Heavy lifting: Why transition finance is vital to combat climate change

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Introduction

In June 2020, the UK reached a milestone that just a few years ago would have seemed impossible - 67 days, 22 hours and 55 minutes without using coal-fired power, the longest stretch since the start of the Industrial Revolution, two centuries ago.

Even as recently as 2010, 75% of the nation's electricity was generated using coal[1], but it has now been almost completely phased out in favour of cleaner natural gas and renewables such as wind and solar power.

This transition shows what can be achieved when the private sector and regulators work together under the right policy frameworks. It also reminds us that a similar transition is urgently required across a number of other sectors in the UK if the country is to truly play its part in addressing global climate change.

In 2019, the UK became the first major economy to pass a net zero emissions law, which requires all greenhouse gas emissions to be net zero by 2050, compared with the previous target of 80% reduction from 1990 levels[2]. This will require, among other things, a significant level of investment from both the public and private sectors.

In recent years, the sustainable finance market has moved from niche to mainstream at rapid pace. However, high-carbon sectors often lose out on sustainable financing due to a lack of clear product fit, or cautious investor sentiment. "Transition finance", targeted directly at these hard-to-abate sectors, has emerged as a way to bridge this gap.

This paper outlines the case for transition finance globally, with a particular focus on the UK. It also highlights recent product innovations in transition finance, and discusses possible levers to encourage transition finance in the UK.

[1] 'Britain's electricity since 2010: wind surges to second place, coal collapses and fossil fuel use nearly halves' https://theconversation.com/britains-electricity-since-2010-wind-surges-to-second-place-coal-collapses-and-fossil-fuel-use-nearly-halves-129346

[2] Skidmore MP, C. (2019, June 27). UK becomes first major economy to pass net zero emissions law. Retrieved from https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law

The case for transition finance

The 2015 Paris Agreement set out the decarbonisation challenge in stark terms – global carbon emissions must be significantly reduced by 2030, and placed on a net-zero footing by 2050 if we are to limit temperature increase to below 2°C[3].

Much of the transition effort has so far been focused on electricity generation. As can be seen in the UK, this focus is now having an effect, thanks to increasingly mature renewable power technology. However, progress in other high-carbon sectors, such as steel, cement or aviation, has been limited. In these areas, transition initiatives are still small-scale, and new technologies are expensive and inefficient.

Unfortunately, these are the sectors that will make or break adherence to the Paris Agreement. Despite its zero-emissions commitment, the UK government so far has failed to lay out clear transition pathways for these sectors.

