



HM Treasury



Infrastructure
and Projects
Authority

Infrastructure Finance Review consultation

March 2019



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Foreword

This government is committed to improving and renewing our infrastructure. This matters for increasing productivity and boosting growth, but it also matters for our everyday lives and quality of life. The infrastructure we are developing needs to be adaptable to fast growing technological change, from autonomous vehicles and electric cars to the next generation of broadband and harnessing the power of data to improve delivery and maintenance. Both the public and private sectors will need to play their part.

The government has already made great strides – in the last few years we have established the National Infrastructure Commission (NIC) and the Infrastructure and Projects Authority, created the £37 billion National Productivity Investment Fund to target spending in critical areas, and set out plans that will see public investment rise to levels not consistently sustained for 40 years.

This is a long-term programme, and later this year the government will publish a comprehensive National Infrastructure Strategy, the first of its kind. The strategy will respond in detail to the NIC's National Infrastructure Assessment, and will set out how we can continue to embrace the opportunities afforded by new technologies, decarbonise the economy, and create infrastructure fit for the 21st century.

The role of the private sector is vital to these efforts, and the government remains firmly committed to supporting private investment in infrastructure. As this document sets out, we support private investment through a variety of tools, and the UK infrastructure finance market has huge strengths, attracting investment from around the world. We want to facilitate further private investment and involvement in infrastructure delivery. As we leave the European Union, our relationship with the European Investment Bank will change, and while we will explore the options for a future relationship with the EIB, we must and will be prepared for all scenarios.

I am therefore pleased to be launching this open consultation process. Over the course of this review we will consider the infrastructure finance market, analyse future challenges, and look at the future role of the government in ensuring that viable projects can raise the private investment they need.

I urge interested parties to engage with this review, and I look forward to many interesting discussions throughout the process.



Robert Jenrick
Exchequer Secretary to the Treasury

Chapter 1

Executive summary and review process

Executive summary

Context for the review

- 1.1 Infrastructure is essential for jobs, growth and productivity, and is one of five pillars of the government's modern Industrial Strategy. Creating infrastructure fit for the 21st century includes improving broadband speeds and mobile coverage, enabling housing development, decarbonising our energy networks, reducing journey times, investing in water networks and increasing our resilience to climate change.
- 1.2 This requires major investment from both the public and the private sectors. The government is increasing public investment and targeting it in productivity enhancing sectors through the National Productivity Investment Fund. The government is also committed to the role of private investment in infrastructure. Of the projected £600 billion infrastructure investment pipeline for the next 10 years, half is forecast to come from the private sector.¹
- 1.3 This investment will be made in a changing landscape. The rapid development of new technologies could create financing challenges, and the UK's relationship with the European Investment Bank (EIB) will change as we leave the European Union. The government is keen to maintain momentum, and in this context, is reviewing both its existing set of tools for supporting infrastructure finance, and the way they are delivered.
- 1.4 This review looks to the long-term, and will inform both the 2019 Spending Review and the National Infrastructure Strategy. The review is being led by HM Treasury, working with the Infrastructure and Projects Authority. It will be supported by an expert panel.

The infrastructure finance market

- 1.5 Chapter 2 sets out the role of private investment in infrastructure. The UK has one of the world's most developed private markets for infrastructure, with investment from both UK and international investors flowing into numerous sectors including transport, energy, water, and digital communications. This is supported by a sophisticated system of independent regulation and, more broadly, by the UK's strong legal framework and the

¹ ['National Infrastructure and Construction Pipeline 2018'](#), Infrastructure and Projects Authority, December 2018.

expertise and advisory capabilities of the UK's world-leading financial and professional services sectors.

- 1.6 The chapter goes on to outline the characteristics of existing sources of infrastructure finance, and the role of the EIB as a source of lending. Working alongside commercial investors, the EIB has been a source of long-term investment in UK infrastructure. The UK will leave the EIB when it ceases to be a member of the European Union, and under the terms of the Withdrawal Agreement, the UK's €3.5 billion of paid-in capital will be returned, with the first €300 million instalment due in December 2019. The government is actively exploring options for a future relationship with the EIB Group, and these options will be explored as part of broader negotiations on the UK's future relationship with the EU.
- 1.7 The chapter closes with an assessment of the future challenges for financing UK infrastructure. The UK has a strong track record of attracting investment and there remains significant ongoing appetite for infrastructure investment. Future challenges could include attracting finance to new, unproven technologies and large, complex projects, and ensuring a steady supply of finance during periods of adverse market conditions.

Investment models and existing tools

- 1.8 Chapter 3 looks at the existing tools used to support investment in infrastructure. The government and independent regulators have created mechanisms to ensure stable and predictable revenues. These include the Regulated Asset Base model in water and energy networks, and Contracts for Difference auctions in renewable energy. These existing mechanisms are updated and refined periodically by government departments and regulators, and are not the focus of this review. However, the government is interested in stakeholders' views on whether lessons from these existing tools could be applied in new contexts.
- 1.9 The government has also historically used private investment to deliver economic and social infrastructure projects through the PFI and PF2 models. At the Budget, the government announced it would no longer use PFI and PF2 models for new projects. Government will not be seeking a like-for-like replacement for these models. The government is open to exploring new ways to use private finance in government projects, but the benefits brought by private finance must outweigh the additional cost to the taxpayer of using private capital, and the government will not consider proposals demonstrating the same characteristics as PFI or PF2.
- 1.10 The chapter then sets out the role for government in supporting financing where it is in line with broader policy objectives and offers value for money for the taxpayer. The chapter describes the tools the government currently uses to support financing directly, including the UK Guarantees Scheme (UKGS) and co-investment funds for new technologies. The government is seeking views on whether, looking to the future, it should expand, reduce or change the use of these tools.

Governance

- 1.11 Chapter 4 explores the institutional options for delivering government support for infrastructure finance. Existing tools such as the UKGS and co-investment funds are delivered by the Infrastructure and Projects Authority, the government's centre of expertise for infrastructure and major projects. In the National Infrastructure Assessment, the National Infrastructure Commission recommended that if access to the EIB is lost, the government should establish a new operationally independent institution (see Box 4A for the full recommendation). The House of Lords European Union Committee also recently recommended the government should consider the case for a new institution.² The government is seeking views on whether reform of the existing institutional structure is needed, and the costs and benefits of changing the current approach.

Review process

- 1.12 This consultation marks the start of the government's formal engagement on these issues.

Scope and devolution

- 1.13 The focus of the review is primarily on economic infrastructure, including energy, transport, water, flood defences, mobile telecommunications and broadband, and waste. These are the sectors that will be covered in the National Infrastructure Strategy. Other sectors such as the higher education sector, housing associations and social infrastructure also borrow privately, and have previously accessed EIB lending. The government welcomes views on how to ensure the availability of finance for these sectors.
- 1.14 Infrastructure policy includes a mix of devolved and reserved responsibilities across the UK and within England. Digital communications policy is reserved for the whole UK. Energy policy is reserved apart from energy efficiency in Scotland and Wales, and devolved (aside from nuclear) in Northern Ireland. Transport policy is largely devolved in Scotland, Wales and Northern Ireland, and water/sewerage, flood risk and waste policy is devolved. Policy on Public Private Partnerships is devolved. The government's existing tools to support infrastructure finance, such as those under the Infrastructure (Financial Assistance) Act 2012, operate UK wide.
- 1.15 Local authorities also have a critical role in developing infrastructure to enable growth in local areas and the development of new housing. Directly elected metro mayors and their combined authorities have significant powers over local infrastructure, and are able to fund infrastructure developments through local revenue sources. The government has also extended the power of Mayoral Combined Authorities to borrow to invest in economically productive infrastructure, subject to debt caps agreed with HM Treasury.

Expert panel

- 1.16 To support the work of the review, the government plans to appoint an expert panel to provide advice during the review process and input on the

² [Brexit: the European Investment Bank](#), House of Lords European Union Committee, January 2019.

challenges facing the infrastructure market and how they can be addressed. The panel will also help to facilitate high quality industry engagement throughout the review process, and provide feedback on the results of the public consultation.

- 1.17 The members of the expert panel will be announced shortly, and will comprise experts from the infrastructure and finance sectors.

