



The case for climate governance assurance

One of the biggest risks facing organisations is climate change and adapting to the emerging low-carbon economy. The challenge is that its impacts are mainly beyond the risk horizons that most organisations work within.

Presented with the challenge, climate risk feels too big, too distant to manage. But it is not someone else's problem. It is for every individual, organisation, institute, government and internal auditor to manage.

It will impact your organisation, perhaps it is already. If not today, then possibly within your lifetime but certainly that of millennials and their children.



What will your personal legacy be to those who come after you?

Is your organisation being proactive or waiting for legislation to force its hand?

Risk in Focus 2019 highlighted that climate change was one of the least audited areas, the situation improved slightly for **Risk in Focus 2020**.

What assurance can internal audit provide over identification and management of this risk?

What more could you be doing?

In May 2019, parliament followed the lead of over 90 councils and cities in the UK in declaring a climate emergency. It represents a desire to be carbon-neutral by 2030: an ambitious goal exceeding the government's current carbon targets.

Your role as an audit leader is to determine the assurance needs for your organisation. Understanding the environment in which it operates is an important part of this.

In this piece, we take a look at some of the latest climate information and offer suggestions on how to make climate assurance part of the audit plan.

View from the experts

Climate change sceptics argue that global warming is part of a natural cycle. This is true. For the last 3 million years, Earth has fluctuated between periods of glacial (cooler) and interglacial (warmer) temperatures. These cycles last for thousands of years. We are currently in an interglacial period that began circa 20000 years ago.

Aside from the natural variability, there is overwhelming evidence, summarised in a United Nations intergovernmental report that human activity also contributes to the variability and is forcing the rate of change.

The average global temperature, according to NASA, has risen by 0.8°C since 1880, two-thirds of this since 1975. Although we are used to huge variations in our daily weather, this number is different and far more significant. Global temperatures relate to the amount of the sun's heat that we retain. It is influenced by the chemical composition of the atmosphere – including greenhouse gases. Geologists have evidenced that a small drop of 1-2°C led to a cooling of the northern hemisphere between c1300-1850 which enabled the great frost fairs on the frozen River Thames.

The UK had a glimpse of the predicted future in 2003 when a record high of 38.5°C was recorded in Kent. Lord Krebs, chair of the Committee on Climate Change, warns: “what we now think of as an extremely hot summer, where people are dying of heat stress and it is extremely uncomfortable in homes, hospitals and much of transport, that is likely to be a typical summer by the middle of the century and would be a cool summer in the 2080s.”

International agreements

According to the 2019 World Economic Forum global risks report, the top risks facing the world in the next 10 years are environmental. Click table below to expand.

Top 5 Global Risks in Terms of Likelihood					Top 5 Global Risks in Terms of Impact				
	2016	2017	2018	2019		2016	2017	2018	2019
1st	Large-scale involuntary migration	Extreme weather events	Extreme weather events	Extreme weather events	1st	Failure of climate-change mitigation and adaptation	Weapons of mass destruction	Weapons of mass destruction	Weapons of mass destruction
2nd	Extreme weather events	Large-scale involuntary migration	Natural disasters	Failure of climate-change mitigation and adaptation	2nd	Weapons of mass destruction	Extreme weather events	Extreme weather events	Failure of climate-change mitigation and adaptation
3rd	Failure of climate-change mitigation and adaptation	Major natural disasters	Cyber-attacks	Natural disasters	3rd	Water crises	Water crises	Natural disasters	Extreme weather events
4th	Interstate conflict with regional consequences	Large-scale terrorist attacks	Data fraud or theft	Data fraud or theft	4th	Large-scale involuntary migration	Major natural disasters	Failure of climate-change mitigation and adaptation	Water crises
5th	Major natural catastrophes	Massive incident of data fraud/theft	Failure of climate-change mitigation and adaptation	Cyber-attacks	5th	Severe energy price shock	Failure of climate-change mitigation and adaptation	Water crises	Natural disasters

In 1992, 195 countries ratified the United Nations Framework Convention on Climate Change. It was the first

and is the main international agreement on climate action enabling countries to work together to limit global temperature increases and climate change, and deal with their impacts.