Transition sectors in the UK economy

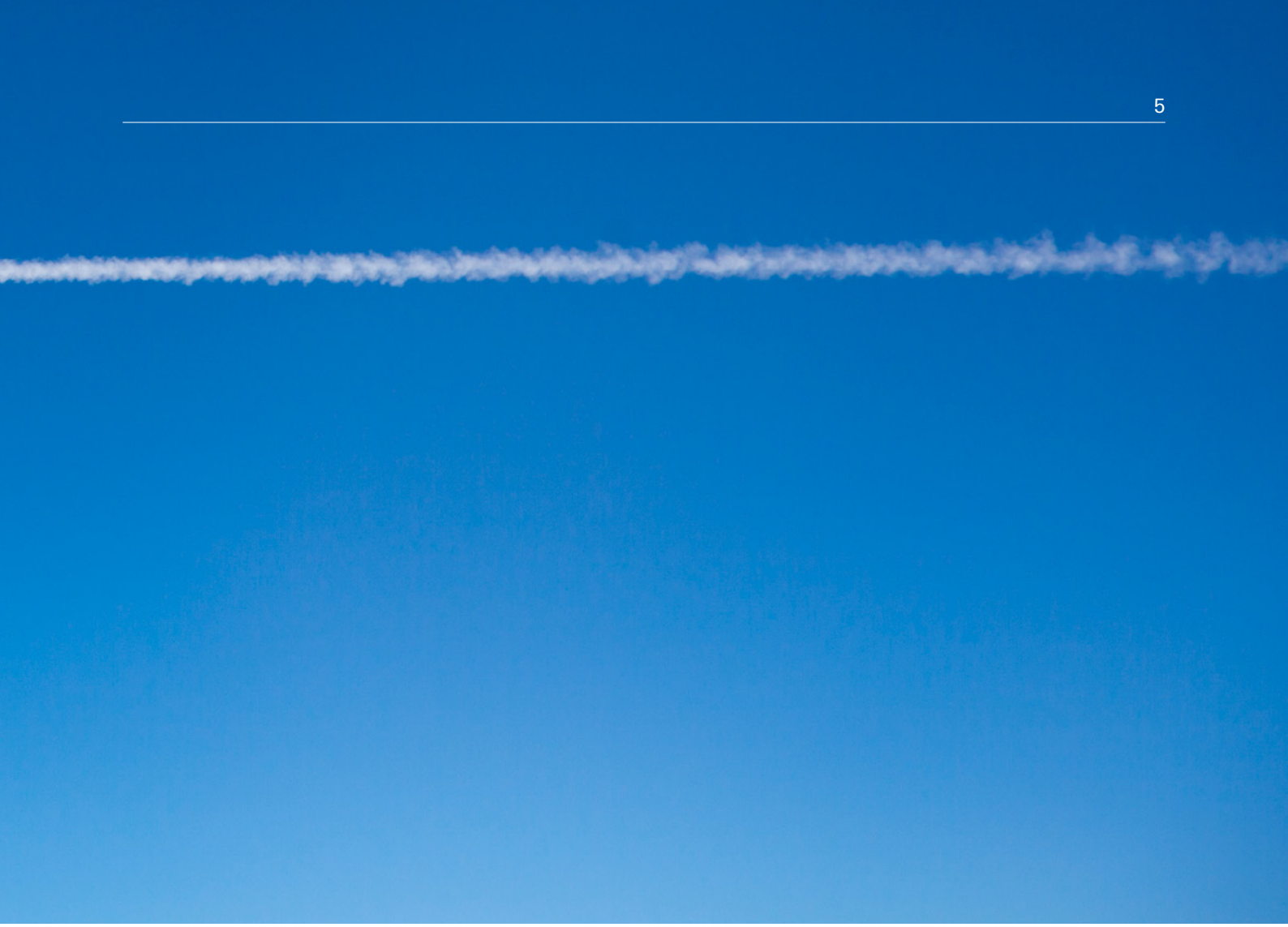
The provisional 2019 carbon dioxide emissions for UK[4] are 352 MtCO2e, a decrease of 4% from 2018 levels. The bulk of the UK's hard-to-abate emissions are concentrated in three sectors:

- **Transport** – 33% of emissions comes from road vehicles, railways, domestic aviation, shipping, and fishing. According to the Energy Transmission Commission (ETC)[5], transport is considered as one of the heaviest polluters worldwide and is a key sector undergoing an environmental transition, thanks to the advent of innovations such as electric cars, bio-fuel, etc.
- **Business** – 18% of emissions are generated from industrial/commercial sectors, industrial off-road machinery, refrigeration and air conditioning. It is worth noting that 3% of total emissions stem from industrial processes, which include cement production and other processes such as iron and steel.
- **Residential** – 18% of emissions comes from fuel combustion for heating and cooking, garden machinery and gases released from aerosols and metered diesel inhalers.