Review process and how to respond

- 1.18 All interested parties are invited to respond by 5 June 2019, when this consultation will close. Responses are welcomed by post or email.
- 1.19 Email responses should be sent to:
InfrastructureFinanceReview@hmtreasury.gov.uk
- 1.20 Written responses should be sent to:

Infrastructure Finance Review
HM Treasury (2 Orange)
1 Horse Guards Road
London
SW1A 2HQ
- 1.21 Please see the accompanying notice which sets out how HM Treasury will use your personal data for the purpose of this consultation and explains your rights under the General Data Protection Regulation (GDPR) and the Data Protection Act 2018 (DPA).
- 1.22 The review will conclude alongside the National Infrastructure Strategy at the Spending Review later this year.

Chapter 2

The infrastructure finance market

The UK's infrastructure finance market

- 2.1 The UK's market for private investment in infrastructure is one of the most developed in the world, and this has attracted high levels of investment. For example, in the water sector, companies have invested more than £150 billion in the last 30 years. In energy, by 2020 there will have been around £80 billion of private investment in energy networks over the same period. Last year, half of all new operational offshore wind capacity in Europe was in the UK, almost all of which was privately financed.¹
- 2.2 Infrastructure investors generally operate internationally, and therefore the UK must compete with other markets as a destination for investment. The UK has been a favourable destination for private investment in part due to a stable system of regulation and successful revenue support models. In order to attract the necessary levels of investment in the future, the UK will need to retain its reputation for stable and predictable regulation.
- 2.3 The UK also has broader strengths as a location for investment, with a strong financial, legal and advisory community, based in some of the world's most significant financial centres, such as London and Edinburgh. Overall, in 2017, the inward stock of Foreign Direct Investment in the UK was the highest in Europe.² For infrastructure in particular, the 2017 CMS infrastructure index reported that the UK has one of the most attractive environments for investment in the world.³
- 2.4 Over the next 10 years around half of the £600 billion infrastructure pipeline is forecast to come from the private sector. Examples include:
- **Electricity generation and networks** – there are 12.9GW of interconnectors planned,⁴ while the current tender round of offshore transmission (OFTO) assets has an estimated value of £2.7 billion for three projects. The UK also has over 7.9GW of installed, operational offshore wind capacity, which will rise to 14GW by 2023, with the third Contracts for Difference allocation round planned to open in May 2019.
 - **Digital infrastructure** – the government has committed to nationwide full fibre coverage by 2033, and it is estimated that this will require around £30

¹ 'WindEurope Annual Offshore Wind Statistics 2018', WindEurope, February 2019.

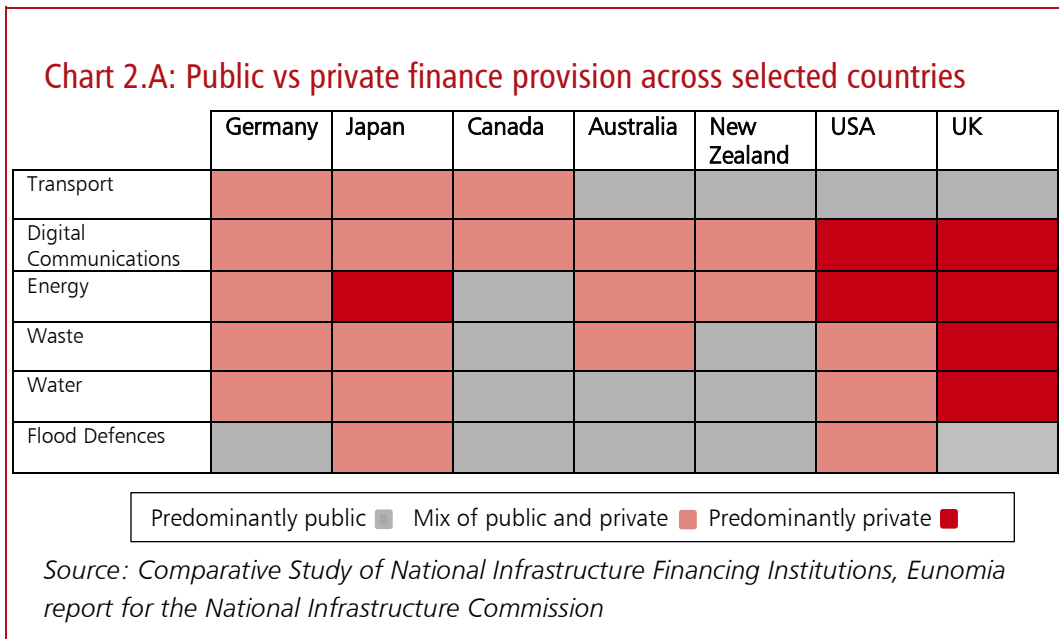
² 'World Investment Report 2018: Investment and New Industrial Policies', UNCTAD, June 2018.

³ 'CMS Infrastructure Index 2017', CMS, November 2017.

⁴ 'National Infrastructure and Construction Pipeline 2018', Infrastructure and Projects Authority, November 2018.

billion of investment, the vast majority of which will come from the private sector.⁵ In the mobile sector, major investments to build 5G networks have been announced, such as Three’s £2 billion investment announced in late 2018.

- **Airports** – following approval of the Airports National Policy Statement in June 2018, Heathrow Airport Limited have indicated that they intend to submit an application for development consent in 2020. Following an examination period for this application, construction would then start if consent is granted.
- **Water and Waste** – in the PR19 price review, companies have proposed investing around £50 billion across the 2020-25 period.⁶



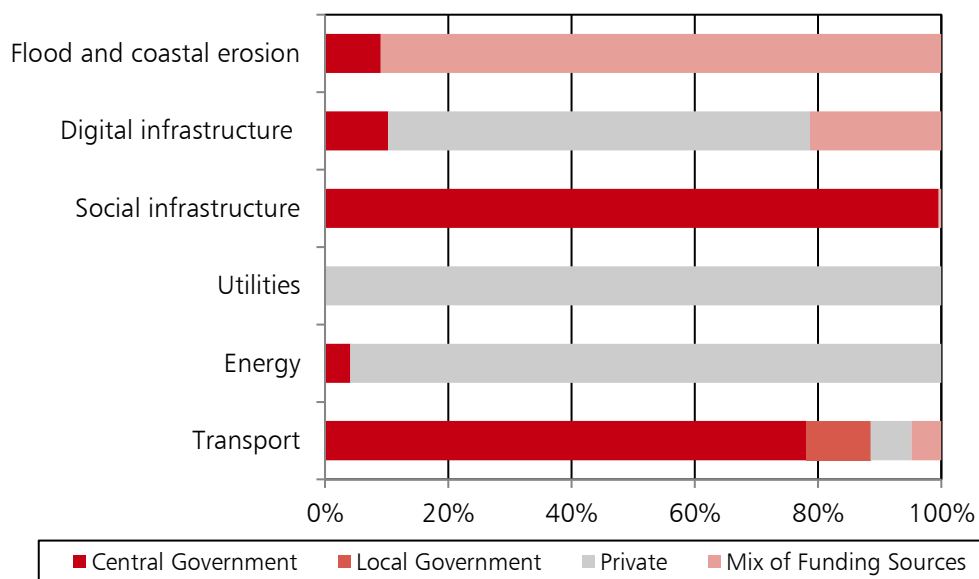
⁵ ‘Future Telecoms Infrastructure Review’, Department for Digital, Culture, Media and Sport, July 2018.

⁶ ‘A Manifesto for Water’, Water UK, September 2018.

Funding sources and investment types

2.5 To attract private financing, a sector or project must have a clear and reliable source of revenue. A distinction can be drawn between the financing of an infrastructure project, which is the provision of money to meet the up-front cost of building the infrastructure, and the funding, which is how this up-front cost is ultimately paid for. The vast majority of infrastructure is ultimately funded by either taxpayers or by users of the infrastructure. A distinction can therefore be made between “taxpayer funded infrastructure” and “consumer funded infrastructure” – the split across different sectors is set out in Chart 2.B.

Chart 2.B: Funding mix of UK infrastructure from 2018/19 to 2020/21 by sector



Source: 2018 National Infrastructure and Construction Pipeline

2.6 The UK has a range of world-leading tools to support revenues and attract investment in the energy, transport, digital infrastructure, and water sectors. This includes stable, independent regulation, and technology-specific support. These are set out in detail in Chapter 3. They create multiple opportunities for investors in UK infrastructure. Box 2.A sets out some key distinctions between different types of investment.