Increased understanding led to two amendments:

- Kyoto Protocol a 1997 legally binding emission reduction targets for developed countries. It includes the Doha amendment to reduce emissions by 2020 by at least 18% below 1990 levels (20% in the EU).

Only 38 countries signed up to this (14% of global emissions) including the UK.

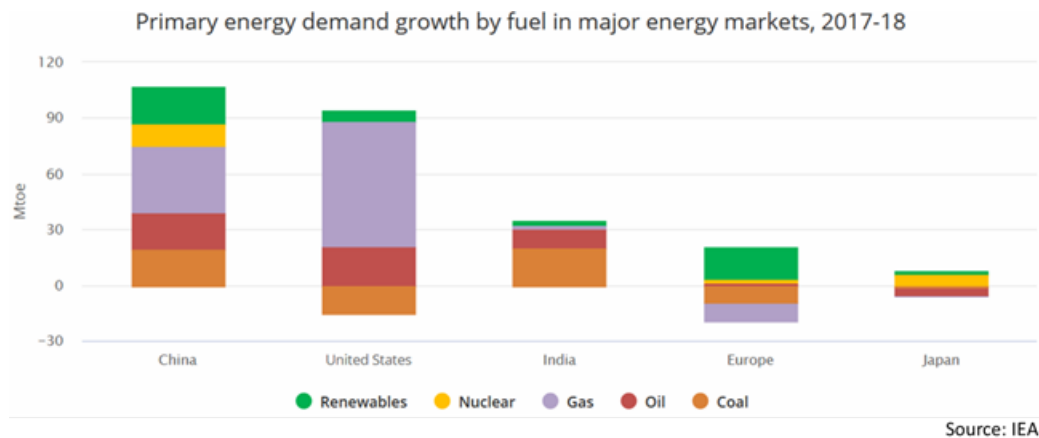
An additional 70 countries have committed to non-binding reduction commitments.

- The Paris Agreement in 2016 set the ambitious goal of limiting global warming to well below 2°C while pursuing efforts to limit the increase to 1.5°C.

195 countries have signed up (55% of global emissions) including the UK.

According to the Intergovernmental Panel on Climate Change, to limit warming to 1.5°C will need CO₂ emissions to be about 45% of 2010 levels by 2030. Even limiting global warming to 2°C will require nothing less than transitioning to a carbon-neutral economy by the middle of this century.

The International Energy Agency **report** showed that global energy consumption in 2018 increased at nearly twice the average rate of growth since 2010, driven by a robust global economy and higher heating and cooling needs in some parts of the world. Consequently, CO₂ emissions rose 1.7% last year and hit a new record.



What is the UK doing?

The Climate Change Act 2008 positioned the UK as an international leader in its response to how the country would tackle the issue of climate change.

An amendment in 2019 sets an ambitious commitment to reach net zero carbon emissions by 2050, making the UK the first member of the G7 (major economies) to legislate for net-zero emissions.

The original 2008 target was to reduce greenhouse gas emissions by at least 80% of 1990 levels by 2050. To meet these targets, the government sets carbon budgets to restrict the amount of greenhouse gas the UK can legally emit in a five-year period. They are set at least 12 years in advance.

Carbon budget	Level	Reduction	Progress
1st 2008 to 2012	3,018MtCO ₂ e	25%	Met
2nd 2013 to 2017	2,782MtCO ₂ e	31%	Outnumbered
3rd 2018 to 2022	2,544MtCO ₂ e	37% by 2020	Outperforming
4th 2023 to 2027	1,950MtCO ₂ e	51% by 2025	Behind
5th 2028 to 2032	1,725MtCO ₂ e	57% by 2030	

Interestingly, in her **speech** to MPs in May 2019, Greta Thunberg, the young climate change activist, accused the UK of creative carbon accounting as official figures had not included those relating to aviation, shipping, imports and exports.

