



CLIMATE ACTION PATHWAY

FINANCE

Vision and Summary

2021

VISION STATEMENT

By 2050, financial markets, institutions and systems are in place to support and fund a resilient zero-carbon economy and society, ensuring that temperature rise remains limited to 1.5 °C. This market alignment has been achieved through corresponding alignment implemented in all areas of government, business and human settlements, in partnership with civil society. As a result, flows of capital have been redirected to sustainable and climate-resilient development.

By implementing the vision that ‘every financial decision takes climate change into account’, the finance system has supported compliance with Article 2.1 (c) of the Paris Agreement: that finance flows are consistent with a pathway towards low-emission and climate-resilient development. Price signals have been adjusted so that the true cost of negative externalities is now reflected on balance sheets. Markets have consequently shifted to reward operating models that have enabled a just transition to sustainable, zero-emission and resilient practices that respect planetary boundaries and the true value of human and natural capital.

As society shifted its expectations of the financial system and the real economy to support sustainable growth, the system responded, supporting the needs of today’s society without compromising the ability of future generations to do the same. Climate justice, equity and intergenerational fairness are now cornerstones of a financial system that is based on the embedded understanding of double materiality, so the impact of investments on sustainability is a consideration as much as the impact of sustainability factors on the value of those investments. The long-term investment horizons of the system now only reward those whose purpose has people and the planet at its heart.

The focus of market participants, regulators and non-financial actors on stewarding a smooth transition has avoided a ‘Minsky moment’ of collapse after over a century of emissions-intensive growth. Instead, capital has flowed to providers of solutions for both adaptation and mitigation. Businesses and their financiers that committed to a resilient, net-zero transition have thrived, avoiding the increasing costs and risks of the high-carbon economy and maximizing the opportunities in and value of the zero-carbon economy. Technological breakthroughs have occurred due to patient, early-stage investment, and growth capital has been ready for speedy deployment, allowing these solutions to develop at pace and scale.

All levels of government have collaborated with financial market participants to develop zero-emission, climate-resilient infrastructure and projects, with public finance institutions crowding in private investment at the scale required to bring investable projects to market. This continuous collaboration now represents business-as-usual. Where companies have failed to transition, support for retraining and employment in the zero-emission, resilient economy has ensured a just transition that works for all, respecting the rights of communities and workers throughout the value chain.

As a result of this paradigm shift, the innovative power of the market has been harnessed and catalysed by correcting its failures. The financial system has transitioned so as to enable, rather than thwart, a sustainable, resilient, zero-emission economy. By limiting global temperature rise to 1.5 °C and stabilizing the climate, the most extreme tipping points and physical risks have been avoided, limiting the destruction of value. This has been achieved through emission reductions and the acceleration towards emission removal through a combination of technological breakthroughs and nature-based solutions supported by robust investment.

The connection between a thriving society and the financial system has been strengthened. This has been fostered through increased understanding of climate risk (including water-related risks) and other sustainability implications within the financial sector, and a shift away from a focus on short-termism and profit at any cost. Local and regional governments have acquired expert knowledge and capabilities in financial project preparation, design and implementation, complementing their increased access to climate finance. Increased financial literacy means that people better understand how their savings and investments flow through banks, asset managers and asset owners to provide capital to the companies and projects that make up the real economy in which they exist. There is increased engagement between market participants and beneficiaries, enabled by technology, transparency and good governance. Market participants better understand and act upon the wishes and preferences of beneficiaries. Beneficiaries are more confident, vocal and engaged. Greater trust has been built in the financial system on a foundation of circular economies supporting a fair and just increase in living standards across the world's communities.

SYSTEM TRANSFORMATION SUMMARY

To deliver our 2050 vision, it is essential that finance and the power of markets are harnessed in the service of delivering a just and smooth transition to a resilient, net-zero-emission global economy that accounts for the climate impacts of its activities. If we transition finance in line with an under-1.5 °C, resilient future, then the result will be that the financial system enables the transition to that future.

At a conceptual level, two of the biggest levers that can deliver this change are (1) the internalization of externalities to correct pricing and close valuation gaps; and (2) the lengthening of investment horizons to avoid the ‘tragedy of the horizon’ and the harms of short-termism. Correcting market failures and unpriced externalities will be needed across all of the Climate Action Pathways and will include (but not be limited to) focus on carbon pricing, ending fossil fuel subsidies and addressing stranded assets. Properly pricing disposal or valuing waste could also incentivize a circular economy. It also calls for enabling policies to drive sector transformations in the real economy - accounting for the value of climate-related transition, physical and liability risks - and necessitates the empowerment of local and regional governments to invest in resilience and adaptation through reinforced domestic financial intermediaries such as Subnational Development Banks and National Hubs of Financial Expertise that support cities and regions in obtaining climate finance. To lengthen time horizons and boost alignment of finance with climate resilience over the long term, we must build on progress made by the Task Force on Climate-related Financial Disclosures (TCFD). Making that progress will transition plans and net-zero-emission and resilience goals built on science-based, measurable interim targets to shift finance and investment onto a long-term path aligned with the Paris Agreement. Reliable, comparable and consistent emissions data will be required for all investments and their supply chains, and for investors to take a long-term approach that recognizes the need to provide for future, as well as existing, generations.