Box 2.A: Infrastructure finance: definitions

- **Greenfield and Brownfield infrastructure** – There are differing levels of risk for new-build (“greenfield”) infrastructure assets, and projects which are already operational (“brownfield”), with brownfield projects offering more immediate returns and lower construction risk. This is a helpful distinction, although in the long-term there may be more combined projects – for example, cross-sector, integrated investment programmes such as in the Oxford-Cambridge Corridor.
- **Project and Corporate Finance** – Private owners of infrastructure most commonly choose either to finance the cost of a project or programme on their own balance sheet (known as corporate finance), or use project finance, where a special purpose vehicle is set up for a specific project and raises money from investors, with the risk and return dependent on the performance of that single infrastructure project.
- **Debt and Equity investment** – Depending on risk appetite, investors can choose to either provide loans to projects or companies in order to receive a return in terms of interest and principal payments (debt investment), or invest to acquire some level of ownership of a company or special purpose vehicle (equity investment) – remunerated by dividends. In project finance, equity investors take on more risk of the performance of a project, but will also stand to gain more from any upside. Equity investors will also have more direct control of management of the asset.

Market participants

- 2.7 The UK has a deep pool of investors, both domestic and international, with the skills and appetite to invest across a range of assets from operational infrastructure to major new greenfield projects. The market acts to match investors to the relevant projects, taking account of the long-term revenue sources, the risks associated with construction and operations, the track record of the technology or asset type, and wider market conditions.
- 2.8 The majority of investors are seeking long-term, stable revenues – and some, in particular institutional investors - often seek immediate returns on their investments. This means that there is considerable availability of capital (debt and equity) for established asset classes and operational assets, including airports, water companies, energy networks and renewables (such as offshore wind, solar, and biomass).
- 2.9 There tend to be fewer investors interested in greenfield infrastructure, therefore the pool of capital is smaller for these projects than operational assets. However, the UK market has been successful in ensuring there has been sufficient investment for large greenfield projects. In recent years major greenfield projects such as Triton Knoll or Moray Firth wind farm have all successfully secured private finance for large scale projects.

Box 2.B: Market participants and characteristics

- **Institutional investors**, such as pension funds, insurance companies or sovereign wealth funds, seek long term, stable returns, consistent with their need to fund long term obligations to policy-holders or pensioners. They also often need to generate immediate returns. The majority tend to have limited appetite for the risks associated with complex construction projects and generally target operational infrastructure and investment grade assets, though there has been increasing appetite for greenfield investments in recent years.
- A significant proportion of these institutional investments are routed indirectly, through **infrastructure funds**. The majority of these funds deal with equity investments. As the infrastructure asset class has matured there has been significant growth in the number of infrastructure funds, which allow capital to be deployed at scale, with active asset management by specialist fund managers. This has led to a very competitive environment for proven operational infrastructure assets.
- Some **specialist institutional investors** have the in-house skills to invest directly in assets, including greenfield assets. These have different risk profiles to operational assets – with construction risk, technical risk, and often no immediate revenue stream. Investing directly means specialist investors will usually undertake active oversight of projects.
- **Banks** generally provide debt for infrastructure projects. Cambridge Economic Policy Associates analysis of primary transactions found that around 30-40% of financing for medium and large infrastructure deals came from commercial bank loans.⁷ Banks can generally provide smaller loans with more flexible features, and accordingly, may consider a wider spectrum of project risk.
- Often project finance deals will involve a significant number of different sources of debt. For instance, offshore wind project deals can often involve multiple banks, the EIB, export credit agencies and institutional debt.

The role of the European Investment Bank

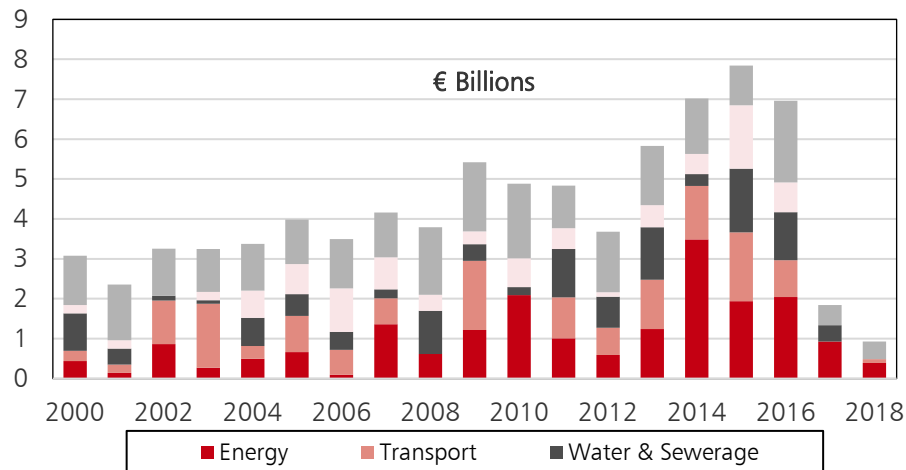
- 2.10 The European Investment Bank (EIB) is the lending arm of the EU.⁸ It lends in order to contribute to the development of the EU's internal market. This focuses on four areas: innovation and skills, small businesses, infrastructure and climate/environment. The EIB has, historically, worked alongside investors and banks, operating as a source of long-term debt financing and expertise.
- 2.11 In the UK, the EIB has lent €118 billion since 1973, to energy and transport projects, social infrastructure through PFI, utilities and a range of other

⁷ 'Review of the UK infrastructure financing market', Cambridge Economic Policy Associates, February 2017.

⁸ 'European Investment Bank at a glance', European Investment Bank.

sectors including universities, housing associations and regional development funds. The EIB does not lend more than 50% of the cost of a project.

Chart 2.C: European Investment Bank lending to UK borrowers since 2000⁹



Source: European Investment Bank

- 2.12 The EIB has a policy remit that guides its lending, and is able to pass on favourable borrowing rates to its clients. It also has strong in-house technical due diligence capability. EIB lending does not score against the UK's fiscal aggregates, and where it uses its own resources, its lending is not classed as State Aid.
- 2.13 Independent assessments of the EIB's role have commented on the impact of EIB lending in different areas:
- The EIB has likely been able to make private investors more comfortable with technology and early deployment risk in emerging technologies.¹⁰ Vivid Economics noted that the EIB had managed this in the offshore wind sector. Their analysis also suggested in some cases the EIB also crowded out private investment. In some cases, some projects similar to ones that were supported by the EIB were able to reach financial close without its support, albeit sometimes on a delayed timetable or at higher cost.
 - The EIB can also play a role in providing market capacity on large projects. Cambridge Economic Policy Associates' (CEPA) analysis of financing transactions in the UK found that the EIB has lent to 8 of the 17 primary financings in the IJGlobal database worth over £650 million. However, the report suggested that while the EIB can play an important role in

⁹ Categories are taken from the European Investment Bank's own classification of projects. The "other" category contains: Composite Infrastructure, Credit Lines, Industry, Services, Solid Waste, Telecommunications and Urban Development.

¹⁰ ['The role and impact of the EIB and GIB on UK infrastructure investment'](#), Vivid Economics, May 2018.

providing confidence to other lenders to a project, it can also crowd out private capital due to its low pricing.¹¹

- The Infrastructure Forum's 2017 report also suggested that the EIB's continued presence in the market during times of market contraction can help infrastructure projects access finance. The report also suggested that some EIB lending (such as to utility businesses) could be replaced by private investors, though at higher cost.¹²

2.14 When the UK leaves the EU, the UK will no longer be a member of the EIB as it will no longer be a Member State. Under the terms of the Withdrawal Agreement, repayment of the UK's €3.5 billion of paid-in capital would be made in annual instalments from 2019-2030. In addition, the UK has preserved the EIB's operating conditions with the aim of ensuring that existing projects face no disruption as a result of withdrawal from the EU.

2.15 As the Chancellor has made clear¹³ and as noted in the Political Declaration, as we leave the EU, we are actively exploring options for a future relationship with the EIB Group. The UK will explore these options with the EU as part of the broader negotiations on the future relationship between the UK and the EU.

2.16 It is important that the UK is ready in all circumstances to ensure viable infrastructure projects can continue to access the finance they need. The following section, relevant to all scenarios, sets out some potential future challenges faced by infrastructure projects seeking finance.