[3] Victor, D. G., Geels, F. W., & Sharpe, S. (2019, November). Accelerating the low carbon transition. Retrieved from http://www.energy-transitions.org/sites/default/files/Accelerating-The-Transitions_Report.pdf

[4] 2019 UK greenhouse gas emissions, provisional figures. (2020, March 26). Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/875485/2019_UK_greenhouse_gas_emissions_provisional_figures_statistical_release.pdf

[5] Mission Possible: reaching net-zero carbon emissions from harder-to-abate sectors by mid-century. (2018, November). Retrieved from http://www.energy-transitions.org/sites/default/files/ETC_MissionPossible_FullReport.pdf



Transition pathways

Technologies exist to support the transition of large parts of the economy, including many of the so-called hard-to-abate sectors. Examples include:

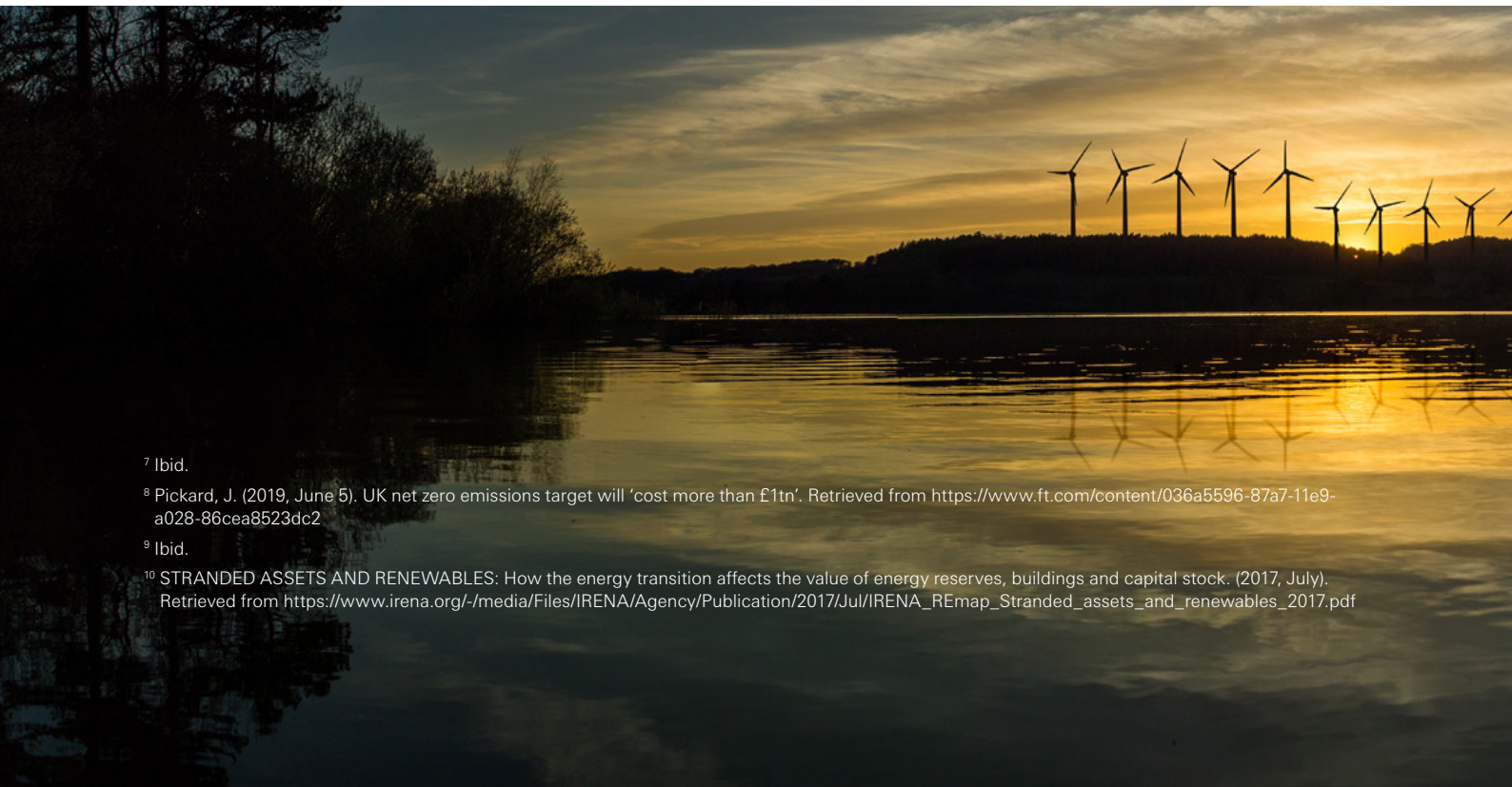
- **Transport** – The ETC has suggested a path to cut emissions in the transport sector by 2050 through electrification, operational efficiency, electrification, modal shift and by reducing demand. Within this plan, the major challenges relate heavy road haulage, aviation and shipping. In heavy-road transport, emissions for lorries, buses and coaches can be reduced in the short-term with the help of improved design and efficiency and in the long-term by switching to electric or hydrogen vehicles in 2030s. Similarly, emissions from shipping and aviation can be lowered by improving design and overall efficiency.
- **Heavy industries** – Through materials efficiency and circularity in the cement, steel, plastics and aluminium sectors, it is estimated carbon emissions could be reduced by 40% globally. Energy efficiency through new technologies could reduce short-term emissions by 15-20%. Further reductions can be reached by better recycling, improving product design, longer product lifetime and new service-based and sharing business models (such as car-sharing to cut steel production). In addition to reducing emissions, investing in carbon capture and storage at production is equally important.
- **Residential** – Heating efficiency can be improved by direct electrification through induction or heat pumps. Costly implications for seasonal heating peaks in some regions can be overcome by using biogas to supplement the baseload heating produced by electricity. Switching to electricity-based fuels, such as hydrogen, as a substitute for natural gas will also reduce carbon emissions. There are also huge opportunities to improve efficiency of heating or cooling through insulation and equipment in residential buildings[6].

