

NATIONAL INFRASTRUCTURE BANK DESIGN

BUILDING A PUBLIC BANK FIT FOR THE FUTURE

Summary

This paper has been prepared by a group of expert organisations¹ as input for the HMT process to establish a new UK National Infrastructure Bank by March 2021. The paper identifies four design objectives to support the current design phase of the new Bank. It discusses each design objective in detail and makes related recommendations for the form and function of the new Bank.

Design Objectives

In the 2020 Spending Review the Chancellor announced the creation of a new National Infrastructure Bank which would “support the government’s ambitions on levelling up and net zero”. A detailed mandate for the Bank has not yet been announced, but it is expected to function in some form from March 2021.

Given the economic consequences of the Covid-19 pandemic, and the end of the UK’s access to funding from the European Investment Bank, the National Infrastructure Bank will be critical to the UK’s green economic recovery. A clear signal should be sent that this institution will remain in public hands for the long-term. It should focus on countering market failures which hold back private sector investment in emerging future-fit UK infrastructure technologies.

The recommendations in this paper are informed by our collective experience of supporting the creation of new public banks and finance facilities, and are based on the following design objectives:

1. **Governance:** The Bank should be an independent institution with full banking powers and borrowing powers, led by an experienced public banker, and governed by a multi-skilled board that is representative both of the whole UK and of the range of sectors and stakeholders with which the Bank will interact. The Bank’s performance should be subject to independent scrutiny.
2. **Capitalisation.** The scale of the Bank’s capitalisation should be appropriate to its mission and functions, both of which need to be specified as a matter of urgency. The institution should be able to access capital markets for both debt and equity. The form of the Bank’s

¹ See Contributors section, at end of document, for a list of the institutions which have contributed to this paper.

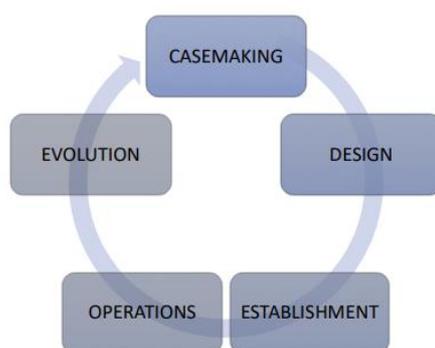
capitalisation should include opportunities for UK citizens to participate and invest in their future.

3. **Mission-driven mandate:** The Bank should be a mission-driven institution. It should have a legal mandate which clearly specifies its levelling up and net-zero goals. Articulation of these goals should incorporate the UK's climate change mitigation and resilience goals, as well as fairness and a just climate transition, since it is through supporting good quality green jobs and green infrastructure that levelling up and a sustainable green UK recovery will be achieved. The Bank's goals should also include crowding in private capital to projects which are not yet suitable for wide-scale private investment due to market failures, as well as avoiding duplication of existing market activity. The Bank should have a long-term mandate, offering the necessary certainty to private investors about the success of its policies to crowd-in capital.
4. **A future-fit definition of infrastructure:** The Bank should focus on facilitating investment in emerging infrastructure sectors and technologies which are not sufficiently serviced by existing providers due to market failures. A broad investment scope will be needed so that the Bank is able to fund a wide variety of projects, in terms of locality, size, and their stage in the pipeline. This scope should include support for SMEs, innovation projects, partnerships with city and regional institutions, and funding of nature-based solutions. The institution should be flexible in the way that it operates, able to adapt to a variety of funding needs and to changes over time.

Why this is the right time to consider design objectives

Through analysis of green bank design processes in the UK and other countries, E3G has identified² five phases of green bank creation³. Figure 1. illustrates these phases. Within this framework the UK's new National Infrastructure Bank is currently in the Design phase.

Figure 1: Five Phases of Learning Process on Designing Green Finance Institutions⁴



Source: Naidoo, 2019²².

² How to Design a Green Bank - E3G

³ https://www.e3g.org/wp-content/uploads/06_07_20_Green-Bank-Design-Principles.pdf

⁴ Naidoo, C. (2019). Greening the Development Bank of South Africa: 1988 to 2019. An Evolutionary Approach

Public finance institution design should be thought of as a cycle which can be iterated. It follows that these institutions can grow and develop over the long-term, and that they need to have the capacity to evolve and innovate to meet new priorities within their overall mandates.

However, to ensure the integrity of the institution, its objectives and structure must be clearly set out from the beginning. These objectives will guide the institution's learning process:

- A mission established in the design phase will act as a link between each future stage in the learning process, ensuring that the institution remains focused on its goals as it develops.
- In the case of the new UK Bank, it will also be important to ensure that the initial form of the institution is appropriate and effective, especially given the tight timeline for deployment.

The design phase involves answering key questions which will enable the institution to take an appropriate structure, with sufficient capitalisation and a clear mission.

