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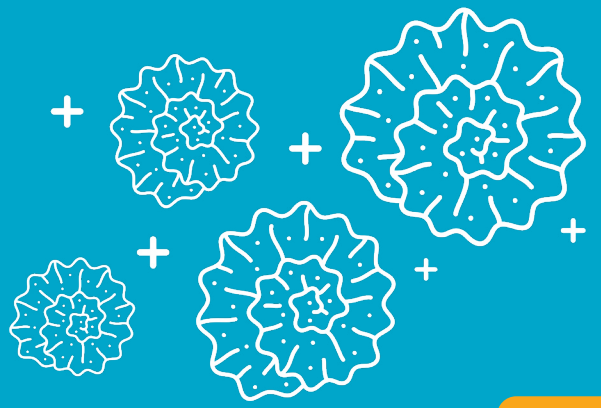
Climate change: The investment risks and opportunities

A practical guide to managing climate change risk for sovereign investors and central banks

June 2021



Introduction

A third of stocks in the FTSE index are at risk in a zero-carbon economy.

To meet the 2015 Paris Climate Agreement's target of keeping global temperature rises below 2°C with any reasonable certainty, more than 75% of fossil fuel reserves will need to stay in the ground.[1]

Government policies are increasingly pushing towards a lower carbon economy – less dependence on fossil fuels and greater use of renewable energy sources. Indeed, many believe the global response to the Covid-19 pandemic will accelerate the transition to a low-carbon economy.

The fiduciary duty of official institutions, such as central banks, sovereign wealth funds and state pension funds, means the risks posed by climate change need to be carefully weighed, and then addressed with capital allocation and engagement. This could mean divesting or selling stocks related to fossil fuels production or use, investing in alternative sources of energy, engaging with oil and gas producers, advocating change to governments and industry, reducing exposure to carbon intensive industries or some combination of all these.

But by divesting from fossil fuels – reducing exposure to a significant income paying sector of global markets – are institutions failing their fiduciary duty? To what extent should institutions engage with the companies they invest in and potentially vote in favour of shareholder resolutions?

This short guide unpicks some of the misconceptions around climate change risk and provides practical advice for institutions to stay on the right side of their fiduciary duty.

1 McGlade, C. E. & Ekins, P. Nature 517, 187–190 (2015). Under this study it has been estimated that about 80%, 50% and 30% of coal, gas and oil reserves, respectively, would need to remain below Earth's surface if the world is to have at least 50% chance of limiting the increase in global mean temperature to 2°C.

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Why should we be concerned about climate change?

According to the Intergovernmental Panel on Climate Change ("IPCC") special report in 2018, human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels already. The same report predicts with high confidence that global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate.

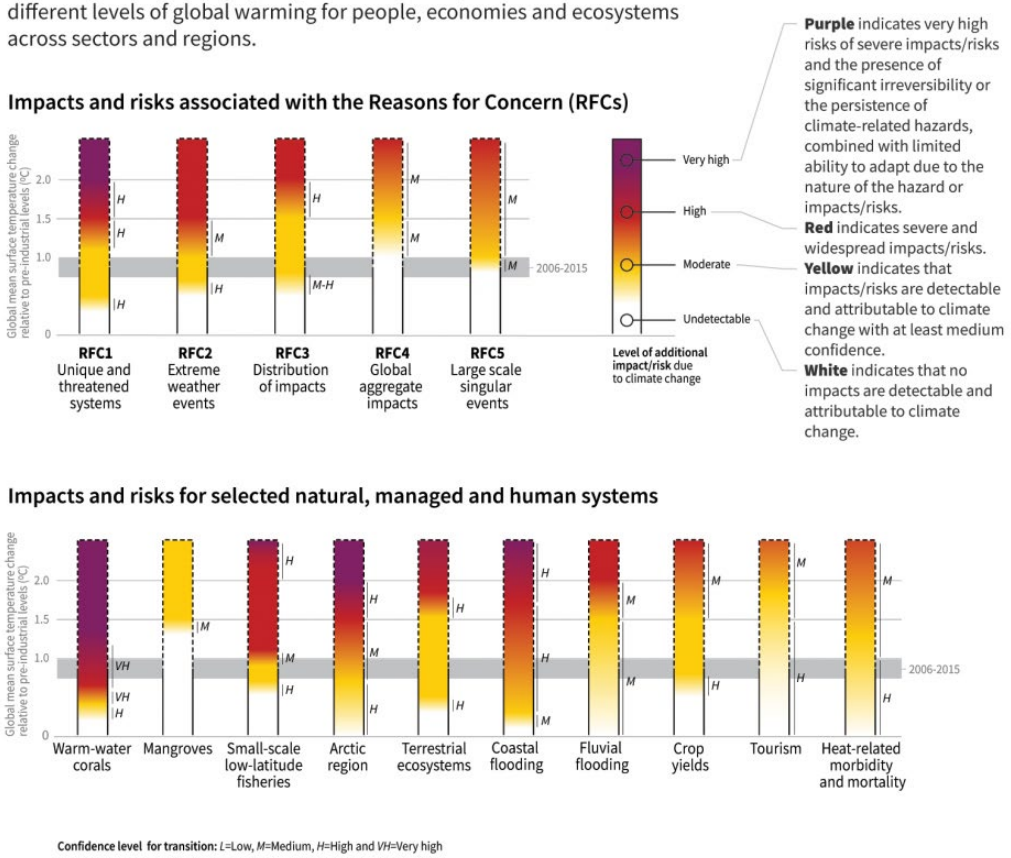
Global warming of 1.5°C may not sound much – after all the temperatures we experience day to day fluctuate by much more than this – but climate models project the impact of this increase to be life-changing at a regional level, and even more so between 1.5°C and 2°C. We can expect to experience more frequent periods of extremely hot weather, heavier precipitation in many regions and the likelihood of drought in other regions. Recent extreme weather events like the Californian and Australian wildfires of 2020 and 2019, Hurricane Harvey which caused over $100bn of damage to Texas in 2017 and the California wildfires of 2017 and 2018 are predicted to become the norm in future years. Even in the UK we are starting to experience more extremes, like the long hot summer of 2020 and the persistent rain and associated flooding of January 2020.

Figure 1, taken from the IPCC's 2018 Special Report, highlights how significant the risks of global warming will be. For example, even at 1.5°C warming above pre-industrial levels, we can expect our warm water corals to be at very high risk of permanent destruction, coastal flooding to be widespread and frequent, and higher mortality from high temperatures.

Figure 1

How the level of global warming affects impacts and/or risks associated with the Reasons for Concern (RFCs) and selected natural, managed and human systems

Five Reasons For Concern (RFCs) illustrate the impacts and risks of different levels of global warming for people, economies and ecosystems across sectors and regions.



Source: Special Report 2018, Intergovernmental Panel on Climate Change (IPCC)

There is broad consensus in the scientific community backed up by robust evidence that the main cause of global warming is greenhouse gas (GHG) emissions, particularly from the burning of fossil fuels. Greenhouse gases are any gases that trap heat in the atmosphere. Carbon dioxide (CO_2) is the main GHG responsible for around 80% of annual emissions but there are several others including: methane (CH_4), nitrous oxide (N_2O) and the fluorinated gases (such as hydrofluorocarbons). These other gases have much higher global warming potential than carbon dioxide so although they may be a small proportion of total emissions, they are very significant.