[6] Ibid.

Key challenges

There are three challenges to a swift transition:

- **Technical** – There is an urgent need to further develop and deploy key technologies at rapid scale. In some industries, net-zero carbon technologies are niche, with low performance and high costs, and therefore cannot compete with established processes.
- **Economic** – Transitioning to a net-zero carbon economy will require significant amounts of investment, generally upfront, but with returns that only materialise in full well into the future. It is estimated that decarbonisation will cost 0.5% of global GDP[7]. In the UK, the Committee on Climate Change, a national independent climate advisory body, has estimated that reaching net zero will require £50bn of capital a year[8]. The Department for Business, Energy and Industrial Strategy puts the figure at £70bn[9].
  Also, as the transition to zero-carbon accelerates, there is an increased risk of creating "stranded" assets from closed power stations or transport infrastructure which are no longer in use and that investors no longer want[10]. On the positive side, accelerating the transition can add to efficiency and industrial competitiveness, limit the risk of creating more new stranded assets, and will have a positive longer term impact.
- **Institutional** – Public/private research and development is poorly connected. There is also a lack of international and national governance to monitor progress. Transition also requires joined-up policies from governments, which is challenging to coordinate.



[7] Ibid.

[8] Pickard, J. (2019, June 5). UK net zero emissions target will 'cost more than £1tn'. Retrieved from https://www.ft.com/content/036a5596-87a7-11e9-a028-86cea8523dc2

[9] Ibid.

[10] STRANDED ASSETS AND RENEWABLES: How the energy transition affects the value of energy reserves, buildings and capital stock. (2017, July). Retrieved from https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Jul/IRENA_REmap_Stranded_assets_and_renewables_2017.pdf