Key questions that need to be answered in the design phase:

1. What are the desired outcomes from this institution?
2. Which government departments need to be consulted about the institution?
3. Why wouldn't the finance gap be met by existing financiers?
4. What is the structure of the institution, and why?
5. How should it most effectively be set up, e.g. governance, shareholders?
6. What is the appropriate scale of capitalization?
7. How is the capitalization going to be financed?
8. What should the institution use its financial resources to support, and how should that change over time?
9. What does the institution's process look like and what exactly will it do?
10. How should the institution evolve over time in order to deliver its long-term mandate?
11. How will the institution work with the existing network of government bodies and funding mechanisms?

Priorities for the National Infrastructure Bank

1. Governance

The new National Infrastructure Bank should be independent of government, while providing an advisory role to offer insight and recommendations on regulatory and other mechanisms that are required to further reduce barriers to green infrastructure investment. It will be crucial for the Bank's management team to be able to make long-term decisions free of day-to-day political interference.⁵

For the success of the UK's net-zero transition, it will be crucial for the UK government to have long-term access to independent institutions that can provide objective advice. The new Bank can play this role in relation to financing the transition, complementing the advisory roles of the Climate Change Committee for carbon budgets, the Office for Environmental Protection for environmental resilience, the Green Jobs Task Force for future-fit employment, and the National Infrastructure Commission for infrastructure strategy.

Strong governance arrangements for the new National Infrastructure Bank will enable it to avoid governance pitfalls such as capture by vested interests, or lack of financial prudence, and will enable it to benefit from a diverse range of stakeholders, expertise and perspectives. The government should also set out a clear intention for the Bank to be a long-term public institution, to avoid creating policy and investment uncertainty.

Different parts of the UK should be represented on the Bank's Board, tangibly demonstrating that this is a bank which brings together the whole United Kingdom. The Institution of Civil Engineers stated in its recent report that the "power and responsibilities for infrastructure policy and service delivery should continue to be devolved to ensure the economic opportunities of the net-zero transition are distributed throughout the UK, to support the 'levelling up' agenda."⁶

Our recommendations associated with this design objective include:

- > **The National Infrastructure Bank should have full banking powers** and should be able to raise money on capital markets for debt and equity. Most other developed economies already have public finance institutions with full borrowing powers, and the UK Bank needs to be able to compete effectively and at scale.⁷
- > **The Bank should operate independently of government**, governed by a clear mandate together with Articles of Agreement created through legislation. This day-to-day independence in investment decision making will be crucial to the Bank's success in maintaining a long-term, strategic focus on its goals. As the Bank is expected to begin its operations before legislation can be passed, the intention for the Bank to be independent should be stated clearly by the government in March 2021.
- > **The Bank's performance should be subject to independent scrutiny.** Independent oversight is essential for the deployment of public money at scale, and for the Bank to

⁵ <https://www.ucl.ac.uk/news/2020/dec/opinion-how-national-infrastructure-bank-could-transform-uk-economy>

⁶ [State of the Nation 2020: Infrastructure and the 2050 net-zero target | Institution of Civil Engineers \(ice.org.uk\)](#)

⁷ We recommend looking at best practices in other countries e.g. KfW in Germany.

build the trust and reputation that will be essential to deliver on its purpose. General departmental or parliamentary scrutiny processes may well not be considered by stakeholders to be sufficiently independent, given the Bank's role in delivering public policy and deploying public money.

- > **The National Infrastructure Bank should be an enduring institution.** The government should commit to making the bank a long-term public institution, to ensure market certainty. Given the precedent of the Green Investment Bank privatisation, market participants are likely to be concerned that there will be a risk of the Bank being sold off or wound up, and this may affect their willingness to enter into long-term partnership or projects. By removing uncertainty on this point the government will also help to ensure that appropriate expectations and incentives are created for the Bank's leadership team.
- > **The Bank should have flexibility built into its long-term mandate, as well as in its approach to funding and financing,** allowing it to adapt and grow according to changing infrastructure investment needs. The Bank will need to be sufficiently staffed to be able to deal with complexity and to manage a portfolio of investments that will take years or even decades to pay off, meaning that undue emphasis should not be placed on making it too much of a 'lean' operation.
- > **The Bank will need to have sufficient risk tolerance to support research, development and innovation, nascent technologies, and smaller projects and to be able to invest in economically underserved areas of the UK.** This is likely to require the creation of a group structure which enables risks to be taken around new types of project without negatively affecting the credit rating of the overall organisation. Sound risk management will require the right leadership and staff, equipped with the necessary skillsets (i.e. experience of leadership in public as well as private finance) to be able to understand and manage the overall risk portfolio of the institution.
- > **The CEO of the Bank should have a background in public banking** in recognition of the need for the Bank to effectively make full use of a range of public finance functions. This expertise should be replicated across the organisation.
- > **The Bank's governing body should include representatives of all the UK regions and should reflect its diverse range of stakeholders.** As well as tangibly demonstrating that this is a bank for all of the UK, the board should also include representatives of key stakeholder groups, e.g. scientific organisations, civil society, workforce representatives, sustainability professionals and investor representatives with expertise in infrastructure investment. This should help ensure that investment decisions consider environmental and social factors, including the quality of employment creation and will ensure that a diverse range of perspectives is considered as part of management decisions. However, a diverse Board will not remove the need for an independent scrutiny mechanism for the Bank.
- > **The Bank should engage key stakeholders in decision making and learn from them to identify investment needs.** The Bank should work closely with key stakeholders including local authorities and trade unions to ensure that their needs are listened to and understood. The Bank should operate in different regions and build deep