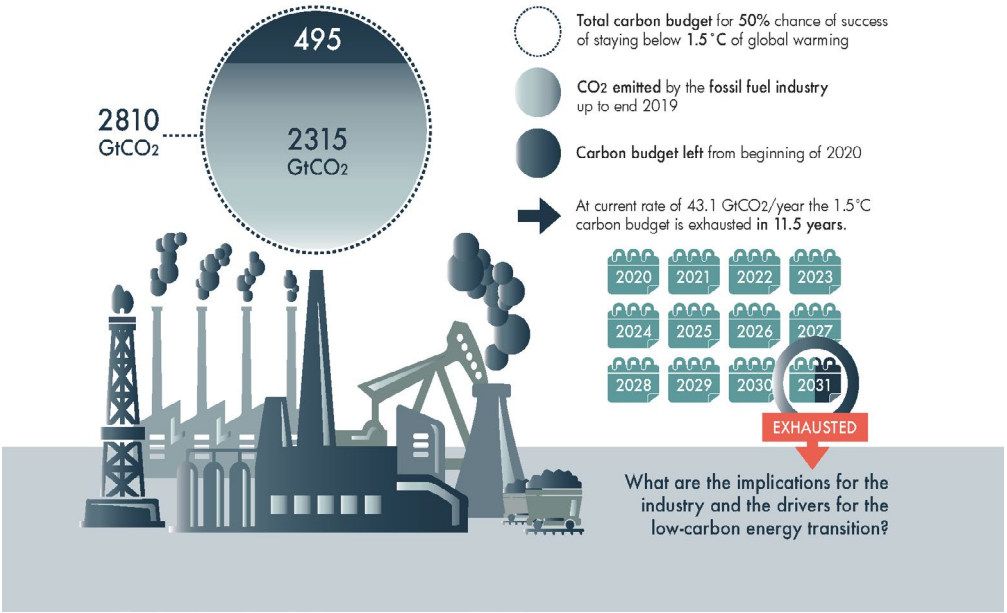
Mitigation measures attempt to reduce these GHG emissions, usually summarised by the phrase "transitioning to a lower carbon economy". This involves switching to renewable energy, improving energy efficiency and reducing emissions from agriculture and deforestation. It will require significant changes in the energy, transport and agriculture sectors, with knock-on effects for the rest of the economy. One particular concern is the potential for stranded assets particularly for fossil fuel producers.

Fossil fuel producers are particularly exposed to climate-related risks as the transition to a lower carbon economy poses an existential threat to their business. It is generally accepted – even by the oil industry – that a large proportion of their fossil fuel reserves may become 'stranded' and hence worthless, which could mean that these companies are over-valued.

The Carbon Tracker Initiative published an update on the global carbon budget in January 2020 which indicates that for 50% chance of success of staying below 1.5°C of global warming, less than 0.5 trillion tonnes of CO_2 can be emitted from 2020 onwards. **According to BP**, existing reserves of fossil fuel reserves – ie. oil, gas and coal – if used in their entirety would generate somewhere in excess of five times that. Even before allowing for new discoveries of oil and gas fields, existing reserves are well in excess of the 0.5 trillion tonnes estimated to keep global mean temperatures below 1.5°C.[2]

As illustrated by Figure 2 taken from the Carbon Tracker Initiative's 2020 report, on 2019 levels of CO_2 emissions this equates to just 11½ years before the 'carbon budget' is exhausted.

Figure 2



Source: Carbon Tracker Initiative, January 2020

2 The Carbon Tracker Initiative estimated that the remaining 1.5°C carbon budget was c.495GtCO_2 as at the beginning of 2020 (based on the carbon budgets updated by the IPCC in 2018 and emissions data from the Global Carbon Project) https://carbontracker.org/resources/terms-list/#stranded-assets

Implications for investments

Climate change can be expected to affect all parts of the economy, especially energy, manufacturing, construction, transport and agriculture. This creates risks for companies that do not plan and adapt adequately, and to the investors that hold their equity and debt. As described above it may result in 'stranded assets', where the value of certain assets is significantly reduced because they are rendered obsolete or non-performing from a financial perspective.

Investors will have capital at risk as a result of the low carbon transition. Companies in the energy sector and those reliant on significant use of energy will be subject to hardening regulatory limits or financial penalties imposed on their activities, replacement by climate-friendly competitors, decarbonisation of the power supply, legal challenges and other non-conventional challenges such as reputational issues resulting from their impact on the climate.

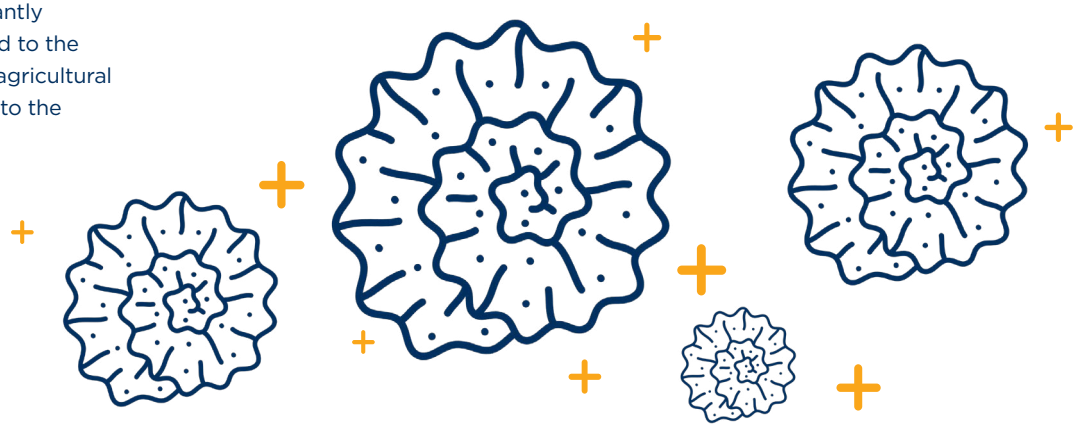
As well as the transition risks referred to above, the physical effects of climate change also present significant risks to some investors' investments. Real estate and infrastructure assets are significantly exposed to heightened risk of floods and storms. Assets linked to the food and textile industries are exposed due to the impact on agricultural yields. Insurers and insurance-related assets are exposed due to the increased possibility of widespread systemic physical risks.

No more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2°C goal, unless carbon capture and storage (CCS) technology is widely deployed.

International Energy Agency (IEA)

A carbon budget consistent with a 2°C target would render the vast majority of reserves 'stranded' — oil, gas and coal that will be literally unburnable without expensive carbon capture technology, which itself alters fossil fuel economics.

Mark Carney, the Financial Stability Board



What's being done to tackle climate change?