Future challenges

2.17 Investor appetite in the infrastructure finance market has remained strong in the last few years. However, investor interest will not always immediately materialise for projects which have significant greenfield construction risk, use novel technology, or have no immediate revenue stream. There is a potential for misalignment between investors' risk appetite and the potential long-term policy benefit of private capital being attracted into new and complex infrastructure.

New technologies

2.18 In the coming years there are likely to be several emerging technologies that begin to seek finance on the market. If there is a lack of precedent or reliable information of an asset's operating history, then a project will generally find it more difficult to raise finance, as there will be more uncertainty about the risk profile.

2.19 Investors can lack incentives or risk appetite to develop experience in new asset classes which could pose a barrier to the adoption of socially useful technologies. Specialist equity and junior debt investors may participate but the risks will create higher financing costs and limit the scale of deployment.

¹¹ 'Review of the UK infrastructure financing market', Cambridge Economic Policy Associates, February 2017.

¹² 'The Future of the European Investment Bank in the UK', The Infrastructure Forum, June 2017.

¹³ 'Mansion House 2017: Speech by the Chancellor of the Exchequer', June 2017.

2.20 The National Infrastructure Commission have noted¹⁴ an intervention from the public sector in a specific sector can provide a signal to the market that it is committed to the sector by giving a ‘stamp of approval’. An intervention from an institution with a credible due diligence function, such as the EIB, can also make the private sector more comfortable with the risk involved of investing. E3G have suggested that the EIB was able to overcome the difference between the risk-perception and the actual risk of a project to enable private sector investment appetite.¹⁵

Box 2.C: Case study: financing the UK offshore wind sector

The EIB was involved in the early developing of investor interest in the offshore wind sector. Along with the involvement of the Green Investment Bank, the EIB was a significant lender to the market at a time when credit conditions were less favourable than they would subsequently be in later years, the market was not yet comfortable with the risk profile of the technology (though there was a track record of onshore wind investment), and there was a pipeline of projects in development.

The EIB was involved in several key projects¹⁶ as investor appetite for offshore wind assets developed:

- it provided 50% of the debt for London Array, the first offshore wind project in the UK to use project finance
- it invested alongside the GIB for the UK’s first construction-ready project finance deal, Galloper
- it also helped the market become comfortable with the risks as projects increased in size, often lending to projects that were larger in scale than any previous deals

There were projects that became operational at the same time that the EIB was involved in the sector that did not receive loans from the EIB or GIB.¹⁷ In recent years, larger projects have also reached financial close without EIB involvement – but they were supported by Contracts for Difference which gave a stable revenue stream on the funding side.

2.21 In the future the UK will require investment in new technology classes to meet social, economic and environmental challenges across all sectors. One such area is in low-carbon technology. The UK has already invested significantly in the deployment of low carbon technologies, with 56% of our electricity generation now coming from low carbon sources. However, while we must maintain momentum on decarbonising the power sector there

¹⁴ ‘National Infrastructure Commission Oral Evidence to the Select Committee on the European Union Financial Affairs Sub-Committee’, September 2018.

¹⁵ ‘Investing the Future’, E3G, August 2018.

¹⁶ ‘The role and impact of the EIB and GIB on UK infrastructure investment’, Vivid Economics, May 2018.

¹⁷ Ibid.

remain significant investment challenges to decarbonise other sectors, such as transport, industrial production and heat.

2.22 Meeting the fourth and fifth carbon budgets (covering the periods of 2023-27 and 2028-32) requires 51% and 57% reductions in greenhouse gas emissions compared to 1990 levels. This has significant implications:

- the Committee on Climate Change identified¹⁸ that significant increases in levels of low carbon energy generation, development of technologies such as Carbon capture and storage (CCS) and an uptake in sales of ultra-low emission vehicles would be required to meet these targets
- the National Infrastructure Commission recommended that the government should deliver at least 50% renewable energy generation by 2030,¹⁹ and the Department for Transport has set out an ambition that at least 50% of new car sales should be ultra-low emission by 2030²⁰
- the NIC and CCC have also highlighted the need for future investment to manage the impacts of climate change, such as flood and coastal erosion risks

2.23 There will also be developments due to technological progress which will create opportunities, both in the next generation of digital infrastructure, and through development of existing assets, as highlighted in the National Infrastructure Commission's study "Data for the Public Good".²¹ New regulatory approaches could also create emerging asset classes for investors.

Very large or complex projects

2.24 The capacity of the finance market to deliver finance is impacted by a range of factors, including the economic cycle, fluctuations in the pipeline of projects, and by strategic decisions by investors regarding their appetite for a given asset class, sector or country. As a result, particularly large projects, or several projects concurrently seeking finance on the market, can struggle to raise finance because the market does not have the capacity to process them.

Box 2.D: Case study: Thames Tideway Tunnel

The Thames Tideway Tunnel is a major project to improve the quality of the water in the River Thames, by constructing a 25km tunnel to upgrade and expand London's existing sewer network, reducing overflows into the river.

The size of the project was a significant test of market capacity, with the cost estimated to be £4.2 billion in 2014 prices. It is a large project compared to Thames Water's Regulated Asset Base, and therefore much of the project risk

¹⁸ '2018 Progress Report to Parliament', Committee on Climate Change, June 2018.

¹⁹ 'National Infrastructure Assessment', National Infrastructure Commission, July 2018.

²⁰ 'Road to Zero', Department for Transport, July 2018.

²¹ 'Data for the Public Good', National Infrastructure Commission, December 2017.

was transferred to an “Infrastructure Provider” (Tideway), the special purpose vehicle set up to deliver the project following a competitive procurement.

The project is regulated under the RAB model, and the government is also providing contingent financial support for low probability, high impact risks during construction that were seen to make attracting private finance difficult. However, the Thames Tideway Tunnel is not a government project and remains off the government’s balance sheet.

The project was successful in raising equity and finance using this model, including a loan from the EIB, though it is likely that the project could be fully debt financed absent the EIB.²² The model replicated the benefit of a regulated sector model for a single asset project finance, as well as providing an investment-grade credit rating with an immediate revenue stream.

The approach to procuring, financing and supporting the project was driven by the specific circumstances regarding the sector, company and type of asset. It is not necessarily replicable in all circumstances, but demonstrates the ability of bespoke government interventions on a project-by-project basis to attract private finance.

- 2.25 In the coming years there will continue to be large projects coming to market that will test market capacity. For instance, offshore wind projects will continue to grow in size, and Heathrow is developing the North-West runway scheme for market.
- 2.26 Another sector that has the potential to test market capacity is nuclear power. In June 2018, the Secretary of State for Business, Energy and Industrial Strategy announced that the government would be reviewing the viability of a regulated asset base (RAB) model as a sustainable funding model based on private finance for future nuclear projects. The government intends to publish its assessment of a nuclear RAB in the summer.

Counter-cyclical support

- 2.27 In recent years infrastructure projects have been able to raise finance from the market. This has been down to a variety of factors – historically low interest rates have meant borrowing costs have been low and the majority of projects seeking finance have been brownfield rather than greenfield so risk profiles have been lower.
- 2.28 Although infrastructure as an asset is less affected than some other asset classes by movements in the wider economy, it is still sensitive to the conditions in the financing market. During the post-financial crisis period, the lending environment was much more difficult. A more-risk averse approach to lending meant the availability of finance for infrastructure projects was reduced. In times of adverse lending conditions, institutions will also be less likely to lend long-term, which affects areas like infrastructure. As a result, there is the potential for a financing gap to be created by the

²² [‘The role and impact of the EIB and GIB on UK infrastructure investment’](#), Vivid Economics, May 2018.

financial cycle rather than the fundamentals of a project, and the government's tools need to be ready to respond to this scenario.

Consultation questions

- 1 Do you agree with strengths identified of the UK infrastructure finance market?
- 2 What are the weaknesses in the UK infrastructure finance market?
- 3 What is your assessment of the European Investment Bank's role in addressing market failure? Where has the EIB provided additionality?
- 4 To what extent can the private sector fill any gap in infrastructure finance left when the UK leaves the EIB?
- 5 What new types of asset or technologies do you see coming to market in the next few years and what kind of financing issues might they raise?
- 6 Does the market have capacity on a long-term basis to finance very large projects?
- 7 What is your assessment of the vulnerability of infrastructure finance to a downturn in market conditions?