Latest projections suggest the UK will fall short of its decarbonising targets for 2032. Government subsidies for the fossil fuel industry are the highest in the EU and almost 25% higher than for renewables. Coal generated energy is due to be phased out by 2025, although gas currently provides most of the energy.

The majority of the UK's greenhouse gas emissions arise from the production and consumption of energy: driving cars, manufacturing goods or simply boiling a kettle. Emissions can be lowered by becoming energy efficient and by switching to low-carbon fuels. To achieve targets will probably require strict decarbonising of the economy.

In March 2019, the Prudential Regulatory Authority and Financial Conduct Authority created a **Climate Financial Risk Forum** with an objective to build capacity and share best practice across financial regulators and industry to advance financial sector responses to the financial risks from climate change. The financial services sector recognises there are barriers to implementing the forward-looking, strategic approach necessary to minimise climate risks. The forum aims to reduce these barriers by developing practical tools and approaches to address climate-related financial risks.

The government is required to publish a UK-wide Climate Change Risk Assessment every five years to assess 'the risks for the United Kingdom from the current and predicted impacts of climate change'. The 2nd **report** in 2017 identified that the majority of risks still required further action or even research to mitigate them sufficiently.

2017 assessment of the top six areas of inter-related climate change risks for the UK

Flooding and coastal change risks to communities, businesses and infrastructure (Ch3, Ch4, Ch5, Ch6)	MORE ACTION NEEDED
Risks to health, well-being and productivity from high temperatures (Ch5, Ch6)	
Risk of shortages in the public water supply, and for agriculture, energy generation and industry (Ch3, Ch4, Ch5, Ch6)	
Risks to natural capital, including terrestrial, coastal, marine and freshwater ecosystems, soils and biodiversity (Ch3)	
Risks to domestic and international food production and trade (Ch3, Ch6, Ch7)	
New and emerging pests and diseases, and invasive non-native species, affecting people, plants and animals (Ch3, Ch5, Ch7)	RESEARCH PRIORITY
NOW -----> RISK MAGNITUDE -----> FUTURE <div>LOW</div> <div>MEDIUM</div> <div>HIGH</div>	

Note: The individual risks that make up these six risk areas may score differently in the *Evidence Report*, but contribute to the overall urgency assessment of that group of risks. Future magnitude is based on a combination of climate change and other drivers of risk (eg demographic change), taking into account how current adaptation policies and plans across the UK are likely to reduce risks.

Source: Committee on Climate Change, UK Climate Change Risk Assessment 2017 Synthesis Report

Background evidence to the report produced by the Committee on Climate Change (CCC) includes:

- a **synthesis report** aimed at broad stakeholders. Auditors will find the graphs and headline statements useful
- an **evidence report** aimed at professionals. Auditors will appreciate the detail from 60 experts when auditing topics from strategy to property management.

The full list of risks summarised in the table above is also included as the detail will resonate for auditors in different sectors in different ways. You will see that action and research are immediate imperatives. Click table below to expand.