In December 2015, 195 countries adopted the Paris Agreement, the latest in a series of international climate change agreements and the most ambitious yet. It strengthened their previous commitment to aim to hold the global average temperature rise to 2°C relative to pre-industrial times and introduced a new aspiration of a 1.5°C limit. It was supported by a series of national and regional commitments to reduce GHG emissions.

However, as illustrated by Figure 3 (overleaf), taken from the United Nations Environment Programme's latest Emissions Gap Report, significant reductions are still needed to have any chance of achieving the goals of the Paris Agreement.

Since 2015, many countries have strengthened their commitments to reduce CO_2 emissions, as required by the Paris Agreement. This is leading to a downward revision of current policy scenario projections for total emissions over time.

Notably, in June 2019, the UK became the first major economy in the world to pass laws to end its contribution to global warming by 2050. The laws require the UK to bring all GHG emissions to net zero by 2050, compared with the previous requirement of at least 80% reduction from 1990 levels. In September 2020, President Xi Jinping announced that China would aim to become "carbon neutral" before 2060. On the first day of his presidency, Joe Biden confirmed that the United States would seek to reach net zero emissions economy-wide by no later than 2050.

Encouragingly, we have also seen many of the world's largest companies committing to targets to reduce their carbon footprint. For example, in 2020:

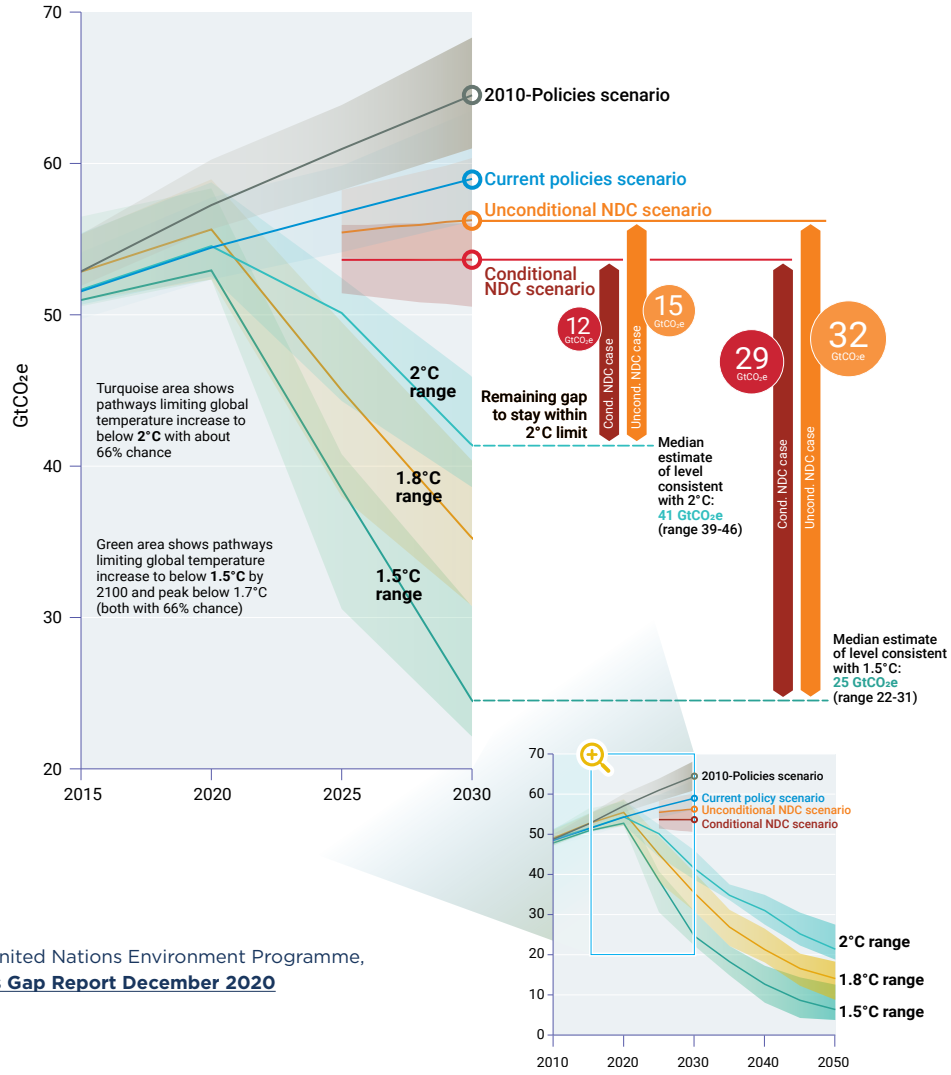
- BP announced its target to become net zero on carbon from its operations and upstream oil and gas production (excluding Rosneft) by 2050;
- Microsoft announced it is to be negative carbon by 2030 and net carbon-zero over its entire lifetime by 2050;
- BlackRock, the world's largest asset manager, announced a number of initiatives to place sustainability at the centre of its investment approach, including a much greater focus on climate-related risks; and
- A group of 30 asset managers representing over $9 trillion of assets under management announced the launch of the Net Zero Asset Managers Initiative. This group of global asset managers committed to support the goal of net zero GHG emissions by 2050 or sooner, in line with global efforts to limit warming to 1.5°C. They also committed to support investing aligned with net zero emissions by 2050 or sooner. Since then. many more asset managers have joined the initiative.

Greenhouse Gas Emission Projections

The international target to keep global average temperature rises below 2°C requires significant cuts in GHG emissions by 2050. The latest Emissions Gap Report from the United Nations Environment Programme indicates that global total emissions need to reduce by around one third from projected levels by 2030 to stay within the 2°C limit with reasonable likelihood (see turquoise shading in Figure 3).

At the 2015 Paris conference, world leaders agreed an aim of reaching peak emissions as soon as possible and achieving zero net human-related emissions in the second half of this century. However, analysis by the UN Environment Programme published in 2020 concluded that the specific pledges they have made to reduce emissions after 2020, known as Nationally Determined Contributions (NDCs), fall significantly short of what is required to meet the 2°C target (see red shading). Nonetheless this represents an improvement on their existing policies (blue shading) and the Paris Agreement includes a mechanism to strengthen their pledges every five years.

Figure 3



Source: United Nations Environment Programme, **Emissions Gap Report December 2020**

What risks and opportunities are there from climate change?

There is a wide range of climate-related risks and opportunities stemming from climate change itself, from measures to adapt to climate change, and from attempts to mitigate climate change. The Task Force on Climate-Related Financial Disclosures (TCFD) distinguishes two types of risk:

- Transition risks – policy, legal, technology and market changes may pose financial and reputational risks to organisations as we transition to a lower carbon economy; and
- Physical risks – acute risks from weather events and chronic risks from longer-term shifts in climate patterns may affect organisations' financial performance, both directly and indirectly through their supply chains.