understanding of the local resources and networks available to support local green energy investment. The Bank should involve and devolve to local authorities where necessary, to ensure consistency in delivering levelling up and net-zero. This will involve capacity-building and adding investment capacity at a local authority level. The Bank should engage local stakeholders in decision making, which could help in identifying and managing trade-offs around specific investments.

- > **The Bank should have a formal advisory role to government** which will enable a positive feedback loop between policy and implementation in relation to scaling up finance for the UK's climate transition. Helping the government to ensure clear and long-term policy incentives will in turn help the Bank to offer certainty to investors and to crowd-in private capital.
- > **The Bank should act as a 'knowledge hub' for private investors and the government** by providing guidance as to how to support different technologies, and by identifying external barriers to investment in certain technologies. This could include recommending supportive net-zero aligned policies which could help reduce the barriers to private investment in clean infrastructure. The hub could also act as a source of real-time expertise for government and other stakeholders in relation to the evolving debates and trade-offs associated with different net-zero technologies.
- > **The Bank should complement the work done by existing institutions working in this area**, such as the Climate Change Committee, the Office of Environmental Protection, the Green Jobs Task Force, the UK Shared Prosperity Fund, the Green Finance Institute, the Impact Investing Institute, and the National Infrastructure Commission, to ensure smooth collaboration and to create clear incentives for market actors. The clear, distinct, and separate role of the Bank in relation to existing institutions should be clearly articulated by government. In some cases, it may be appropriate for the Bank to align with or absorb the finance-related roles of other relevant institutions and develop Memorandums of Understanding with these bodies.⁸

2. Capitalisation

The level of capitalisation for the Bank should be commensurate with its mission and functions. It should also be noted that a broad range of funding models exists for the Bank, going well beyond the option of simply allocating public funds⁹.

To provide a sense of the scale of funding that is likely to be required, the Aldersgate Group has proposed public funding of £20bn over 4 to 5 years. This is modest in comparison to the funding of comparable institutions in major economies, such as Germany's KfW which has capitalisation of £80bn and covers 90% of its borrowing needs in the capital markets.¹⁰

⁸ For example, the Infrastructure and Project Authority's existing financing tools could be folded into the Bank.

⁹ See E3G's Banking on the Future report for a discussion of different mechanisms for capitalisation: https://www.e3g.org/wp-content/uploads/30_6_20_Banking-on-the-future-the-case-for-a-green-infrastructure-bank.pdf

¹⁰ The Grantham Institute found that capitalisation of £20bn paid up over 4 to 5 years would then attract £80bn of private capital, taking full capitalisation to £100bn.

Through the 2020 Spending Review, the Government has committed to £100bn of capital investment for recovery over the 2020/21 period, with £27bn being allocated to economic infrastructure.¹¹ This level of spending should be considered a ‘new normal’ given the scale of investment needs in the UK. In relation to the Net-Zero Target alone, the Climate Change Committee’s 6th Carbon Budget estimated that “finance for low-carbon investments will need to grow from c.£10bn/year. in 2020 to £50bn/year. by 2030, continuing at that level to 2050.”¹²

Capital deployment for infrastructure will require ‘front loading’ due to the up-front nature of investment in long-term infrastructure. PWC estimates that £40bn of investment in UK infrastructure is required over the next decade, while due to the scale and urgency of the challenge, Stern states that at least £20 billion over the next five years might be needed.¹³ When deciding on the Bank’s initial capitalisation, these shorter-term needs should be seen in the context of the multi-decade nature of the investment needs identified by the Climate Change Committee to 2050.

Although substantial investment is required to create an effective National Infrastructure Bank, the institution will have the potential to play a catalytic role in mobilising investments at much larger scale into UK infrastructure from the private sector, as well as from citizen investors. It will also be crucial for the Bank to have full banking powers and borrowing powers in order to access capital markets, as discussed in the previous section on Governance.