Chapter 3

Investment models and existing tools

- 3.1 This section discusses the ways in which the government and independent regulators can help facilitate investment. This includes stable regulatory models for consumer-funded sectors, and models that use private investment for government-funded projects. In some cases the government also acts alongside the private sector by making direct investments or providing guarantees to individual projects.

Supporting revenues

Investment models in consumer-funded sectors

- 3.2 In sectors where consumers or bill-payers ultimately fund the necessary investment, private investment is needed to finance up-front capital costs. The UK has developed a range of tools to attract this investment by ensuring there are clear, stable revenues, creating long-term and predictable returns.
- 3.3 The mechanisms operating in each sector are refined by both government and independent regulators to ensure that they continue to support policy goals and deliver for taxpayers and consumers. For example, Ofwat are currently carrying out the 2019 price review,¹ and Ofgem has set out its framework for the RII0-2 price control.² In the longer-term, the Department for Business, Energy and Industrial Strategy has announced its intention to publish a White Paper on energy later this year, and the government has asked the National Infrastructure Commission to carry out a study on the future of economic regulation, which will report in Autumn 2019.³
- 3.4 These investment routes are a critical way to attract and sustain investment, but are well-established, and beyond the scope of this review. The government is, however, interested in whether successful models can be applied to new sectors, and whether there are opportunities to learn from successful models in contexts where they have not so far been applied.

¹ '2019 Price Review', Ofwat.

² 'RII0-2 Framework Decision', Ofgem, July 2018.

³ 'Chancellor letter to Sir John Armit: National Infrastructure Commission study on economic regulation', February 2019.

Box 3.A: Examples of mechanisms to support private investment

Energy

- RIIO Model – Regulated Asset Base (RAB) model for electricity and gas transmission and distribution, with revenues set by Ofgem
- Offshore Transmission owners (OFTOs) – a long-term, availability-based revenue stream, with licences allocated competitively
- Interconnectors – Cap and Floor – Ofgem regulate the income stream so that income from the price differentials between the respective energy markets allows for sufficient but moderated returns
- Low carbon electricity generation – low carbon energy generators receive a fixed “strike price” through competitive auction to guarantee a stable revenue stream for 15 years
- Security of electricity supply – The Capacity Market, which is currently suspended following a successful challenge against its State Aid approval, ensures sufficient investment in future generation capacity to guarantee security of supply. Auctions are held for capacity contracts paid for by energy consumers through levies on suppliers charged by the Electricity Settlements Company

Water

- Regulatory Capital Value (RCV) – RAB model for water, with revenues set by Ofwat
- Direct procurement for customers (DPC) – a process for water companies to competitively tender for a third party to design, build, finance, operate and maintain infrastructure
- Thames Tideway Tunnel – Ofwat regulate the project under a bespoke regime – the RCV is separate from Thames Water and allows for a revenue stream during the construction period, with the government providing contingent financial support for some extreme risks

Airports

- The Civil Aviation Authority provides a system of economic licensing and regulation that covers Heathrow, Gatwick and NATS (National Air Traffic Services)

Digital

- Ofcom's approach to its next round of market reviews, which will establish regulations from 2021, will aim to promote investment and competition in fibre networks

Investment models in government-funded projects

- 3.5 In the UK, government has historically brought private investment into government-funded projects in sectors such as health, education, justice, defence and transport using Public Private Partnerships (PPPs). PPPs are long-term contractual arrangements, usually for the construction and maintenance of an infrastructure asset over 25-30 years. Until 2012, the Private Finance Initiative (PFI) was the government's preferred model of PPP.
- 3.6 In 2012, PFI was replaced with Private Finance 2 (PF2), in response to widespread concerns about value for money. PF2 was used only six times, for projects with a total capital value of around £900 million, comprising only 0.5% public investment over the period 2012 to 2018.
- 3.7 At Budget 2018, the Chancellor announced that the government would no longer use PF2 for new government projects, recognising that the model created a "fiscal illusion"⁴ and a long-term fiscal risk for the taxpayer, inflexibility for public service providers, and operational complexity for public sector contract holders.
- 3.8 The government will not be seeking a like-for-like replacement for either PFI or PF2 and will therefore no longer procure off-balance sheet projects using a Design, Build, Finance and Maintain/Operate contracting structure where the taxpayer directly pays for the project. This supports the government's wider agenda of improving the management of the public sector balance sheet and ensuring value for money for the taxpayer. Capital spending on public infrastructure is a devolved matter so this policy does not apply to devolved bodies. The government continues to support a wide range of vehicles for delivering private investment into consumer-funded infrastructure, as set out above.
- 3.9 Private finance could still bring benefits to government-funded infrastructure, for example in risk management, project discipline and innovation, so the government is open to exploring new ideas for using private capital in government projects, including through on-balance sheet structures. However, the government recognises the lessons learned from the experience of PFI and PF2 including the need for greater transparency: new ideas must be able to demonstrate that the benefits brought by private capital outweigh the additional cost to the taxpayer of using it.
- 3.10 Any ideas presented to this review will be assessed according to the value for money guidance in the Green Book and the standards set out in Managing Public Money. Those demonstrating the same characteristics as PFI or PF2 will not be considered.

⁴ 'Fiscal Risks Report', Office for Budget Responsibility, July 2017.

Consultation questions

- 8 In the long-term, what lessons or models from established tools could be applied in different contexts?
- 9 In what new ways could private finance be used to improve the delivery, management and performance of government-funded infrastructure projects?

Supporting finance

Supporting the supply of infrastructure finance

- 3.11 The potential future challenges for infrastructure financing are set out in Chapter 2. The government is committed to ensuring viable infrastructure projects can raise the finance they need. There is sometimes a case for the government to act directly in the market, working alongside commercial investors. In these cases the government aims to crowd-in investment, whether that is helping to support development of a new technology, raise finance for a major project, or respond to a short-term reduction in market appetite. The government can use guarantees and co-investments with the private sector, and could consider lending directly to projects if appropriate.
- 3.12 The following issues are relevant when considering government intervention:
- any intervention must be for the public good and consistent with wider government objectives including growth and productivity, decarbonisation, and implementing our modern Industrial Strategy
 - government activity must address clear challenges for the market, and avoid crowding-out private investment
 - any public finance impact and risks to the taxpayer must be appropriately considered and managed
- 3.13 Government interventions have an impact on the public finances. Guarantees are typically classified as contingent liabilities, and depending on the nature of the underlying risk exposure, only impact the government's balance sheet if called. Loans and other financial transactions contribute to Public Sector Net Debt, and must therefore be considered and weighed against alongside other government spending priorities.
- 3.14 As the UK leaves the EU, rules on State Aid will continue to apply during any implementation period. However, should the UK leave the EU without a deal, the EU State Aid rules are being transposed into UK domestic legislation under the European Union (Withdrawal) Act. The UK legislation replicates the existing state aid framework. This ensures that the UK will retain a functioning and robust State aid regime that gives aid grantors and beneficiaries certainty. Once the UK has left the EU the Competition and Markets Authority (CMA) will monitor and approve new aid granted in the UK.

3.15 The government already has a range of tools, working within these criteria, to support financing for infrastructure and crowd-in private sector investors. The government has also taken steps to promote investment by domestic pension funds, including through the Local Government Pension Pools which are now operational and have confirmed increased allocations to infrastructure investment.

Guarantees

3.16 The government is able to provide guarantees for lending by private lenders, and therefore enable borrowers to raise capital that would not otherwise be available.

3.17 **UK Guarantees Scheme (UKGS)** – the UKGS was established in 2012, with a capacity of up to £40 billion, to ensure there is sufficient finance available for nationally significant infrastructure projects. It works by guaranteeing some or all of the debt for a project – the guarantee represents a commitment that the government will step-in if the borrower is unable to repay a loan.

3.18 The UKGS operates on a commercial basis, with borrowers paying a fee for the guarantee. Projects must be commercially sound to qualify for a guarantee, with a risk profile and revenue stream that makes commercial lending viable.

3.19 This scheme is demand-led: it operates where needed, and does not crowd-out the market. To date it has issued £1.8 billion of guarantees to projects worth £4 billion. Other projects have pre-qualified for guarantees and been supported through the financing process, but have ultimately raised finance privately on the market. In these cases the UKGS can help to crowd-in investment through its involvement, even if it is not ultimately required.