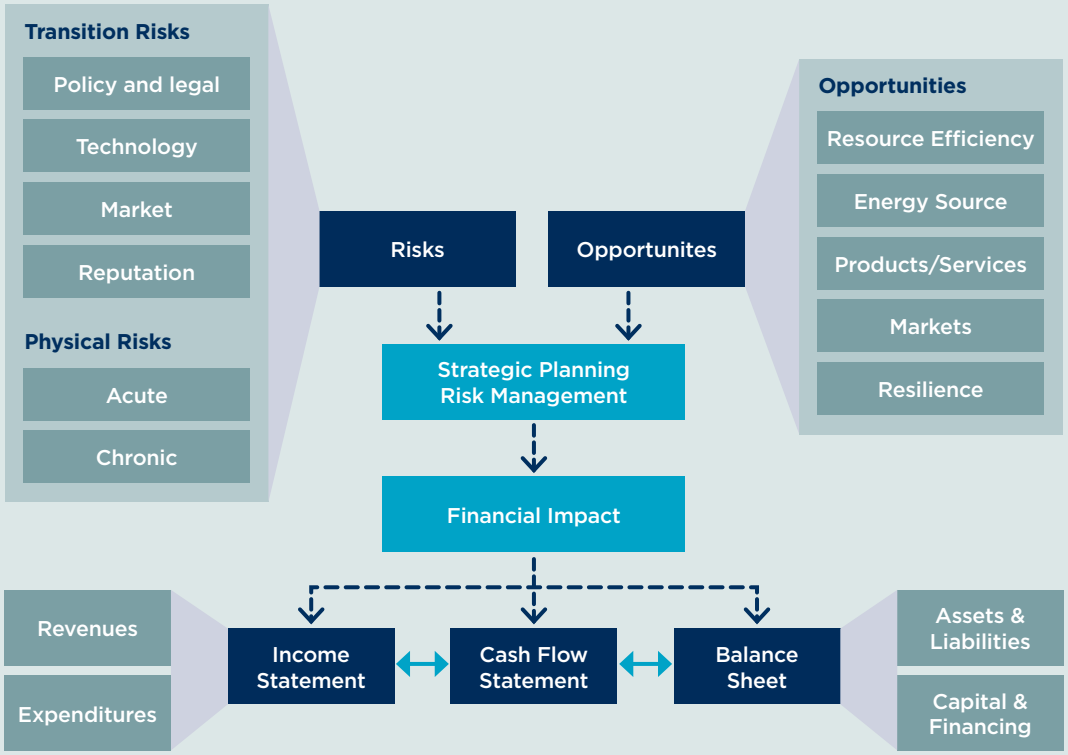
There is a trade-off between these risks: stronger mitigation measures will increase transition risks while reducing physical risks, whereas weaker mitigation measures will increase physical risks while posing fewer transition risks. Overlaying this is how societies will be impacted as a result of the measures imposed. The balance between these risks will depend on the actions taken by governments, regulators, companies, investors and individuals.

The TCFD also identified five sources of opportunity – resource efficiency, alternative energy sources, new products and services, new markets, and developing resilience to climate change (see Figure 4).

Together the risks and opportunities can have a significant impact on a company's bottom line. A company that is keenly aware of these factors and responds appropriately is expected to reap the financial rewards.

Figure 4

Climate-related risks, opportunities and financial impact



Source: TCFD, Recommendations, June 2017

Covid-19 – a sign of what's to come?

2020 was dominated by the impact of the Covid-19 pandemic on our daily lives and the negative effects on the global economy. One of the significant features of the Great Lockdown and subsequent decline in economic activity was the dramatic fall in oil prices from around 60 USD per barrel to as low as 20 USD at the low point in April 2020. Indeed, the price for West Texas Intermediate (WTI) contracts even went below zero for a short spell as storage facilities for excess supply ran out.

In addition to the direct impacts on the oil and gas industry, other sectors of the economy (such as travel, leisure and retail) were significantly disrupted, prompting many companies to review their business models and build in more resilience for future systemic events. At the same time governments around the globe committed billions of dollars to spending on 'building back better' and sustainable infrastructure.

The effects of Covid-19 are a stark example of how systemic events can cut across all the accepted norms and require collective global action with consequent positive and negative impacts on investment markets.

Climate change similarly presents an unprecedented challenge: either significant and rapid transition to a low-carbon economy needs to take place within the next 10 years, or we face significant physical risks with many parts of the planet potentially becoming uninhabitable.

Climate change poses significant risk to the economy and to the financial system, and while these risks may seem abstract and far away, they are in fact very real, fast approaching and in need of action today.

Sarah Breeden
Bank of England

How are institutions responding?

Heightened awareness of the risks from climate change and several high profile campaigns are challenging many institutions to divest from fossil fuel producers. Well-known organisations, including central banks and sovereign wealth funds such as Norway and the European Investment Bank, are among the many that have committed to or proceeded with some form of fossil fuel divestment.

Examples of the actions taken by some of these organisations are included below:

Norway's Sovereign Wealth Fund:

In June 2019, Norway's parliament voted plans into law for its sovereign wealth fund (which is over $1trn in size) to remove investments in coal companies and oil producers; requiring the fund to drop coal investments worth around $6bn. Alongside the fossil fuel divestment, the fund was also provided with a legal mandate to invest directly in renewable energy projects rather than listed energy companies. The legislation empowers it to invest up to $20bn, beginning with wind and solar projects in developed markets.

New Zealand Superannuation Fund:

In October 2016, the New Zealand Super Fund announced its plans to take more action with regards to climate change risk, through a new "Climate Change Strategy". The strategy includes reducing exposure to fossil fuel reserves and carbon emissions, incorporating climate change into analysis and decision making, managing climate risks through active engagement and seeking new investment opportunities eg renewable energy. In August 2017, the Super Fund announced progress made on its strategy via a NZ$950m divestment from companies with high exposure to carbon emissions, significantly reducing the Fund's overall carbon footprint. Furthermore, in 2020, the Fund invested in Galileo Green Energy, LLC which will invest in the development of wind, solar PV energy projects and storage solutions across all of Europe.

European Investment Bank:

Following a decision by EU finance ministers to unanimously back the "phasing out" of funding fossil fuel projects, in November 2019, the EIB adopted a strategy to end funding for new fossil fuel energy projects from the end of 2021. The EIB agreed to align all financing activities with the goals of the Paris Agreement from the end of 2020; a commitment which implied that future financing will accelerate clean energy innovation and efficiency. Further, the EIB set out a new funding policy detailing key principles that will govern its future engagement in the energy sector:

- prioritising energy efficiency to support the new EU target under the EU Energy Efficiency Directive;
- enabling energy decarbonisation through increased support for low or zero carbon technology, aiming to meet a 32% renewable energy share throughout the EU by 2030;
- increasing financing for decentralised energy production, innovative energy storage and e-mobility;
- ensuring grid investment essential for new, intermittent energy sources like wind and solar as well as strengthening cross-border interconnections; and
- increasing the impact of investment to support energy transformation outside the EU.

Practical actions to reduce exposure to climate change risk

Divestment from fossil fuels is the approach which has grabbed the headlines for some high profile investors (eg Norway, see page 11). But - if you decide to adopt a divestment approach - is divesting from companies that extract the resource enough? Should you also divest from the service providers too – for example the transporters, distributors and utilities that use fossil fuels?