Use of the Bank’s capital should be aimed at crowding in and helping to attract private investment at the pace and scale required by the UK’s Net-Zero and environmental goals. To maximise its impact the new institution should focus on areas where market failures exist, e.g. early-stage technologies and sectors where there are no existing commercial models e.g. building retrofits for energy efficiency, large-scale trials for CCUS and hydrogen¹⁴.

Our recommendations associated with this design objective include:

- > **The UK should follow international best practice in treatment of the Bank on national balance sheets.** The accounting treatment of publicly owned banks post-2008 suggests that these investments need not be counted as public sector debt. Applying the same approach to the capitalization of a new public bank would avoid public balance sheets being negatively affected.¹⁵
- > **The National Infrastructure Bank should work with the private sector to de-risk markets and unlock private sector investment at scale by crowding private capital into areas where there are market failures** e.g. through “lender of first resort” position and employing de-risking solutions like first-loss, blended finance and

¹¹ National Infrastructure Strategy 2020:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938539/NIS_Report_Web_Accessible.pdf

¹²<https://www.theccc.org.uk/publication/sixth-carbon-budget/>

¹³ Lord Stern and Tim Besley Royal Economics Society, May 2020

¹⁴ This is not without its challenges. Offshore wind was primarily driven by utilities and developers e.g. Orsted. In many sectors today, similar players do not exist, which will be a consideration for the National Infrastructure Bank.

¹⁵ We recommend looking at best practices in other countries on the application of these accounting principles e.g. Germany.

guarantees. A long-term commitment to the Bank from government will offer further certainty to private investors.

- > **Preservation of capital should be embedded as a design principle for the institution.**
The Bank should use a variety of funding instruments and should aim to recycle capital between projects.
- > **The Bank should additionally consider funding options that enable UK citizens to invest in their own future** e.g. through new tax-incentivised instruments such as green ISAs, pensions, and bonds. This would build public support for the net-zero transition, incentivise savings and support levelling up. The Bank is a key mechanism through which the government could crowd-in private surplus saving for the green recovery.
- > **The Bank should maximise the impact of the existing ecosystem of public finance institutions in the UK**, e.g. by consolidating existing public funding instruments which are relevant to investment in low-carbon infrastructure but may sit in different parts of government into a single coherent institution.¹⁶

3. Mission Driven

Mission-driven public institutions such as banks and funds have an important role to play as market-makers. They can, for example, help break down the structural barriers which suppress green investment and the creation of good quality green jobs, both of which will be required to rebuild national economies and meet policy goals.¹⁷

Successful institutional design begins with an assessment of what is required to solve the problems faced, rather than asking what is achievable within the existing institutional and funding landscape. The questions involved in establishing new public finance institutions, and the route to answering them, are common across jurisdictions regardless of the institutional backdrop or a country's level of development (although these factors are likely to have a substantial influence on the answers to the questions).

The UK National Infrastructure Bank should be mission-driven with a clearly specified long-term mandate to support the achievement of both the UK's levelling up agenda and the UK's Net-Zero target and climate resilience goals. The Bank's mandate should be ambitious in its aim to create positive benefits – should go beyond the precautionary or do-no harm approach. The Bank should also be tasked with helping to drive a just transition.

We propose that the following three goals should be at the heart of the National Infrastructure Bank's purpose¹⁸:

1. Levelling Up economic opportunities across the UK
2. Net-Zero and Resilience

¹⁶ For example, the Bank could link up mechanisms including the UK Guarantee Scheme and the Charging Investment Infrastructure Fund for EV charging.

¹⁷ <https://coalitionforgreencapital.com/what-is-a-green-bank/>

¹⁸ For comparison, the Scottish National lists its missions as the transition to net-zero; building communities and promoting equality; and harnessing innovation.

3. Recovery, Fairness and Just Transition

The proposed goals are highly complementary and interdependent; however, trade-offs will occur. The Bank should manage trade-offs by building flexibility into the investment screening process, enabling experts from relevant disciplines to be brought in to scrutinise and advise on decisions. Embedding minimum standards and/or a Do-No-Significant-Harm principle could also help in managing trade-offs, while the perspectives and experiences of local authorities can potentially support project impact assessment and investment selection.¹⁹

Whichever goals are selected by the government, they must be drafted unambiguously and with underpinning descriptions, definitions and limitations to avoid ambiguity and mission creep, and to ensure and that performance can be effectively measured and scrutinised.

Goal 1 - Levelling Up economic opportunities across the UK.

The UK's levelling up agenda aims to address geographic inequalities in productivity and wealth across the UK through a programme of infrastructure development and financing research, education, and skills development.

Investment in the infrastructure technologies of the future will be key to promoting the UK's long-term economic productivity, providing a new mechanism in place of the funding previously provided by the European Investment Bank²⁰ and supporting the creation of decent and good jobs in future-fit sectors. The co-benefits and opportunities associated with low-carbon, resource efficient infrastructure investment are significant, including tackling pollution, ill-health, congestion and inefficiency.