MORE ACTION NEEDED	RESEARCH PRIORITY	SUSTAIN CURRENT ACTION	WATCHING BRIEF
Ne1: Risks to species and habitats from changing climate space	Ne3: Changes in suitability of land for agriculture & forests	Ne9: Risks to agriculture, forestry, landscapes & wildlife from pests/pathogens/invasive species	Ne14: Risks & opportunities from changes in landscape character
Ne2: Opportunities from new species colonisations	Ne7: Risks to freshwater species from high water temperatures	Ne10: Extreme weather/wildfire risks to farming, forestry, wildlife & heritage	Ne7: Low/high riverflow risks to hydroelectric generation
Ne4: Risks to soils from increased seasonal aridity and wetness	Ne13: Ocean acidification & higher water temperature risks for marine species, fisheries and marine heritage	Ne11: Saltwater intrusion risks to aquifers, farmland & habitats	Ne8: Subsidence risks to buried/surface infrastructure
Ne5: Risks to natural carbon stores & carbon sequestration	In5: Risks to bridges and pipelines from high river flows/erosion	In13: Extreme heat risks to rail, road, ICT and energy infrastructure	In10: Risks to electricity generation from drought and low flows
Ne6: Risks to agriculture & wildlife from water scarcity & flooding	In11: Risks to energy, transport & ICT from high winds & lightning	In14: Benefits for infrastructure from reduced extreme cold events	PI3: Opportunities for increased outdoor activity in warmer weather
Ne8: Risks of land management practices exacerbating flood risk	In12: Risks to offshore infrastructure from storms and high waves	PI13: Risks to health from poor water quality	PI12: Risks of food-borne disease cases and outbreaks
Ne12: Risks to habitats & heritage in the coastal zone from sea level rise; loss of natural flood protection	PI2: Risks to passengers from high temperatures on public transport	PI14: Risk of household water supply interruptions	BI4: Risks to business from reduced access to capital
In1: Risks of cascading infrastructure failures across interdependent networks	PI6: Risks to viability of coastal communities from sea level rise	BI3: Risks to business operations from water scarcity	BI7: Business risks/opportunities from changing demand for goods & services
In2: Risks to infrastructure from river, surface/groundwater flooding	PI7: Risks to building fabric from moisture, wind, and driving rain	BI6: Risks to business from disruption to supply chains	RI7: Opportunities from changes in international trade routes
In3: Risks to infrastructure from coastal flooding & erosion	PI8: Risks to culturally valued structures and historic environment		
In4: Risks of sewer flooding due to heavy rainfall	PI10: Risks to health from changes in air quality		
In6: Risks to transport networks from embankment failure	PI11: Risks to health from vector-borne pathogens		
In9: Risks to public water supplies from drought and low river flows	BI2: Risks to business from loss of coastal locations & infrastructure		
PI1: Risks to public health and wellbeing from high temperatures	BI5: Employee productivity impacts in businesses and from severe weather infrastructure disruption		
PI4: Potential benefits to health & wellbeing from reduced cold	RI2: Imported food safety risks		
PI5: Risks to people, communities & buildings from flooding	RI3: Long-term changes in global food production		
PI9: Risks to health and social care delivery from extreme weather	RI5: Risks to the UK from international violent conflict		
BI1: Risks to business sites from flooding	RI6: Risks to international law and governance		
RI1: Weather-related shocks to global food production and trade			
RI4: Risks from climate-related international human displacement			

Source: Committee on Climate Change, UK Climate Change Risk Assessment 2017 Synthesis Report

KEY TO CHAPTERS:

- Chapter 3: Natural environment and natural assets
- Chapter 4: Infrastructure
- Chapter 5: People and the built environment
- Chapter 6: Business and industry
- Chapter 7: International dimensions

UK centric impact predictions

The Met Office [UK Climate Projections](#) 2018 warn that:

- Our average temperatures have risen by around 1°C over the last century. A trend is developing in our local weather towards warmer winters, hotter summers and changing rainfall patterns. Scotland, in particular, has been on average 4% wetter in 2008-2017 than the 1981-2010 average.
- Hot summers are expected to become more common. In the recent past (1981-2000), the chance of seeing a hot summer, as experienced in 2018, was low (<10%). It is now 10-20%. With future warming, hot summers by mid-century could become even more common (~50%).
- Sea levels are rising by around 3mm a year. A 2018 [report](#) by the CCC warned that it would not be viable to improve all coastal defences; models estimate that levels could be 1m higher by the 2080's although 20% of existing defences will be vulnerable once levels reach 0.5m.