Fossil fuels are found in 96% of the items we use daily; petroleum and natural gas are crucial to our livelihoods. Indeed, petroleum and its derivatives can be found in over 6,000 **items**. This is because petroleum is the raw material for plastics (which is a whole other issue) and other intermediate/end-user goods. Even MRI and CT scanners used in medicine rely on petrochemical derivatives. Does this mean you should divest from companies that use petroleum too? At what point do you draw the line?

Increasingly investors are adopting more sophisticated approaches to address climate change risk in their investment portfolios, including some or all of the following:

- Engaging with companies to understand their approach to climate change and the transition to a low-carbon economy is a powerful tool for investors to help manage climate change risk. With this approach, investors can use the threat of divestment to strengthen engagement with companies and help drive change.
- "Decarbonisation" is another approach. Typically, this involves setting targets to reduce the portfolio's exposure to carbon intensive investments – for example establishing a pathway to achieve 'net zero' GHG emissions for the portfolio by 2050. This could be considered the smart approach to reducing carbon exposure compared with the more binary divestment approach.
- Proactively investing in solutions to climate change – for example renewable infrastructure. This can contribute to long-term investment performance positively by reducing exposure to carbon risk and enhancing diversification by investing in alternative sectors to traditional sources of return.
- Selective divestment from companies that after engagement fail to offer a credible strategy for the transition to a low-carbon economy.

To help navigate this, we have summarised the main approaches we have seen taken by institutions to reduce their climate risk exposure in the table below:

Approach	Examples of investment policies to put the approach into practice
Active engagement	Engage with investee companies to encourage them to assess and report their exposure to climate change and to establish a credible strategy to address the risks of climate change to their businesses.
	Exclude carbon intensive companies (companies which have a high carbon footprint relative to their size) which, after appropriate engagement, fail to take action to reduce their carbon emissions.
Fossil fuel screen	Exclude investment in any companies which derive more than, for example, 10% of their revenue from the extraction of thermal coal or production of oil from tar sands or coal-fired power generation.
	Exclude investment in any companies involved in the extraction, exploration or production of coal, oil or gas. A threshold for revenue is also often specified here, for example excluding companies with 5% or more revenue derived from these sources.
Decarbonise portfolio	Reduce average carbon emissions intensity[6] for holdings in the investment portfolio by (say) 50% by reducing the allocation to carbon intensive companies in favour of low-carbon and renewable energy companies.
	Ensure that companies held in the investment portfolio are aligned with the targets in the Paris Agreement.
	Transition to a carbon neutral portfolio by 2050 with measurable science-based targets along the transition.
Positive investment	Target strategic asset allocation of (say) 10% to companies providing solutions to climate change (such as renewable energy producers).

6 A variety of measures are used, involving Scope 1, Scope 2 and sometimes Scope 3 emissions. See the Task Force on Climate-Related Financial Disclosures' recommendations for details of commonly used metrics, including their advantages and disadvantages.

Practical actions to reduce exposure to climate change risk continued

Ongoing climate governance

Sovereign investors should form their own policies on climate change risk, and will need to strike a balance between maximising their investment opportunity set, mitigating climate change risk and, where relevant, reducing or avoiding investments which conflict with their government's expectations and stated targets. In our view, even if investors decide to implement none of the approaches described on page 12, it is imperative to actively consider and regularly monitor the risk of climate change on their investment portfolio.

To divest or engage?

Divestment-sceptics argue that selling your holdings in the listed market will not change the activities of the largest carbon emitters. It will not directly affect their finances; it just changes the ownership of their shares or debt. After all, the stocks you sell will be picked up by others who may not share your views about the need for climate action, or worse, your stocks could be bought by climate sceptics who support the current fossil fuel activities. Instead, your investment holdings in fossil fuel companies can be a force for change by actively engaging with the management and influencing these companies to act responsibly.

Indeed, several institutions which have signed up to the **DivestInvest Pledge** have elected to retain de minimis shareholdings in fossil fuel stocks to engage in shareholder activism and use ownership rights to influence the companies.

The box below highlights key considerations to work through in the divest versus engage debate:

Arguments for divestment	*Arguments against divestment*
• May be necessary to exclude companies conflicting with the investor's stated objectives. • Help reduce exposures to some of the key drivers of climate risk within your local economy. • Greater alignment with views of the government. • Financial risks of climate change may not be fully priced into the market for fossil fuel companies. • Reduces financial support for companies involved in the extraction, exploration or production of fossil fuels – for example hampering the ability of these companies to raise capital in the future. • Reduces risk of holding investments that could become "stranded". Examples of stranded assets include coal reserves or coal plants which could be written off if it becomes unsustainable to continue operations. This could be brought about due to lower demand for coal-derived energy or regulations prohibiting coal-fired power. • May enhance the reputation of the institution, if it has previously faced criticism from activist groups over its stance on climate change.	• Forgo opportunity to engage with the company's management or to exercise voting rights to influence a company's practices and policies in a way that reflects the investor values and helps reduce the systemic risks from climate change.. • Selling existing shares or debt does not reduce the capital available to fossil fuel companies; it just changes their ownership. The new owners may not use their rights to encourage the low carbon transition. • The price of some fossil fuel company shares may sufficiently reflect the risks of climate change (either now or in the future). By refusing to consider investing in these companies an investor may miss out on attractively priced investments. • Potentially detrimental to the investor's natural income stream as oil and gas is typically one of the higher yielding sectors in the stock market. • Potentially reduces diversification of the investment portfolio's sources of return; although important to consider the overall impact on risk-adjusted return (see page 14).

Practical actions to reduce exposure to climate change risk continued

How might divestment (or decarbonisation) impact financial return?

A study of portfolio returns over various long-run historical periods indicates that divestment or decarbonisation are not expected to be detrimental to investment performance. Based on this research, Jeremy Grantham commented on divestment that:

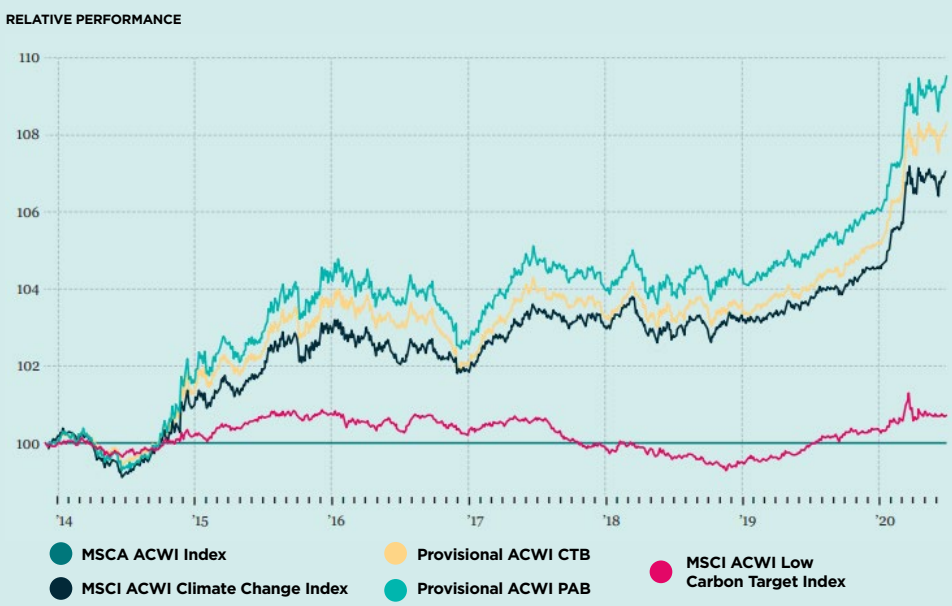
"It means that if investors take out fossil fuel companies from their portfolios, their starting assumption should not be that you have destroyed the value. Their starting assumption should be until proven otherwise, that it will have very little effect and is just as likely to be positive...as negative."