3.20 In Autumn 2016 the government extended the UKGS to at least 2026 and in June 2017 the government created additional flexibility within the UKGS to offer guarantees that apply only during the construction period.

Project	Guarantee	Status	Sector	Region
Drax Power	£75m (bond)	Released	Energy	Yorkshire
Sustainable Development Capital Ltd	£9m (loan)	Released	Energy	UK
Northern Line Extension	£750m (standby liquid facility)	Issued	Transport	London
Mersey Gateway Bridge PPP	£257m (bond)	Issued	Transport	North West
Ineos Grangemouth	€285m (bond)	Issued	Energy	Scotland
Speyside CHP plant	£48m (bond)	Issued	Energy	Scotland
University of Northampton	£292m (bond)	Issued	University	Midlands
Countesswells - housing development	£86m (loan)	Issued	Housing	Scotland
University of Gloucester	£39m (bond)	Issued	University	Midlands

3.21 Housing guarantees – the government has also used debt guarantees to support housing development, including:

- The Affordable Housing Guarantee Scheme, which guaranteed £3.2 billion between 2014 and 2018, helping to support 34,000 homes.
- The Private Rented Sector Guarantee Scheme, which has so far guaranteed £698 million of bonds since 2016, supporting 3,400 Build to Rent homes. The scheme has a pipeline of further applications considerably in excess of the remaining £2.8 billion. These applications will continue to be processed as the projects reach completion, until such time as the £3.5 billion is fully utilised.
- At Autumn Budget 2017, the government announced it would explore options with industry to create £8 billion worth of new guarantees to support housebuilding, including SMEs and purpose built rented housing. Autumn Budget 2018 announced the first of these schemes, providing guarantees to support up to £1 billion of lending to SME housebuilders, to be implemented by the British Business Bank on behalf of the Ministry of Housing, Communities and Local Government.
- The Spring Statement has announced a new Affordable Housing Guarantee Scheme which will see the government guaranteeing up to £3 billion of borrowing by housing associations in England.

Co-investment funds in new technologies

3.22 The government has also established funds in new, emerging sectors, designed to catalyse activity and develop markets. The aim is to crowd-in other market participants and to demonstrate a track record for these new technologies. In these cases the government acts as a cornerstone investor, with private sector fund managers operating the funds and making investment decisions.

3.23 Digital Infrastructure Investment Fund (DIIF) – the DIIF was launched in 2017 to support the rollout of next-generation broadband networks, with the government acting as a cornerstone investor by providing £400 million across three funds, matched by the private sector. The aim is to provide capital to alternative network providers to help them accelerate their rollout plans and scale up more quickly, and to catalyse further investment in new broadband networks by igniting interest from private finance providers.

3.24 The funds are managed and invested on commercial terms by private sector fund managers, generating a commercial return for the government. This utilises the private sector's experience of identifying the most promising development opportunities and creating new commercial models to assist with the growth of the sector. Key investments have so far been made in five companies, including £18 million in Community Fibre, which will connect 100,000 social houses in London to ultrafast broadband, and £16 million into Airband, which will help expand their network to an additional 50,000 homes and businesses across England and Wales.

- 3.25 More significantly, the DIIF is already delivering on its objective of catalysing further private investments in full fibre broadband, with major commitments made by industry since the Fund was first announced in 2016.
- 3.26 **Charging Infrastructure Investment Fund (CIIF)** – the CIIF works on the same principle as the DIIF, and is intended to enable faster expansion of electric vehicle charging infrastructure and to catalyse investment in the sector. This will encourage increased adoption of electric vehicles (EVs), and reflects the government’s confidence in the growth potential of this sector.
- 3.27 The government will invest up to £200 million, to be matched by private investors. This will be managed and invested on a commercial basis by private sector partners, investing in all elements of EV charging infrastructure, including (but not limited to): physical chargepoints, the software and platforms required to operate charging infrastructure, grid connections and battery storage solutions. In July 2018 the government requested proposals for a fund manager. Following this, in early February the government announced that it was entering into exclusive negotiations with Zouk Capital, the infrastructure and private equity fund manager, to manage the fund. Subject to negotiations, it is expected the fund will launch in spring 2019.
- 3.28 **Clean Growth Fund** – the Clean Growth Fund aims to speed up the deployment of innovative clean technologies. The government is providing up to £20 million to make direct investments in companies seeking to commercialise promising technologies. As with the DIIF and CIIF, the fund will be managed by private sector fund managers, who will match government investment as a minimum. In October 2018 the government requested proposals for fund managers.

Loans

- 3.29 **The Infrastructure Finance Unit (TIFU)** – the government has the capability to offer direct lending to infrastructure projects. However, as with the UKGS, the need for this level of intervention depends on wider market conditions. TIFU was set up to offer direct loans to infrastructure projects following the financial crisis. It made one loan with a value of £120 million and engaged on a range of other projects before market conditions recovered and direct lending was no longer required.
- 3.30 The government also offers loans to local authorities and other authorised bodies, who can also seek finance from the private sector:
- 3.31 **Public Works Loan Board (PWLB)** – the PWLB is a statutory body responsible for issuing central government loans to local authorities and other authorised bodies, typically for capital projects. The PWLB consists of up to 12 independent Commissioners, though their functions are delegated to the PWLB Secretary, a civil servant in the UK Debt Management Office (DMO). In November 2016, the government committed to abolishing the PWLB as a legal entity and transferring its powers to the Treasury. This is intended as a governance change, and will not affect lending practices.
- 3.32 The PWLB can be used by local authorities to finance infrastructure investments. To enable this, in autumn 2017 the government introduced a

Local Infrastructure Rate, offering up to £1 billion of lending at gilts + 60 basis points. Allocations have been split across two bidding rounds. The first round has concluded and five local authorities were successful, receiving a total of £275 million. The second bidding round is currently open, with the remaining £725 million available at this stage.

- 3.33 Salix Finance Ltd** – helps to decarbonise the public sector and promote energy efficiency by providing interest free capital to the public sector. This enables the installation of modern, energy efficient technologies such as replacement boilers, LED lighting, improved insulation and solar PV projects. So far Salix has supported over 17,000 projects worth more than £740 million.

Consultation questions

- 10 What is your view on the effectiveness of the existing government tools to support the supply of infrastructure finance?
- 11 Should the government change, expand or reduce the levers it uses to support the supply of infrastructure finance?
- 12 Should the government consider any alternative forms of infrastructure finance support for sectors such as higher education or housing associations?
- 13 Which sectors or types of infrastructure may need support from government to raise the finance they need, particularly in light of major technological changes?

Chapter 4

Governance

- 4.1 The effectiveness of any tool to encourage private investment is strongly influenced by how it is managed, and the mechanism by which it is delivered to the market. Key decisions include whether interventions in the market are delivered by central government or an arms' length body, how the government ensures it has the expertise and knowledge needed to intervene effectively, the mandate for any intervention, and how interventions are funded.
- 4.2 The UK government currently delivers its support for infrastructure financing through the Infrastructure and Projects Authority, a body which sits in central government and reports jointly to HM Treasury and the Cabinet Office.
- 4.3 In the 2018 National Infrastructure Assessment (NIA), the National Infrastructure Commission (NIC) recommended that, if UK loses access to the EIB then a new, operationally independent UK Infrastructure Finance Institution should be established by 2021. This recommendation is included in full at Box 4.A.

UK approaches to governance of interventions

- 4.4 The UK government uses a range of governance structures to deliver financial interventions to address market failures. These include centrally managed schemes, such as those delivered through the IPA, as well as operationally independent institutions such as the British Business Bank (BBB).
- 4.5 In 2016, the UK government established the IPA, through the merger of Infrastructure UK and the Major Projects Authority, to deliver the majority of its infrastructure support programmes. These include tools referenced in the previous section:
- UK Guarantees Scheme
 - Digital Infrastructure Investment Fund
 - Charging Infrastructure Investment Fund
- 4.6 The IPA is staffed by commercial experts with the knowledge and experience to effectively support infrastructure finance, and plays a role as the centre of the government's Project Finance Profession. IPA officials advise the government on finance support tools and are responsible for delivering the UK Guarantees Scheme, by engaging with the market, carrying out due

diligence on specific projects, and issuing guarantees.¹ The IPA also work with fund managers to deliver the DIIF, CIIF² and Clean Growth Fund.