In practical terms this translates into impacts on everything from building design to tourism, healthcare to manufacturing.

20% of homes currently overheat and 90 percent of hospital wards are of a type prone to overheating. The UK population is increasing and aging, heat-related deaths in the UK are projected to increase by around 250% to over 7,000 by the 2050s.

Warmer temperatures will allow non-native species of pest, insects and animals to live in the UK. This introduces new health threats alongside the possibility of milder winters increasing the survival rate of domestic insects like ticks and mosquitos.

The long, hot summer of 2018 saw low crop yields and forced farmers to use winter feed to supplement field grass that had died off/lacked nutrition. The cost impact is felt, often disproportionately through the food chain. Potatoes were significantly impacted causing crisp prices to increase in 2019. The fertility of soil is also degrading and coupled with water shortages could see some areas such as East Anglia cease to be viable for farming.

The UK is not self-sufficient for food production and currently imports over 40%, excluding ingredients in processed foods. Our food consumption will therefore be impacted by climate change in other parts of the globe.

The Thames Barrier protects buildings, people and infrastructure with a combined value in excess of £80bn. It is possible that by 2030 the barrier will be closed up to 30 times a year compared to the average of 5 over the last 25 years.

Climate assurance

Prioritising assurance needs is a balancing act for any audit leader. You may already be auditing climate risks, have a concerned audit committee or sufficient resource to provide supplementary assurance to the main plan.

Conversely you may need to prepare the way for auditing climate risk.

We focus here on three areas where audit leaders may wish to consider investing their consultancy/advisory time to engage with governance leaders:

- Stewardship
- Risk Appetite
- Climate Governance

Stewardship

Stewardship is a fundamental concept in the management of climate risk. The climate is a global issue, and for today's governance leaders here in the UK, one where the consequences will be felt by future generations across the globe.

The financial crisis of 2008 brought stewardship into sharp focus, acknowledging that the role of leaders is to work within an appropriate balance of short and long-termism. Not sacrificing future viability for short-term gain. The same principles apply for the environment as for financial stability.

Are you able to answer these questions?

- Does your organisations board operate with the values of stewardship?
- Do individuals have overriding personal/political agendas?
- Is the board apathetic to anything other than the organisation itself?
- Does the strategy prioritise short-termism?
- What language does internal audit use to promote stewardship?
- What conversations could be leveraged to help educate the board on its role?
- Which advocates could be engaged to lead change?

Audit leaders may want to think about auditing **board effectiveness**, organisational culture and/or the

strategy setting process as ways to engage at this level and provide assurance in addition to consultancy.

Risk Appetite

Since 2016, non-residential energy consumption has been taxed using the Climate Change Levy: a tax intended to encourage energy efficiency. In addition, emissions are taxed using the Emissions Trading Scheme.

What has been your organisations attitude to this? An additional complexity and cost burden added to the bottom line? Or has it been an opportunity to reduce its carbon footprint, explore renewables and improve efficiency?

Experts agree that action is required today, yet the strategic plans for many organisations only extend 3-5 years. The impact of climate risk is beyond the risk horizon for most sectors.

What gets measured gets managed. A well-used phrase because it is true. An audit of risk management could provide assurance over the robustness of risk identification and application of risk appetite. Think about your organisation's risk profile. Where does climate risk feature? Is it a principal risk? Is it still an emerging risk to 'maintain a watching brief' over? Is it being addressed?

Does the organisation fully appreciate the strategic implications of climate change on its operations? Have operations been evaluated, such as a lifecycle greenhouse gas assessment of products and/or services? How are climate actions managed, monitored and reported?

Government **statistics** for (provisional) 2018 UK emissions show the difference in sector contributions (*rounding and additional positive contributions mean this does not add exactly to 100*).