From the top down, policy and regulation will set the tone of what is required in the transition. This will send powerful signals to drive markets in support of the transition to net-zero emissions and to finance projects for climate-resilient infrastructure to adapt to the impacts of climate change already being felt around the world, particularly by those least able to afford them. Transformational tools and capacity-building in human resources, enhanced by technology and harnessing innovation, will deliver change. This will involve creating new financing mechanisms, market norms, shared taxonomies, scenarios, and other tools for net-zero alignment and resilience. Governance, oversight and/or coordination mechanisms will need to develop to promote integrity, accountability and harmonization of targets and standards across financial systems. Systems to foster the sharing of best practices and lifting of barriers to progress will be needed, as well as the building of capacity through education, training, tools and engagement to integrate climate-related risks (which include water-related risks) and climate solutions fully within finance and investment decision-making. Alignment of the digital transformation of the financial system with a 1.5 °C pathway and a resilient future will embed the required changes in an increasingly autonomous and decentralized system. Innovation, vision and effective investment de-risking tools will be required to scale finance and deploy capital in emerging markets and developing countries, with a focus at the local level, including for adaptation and resilience as well as breakthrough technologies.

From the bottom up, incentives and risk management will need to align with and drive the shift within the financial system. Adopting appropriate financial, fiscal and institutional incentives will power change in the

real economy. Prudential risk management and the alignment of board/executive remuneration with net-zero emission and climate-resilience goals, including meaningful interim targets, will be essential to recognize the central nature of climate risks and opportunities and support a successful transition.

If these shifts are made, money will flow in a manner consistent with our 1.5 °C-aligned and resilient vision for 2050 and beyond. One of the key proof points will be the availability of finance at scale for zero-carbon, resilient infrastructure and nature-based solutions. Adopting mechanisms to ensure investments foster an equitable and just transition away from high-emission resources, infrastructure and products and unlocking finance for zero-carbon and resilient infrastructure, especially at the subnational level via fiscal incentives for concepts like blended finance will, amongst other things, ensure access to clean energy and climate solutions for all.

Throughout the accompanying action tables, we examine what actions will be needed under these impact areas, with specific actions delineated for each of several categories of financial system actors and influencers who all must make demonstrable progress against identified interim targets. Some of the actions we list will be important in multiple impact areas, for example accelerating progress on the mandatory adoption of the recommendations of the TCFD and setting targets in line with the goals of the Paris Agreement. Repetition serves to highlight how critical these elements will be to transition the financial system and finance the transition to secure a 1.5 °C-aligned, resilient future. An overview of the Action Tables can be found below.

THEORY OF CHANGE

This pathway defines two high-level impact areas that global efforts will need to focus on to realize this vision for 2050:

1. Transitioning finance in line with a 1.5 °C, resilient future
2. Financing the transition in line with a 1.5 °C, resilient future.

Impact areas

In order to transition finance, and finance the transition, in line with a 1.5 °C, resilient future, the accompanying Action Tables will explore what actions need to be taken by different actors, and when, on the following topics:

1. Closing the ‘valuation gap’

Correcting market failures and unpriced externalities (cross-cutting through other pathways) through mechanisms including, but not limited to, carbon pricing, ending fossil fuel subsidies, accounting for the value of climate-related physical, transition and liability risks, addressing stranded assets and advancing a circular economy. Calling for enabling policies that send powerful signals to the market in support of the requisite investment to drive sector transformations in the real economy.

2. Tackling the ‘tragedy of the horizon’ and short-termism

Building on TCFD progress with transition plans and net-zero-emission and resilience goals built on science-based, measurable interim targets to shift finance and investment onto a long-term path aligned with the Paris Agreement and beyond. Utilizing the lengthening of the investment and strategic horizons that a 2050 target brings to align investment horizons with the long-term needs of customers, beneficiaries, other stakeholders and a thriving society.

3. Creating systemic transformation tools and building capacity

Creating new market norms, shared taxonomies, scenarios and other tools for net-zero alignment, investment in climate adaptation, and resilience. Governance, oversight and/or coordination mechanisms to promote integrity, accountability and harmonization of targets and standards across financial systems. Systems to foster the sharing of best practices and lifting of barriers to progress, as well as building capacity through education, training, tools and engagement to fully integrate climate-related risks and climate solutions in finance and investment decision-making, including in algorithms and smart contracts deployed in decentralized automated financial technology. Aligning the digital transformation of the financial system with a 1.5 °C pathway and a resilient future. New payment rails and digital currency technologies are able to monitor climate impact through transaction data.

4. Improving incentives and risk management

Engagement with the real economy to acquire relevant and material climate-related data. Adopting appropriate financial, fiscal and institutional incentives to drive change in the real economy. Prudential risk management, macroprudential intervention and board/executive remuneration alignment with net-zero

goals and physical risks posed by climate change. Innovation to scale finance and deploy capital in emerging markets and developing countries, and for adaptation/resilience as well as breakthrough technologies.