- 4.7 The IPA is a joint unit between HM Treasury and Cabinet Office, and is governed in line with core government practices. This means its staff are classed as civil servants, it is funded through departmental budgets, and Ministers retain responsibility for taking decisions, for example, approving any new support issued through the UK Guarantees Scheme. Also, as part of central government, its guarantees and investment funds accrue to HM Treasury's balance sheet, and so impact headline measures of government debt.
- 4.8 The IPA also acts as the public-sector centre of excellence for project management and delivery. In this role it is responsible for supporting and de-risking the most complex and high-risk projects and for developing the UK's infrastructure pipeline analysis.³
- 4.9 Whilst it does not deliver infrastructure support, the British Business Bank (BBB) provides another example of how the government makes financial interventions in the market. Established in 2014 as a plc with a sole Government shareholder, the BBB aims to make finance markets work better for small businesses. It does this through a range of interventions covering both demand and supply for finance. These include equity, debt, and guarantees to financial intermediaries. The BBB is operationally independent, with its Executive making decisions on day-to-day operations and reporting to an independent Board. Government retains power over financing, approving business plans, and appointing the CEO, Chair, and Non-Executive Directors.⁴
- 4.10 In 2012 the UK government established the Green Investment Bank (GIB) to address market failures in the renewable energy finance market. GIB operated on principles similar to the BBB; it was funded directly through central government, who also had responsibility for appointing senior leadership and approving business plans. Meanwhile decisions about investments and the internal management of the institution were devolved to an independent board and executive.⁵
- 4.11 The sale of the GIB also shows another principle of government's intervention in markets; that interventions should be additional, and only continue as long as they crowd investment in rather than out. In the case of the GIB, the government's intervention had catalysed investment in renewable energy, showing that investment could be both green and profitable, and that a strong private market in green finance could be developed.

¹ ['About the IPA'](#), Infrastructure and Projects Authority, 2017.

² ['Infrastructure Investment Fund guidance'](#), HM Government, 2018.

³ ['About the IPA'](#), Infrastructure and Projects Authority, 2017.

⁴ ['BBB Framework Document'](#), BBB, 2013.

⁵ ['GIB governance documentation'](#), Companies House, 2012.

National Infrastructure Commission recommendation

- 4.12 As mentioned above, the NIC's 2018 NIA recommended that if the UK loses access to the EIB, a new, operationally independent, UK infrastructure finance institution should be established. The full recommendation is set out in Box 4.A.

Box 4.A: NIC recommendation for a UK infrastructure finance institution⁶

"The Commission recommends that government should maintain access to the European Investment Bank if possible. If access is lost, a new, operationally independent, UK infrastructure finance institution should be established by 2021. To enable this, government should consult on a proposed design of the new institution by Spring 2019. The consultation should cover:

- functions, including provision of finance to economic infrastructure projects in cases of market and coordination failures; catalysing innovation; and acting as a centre of excellence on infrastructure project development, procurement and delivery
- a clear mandate, including sound banking, additionality and having a wider economic and social impact

Governance to safeguard the operational independence of the institution."

- 4.13 The NIC also state that "any domestic institution would score within the government's main debt measure, Public Sector Net Debt. A new institution would therefore need a clear remit, and robust processes to ensure additionality and 'sound banking'".⁷ The NIC explained the benefits it saw a new institution could provide:

- policy certainty in areas which exist outside of the short-term political cycle
- expertise and credibility, which can be used to build the understanding and capabilities of both private investors and local government
- a portfolio of investments would allow an institution to take risk without imposing an overall cost on the public purse⁸

- 4.14 The NIA also includes some principal functions for the institution:

- provision of finance to economic infrastructure in cases of market and coordination failures
- catalysing innovation

⁶ 'National Infrastructure Assessment', National Infrastructure Commission, 2018.

⁷ Ibid.

⁸ Ibid.

- acting as a centre of excellence on infrastructure project development, procurement, and delivery⁹

4.15 The NIC emphasised that should a new, operationally independent institution be considered, it would be important to fully explore its governance, especially regarding measures to safeguard its operational independence.¹⁰

International comparisons

4.16 There is no uniform model across developed nations about how best to structure the governance around infrastructure financing interventions. Some nations, such as Germany, Japan and Canada, have publicly-owned, operationally-independent financing institutions which support financing of infrastructure projects. Other countries, such as the USA and the Netherlands, run central government infrastructure programmes through government departments. Finally, some other countries, such as Australia have a blended approach, with some sector-specific interventions delivered by operationally independent bodies, but with central government retaining control of other programmes. Available evidence does not show any of the above governance structures to be clearly superior in delivering quality infrastructure. A comparison of international approaches to governance is included at Annex A.

Future governance considerations

4.17 This review will consider the case for changing the current governance of our infrastructure finance support, taking into account the costs and benefits of potential alternative approaches. We welcome stakeholder views on the NIC's proposal and whether, for example, any benefits from operational independence would outweigh the set-up and ongoing costs associated with a new body.

Consultation questions

- 14 In your view, how effective is the current institutional framework at ensuring good projects can raise the finance they need?
- 15 Is any reform to the UK's institutional framework needed to better provide support to the market?
- 16 In the event that the UK loses access to the EIB, do you agree with the NIC that the government should establish a new, operationally independent, UK infrastructure finance institution? If so, what should its mandate be, and how should its governance be structured?

⁹ 'National Infrastructure Assessment', National Infrastructure Commission, 2018.

¹⁰ Ibid.

Annex A

International comparisons

- A.1 This annex provides a high-level overview of the approaches taken in different countries to provide financing support for infrastructure projects. For the purposes of this annex, institutions are defined as any majority government-owned, operationally independent body which seeks to increase the supply of finance for investment. These include not only bodies which focus on infrastructure across the piece, but also sector-specific institutions.

Germany
Institution: KfW



History	Est. 1948 to assist in the reconstruction of Germany following WWII – initially funded with €18.4bn of Marshall Plan funds (2019 prices). Over time KfW’s mission has developed and expanded to include; overseas development cooperation, corporate project finance, loans for individuals and SMEs, and a focus on sustainability. ¹
Assets and level of activity	2017: Balance sheet of €472.3bn ² 2016: Issued €4.1bn to support infrastructure ³
Funding sources	Raises majority of funds from capital markets ⁴
Governance	Government-owned Development Bank, where KfW IPEX, a subsidiary of KfW banking group, predominantly leads in project and corporate finance. It is operationally independent of government, although the Board of Supervisory Directors, which provides oversight of KfW, is drawn from across both public and private sectors, and is Chaired by a government minister. The Supervisory Board is responsible for appointing member of the Executive Board, approving financial statements, and selecting auditors. ⁵

¹ 'About KfW', KfW.

² 'KfW Financial Report 2017', KfW, 2018.

³ 'Comparative Study of National Infrastructure Financing Institutions', Eunomia, 2018.

⁴ 'KfW Financial Report 2017', KfW, 2018.

⁵ 'Board of Supervisory Directors and its Committee's', KfW.

Japan

Institutional: Development Bank of Japan Inc. (DBJ):



History	Est. 2008, replacing the previous Development Bank of Japan which was formed in 1999 through the merger of Japan Development Bank and Hokkaido-Tohoku Development Finance Public Corporation. This move was undertaken to prepare DBJ for privatisation and signalled a change in investment focus away from its previous goals of “community development, environmental conservation and sustainable societies, and creation of new technologies and industries”, ⁶ towards “high-value-adding” investment to appeal to future shareholders. ⁷
Assets and level of activity	2018: Balance sheet c. ¥17tn ⁸
Funding sources	Historically, funding has been sourced through the Fiscal Investment and Loan Programme, an intra-governmental transfer mechanism of postal saving deposits and postal insurance premiums. Capital is now also raised from the market, although the majority of DBJ’s borrowing is backed by a government guarantee. ⁹
Governance	Government-owned Corporation. Ministers oversee appointment of Directors and approve business plans, among other duties. ¹⁰

⁶ ‘DBJ’s History’, DBJ.

⁷ ‘The Development Bank of Japan Act’, DBJ, 2007.

⁸ Ibid.

⁹ Ibid.

¹⁰ Ibid.

