweight materials less resilient to water, storm and wind damage, greater disruption;
- Effective maintenance – poor defect detection in pods (kitchens and bathrooms), replacement of pre-fabricated components, greater disruption.



The Climate Change Commission¹ is confident that opportunities to meet the UK's commitment to reach net-zero emissions by 2050 are economically and technically viable and are there for the taking. Essential components include:

- Low-carbon electricity – supply must quadruple by 2050;
- Efficient buildings and low-carbon heating – throughout the building stock;
- Electric vehicles;
- Carbon capture and storage CCS;
- Diversion of biodegradable waste from landfill.

Charities and social organisations

At all levels the third sector can make a difference. Many organisations are actively involved in lobbying for restrictions of man-made climate change, and others are managing the human, animal and environmental consequences of a warming world. Charities' campaigning on immediate action has been a galvanising force in recent years, although many have been the leading global voices for decades. Voluntary and community groups work tirelessly to make tangible differences locally.

Charities can be an influential force for change, they are:

- Managing property and land – innovating to mitigate and adapt to climate change, from retrofitting heritage buildings with carbon neutral heating to employing natural flood defences;
- Managing investments and donations in line with core commitments and ethical stances on climate change;
- Delivering services sustainably and ethically to the public sector – taking social responsibility, promoting their climate resilience credentials and protecting reputations;
- Making a positive difference to the climate as part of their remit.

Charities can help tackle the human cost of climate change. All third sector organisations should be socially responsible, follow best practice, and rise to the challenge.

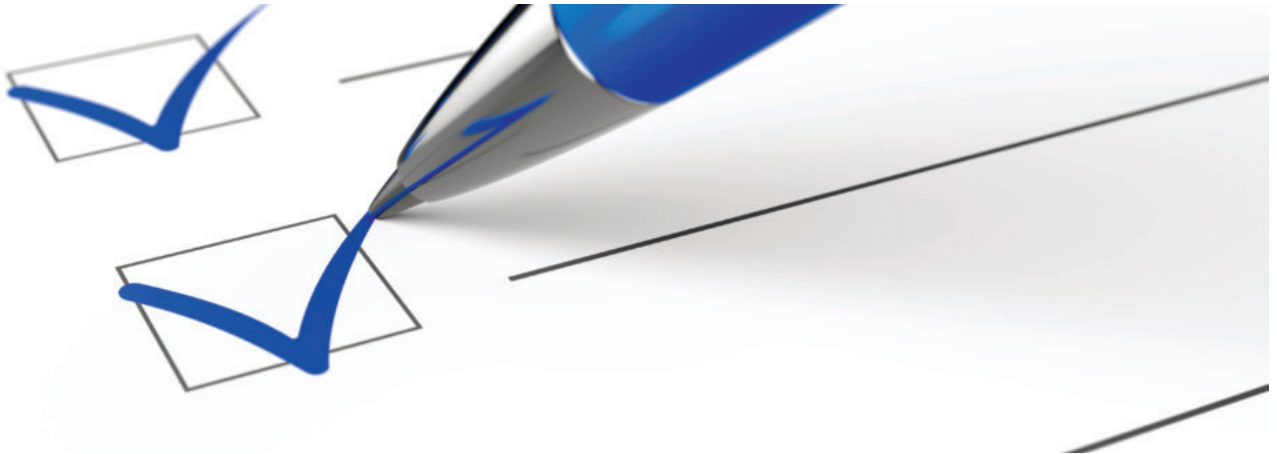
What's next?

Be ready to seize opportunities, fulfil potential and deal with challenges head on:

- Take action now where you can. Introduce climate action into every conversation;
- Make sure mitigation, adaptation, resilience, response and sustainability are discussed when assessing any risk management, plan, programme, investment or contract;
- Influence on changes to regulations, standards, policies and targets;
- Question decisions that have climate warming consequences;
- Develop standards, codes, plans, policies and programmes to encompass climate change(s);
- Work with partners, stakeholders, citizens and residents towards creating zero carbon communities;
- Manage existing supply chains and contracts. Establish carbon credentials of partners and suppliers. Develop alternatives to existing supply chains and utilities;
- Strengthen the physical resilience and sustainability of assets.