5. Zero carbon, resilient infrastructure and real assets

Adopting mechanisms to ensure capital flows to (i) foster an equitable and just transition away from high-carbon resources, infrastructure, products and services; and (ii) unlock finance for zero-carbon and resilient infrastructure, access to clean energy, and climate solutions for all, with a focus on the most vulnerable communities, while respecting rights of workers and communities throughout value chains and operations through social dialogue. This can in part be achieved through systemic policies and public support mechanisms that help increase access to finance for local and regional governments (e.g. financial intermediation, technical assistance for project preparation and financial analysis, along with fiscal incentives for concepts like blended finance). Phase out new fossil fuel financing and ensure a focus on transitioning high-emitting sectors' capital expenditure to low/zero-carbon, resilient infrastructure/assets and local, circular supply chains. Increased integration of sustainability into building standards and broad-based adoption of carbon removal with a focus on nature-based solutions.

MILESTONES TOWARDS 2050

	By 2021 ▼	By 2025 ▼	By 2030 ▼	By 2040 ▼
Closing the 'Valuation Gap'	<ul style="list-style-type: none"> Ending fossil fuel subsidies Policy sends powerful signals to markets driving change in the real economy 	<ul style="list-style-type: none"> Carbon pricing becomes widespread globally Stranded asset risks are incorporated in valuations Standardized accounting for climate risk and resilience 	<ul style="list-style-type: none"> Costs of externalities are internalized Climate resilience incorporated in broader economic assessments. 	<ul style="list-style-type: none"> Markets have been re-aligned so as to drive all sectors, including hard-to-abate sectors, to achieve net zero emissions in this decade.
Tackling the tragedy of the horizon and short termism	<ul style="list-style-type: none"> Build on TCFD progress with commitments to science-based targets and transition plans. 	<ul style="list-style-type: none"> Widespread adoption of transition plans within financial services as a reflection of their prevalence/ requirement in the real economy. 	<ul style="list-style-type: none"> Lengthening of investment horizons with the long-term needs of financial customers, beneficiaries and stakeholders for a thriving society. 	
Creating Systemic Transformation tools and building capacity	<ul style="list-style-type: none"> Advance coordinated global efforts for mechanisms to support sustainable finance Collaboration between financial actors to build robust scenarios and tools for net zero portfolio alignment and investment in climate solutions. 	<ul style="list-style-type: none"> Targets and taxonomies are widely agreed and harmonized. Climate risk is fully integrated into broader financial education and best practice is widely shared. 	<ul style="list-style-type: none"> Digital currencies, blockchains and new payment rails are integrated with climate related emissions data. 	<ul style="list-style-type: none"> A transformed financial system is now harmonized with a net zero emissions and climate resilient future.
Improving Incentives and Risk Management	<ul style="list-style-type: none"> Increased engagement with the real economy to increase the disclosure of relevant climate related data. Innovation grants and blended finance shifts to emerging and breakthrough technologies. 	<ul style="list-style-type: none"> Climate risk and increasing resilience is embedded in risk management frameworks and due diligence practices. Physical, transition and liability risk is included in prudential oversight and considered in decisions around macroprudential intervention. 	<ul style="list-style-type: none"> All board, executive and client facing staff remuneration is aligned with net zero targets and managing climate risk and resilience. 	<ul style="list-style-type: none"> Climate risk and considering adaptation and resilience is embedded in the financial system.

<p>Zero Carbon, resilient infrastructure & Real Assets</p>	<ul style="list-style-type: none"> • Increased integration of sustainability into building and development standards. • Begin phase out of fossil fuel finance with no new coal power and increased due diligence for new fossil fuel exploration per IEA scenarios. 	<ul style="list-style-type: none"> • Unlock finance, particularly private investment into local schemes for access to clean energy and climate solutions, through financial intermediation, technical assistance and fiscal incentives for concepts like blended finance, with a focus on the most vulnerable communities. • Increased capital flows to climate solutions to foster adaptation and resilience and a just transition. • Acceleration of stranded asset programs to ensure high emitting sectors, assets and infrastructure do not continue to be financed by shadow banking and investment. 	<ul style="list-style-type: none"> • Increased integration of carbon removal technologies including nature-based solutions from 'green' and 'blue' infrastructure into all development proposals and capital expenditure. 	<ul style="list-style-type: none"> • All infrastructure and asset finance is consistent with net zero emissions and climate resilience towards 2100.
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PROGRESS

In transitioning finance, the last 18 months has seen the finance sector progress rapidly in its climate ambition. A number of initiatives have been launched to enable financial institutions to set and achieve net-zero operational and financed emissions by 2050. Finance-sector initiatives have expanded along the Race to Zero Campaign, with the UN-convened Net-Zero Asset Owner Alliance (NZAOA) (currently 42 institutional investors with USD 6.6 trillion in assets under management (AUM)), the Paris Aligned Investment Initiative's Net Zero Asset Owner Commitment, the Net Zero Asset Managers Initiative (currently 87 signatories with USD 37 trillion in AUM) and the Net-Zero Banking Alliance (45 banks with USD 29 trillion in AUM) all having come together in April 2021 to launch the Glasgow Financial Alliance for Net Zero (GFANZ). Additional financial sector Race to Zero alliances are anticipated to launch in the run-up to the twenty-sixth session of the Conference of the Parties (COP 26), including the Net-Zero Insurance Alliance launched in July in Venice.