The role of transition finance

Addressing a gap in the market

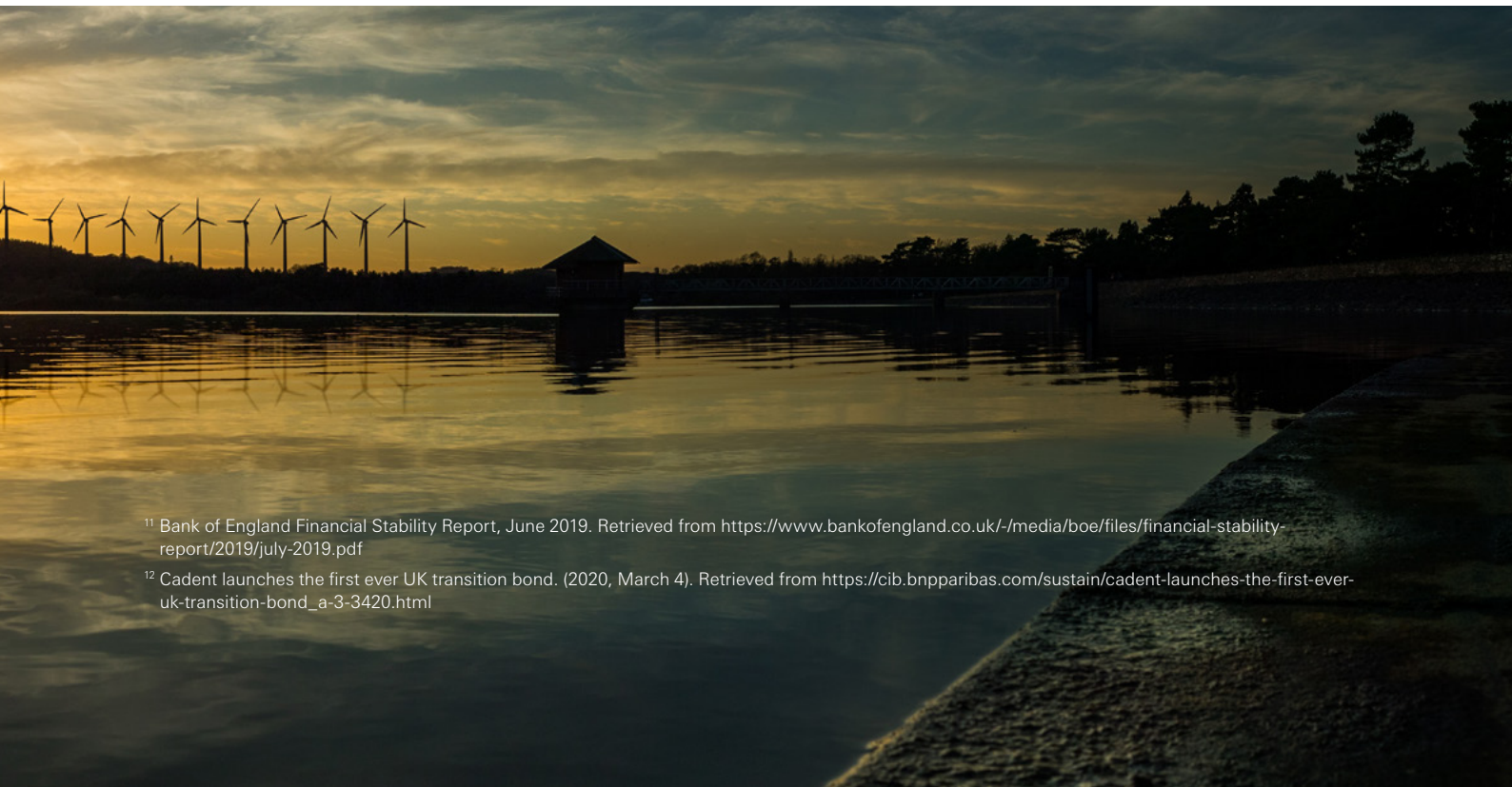
Financial institutions are increasingly concerned about the financial as well as reputational risk associated with investments in hard-to-abate sectors. According to the Bank of England, the loan exposures to fossil fuel producers and other transition assets in the UK amount to about 70% of banks' capital[11].

The sustainable finance market has seen great success in recent years, with high double-digit growth rates in green bonds and loans on the financing side, and environmental, social and corporate governance-aligned assets on the investor side. However, the sustainable finance market has so far done a poor job of mitigating emissions in hard-to-abate industries. Firms in these industries often need to undertake complex transformations to reduce their carbon output, which include many incremental efficiency steps that may not be seen as "green". For example, an airline company may use a green bond to finance research into biojet fuel, but investors may not be willing to accept the financing of a new, less carbon-intensive fleet of aeroplanes.