Climate action checklist

This is your checklist for change:



- ☐ **Procurement** – ensure procured goods and services have climate change principles at their heart and aim to only work with providers who can assist you to achieve your aims and objectives.
- ☐ **Compliance** – meet and exceed design standards and emissions targets.
- ☐ **Investments** – ensure pensions and commercial investments meet organisational, local, sector and national climate change commitments, ethical standards and environmental targets.
- ☐ **Training & employment** – support training and employment to fill skills gaps, explore redeployment, and enable the volunteer force. For example, in new technologies, renewable energy, and housing design and construction.
- ☐ **The green economy** – support innovation, investment, manufacture and expansion.
- ☐ **Existing assets** – ensure they are low-carbon and resilient to climate change and impacts. For example, retrofitting homes with non-carbon heating, siting servers and electronic data storage in cool buildings, creating flood defences for immovable assets.
- ☐ **New assets** – make them efficient, resilient, and future-proofed. For example, new homes should be carbon neutral, water-efficient, and cold, heat and flood resilient. There should be no flood plain development, unless long-term risk mitigation is identified and delivered.
- ☐ **Infrastructure** – align infrastructure plans and projects to climate change commitments and ambitions. Ensure plans for transport expansion (roads, rail and air) are compliant. Prioritise sustainable projects and those offering resilience against climate change effects, like flood defences and alleviation. Offset major development with environmental compensation; tree planting, rewilding, green space creation.
- ☐ **Planning** – influence and oversee new development sites, land use and climate change adaptations and mitigations. For example, deter flood plain and green field development, encourage brown field developments, influence use of attenuation ponds and SUDs, manage paving over front gardens.
- ☐ **Building standards** – enforce building and planning permissions to ensure all developments exceed standards and meet long-term targets.
- ☐ **Funding** – take advantage of low borrowing rates, freer access to public funds for capital infrastructure, discreet climate change funds, raising money for projects and programmes, and partnership funding.
- ☐ **Partnerships** – cross-sector programmes of work and local influencing. For example, public transport, infrastructure, energy creation and house building.
- ☐ **Parks and open spaces** – outside space use will increase with milder winters and hotter, drier summers. Create well-shaded green spaces and community woodlands. Provide wildlife areas and promote biodiversity. Provide allotments and garden projects for growing food.

Signposts

Research has shown time and again that organisations supporting communities cannot respond effectively to climate change challenges unless they take action now.



The UK Climate Impacts Programme, based at Oxford University, provides support to organisations across the UK to help them understand the risks of climate change and ways to adapt.

www.ukcip.org.uk

The NDP is a unique partnership of eight organisations that support local authority action on climate change adaptation and mitigation. Each of the partners individually offers support and advice for councils on climate change. They also jointly provide combined adaptation and mitigation tools for local authorities and their partners. The Nottingham Declaration Website

<https://local.gov.uk/environment-and-housing-climate-change-nottingham-declaration-consultation>

The Climate Coalition is the UK's largest group of people dedicated to action on climate change and limiting its impact. The coalition is made up of over 140 organisations with a combined supporter base of 22 million, including WWF, National Trust, RSPB, Christian Aid, CAFOD, The Women's Institute and Oxfam.

theclimatecoalition.org

The Priestley International Centre for Climate. Based at the University of Leeds, the Priestley Centre aims to provide international solutions to the global challenge of climate change through new interdisciplinary research partnerships that better link our physical, technological, economic, and social understanding of climate change with strategies for mitigation and adaptation.

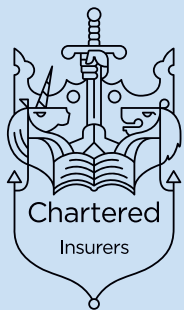
climate.leeds.ac.uk

How Zurich Municipal can help

Our teams of specialist risk consultants cover all risk aspects from physical, property related risks to strategic, organisational risks, ready to support our customers as they consider their climate risk profile. We are actively lobbying on key climate areas and welcome all conversations and discussions on how we, with our customers, can respond to ensure climate action is at the core of what we do.

To discuss any aspect of this whitepaper further, or for more information:

info@zurichmunicipal.com
or call us on **0800 335 500**



We are **Chartered Insurers**, publicly committed to a customer-first approach and values that align with a professional Code of Ethics. We'll provide solutions relevant to your needs, maintaining our knowledge through qualifications and ongoing professional development.

Zurich Municipal is a trading name of Zurich Insurance plc, a public limited company incorporated in Ireland. Registration No. 13460. Registered Office: Zurich House, Ballsbridge Park, Dublin 4, Ireland. UK Branch registered in England and Wales. Registration No. BR7985. UK Branch Head Office: The Zurich Centre, 3000 Parkway, Whiteley, Fareham, Hampshire PO15 7JZ.

Zurich Insurance plc is authorised by the Central Bank of Ireland, and authorised and subject to limited regulation by the Financial Conduct Authority. Details about the extent of our authorisation by the Financial Conduct Authority are available from us on request. Our FCA Firm Reference Number is 203093.