These alliances were built on the back of decades of engagement between civil society and the finance industry in raising ambition via their engagement with the real economy and shifting investments away from high-carbon ventures and into climate solutions. The Principles for Responsible Investment (PRI), which recently surpassed 4,000 signatories, has publicly demonstrated its commitment to driving inclusion of environmental, social and governance (ESG) factors in investment decision-making and ownership. CDP's bank and investor request, which requests that companies disclose environmental data in line with TCFD recommendations annually, has now amassed over 600 signatories (with assets of USD 110 trillion). In 2020, over 9,600 companies disclosed data to CDP, representing over 50 per cent of global market capitalization. Climate Action 100+ (570 investors, USD 54 trillion in AUM), which is investor-led and coordinated by the Asia Investor Group on Climate Change, Ceres, the Investor Group on Climate Change, Institutional Investors Group on Climate Change and PRI, is engaging with some of the largest and high-emitting companies (80 per cent of industrial emissions) on improving climate action, cutting emissions and strengthening climate-related financial disclosures and governance (see 'Facts and figures' in figure 1).

This progress, built on strong foundations of industry-led and civil society-supported action, is encouraging. However, the translation of this momentum into meaningful, measurable action will soon enter a critical phase. Commitments to net zero require adherents to set meaningful short- and long-term science-based targets to reduce financed emissions, which are estimated at 700x of operational emissions (see figure 2). A number of target-setting mechanisms such as the Science-Based Targets Initiative for Financial Institutions, the NZAOA 2025 Target Setting Protocol and the Net Zero Investment Framework, are in the early stages of adoption. These are built on portfolio alignment and accounting methodologies such as the Partnership for Carbon Accounting Financials (PCAF), the Paris Agreement Capital Transition Assessment (PACTA) and various other related tools, including the many implied temperature rise (ITR) portfolio analysis tools, which still have relatively low levels of adoption in the industry (see figure 3). The COP 26 Private Finance Hub's Portfolio Alignment Team recommended in their November 2020 Measuring Portfolio Alignment report that 'common, comparable metrics' meet the following criteria:

- Forward-looking: to communicate a direction of travel and give credit to credible efforts by companies to decarbonize;

- Decision-useful: allowing comparisons of companies and portfolios with peers, tracking progress over time, and incentivizing transition;
- Robust: analytically rigorous and consistent with climate science;
- Broad coverage: across sectors, assets and end users;
- Actionable: methodologically transparent and feasible given data requirements.

To build on this promising work to date, a convergence of corporate and financial institution climate-related disclosure metrics and common, comparable climate transition action plans will be required in the coming years, translating to robust and verifiable target-setting and reporting. In this area, policymakers and those at the forefront of industry-led change need to accelerate and work together collaboratively to ensure the required action takes place. As well as focusing on the transition of finance to fund and incentivize decarbonization in the real economy, increasing levels of finance are required to finance resilience measures to adapt to the changes that we are already seeing in the world due to warming already embedded. The faster we decarbonize, the less we will need to adapt, but financing adaptation to the changes we have already caused remains crucial.

Financing the transition – although it has been in progress for decades, financing the transition is increasing at an exponential rate. As ambition to transition the sector increases, so does the sector's commitment to deploying capital for climate solutions in mitigation and adaptation as well as financing the transition in companies to meet their own net-zero commitments. Three major banks have collectively committed USD 3 trillion into sustainable finance by 2030, which is the amount issued in green bonds and loans in the total market in the 12 years prior to 2020 (see figure 4). Whilst these are very large sums, the International Energy Agency (IEA) estimates that by 2030, USD 4 trillion per year will be required for investment in clean energy alone to meet net zero by 2050 (see figure 5).

However, increased 'green' finance on its own is not sufficient to finance the transition. The finance sector continues to fund high-emitting companies, projects and assets to an extent that is currently well above their funding of 'green' activities (see figure 6). The phase out of fossil fuel financing is not progressing at the pace required. The Net Zero Emissions by 2050 (NZE2050) pathway in the above-mentioned IEA report states that there can be no new unabated coal plants approved for development, no new oil and gas fields or coal mines, and no additional fossil fuel exploration needed after 2021 under a scenario where net zero is achieved by 2050. NZE2050 is clear that there is continued investment in *existing* sources of fossil fuels as they are gradually phased out, with diminishing amounts of financing. The report also makes the case that oil and gas companies have expertise well suited to transitioning to the provision of new clean energy technologies. This presents an opportunity for financial institutions to deploy transition finance which facilitates and encourages the evolution of oil and gas companies as envisaged in the roadmap. This could be by engagement or incentives through financial instruments such as sustainability/transition-linked loans and bonds.