Under the National Infrastructure Strategy, £27bn has already been pledged over 2021/22 for economic infrastructure. The UK has established a £4 billion levelling-up fund to invest in infrastructure across England, and the National Infrastructure Bank should work with this fund to maximise joint impact.

Our recommendations associated with this goal include:

- > **Geographic balance should be a priority in the project selection process.** The Bank should be active in a wide range of UK localities, especially where communities have been historically underserved. Key Performance Indicators (KPIs) should ensure that levelling up is centred in investment decisions, through elevating economic co-benefits and employment measures in project selection criteria and evaluation. Impact reporting can then evaluate performance against macro-economic metrics such as job creation and local multiplier effects.
- > **The Bank should take a flexible approach to funding** that allows different types of funding solutions to be deployed for different contexts and projects e.g. grant funding, first-loss and blended financing. The Bank should offer a range of financing mechanisms to enable de-risking of projects. Flexibility should also apply to the kind of projects that the Bank invests in over time, as the UK moves along the net-zero

¹⁹ <https://www.impactinvest.org.uk/publications/reporting-of-environmental-social-and-economic-outcomes-briefing-paper/>

²⁰ National Infrastructure Assessment - NIC, 2018

transition pathway. The bank should create clarity on payment frameworks for projects i.e. user-pay, system-funded through regulation, or taxpayer-funded.

- > **The Bank's functions should include a project development facility/ team** which engages with Local Authorities, as well as with the private sector, to support the development of a pipeline of bankable projects that have both a mitigation and adaptation focus. Such a unit could support project standardisation and aggregation. It could also include a matchmaking function which identifies a pipeline of geographically dispersed projects and matches them with interested private funders.
- > **The Bank's functions should include a technical assistance function** working with Local Authorities and agencies to upskill them to support green projects in their local areas and reduce barriers to local investment, i.e. knowledge barriers, access to finance and regulatory barriers. Advisory services, capacity building and strategic planning support could further help reduce barriers. SMEs are an ideal target for capacity building, as they struggle not just with lack of funding but also lack of know-how to capture the opportunities associated with the transition to net-zero.
- > **The creation of good quality employment is key to the levelling up agenda.** Good jobs plans should be developed with unions for all projects to ensure that the Bank's investment creates good quality jobs and boosts local skills. When the Olympics were planned, government and the Olympics Delivery Authority worked with trade unions, Local Authorities and others on an agreement that ensured the project would deliver good quality local jobs and skills programmes. A similar agreement was reached to deliver HS2. All Bank investment should include a plan with unions to promote good quality jobs and training programmes.

Goal 2 – Net-Zero and Resilience

The new National Infrastructure Bank should have a clear and legally binding mandate to support achievement of the UK's commitments under the Paris Agreement (including both climate change mitigation and adaptation) and the UK's Net-Zero target, and to enable a just transition.

Our recommendations associated with this goal include:

- > **The Bank's investment processes should support alignment with the goals of the Paris Agreement and the UK's climate goals.** The Bank's net-zero mandate should act as an investment screen (e.g. employing the new UK Green Taxonomy in investment evaluation) and should apply across the supply chain to prevent outsourcing of UK emissions to other jurisdictions. Climate resilience should be part of investment screening, and any infrastructure that this Bank supports should support the UK's adaptation goals and be built to last.
- > **The Bank should approach its Net-Zero mandate in the context of the UK's wider sustainability goals, circular economy and the SDGs.** The Bank should prioritise funding projects which are ecologically sustainable in the round. Climate change goals should not be traded off against other environmental or social impacts in a way that goes below minimum expectations for sustainability, which should be set out through

a Do-No-Significant-Harm principle. The Bank should promote a circular economy approach to economic activity.

- > **The Bank should set meaningful performance targets which reflect what is necessary to achieve its goals.** The Bank should set ambitious targets and should ensure that they are integrated throughout the institution's operations and supply chain. This will serve to operationalise the Government's commitment to only invest in sustainable infrastructure. Reporting against these targets should elevate net-zero performance to the same level of importance as financial return information, and metrics should address both social and environmental sustainability.

Additional measures that the UK government should take to support the Net-Zero mandate of the National Infrastructure Bank include:

- > **Establishing clear principles for achieving net-zero through investment**, e.g. decarbonisation as an imperative, with carbon offsetting a measure of last resort.
- > **Further reforming the investment guidance set out in the Green Book** to better reflect the Net-Zero target in the government's project appraisals and assessments.
- > **Elevating emission reduction impacts in government procurement criteria** to be prioritised at the same level as financial return, and health and safety.