Encouragingly, more recent analysis of investment performance for "low carbon" funds and indices suggests a positive contribution to performance from lower exposure to more carbon-intensive companies. Figure 5, taken from the **PLSA's recent report on Climate Indexes**, shows outperformance of MSCI's low carbon indices relative to MSCI's broader "All Countries World Index" over periods from June 2014 to June 2020. Indeed there was a notable positive contribution in March 2020 when oil and gas stocks were badly hit in the fall-out from the Covid-19 pandemic.

As the saying goes, past performance is not a guarantee of future performance. Looking ahead, the impact on performance of divestment or decarbonisation could be positive or negative. For example, factors which could be expected to give rise to positive returns following divestment:

- the pace of regulations curbing CO_2 emissions is faster than expected;
- renewable energy solutions develop faster than expected;
- increased use of technology for remote working and meetings replaces demand for transport; and
- more widespread bans on use of plastics and other oil-derived products.

Figure 5



Source: MSCI as of June 30 2020, as displayed in PLSA guide 'Climate Indexes' August 2020

On the other hand, factors which could be expected to impact negatively include:

- failure of governments to adhere to climate change targets; faster growth of developing economies driving increased demand for fossil fuels;
- increasing globalisation leading to more demand for transportation; and
- carbon capture technology which could enable fossil fuels to be burnt without contributing to CO_2 emissions.

Institutions will need to come to their own views on these factors: some may fall strongly one way or another. But what is most important is that they reach an informed and considered view on this and review that position on a regular basis to reflect best practice and emerging information.

Practical actions to reduce exposure to climate change risk continued

Case study: Royal Dutch Shell

Divestment has started to register with Shell. In its 2018 annual report, it highlighted fossil fuel divestment as a risk. Fossil fuel divestment has a "material adverse effect" on its share price and its ability to access capital. In acknowledging climate activism, it seems to be feeling the heat.

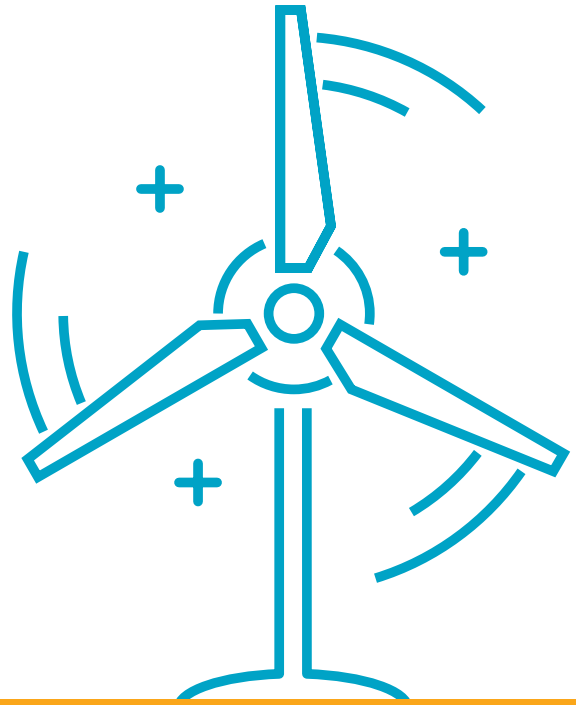
In the last few years, a growing number of investors strengthened their engagement with Shell and began backing a resolution at Shell's AGM for the company to address climate change concerns. Finally, following conversations with Climate Action 100+ investors, led by Robeco (an asset manager) and the Church of England Pensions Board, Shell announced the following changes at the end of 2019:

- Shell aims to reduce the Net Carbon Footprint of its energy products by around half by 2050, and 20% by 2035 in line with the goals of the Paris Agreement. More recently it has upped its targets to 100% by 2050 and 45% by 2035.
- It pledged to set short-term targets for reducing carbon emissions to be reviewed every three to five years. The target not only covers emissions from its production of oil and gas but also customers' emissions from burning this oil and gas.
- Executive remuneration policy will be linked to carbon emissions targets and the transition to cleaner energy (this revised remuneration policy was approved by shareholders at the 2020 AGM).
- It has also pledged to review ties with lobbying groups which undermine climate change action. Shell had already taken a small step in exiting the American Fuel and Petrochemical Manufacturers group earlier in 2019.

Shell was the first of the oil majors to make such significant pledges to address climate change. But this would not have happened without the concerted effort of various shareholders which included Climate Action 100+ investors and activist group Follow This which has repeatedly brought shareholder resolutions to Shell's AGM. Whilst it may still be too early to see significant results from the pledges, it demonstrates the power of shareholder engagement.

Climate Action 100+

This is an investor-led initiative where members commit to engage with the world's largest corporate greenhouse gas emitters. The goal is to encourage more than 100 of the most 'systemically important emitters', accounting for two-thirds of annual global industrial emissions, to reduce emissions, and strengthen climate governance and disclosure. To date, more than 500 investors worth over US $50 trillion in assets under management are signatories to the initiative.



Practical actions to reduce exposure to climate change risk continued

Don't overlook your fixed income portfolio

When it comes to measuring and managing the environmental impact of portfolios, equity holders take most of the headlines. That's not surprising, shareholder resolutions are a powerful tool to shape business change, and the listed nature of equity markets means data is more readily available and comparable.

Bonds are frequently overlooked. However, many companies finance themselves substantially in the bond markets, returning regularly to raise money from fixed income investors. Fixed income investors have a voice, and potentially a strong one if they vote with their wallet, on the way these companies are run. At the very least, if you're looking to align your equity portfolio with the transition to a low-carbon economy, you should be asking yourself similar questions about your bond portfolio.

For sovereign wealth funds and central banks, fixed income often plays a key role in investment strategies. Bonds with maturities of 10, 20 and even 30+ years are frequently held. These longer-dated bonds, particularly those issued by carbon-intensive companies without a rigorous transition plan, are very exposed to changes in investor sentiment. More practically, potential shifts in government regulations (eg increases in carbon pricing) make the risk of default in the coming decades very real for many companies.

What steps can you take?

As a fairly simple first step, you can instruct an explicit limit on greenhouse gas emissions of your portfolio. Measuring greenhouse gas emissions of equities has become relatively commonplace. Many equity investors now manage their "carbon intensity" (eg tonnes of CO^2 emissions per $m of sales). This is not as common in the fixed income space as the data is often not as readily available, but a good manager should be able to do it.