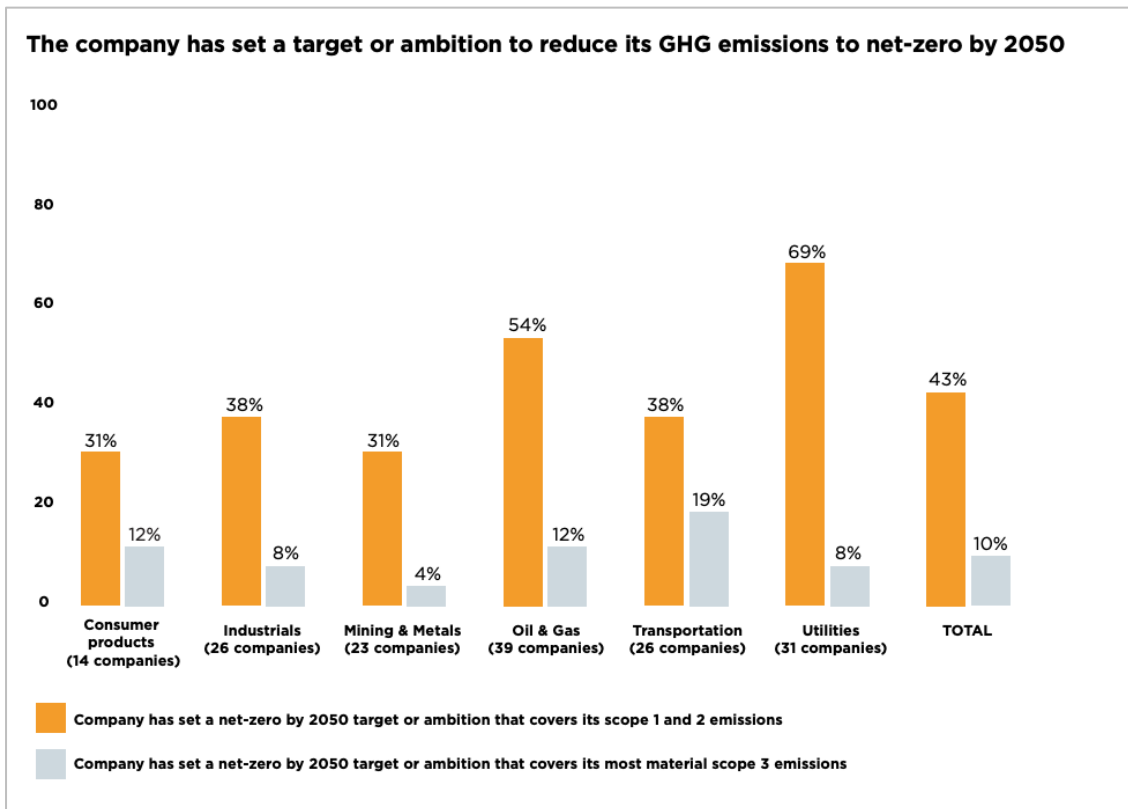
Multilateral development banks (MDBs) and development finance institutions (DFIs) are playing an ever-increasing role in climate finance. Climate financing by seven of the world's largest MDBs accounted for USD 61.6 billion in 2019, of which USD 41.5 billion (67 per cent) was in low- and middle-income economies, according to the 2019 Joint Report on Multilateral Development Banks' Climate Finance. The European

Investment Bank (EIB) will increase its level of support to climate action and environmental sustainability to exceed 50 per cent of its overall lending activity by 2025 and beyond, thus helping to leverage EUR 1 trillion of investment.

This builds on the increasingly important role these institutions, particularly green banks, have played in accelerating adoption and driving down the cost of climate solutions such as renewable energy. The success of technologies such as offshore wind in the United Kingdom of Great Britain and Northern Ireland and Northern Europe can be linked to government-seeded investment by green banks, which crowd in private sector investment and are supported by policy actions such as setting of grid priorities and price signals such as feed-in tariffs and contracts for differences in catalysing and supporting development in this area (See figure 7). Such examples must be continued in energy and infrastructure and expanded into breakthrough climate solutions, especially for resilience and adaptation at local level, to ensure a just transition involves access to clean energy, water and nature-based solutions throughout all economies and communities.