Goal 3 - Recovery, Fairness and Just Transition

The Covid-19 pandemic has created unprecedented economic and social challenges in the UK, with a 20.4% contraction in the UK economy seen in 2020²¹. As the UK works towards economic recovery it will be crucial that the climate and energy transition takes place without creating unnecessary adverse impacts on the most disadvantaged citizens. The pursuit of a just transition should be explicitly linked to the Bank's goals around levelling up and Net-Zero and Resilience.

The new National Infrastructure Bank should ensure that the projects and infrastructure which it supports are aligned with a just transition, incorporating this principle into its mandate following the example of Scotland's new National Investment Bank.²² This will mean making investments that create not only economic returns, but also decent work and good jobs for local communities.

Our recommendations associated with this goal include:

- > **The Bank's investment screening process should place value on enabling a just and managed transition.** The Bank should prioritise projects for investment that have strong social co-benefits, such as creating good quality green jobs, reducing pollution, improving quality of life, and reducing inequalities across the country with a focus on those already marginalised and subject to structural inequality. The social impact of projects should be measured with nuance rather than in a standardised way only, e.g.

²¹ [Coronavirus and the impact on output in the UK economy - Office for National Statistics \(ons.gov.uk\)](https://www.ons.gov.uk/economy/gross-domestic-product/gdp-reports/coronavirus-and-the-impact-on-output-in-the-uk-economy)

²² <https://www.gov.scot/news/a-new-bank-for-scotland/>

with reference to local conditions and needs, and learning lessons from the experiences of Local Authorities in forward-looking impact assessment.

- > **The Bank should make investments that positively support a just transition**, such as green employment training, programmes which help communities transition away from high carbon sectors, and prioritisation of areas and communities which are subject to inequality.
- > **The Bank should engage local stakeholders in decision-making processes** with a focus on ensuring an inclusive approach to dialogue and embedding best practices into governance protocols, including ensuring representation of workers and marginalised groups at each level of the Bank, as well as throughout decision-making.
- > **The Bank should ensure sustainable global supply chains**, ensuring that projects based in the UK do not create social or environmental harm in other countries, e.g. through unsustainable sourcing of materials or poor working conditions.

4. A future-fit definition of infrastructure:

The National Infrastructure Bank has the potential to stimulate economic returns across the economy. Its impact will be maximised if the institution takes a broad, ambitious definition of infrastructure which will allow it to fund a wide range of projects across the supply chain and across different parts of the UK, as well as in other countries through an international arm.

The investment focus for the Bank should be on new and emerging infrastructure sectors and technologies which are not sufficiently serviced by existing providers due to market failures. The Bank's definition of infrastructure should include energy efficiency and nature-based solutions. The Bank should only finance infrastructure which is resilient to the impacts of climate change under a range of future scenarios.

The economic benefits of investing in future-fit infrastructure are clear. According to the CBI, for every £1 spent on construction activity, £2.92 is created in wider value to the economy.²³ Sustainable, resilient, and inclusive investments have some very appealing short-run and long-run characteristics for assisting economic recovery:

- > In the short-run, future-fit infrastructure technologies impart high short-run multipliers. Technologies such as insulation retrofits, wind turbines, broadband networks, electric vehicle charging infrastructure, afforestation and wetlands restoration are labour-intensive but are not susceptible to offshoring or imports.
- > In the long-run, the economic multipliers are also high. The operation and maintenance of more productive renewable technologies makes them less labour-intensive and energy cost-savings are passed to the wider economy. The scale of the low-carbon transition means that network effects and economies of scale are very large, with evidence of significantly greater spill-over effects as compared with more traditional types of infrastructure investment (e.g. into fossil fuel technologies).

²³ [Government set to unveil national infrastructure bank tied to net-zero \(edie.net\)](#)

As a consequence, the economic opportunities and returns to investments in future-fit infrastructure can be assumed to be larger than for traditional infrastructure investments, with less risk of locking in to stranded and devalued assets. This is partly due to amplifying feedbacks, e.g.:

- > Rapid reduction in costs due to learning effects. With rapidly expanding deployment, lessons are learned on how to manufacture, distribute, install, run, and maintain infrastructure.
- > Costs also come down due to economies of scale in production and distribution, as unit cost benefits accrue. This reflects the tendency of future-fit infrastructure technologies to involve large initial fixed costs. Once these have been incurred, low unit costs encourage increased output.
- > Network and coordination effects are also likely, reflecting the greater advantages of moving in tandem with others as markets grow. As new norms are created, social and institutional feedbacks will also emerge, which will make these norms self-reinforcing and therefore stable, reducing risk.