Transition finance has emerged as the solution to this problem. It targets sectors which are energy-intensive and hard-to-abate, and which cannot be green in the short-term as they do not have access to green alternatives which are economical or technically feasible.

There are two main examples of transition financing:

- **Transition bonds and loans** – These have been issued by a number of corporates to finance activities that reduce emissions and enable the achievement of long-term climate objectives. Most recently, Cadent Gas issued a €500m bond to finance the retrofit of gas transmission and distribution networks in the UK[12], thereby reducing methane leakage and facilitating the introduction of hydrogen. For credible transition bond issuance, issuers should disclose a net-zero target and a strategy for long-term decarbonisation.
- **Sustainability-linked bonds and loans** – These products are any type of bond or loan which the financial and/or structural characteristics can vary depending on whether the issuer achieves predefined sustainability/ objectives thus creating an incentive for the issuer to meet those targets. For instance, a recent bond issued by power firm Enel was subject to a potential one-time 25 basis point increase if less than 55% of Enel's total power generation capacity came from renewable power facilities by December 2021. This type of bond, dependent on interest-linkage which is common in revolving credit facilities, differs from green bonds as it does not specify eligible use of proceeds but rather permits funds to be used for general corporate purposes.



[11] Bank of England Financial Stability Report, June 2019. Retrieved from https://www.bankofengland.co.uk/-/media/boe/files/financial-stability-report/2019/july-2019.pdf

[12] Cadent launches the first ever UK transition bond. (2020, March 4). Retrieved from https://cib.bnpparibas.com/sustain/cadent-launches-the-first-ever-uk-transition-bond_a-3-3420.html

Advantages

Transition finance solutions complement those offered by ordinary sustainable finance. They bring in more issuers and investors, as there is a possibility to be more flexible in the type of proceeds and targets, and thus create more investment options.

Because transition finance is generally linked to specific outcomes, either at the level of the issuer or issuance, it creates more accountability and transparency in financial markets. This reduces the risk of "green-washing"[13], where companies claim to be more eco-friendly than they are in reality. It will also build confidence in the ability of high-carbon industries to convert to greener alternatives.

Barriers to growth

Businesses have only just started to recognise that climate risks should be part of financial risk management, rather than just corporate social sustainability[14]. That means there is still a lack of understanding and awareness of the relative rates of return on carbon-intensive assets and the associated financial risks with climate change.

This is partly due to a lack of consistent and comparable data relating to high-carbon industries emissions and sustainable initiatives. This complicates the ability for investors to track progress and proceeds accordingly.

There is also a lack of consensus globally on definitions and scope of transition finance. Additional transaction costs in reporting may deter firms from issuing transition finance products.

Finally, the market currently provides only limited incentives for companies to actively invest in the transition. Measurement of climate risk is still not fully developed and therefore does not translate into pricing the cost of capital, for debt or equity.

[13] Transition bonds - New funding for a greener world. (2019, December 10). Retrieved from https://cib.bnpparibas.com/documents/markets-360-brief-on-transition-bonds.pdf

[14] Franklin, A., Davies, P., Domínguez, I., & Wyatt, K. (2019, November 8). Sustainability-linked bonds complement and bolster the ... Retrieved from https://www.lw.com/thoughtLeadership/Sustainability-linked-bonds-complement-and-bolster-the-sustainable-finance-market