33% Transport	18% Business	18% Residential
18% Energy (power stations)	9% Energy (other)	3% Industrial process
2% Public sector	1.5% Agriculture	0.1% Waste management

Climate Governance

It is too vague to assign board responsibility to climate risk. Risk needs a single owner to drive accountability and action. Who in your organisation is accountable? There will be many with specific actions and responsibilities but who ensures there is a strategic intent, coordination, reporting and most importantly a budget.

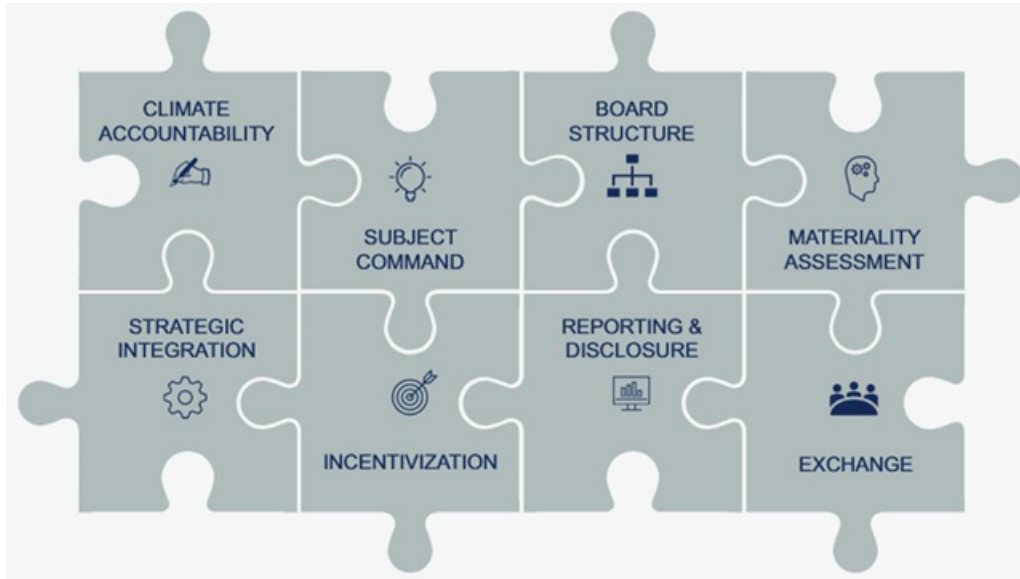
A climate risk assurance map would assist in such a wide-reaching risk. This could assist in providing clear visibility and promote engagement with governance leaders and management.

A consideration for internal audit is the knowledge base of the board. It is an additional challenge if those charged with oversight are unaware of the risks and assurance need, specific to the organisation. How can audit leaders raise such awareness? Is climate action happening but considered non-material for the board? Should the profile be higher?

What are the embedded elements of governance for your board? Topics such as business continuity, health and safety are commonplace. Does climate risk feature? Depending on the nature of emissions this may be something to prioritise.

The shift to a low-carbon economy will impact all organisations. The Bank of England is part of an international coalition that aims to ensure **financial stability** through the transition. Has the board considered how the organisation will need to adapt, which assets may be at risk, where opportunities exist or even how viable operations will be in future?

We encourage audit leaders to read a very practical paper on **effective climate governance** produced by the World Economic Forum. It focuses on eight governance principles. Should you make resource available for a climate governance audit on your audit plan?



Source: WEF, Creating effective climate governance on corporate boards

Closing Thoughts

Some of the statistics are frightening. Some of the prospects for our future are bleak.

But there is also huge opportunity.

In August 2018, Greta Thunberg started a Friday school strike, sitting alone outside the Swedish parliament demanding climate change action. No-one would join her. By March 2019, it was estimated that 1.4 million students across 112 countries had joined the protest.

Individuals can make a difference. Audit leaders can make a difference.

“Avoiding climate breakdown will require cathedral thinking. We must lay the foundation while we may not know exactly how to build the ceiling.”

Greta Thunberg, youth climate change activist