The National Infrastructure Bank is being created at the ideal moment to capture these benefits and crowd-in private sector investment, because there is a clear short-run stimulus need, which adds to an existing deficit in infrastructure investment needs. The IMF Fiscal Monitor for October 2020 suggests investing in “job-rich, highly productive, and greener activities”, would generate a multiplier of 2.7 in additional output.²⁴

Practical actions associated with this design objective include:

- > **The National Infrastructure Bank should take a broad definition of infrastructure** e.g. including investments in energy efficiency, and in new types of distributed and integrated infrastructure with a strong emphasis on preventive, digital demand side opportunities. The Bank should target support to those sectors which, due to market failures, are not yet suitable for private financing, such as new green technologies or building retrofits.
- > **The Bank should include nature-based solutions and natural infrastructure within its portfolio** given the urgency and scale of the climate crisis, and the fact that Nature Based Solutions are a priority for the UK’s Presidency of COP26. The support of natural infrastructure such as wetland restoration, tree planting and peatland protection will also support the targets within the Environment bill and the 25 YEP (25-year Environment Plan) such as biodiversity, air and water quality, climate resilience and resource efficiency. Sequestration and potentially also gold-standard carbon offsetting²⁵ are areas of growing need, and the National Infrastructure Bank can support the development of suitable natural infrastructure projects.
- > **The Bank should take a place-based approach, prioritising the places that need most support:** The Bank should place a strong focus on a just transition in all sectors and

²⁴ In the UK, €23m of ELENA Technical Assistance led to €859m in investment.

²⁵ Carbon offsetting should be treated as a ‘last resort’ option which does not avoid the need for decarbonization of the UK economy in pursuit of net-zero.

regions as part of the levelling up agenda. It should build partnerships with city & regional institutions²⁶, engage different levels of government (especially those that require support to structure big projects), and include supply chain and SME investments. The Bank must have the capacity to assess wider community impact, and impact on a local level, including on employment opportunities and quality.

- > **The Bank should act as a Market Maker for new infrastructure technologies**, enabling the private sector to invest in industries that are experiencing market failures (e.g. as the UK's Green Investment Bank did initially for offshore wind) and to implementing a clear exit strategy once these industries are mature/aggregated and can rely on private financing. The Bank will need to do this in a flexible way over time, adapting to changing economic needs as the UK moves along the net-zero transition pathway.
- > **Expertise housed within the Bank should include the skills and capacity required to meet the specific challenges of building new low-carbon resilient infrastructure markets.** e.g. de-risking activities, aggregation of smaller projects, and issuing bespoke financial instruments such as climate resilience bonds.
- > **The Bank's goals should include supporting technological innovation.** This function would incorporate both a push and a pull. The pull would be delivered by convening purchasers for new technologies – including both public procurement and major purchasers in the private sector – and conducting research to identify new markets for green solutions. The push would come from offering finance to support these projects.
- > **The Bank should act as an observatory of UK infrastructure finance**, tracking financial flows in real-time to quantify investment for different infrastructure needs at the national and regional level, and to identify shortfalls in investment and barriers to levelling up. This would complement the role of the National Infrastructure Commission while adding a financial perspective. It would help provide the credibility and trust which will be key to the transition.
- > **The Bank should provide strategic advice to the government** on what the current barriers to future-fit infrastructure investment are, how effectively policy tools designed to address them are working, and when policy tools should be adjusted, or could be withdrawn due to no longer being needed.
- > **The Bank should have an international investment arm** which can work directly with countries to leverage in major funding to clean sectors beyond the UK. This would be welcomed by businesses and could strengthen existing UK efforts to support green market development overseas (UK ICF, UK PACT, GFI, UK-China). The institution's mandate should however be clear on its main geographic focus – UK infrastructure.

²⁶ See the EIB's ELENA program for an example of this in practice:
<https://www.eib.org/en/products/advising/elena/index.htm>

Sectoral Priorities

Using a future-fit definition of infrastructure will mean a broad range of projects can be funded. The National Infrastructure Bank should also support the levelling up agenda by working to crowd-in capital for housing, support for SMEs, transport, urban regeneration, and supply chain management. However, it will be important that there is a robust net-zero screen to exclude projects that will increase emissions, such as roads and airports, and that the Bank focuses on removing market barriers rather than competing with the private sector in functioning markets.

The following areas of investment have been suggested by the Green Finance Institute as priorities:²⁷

- > **The Built Environment:** This is one of the areas of greatest need for intervention, with around £360bn²⁸ of investment required to transform the sector. Some potential areas for funding include:
 - Technical assistance and lending to local authorities to aggregate building retrofit and heat decarbonisation projects to attract larger scale financing.
 - Offering concessional loans to households and SMEs via financial intermediaries (retail banks and building societies), or blended concessional loans with those intermediaries.
 - Providing loan guarantees for social housing retrofits to the highest standards.
 - New National District Heat Fund potentially managed and owned by the Bank.
- > **Clean Energy Infrastructure:** This is another important area of funding for the Bank, given the importance of scaling up clean energy in achieving the UK's Net-Zero target. The previous Green Investment Bank was instrumental in scaling up UK wind technology. Projects that a new Bank could consider funding include:
 - Energy Storage technologies such as Lithium-ion or other new generation batteries and hydrogen electrolyzers.
 - Infrastructure for both green hydrogen production and Carbon Capture and Storage (highlighted in the Ten-Point Plan).
 - Co-investing in building commercial-scale green hydrogen plants.
 - Smart grid infrastructure, especially on a local level to support community clean energy projects.