We recently conducted research on over 50 corporate bond portfolios, across various investment managers, which showed that a typical portfolio has a carbon intensity of around 190 t/$m, roughly comparable to an equity index such as the MSCI ACWI Index.

Bond investors can start by setting targets for this metric. Our research shows that you do not need to pay a huge cost in the form of reduced yield to do so. Perhaps as little as 0.05% pa to reduce carbon intensity by 30% or more, while maintaining other key metrics such as credit quality and diversification.

The journey to aligning your portfolio with your country's commitments doesn't have to be linear and, although it is possible to create a low emission portfolio now, it will pay to be pro-active by taking the middle-ground where portfolios are constructed with greater emphasis on forward-looking corporate decarbonisation pathways.

Case study: expanding a low carbon tilt into our client's fixed income portfolio

Our client was looking to align their corporate bond portfolio with their policy on climate change.

We set a number of targets for this exercise:

- The yield and overall credit quality of the portfolio needed to remain broadly unchanged.
- The carbon emissions associated with the portfolio needed to reduce by at least 30%, with a rolling programme of future reductions.
- Outside of climate change, we also recommended tilting the portfolio towards companies that score well on other factors (such as social and governance issues), helping further reduce both financial and reputational risk.

Our approach:

As an independent consultant we were able to help our client manage and run a competitive fund manager selection exercise based on their objectives.

As part of this process, we reviewed example portfolios, the proposed investment approaches and key statistics relating to carbon intensity. As our global research team regularly reviews funds on an ongoing basis we already had a good understanding of the managers' capabilities in this space.

Working in conjunction with our client, we selected and helped put in place the new mandate.

Outcome:

The portfolio yield was left unchanged. The new portfolio is well diversified, spread across a large number of sectors and issuers.

Carbon exposure within the portfolio was reduced by around 35%. A rolling programme of future reductions has been pre-agreed, meaning the portfolio won't get left behind as the transition proceeds.

The outcome of our fee negotiation exercise was positive, with the client receiving a material fee reduction as part of the switch.

Our client was able to transition to a more diversified fixed income portfolio with significantly lower carbon exposure and lower ongoing management fees.

Reviewing your investment managers' approach to climate change risk

Some official institutions delegate some or all of the selection of specific investments to external investment managers. Where this is the case, an important component of implementing the approach to climate change risk is to assess and regularly monitor these investment managers' approaches to this risk.

In practice, managers can adopt a wide range of approaches to manage climate change risks. Examples include:

- Qualitative consideration of climate change risks before purchase of a security, eg effectiveness of the company's climate policies
- Review of climate metrics for each security, eg GHG emissions
- Factoring climate change into valuation of securities, eg modelling the effect of a carbon price
- Top-down consideration of climate change risks for the whole portfolio
- Applying climate scenario analysis or stress tests at security or portfolio level, eg flooding risks for real estate
- Avoiding assets with high climate change risk exposure, eg exclusion of coal mining companies
- Using opportunities from the low carbon transition to generate investment ideas
- Voting in favour of climate-related resolutions at AGMs
- Engaging with portfolio companies to understand and seek to improve their management of climate change risks
- Encouraging companies to publish TCFD disclosures and set decarbonisation targets
- Collaborating with other investors to improve the effectiveness of their engagements
- Supporting investor initiatives that encourage governments and regulators to provide greater certainty around climate policies.

Ultimately it is the investor's responsibility to ensure that the approaches taken by its investment managers are aligned with its views. To help with this we recommend investors undertake the following assessment of their managers:

- Gain a deep understanding of the approach that each manager is taking on climate change risk. Ask them questions to ascertain:
    - Their commitment to addressing climate change risks
    - How effectively they are managing the risks
    - Whether they undertake climate scenario analysis
    - Whether they consider the physical impacts from climate change
    - Their plans to evolve their approach
    - Any targets to improve the portfolio's climate resilience
    - Voting and engagement activity related to climate change risks and the outcomes from their activity in this area
- Consider how each manager's climate approach fits with the investor's beliefs and climate objectives;
- Encourage the managers to address any concerns identified, being prepared to switch managers if necessary;
- Consider exposure of existing portfolios to climate risks and explore options for any mandates with high exposure, eg low carbon index tracker for passive equity allocation;
- Investigate strategies that invest in climate solutions;
- For segregated mandates, incorporate the investor's climate requirements in the investment management agreement.

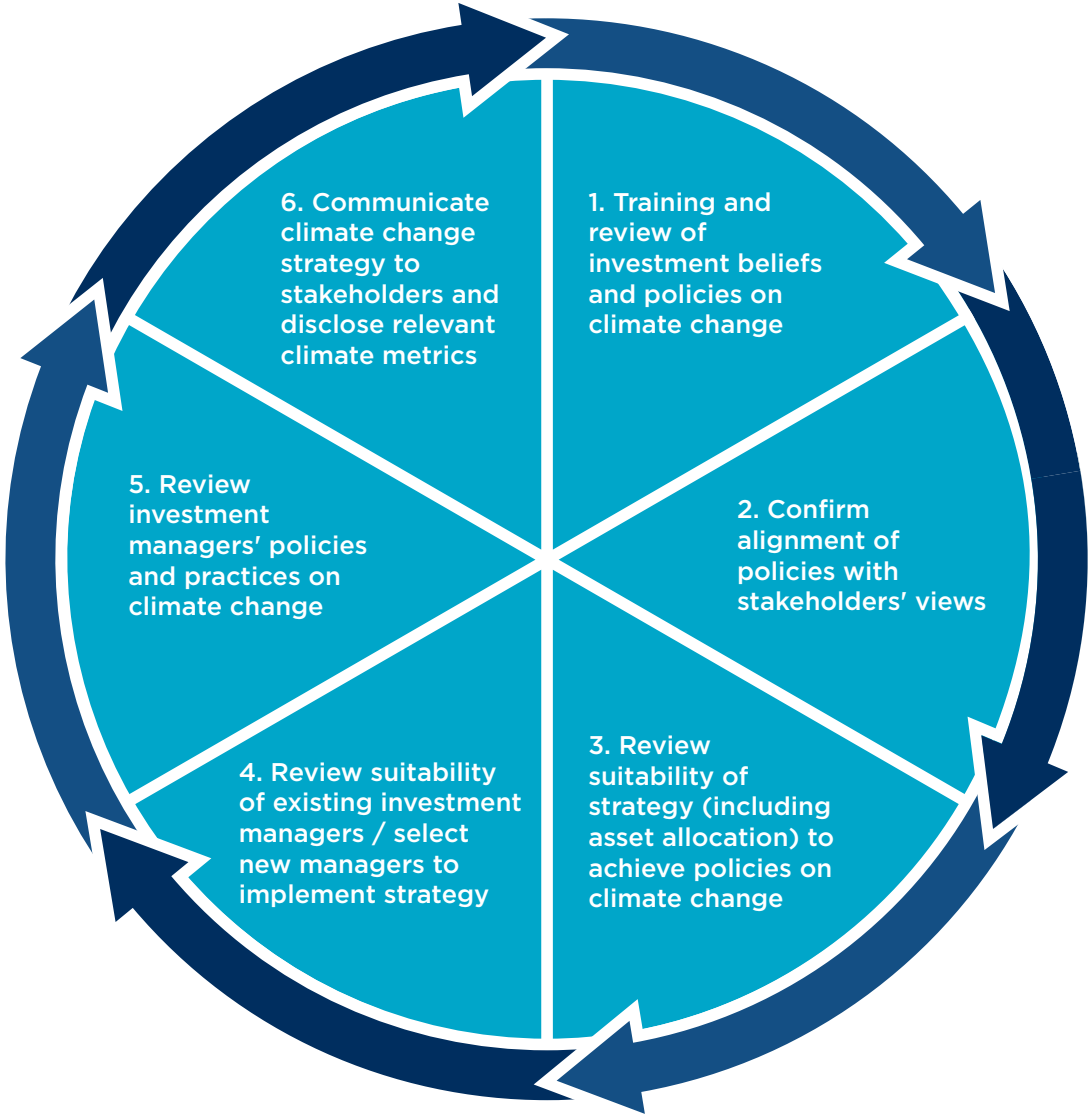
This analysis should also form part of ongoing monitoring of existing managers to ensure they are keeping pace with evolving policies, wider market practice and regulatory expectations.