FACTS & FIGURES

FIGURE 1:



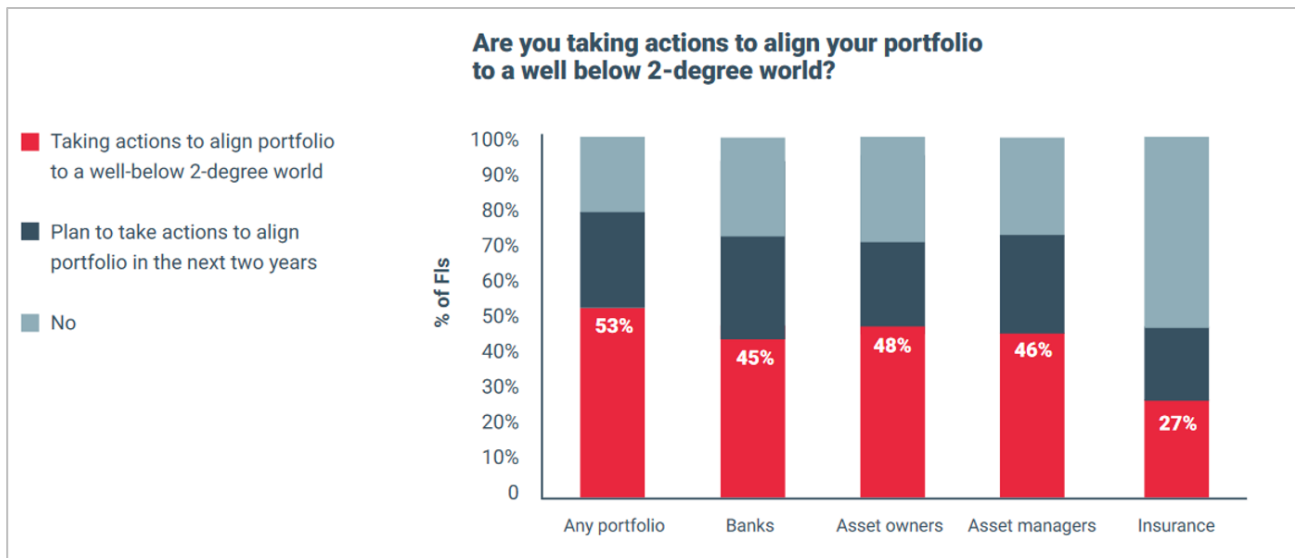
Source: CA100+ 2020 progress report

FIGURE 2:



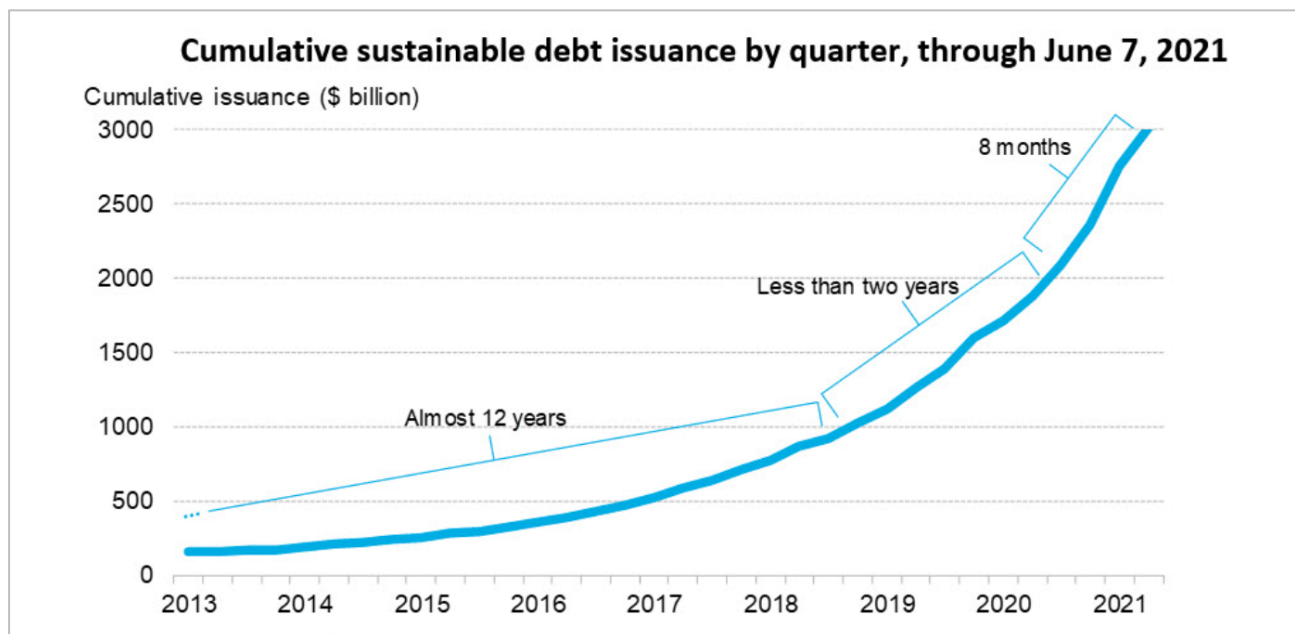
Source: CDP 2020 Financial Services Disclosure Report

FIGURE 3:



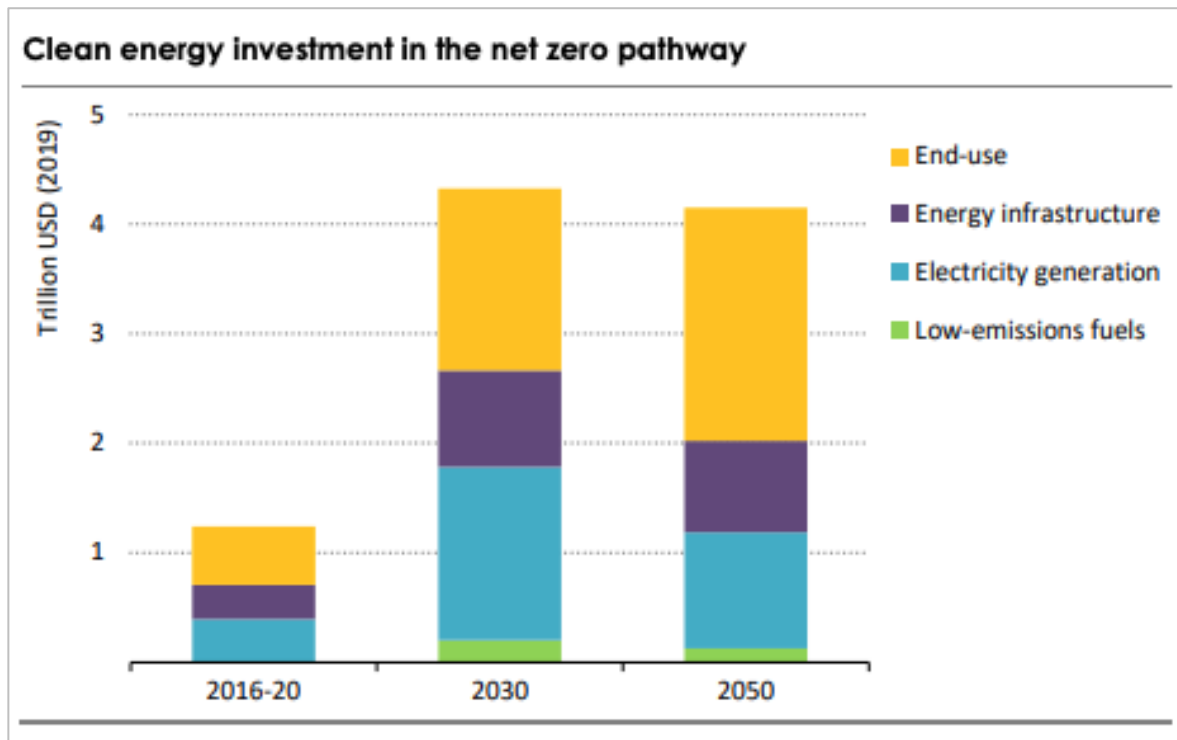
Source: CDP 2020 Financial Services Disclosure Report

FIGURE 4:



Source: BloombergNEF, Bloomberg L.P.

FIGURE 5:



Source: IEA

FIGURE 6:

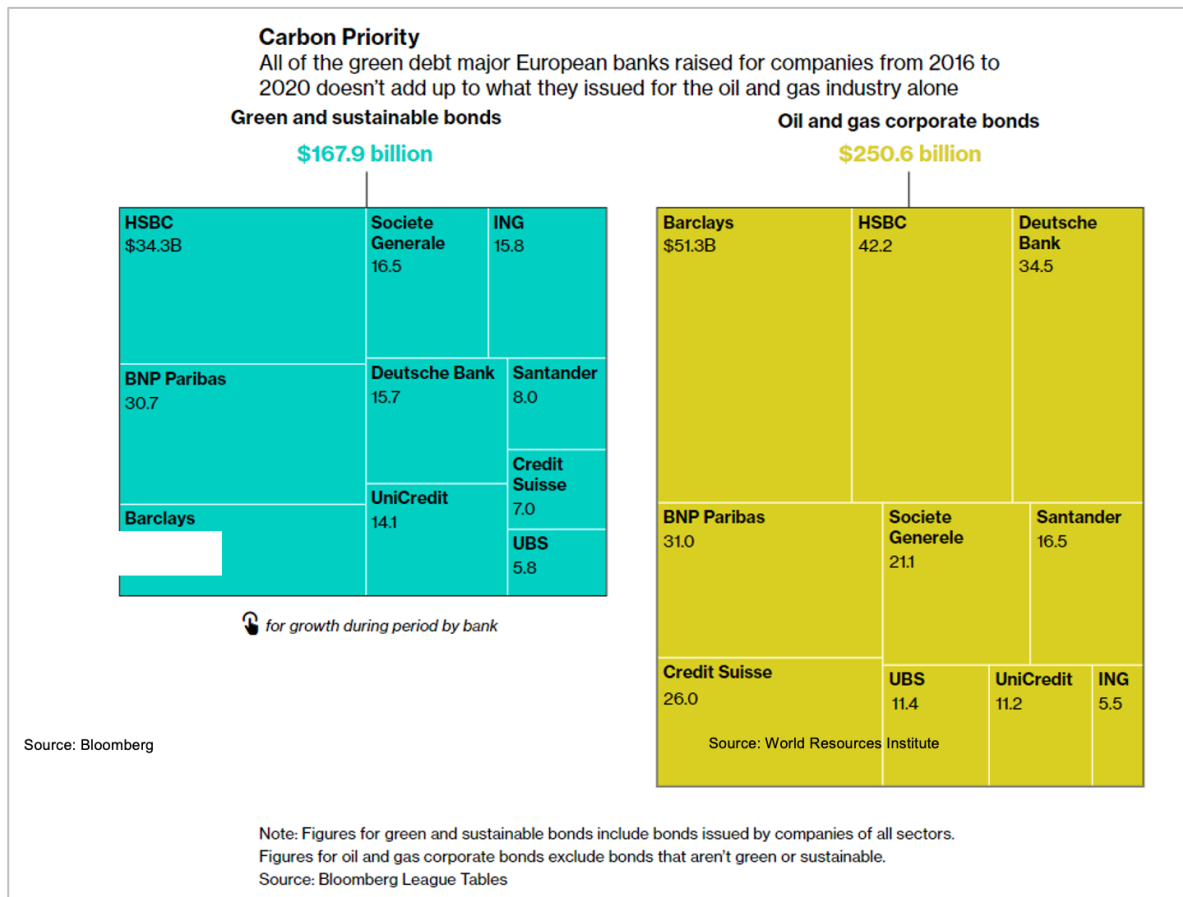
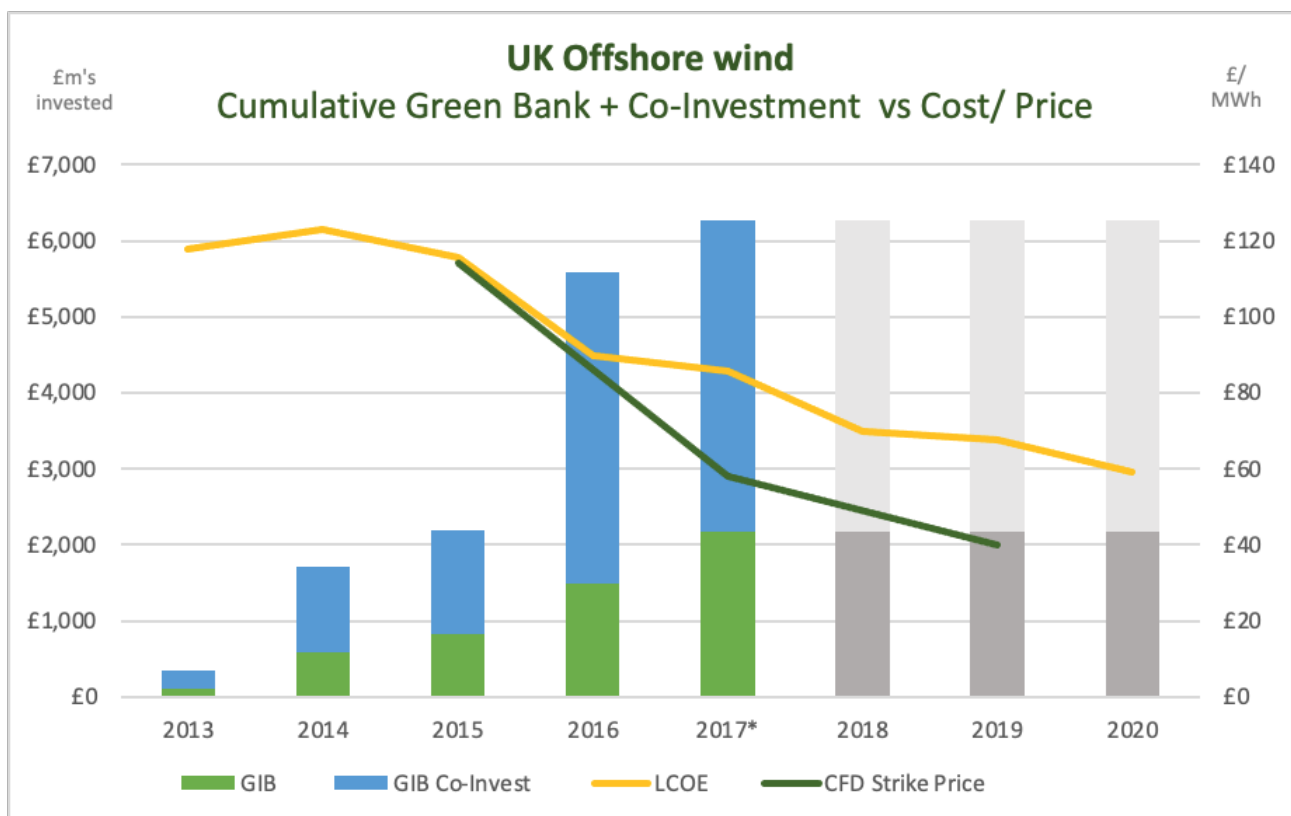


FIGURE 7:



Source: GIG, Cranfield University



CLIMATE ACTION TABLES – STRUCTURE