²⁷ <https://www.greenfinanceinstitute.co.uk/wp-content/uploads/2020/12/GREEN-FINANCE-INSIGHTS-PAPER-1.pdf>

²⁸ CCC's 6th Carbon Budget calculates the additional capital cost to 2050 for all buildings' full decarbonisation as £360bn (in the Balanced Pathway scenario). Source: <https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-Dataset.xlsx>

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- > **Decarbonising UK Transportation:** The UK's transport infrastructure is ageing, and together with UK power and heat, transport networks account for one-third of UK emissions.²⁹ The Bank will play a critical role in funding their transformation with projects such as:
 - EV charging infrastructure, depots and hubs, and the development of a UK battery supply chain.
 - National Infrastructure Bank investment could help scale the construction of such battery production facilities in the UK.
 - Loans could be provided which focus on upgrading public transport.
 - A Residual Value Guarantee provided to EV funders to enable competitive leasing contracts, for which the Bank is the Guarantor.

 - > **Nature Based Solutions:** Nature Based Solutions (NBS) have an important role to play in achieving the UK's Net-Zero and Resilience goals. NBS have not yet been mainstreamed by a public bank³⁰, and given the UK's particular investment needs around flood protection this could be an area for UK leadership. Potential projects for funding could include:³¹
 - Lending to Local Authorities to develop guarantees for new markets in sustainable drainage and stormwater retention. There is already political appetite for funding UK flooding infrastructure, so this would be a natural fit within the Bank's remit.
 - A pipeline for private sector nature investments and markets building on the work of the Environment Agency and Defra's Investment Readiness Fund that launches in 2021.
 - Co-investor or providing first loss guarantees particularly within sustainable and regenerative agriculture³² and sustainable forestry.³³

In order to refine the Bank's approach to prioritising investment areas, HMT should move quickly to conduct supporting analysis during the Bank's initial operations phase from March 2021, e.g.:

- **Economic analysis of investment and employment needs in different parts of the UK**, as well as local opportunities for net-zero economic transition, informed by the Net-Zero Review.

²⁹ See the National Infrastructure Strategy 2020 for more detail:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938049/NIS_final_web_single_page.pdf

³⁰ E3G's public bank matrix includes some project examples where Nature Based Solutions (NBS) have been integrated well by public banks: https://www.e3g.org/metrics_methods/nature-based-solutions/

³¹ More ADB case studies on the potential of Nature Based Solutions can be found here: [Nature-Based Solutions for Building Resilience in Towns and Cities: Case Studies from the Greater Mekong Subregion | Asian Development Bank \(adb.org\)](#)

³² Given the well-established forestry carbon verification process

³³ The [Dasgupta Review](#) outlines the economic costs/benefits of biodiversity protection.

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- **Identification of what types of infrastructure projects private sector investors are currently prepared to invest in** and where there are market barriers that a Bank could help to break down.
 - **Identifying and evaluating the project development tools that are already available for use** as well as gaps where new tools may be required.
 - **Identifying lessons learned from the UK's previous experience of financing infrastructure**, e.g. through the European Investment Bank and the European Investment Fund, through green bonds. This will help to identify functions that the Bank could usefully replace or build on.
 - **Assessing the scope, goals, governance, and capitalisation of equivalent institutions in other major economies** and identifying best practice.

Conclusion

The National Infrastructure Bank's primary role will be as a provider and facilitator of finance for infrastructure projects across the UK. We have suggested key design objectives for this phase in its life cycle in relation to Governance, Capitalisation, Mission-Driven Mandate and Future-Fit Infrastructure. To achieve its design objectives the National Infrastructure Bank will need to play multiple roles to reduce the barriers to project generation, scaling and funding. It will require advisory, project development and market making functions which work to reduce other barriers to green infrastructure proliferation.

The role of this institution should go beyond the channelling of public finance for infrastructure. The Bank can also play a vital role in unlocking private finance and citizen investments, directing them towards future-fit infrastructure. It could also compete with its international peers in global capital markets through the development of an international arm. Crucial decisions to be made now on the Bank's design, governance and capitalisation will likely shape its future success. Given the rapid speed for operationalisation of the Bank, now is the moment to make these key decisions.

Contributors

This paper draws on the views of a group of expert organisations and individuals. Key contributors to the paper's development are listed below:

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