Canada

Institutional: Canada Infrastructure Bank:



History	<p>Est. 2017 with a mission to: work with provincial, territorial, municipal, federal, Indigenous and private sector investor partners to transform the way infrastructure is planned, funded and delivered in Canada by:</p> <ul style="list-style-type: none"> • Engaging private sector partners early in the planning and design process; • Advancing revenue-based business models, where appropriate; and • Exploring new and innovative approaches to project finance and delivery¹¹
Assets and level of activity	<p>Total allocation: \$35bn¹² First investment made in 2018: \$1.28bn loan to a Montreal light-rail project.</p>
Funding sources	<p>Funded directly by federal government.¹³</p>
Governance	<p>Crown Corporation. Fully accountable to Canadian government, and must submit an annual corporate plan encompassing the overall business and activities of the organisation, for approval by the Minister responsible.¹⁴</p>

¹¹ 'Mission and Mandate', CIB.

¹² 'Annual Report 2017/18', CIB.

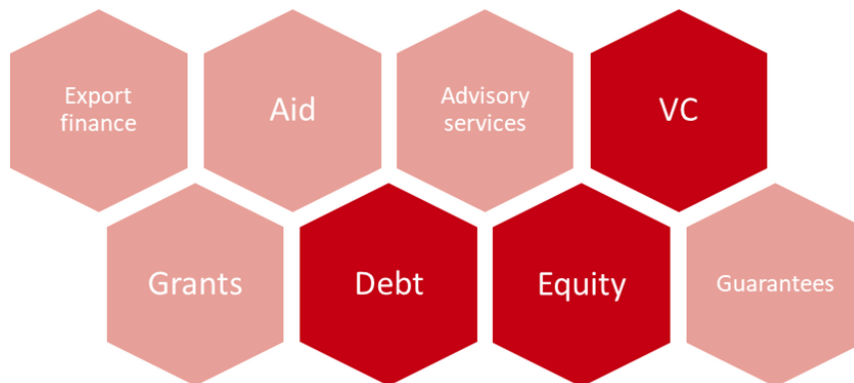
¹³ Ibid.

¹⁴ Ibid.

Australia

Institutional:

Clean Energy Finance Corporation (CEFC):



History	Est. 2012 with a mission to “accelerate Australia’s transformation towards a more competitive economy in a carbon constrained world”, ¹⁵ by acting as a catalyst to increase investment in emissions reduction.
Assets and activity	Total allocation: \$10bn ¹⁶ Investment portfolio of commitments was \$5.3 billion at 30 June 2018 ¹⁷
Funding sources	Funded directly by government. ¹⁸
Governance	Independent statutory authority. Responsible to an independent Board which reports to parliament through responsible ministers. Focus on renewable energy and decarbonisation. ¹⁹

Interventions delivered directly by central government:

1. Infrastructure Investment Programme/National Water Infrastructure Development Fund: Schemes to provide grant funding to states and territories.²⁰²¹
2. The Australian government owns and initially funds companies to invest in revenue generating infrastructure such as broadband provision and energy generation.²²²³
3. The Australian government encourages states and territories to lease or sell assets to private companies by offering a 15% bonus on re-investments in infrastructure. This is called the Asset-Recycling Initiative.²⁴

¹⁵ [Annual Report - 2018](#), CEFC.

¹⁶ Ibid.

¹⁷ [CEO statement](#), CEFC.

¹⁸ [Annual Report - 2018](#), CEFC.

¹⁹ Ibid.

²⁰ [Infrastructure Investment Program](#), Department of Infrastructure, Regional Development and Cities.

²¹ [National Water Infrastructure Development Fund](#), Department of Infrastructure, Regional Development and Cities.

²² [Annual Report 2018](#), Snowy Hydro, 2018.

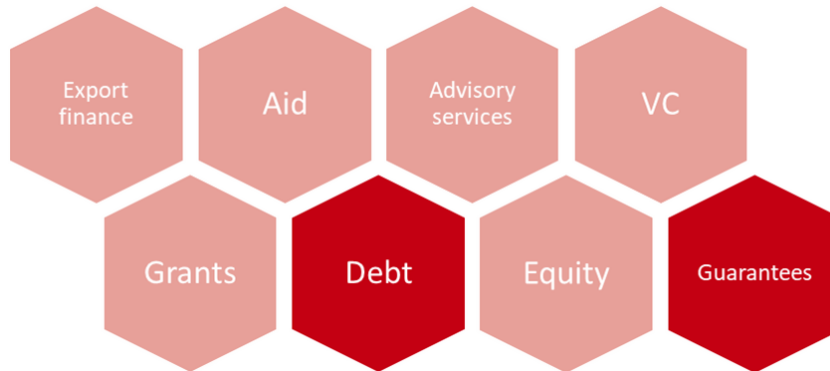
²³ [About NBN Co](#), National Broadband Network.

²⁴ [National Partnership Agreement on Asset Recycling](#), Council on Federal Financial Relations, 2014.

USA

Institutional:

The USA does not operate or own any federal level institutions for supporting investment, although it has provided grants for the capitalisation for a number of state-level institutions in the past.²⁵ A number of states also operate institutions without federal support, for example, the New York Green Bank:



History	Est. 2015 with a mission to “accelerate clean energy deployment in New York State by working in collaboration with the private sector to transform financing markets”. ²⁶
Assets and activity	Total allocation: \$1bn ²⁷ Portfolio at end FY 17/18: \$374.3m ²⁸
Funding sources	NYGB is funded through a range of state resources, including some existing unallocated funds as well as hypothecated future state income. ²⁹
Governance	Quasi-independent investment decisions, with state government representatives participating in the ‘greenlighting committee’. State government retains responsibility to approve business strategies. ³⁰

Interventions delivered directly by federal government:

In recent years the federal U.S. Government has directly managed a number of direct programmes to increase the supply of finance to infrastructure projects. Examples of these programmes include the Transport Infrastructure Finance and Innovation Act and Water Infrastructure Finance and Innovation Act are interventions which supply direct loans, credit lines, and guarantees to projects and are delivered through the relevant federal departments.^{31 32}

²⁵ [Federal Support for Financing State and Local Transportation and Water Infrastructure](#), Congressional Budget Office, 2018.

²⁶ [About NY Green Bank](#), NY Green Bank.

²⁷ [2017/18 Annual Financial Metrics Report](#), NY Green Bank, 2018.

²⁸ *Ibid.*

²⁹ *Ibid.*

³⁰ [NYGB Annual Review 2017-18 and Annual Business Plan 2018-19](#), NY Green Bank, 2018.

³¹ [TIFIA Overview](#), U.S. Department of Transportation.

³² [WIFIA Overview](#), U.S. Environmental Protection Agency.

Annex B

Consultation questions

- B.1 The full list of questions asked in this consultation are as follows:
- 1 Do you agree with strengths identified of the UK infrastructure finance market?
 - 2 What are the weaknesses in the infrastructure finance market?
 - 3 What is your assessment of the European Investment Bank's role in addressing market failure? Where has the EIB provided additionality?
 - 4 To what extent can the private sector fill any gap in infrastructure finance left when the UK leaves the EIB?
 - 5 What new types of assets or technologies do you see coming to market in the next few years and what kind of financing issues might they raise?
 - 6 Does the market have capacity on a long-term basis to finance very large projects?
 - 7 What is your assessment of the vulnerability of infrastructure finance to a downturn in market conditions?
 - 8 In the long-term, what lessons or models from established tools could be applied to different contexts?
 - 9 In what new ways could private finance be used to improve the delivery, management and performance of government-funded infrastructure projects?
 - 10 What is your view on the effectiveness of the existing government tools to support the supply of infrastructure finance?
 - 11 Should the government change, expand or reduce the levers it uses to support the supply of infrastructure finance?
 - 12 Should the government consider any alternative forms of finance support for sectors such as higher education or housing associations?
 - 13 Which sectors or types of infrastructure may need support from government to raise the finance they need, particularly in light of major technological changes?
 - 14 In your view, how effective is the current institutional framework at ensuring good projects can raise the finance they need?

- 15 Is any reform to the UK's institutional framework needed to better provide support to the market?
- 16 In the event that the UK loses access to the EIB, do you agree with the NIC that the government should establish a new, operationally independent, UK infrastructure finance institution? If so, what should its mandate be, and how should its governance be structured?

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