Mobilising transition finance

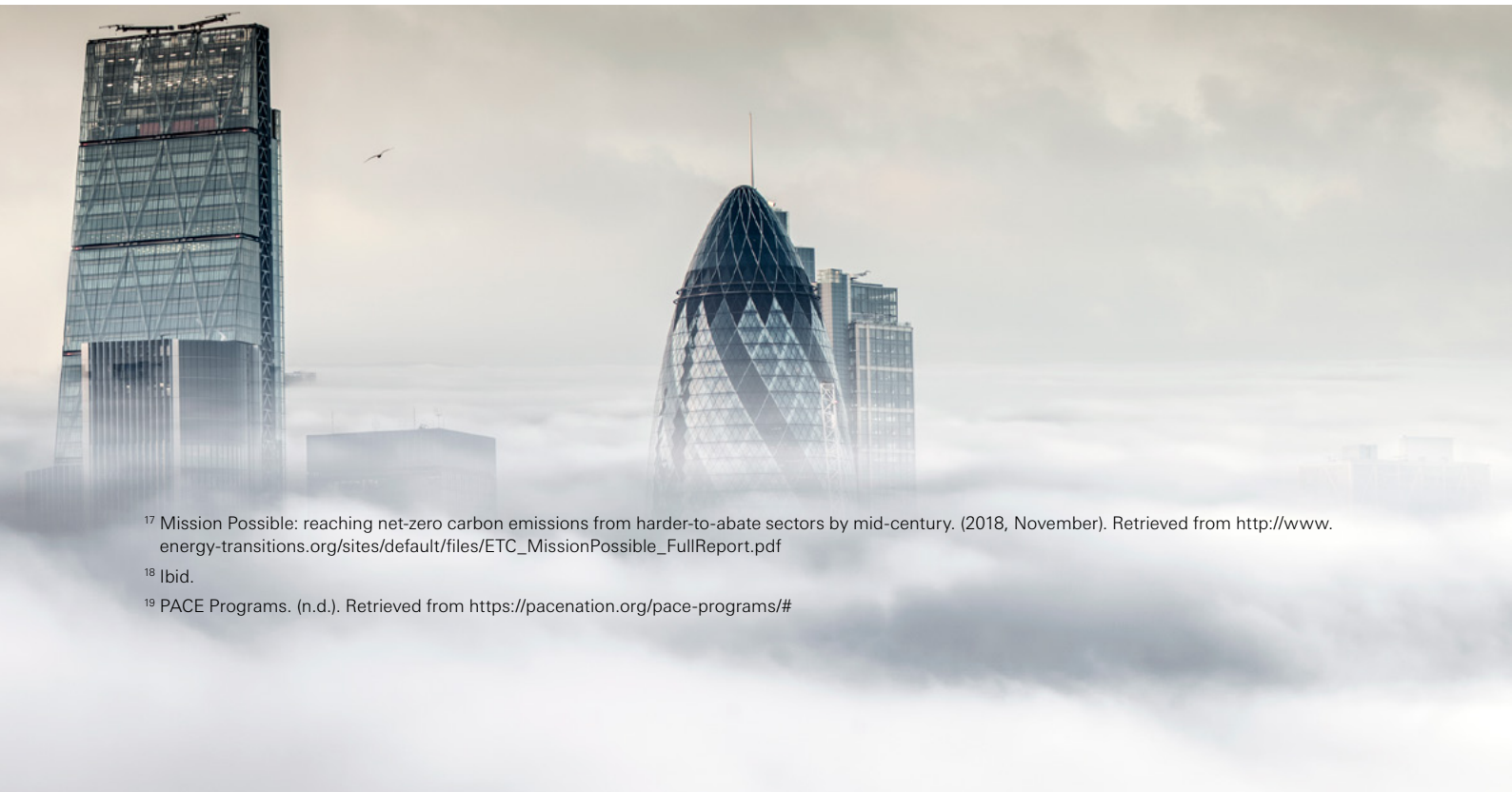
We have identified a number of ways to accelerate sustainable investment in transition sectors:

- **Transition pathways** – Establish clear pathways for each sector with transparent policy expectations to provide clarity for issuers and investors. This should include information about the technologies that are on the next frontier of investment, including negative emissions technologies such as carbon capture and storage. There needs to be a clearer regulatory framework, notably to discourage moral hazard, but also widespread public awareness campaigns on benefits and risks to foster the investment required.
- **Disclosure** – Mandatory disclosure of the transition risk in a company's business model, following a standardised disclosure template within annual reports. This will provide better, more consistent information to investors and financial markets, improving the effectiveness of transition risk pricing. Greater transparency creates a wider democratisation of decision-useful information, enabling private investors and smaller institutions also to play a stronger role in the transition to sustainability. Offering tax incentives to businesses that disclose operational and measurable reductions in carbon emissions could encourage a change in behaviour among businesses of every size.
- **Product innovation** – Dedicated transition finance products to mobilise investments into key sectors. These can be linked to specific projects or to company-specific transition metrics. Given the time it can take for investors to understand new products, there is a case for the public sector to build support by issuing transition instruments and investing in them, mobilising pension funds and other asset owners to fund the transition. Standardisation, for example around sustainability performance measures, can also provide a benchmark definition of sustainability.
- **Pricing of climate-related risk** – Despite important progress by supervisors and financial institutions, financial markets are still unable to price climate risk in a systematic and effective way. Financial institutions need to amend their risk management practices to look beyond short-term business cycles and instead align their risk appetites, investment horizons and investment and funding profiles with longer-dated climate risks. There is a case for financial institutions to adjust the risk weighting of their investments to reflect transition pathways and for this to be accounted for in the regulatory capital they are required to hold[15]. Certain asset classes can potentially be incentivised by lower risk weights, subject to the evidence to demonstrate that there is a link between environmental performance and credit performance.

[15] Steenis, H. van. (2019, June). Future of Finance: Review of the outlook for the UK financial system: What it means for the Bank of England. Retrieved from https://www.bankofengland.co.uk/-/media/boe/files/report/2019/future-of-finance-report.pdf?la=en&hash=828A3E3D1517ABFE231FAA28034F6D7B0C63A097

[16] Hirst, D. (2018, January 8). Carbon Price Floor (CPF) and the price support mechanism. Retrieved from https://researchbriefings.files.parliament.uk/documents/SN05927/SN05927.pdf

- **Carbon pricing** – The introduction of a comprehensive carbon pricing framework creates a market signal for emissions. Pricing must reward low-carbon behavior, but still allow hard-to-abate sectors to continue operating in the UK as they transition. For financial institutions, carbon pricing provides key data points which could be used in credit risk frameworks more widely[16].
- **Financial incentives** – There is a case for time-bound financial incentives to support accelerated investment into transition research and development. Tax incentives on transition bonds, either for issuers or for investors could help stimulate the market, as would reducing the costs of transition-finance solutions through direct grants. Fast-tracking regulatory approval for certain instruments could provide non-financial but economically beneficial advantages. To strengthen the incentives for industries to invest in transition, improving standards and monitoring, providing fiscal incentives for industries who meet certain goals each year or even simply communicating use cases and advocating for more innovation in the space could be effective. The government could also help to create industry consortia to socialise investment, test and deploy new technologies.
- **Asset write offs** – In heavy industry, long asset life delays the deployment of new technology. One policy incentive would be to encourage could be to allow early write-offs of assets[17]. The ETC suggests that in the steel industry for example, switching from blast furnace to hydrogen would require scrapping existing plant before the end of their useful life.
- **Collaboration** – It is also important to encourage collaboration and better connectivity between public and private R&D[18] through facilitating the deployment of proven technologies at commercial scale or development of partnerships for greater efficiency.
- **Government programmes** – Lastly, standardised government programmes, such as Property Assessed Clean Energy[19] financing in the US, would offer long-term private financing for resiliency upgrades to homes and businesses, allowing financial product innovation (e.g. green asset-backed securities and green mortgages).



[17] Mission Possible: reaching net-zero carbon emissions from harder-to-abate sectors by mid-century. (2018, November). Retrieved from http://www.energy-transitions.org/sites/default/files/ETC_MissionPossible_FullReport.pdf

[18] Ibid.

[19] PACE Programs. (n.d.). Retrieved from https://pacenation.org/pace-programs/#

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