Similarly, when selecting a new manager, we recommend including these considerations in the assessment criteria. Investors may also wish to consider the prospective managers' expertise and ability to develop and deliver tailored solutions to align with their specific investment beliefs around climate change.

An action plan for institutions

Institutions should have an effective process to manage and monitor the risks and opportunities from climate change on their investment portfolio.

In the chart on the right, we provide a six-step action plan to establish an effective and robust process for this. We would expect this review process to be repeated at regular intervals to respond to evolving climate change risks and opportunities.



An action plan for institutions

In practice there is a broad range of approaches available to implement different climate change strategies. We have listed the main options below to help institutions break this down:

Investment approach	*Outline*
Divestment	• Define companies or sectors which will be excluded from investment eg divest from coal or tar sands or all fossil fuel producers and extractors. • With this, consider materiality levels eg focus on top 100 fossil fuel producers and extractors, any conflict or alignment with institutional objectives and the transition timeline to divest from existing fossil fuel holdings. • A range of pooled investment vehicles are available with exclusions for fossil fuels.
Best in class investment / positive screening	• Investing in most/all sectors but picking the companies with lower carbon intensity and/or better climate risk management.

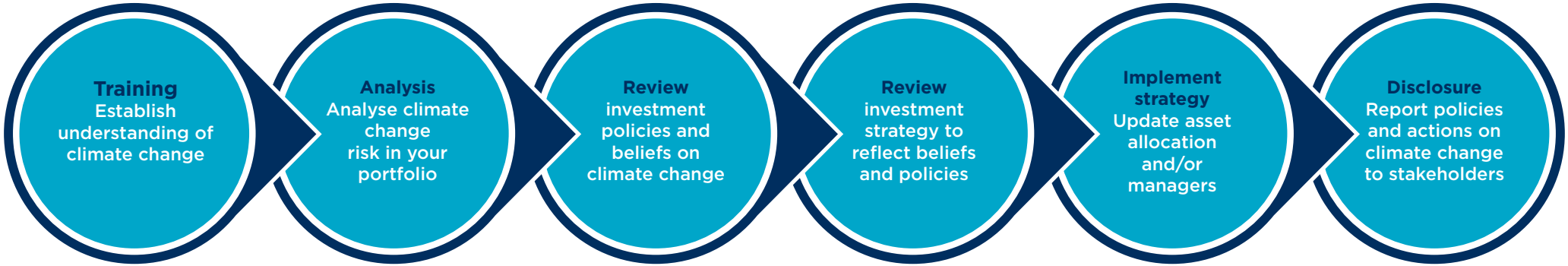
Climate tilts	• Alter the weightings to individual companies in order to:
	  • reduce the risk of stranded assets by reducing the asset allocation to fossil fuel producers and companies heavily reliant on using fossil fuels; and
	  • reduce the exposure to transition risks (such as carbon tax) by reducing the asset allocation to carbon-intensive companies in favour of low carbon companies.
	• Practical approaches for implementation are available through investment which track a low carbon index. The main index providers, such MSCI and FTSE Russell for example, maintain low carbon indices which re-weight their parent indices based on company carbon emissions data and fossil fuel reserves.

An action plan for institutions continued

Investment approach	*Outline*
Sustainable and impact investing	• A growing area in the investment universe, sustainable investing, focuses on companies that are consistent with environmental and social sustainability and are expected to generate competitive financial returns for investors through benefiting from these trends. • Impact investing takes this further by focusing on solutions to environmental and societal challenges and intentionally seeking to deliver positive additional and measurable change in these areas. • By investing in companies that focus on providing solutions to climate change, there is the opportunity to mitigate climate change risk and participate in long-term sustainable returns. • By definition, an active management approach is necessary. Several pooled investment vehicles are available in the public and private markets, with some specialising in climate change opportunities and others being more broadly based impact funds.
Engagement	• Engagement can and should be implemented alongside the other investment approaches covered above. In particular, combining engagement with the threat of divestment can be very effective. • The easiest form of engagement is utilising your voting rights via your investment managers. • But as shown in the case of Shell, collaborative engagement can be highly influential if you wish to enact change. There are various collaborative groups institutions can partake in – Climate Action 100+ and the Principles for Responsible Investment are just two of many that aim to engage with companies on climate change. • Effective engagement with investee companies will be crucial for achieving climate targets. Investors should expect to see clear links between their investment managers' engagement activity and investment decisions for active mandates. For example, divesting from high emitting companies that are not setting ambitious climate action plans and do not respond to engagement.
Advocacy	• Effective engagement with policymakers and regulators is another critical element in managing climate risk. • The importance of policy advocacy on systemic issues like climate change is often underappreciated, partly because it tends to be conflated with company-level engagement. Public policy sets the rules for investment and can influence your ability to generate sustainable returns and create value. This is why lobbying is such a powerful tool.

These approaches are increasingly available as pooled fund vehicles, making these approaches accessible to investors of all sizes. It is no longer the case that you need to be a large asset owner with direct investments to implement climate-related investment policies.

Next steps



Whichever investment approach you decide to take, the direction of travel is clear. To do nothing about climate change is no longer a viable option as it would be a failure in fulfilling your fiduciary duty. Whilst implementing a climate change strategy is by no means simple, there is an abundance of resources available to assist investors. At LCP, we continue to develop our approach to assisting our clients in assessing climate-related risks and opportunities. For a portfolio designed to operate in perpetuity, addressing climate change in your investment strategy is crucial to maintaining your ability to fulfil your institutional objectives long into the future.

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At LCP, our experts provide clear, concise advice focused on your needs. We use innovative technology to give you real time insight & control. Our experts work in pensions, investment, insurance, energy and financial wellbeing.

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