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Governance, funding and finance for major infrastructure projects: bridging the gaps

Richard Price¹

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Introduction

The UK is embarking on a significant institutional reform to put long-term infrastructure planning on a firmer basis. The creation of the National Infrastructure Commission (NIC), building on experience in Australia and elsewhere, should help promote a better evidence-based discussion on the UK's infrastructure needs and political choices, and to put infrastructure design and delivery on a surer footing. Interactions with the system of economic regulation need to be worked through, but the NIC will help governments to give a clearer statement of long-term policy within which regulators can operate and ensure projects are delivered efficiently.

Funding and financing challenges however have yet to be fully addressed across the infrastructure planning and delivery chain – not just in the UK but globally. A number of initiatives are beginning to tackle this policy gap, and recent UK experience suggests ways in which projects can be brought to market in ways which secure private investment and secure the interests of consumers and taxpayers. There is a major opportunity to deliver better infrastructure efficiently if we can get this right.

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Tackling the barriers to infrastructure investment: key points

- Infrastructure investment is critical to driving better living standards: globally an enormous number of projects need finance – amounting to around US\$60 trillion between now and 2030.
- There are large amounts of private capital available to invest, but paradoxically, the substantial increase in investment in infrastructure projects we ought to see is not happening.
- There is a gap between the projects needed and the money available, This needs to be addressed:
 - governments need to improve the speed and predictability of their ‘project pipelines’;
 - investors need to improve the quality of information in the market, and some progress is being made;
 - bespoke government contracts and guarantees can be opaque, confusing for investors, and impede scaling-up the infrastructure investment market; and
 - more standardisation is needed around a relatively small number of funding structures which work for different kinds of projects. Approaches such as Thames Tideway, combining government support with a flexible but predictable regulatory framework, can work well in important parts of the market.
- The way projects are brought to market needs to be transparent, more easily understood by investors, and hold the confidence of the public. This needs urgent attention if the investment gap is to be addressed.

Most of these challenges are global, but it would be a positive step if we can make progress in the UK, both for the UK itself and, working with international institutions and investors, for the global infrastructure investment market.

The UK's National Infrastructure Commission

The launch of the UK's National Infrastructure Commission (NIC) is good news. Its remit is to "provide expert, independent advice on pressing infrastructure issues. The commission will set out a clear picture of the future infrastructure we need, producing an in-depth assessment of the UK's major infrastructure needs on a 30-year time horizon". The Commission "will build on the work of individual actors, including government departments, sub-national and regional bodies and regulators, using a robust, common methodology to develop needs assessments that take account of strategic cross-sector considerations."²

Its role is not to take decisions on infrastructure priorities: that remains the role of government. But we can expect the NIC to set the agenda for debate and decision-making on long-term infrastructure priorities. It will do that by providing a long-term analytical framework, helping to identify the constraints to growth and pressure-points over three decades, and options for addressing them; and by tackling specific challenges identified by government. The debate on infrastructure needs will get a head start later this year when the National Needs Assessment for infrastructure reports – a process convened by John Armitt (now a commissioner on the NIC) at the UK's Institute of Civil Engineers, before the government's announcements on the Commission.³

Crucially the National Infrastructure Commission will seek to achieve some degree of consensus – both across the politicians and across authorities,⁴ users and infrastructure businesses. The Commission is independent of government, but the core thesis is that you can never take the politics out of infrastructure. Indeed as Michael Heseltine – another member of the National Infrastructure Commission has said – "there is no infrastructure without politics". But it is possible to help politicians and policymakers to take better informed decisions, in a more orderly way. They are not constrained by the evidence, but they will be informed by it. The NIC has the potential to underpin a stable policy environment over the long periods needed to plan and deliver major infrastructure projects. It also helps to provide some evidence and order to accelerate the process of decision-making, avoiding the long delays that beset critical infrastructure projects in a democracy.⁵

² HM Treasury: National Infrastructure Commission: consultation (January 2016).

³ Institute of Civil Engineers: National Needs Assessment - Call for evidence (2015).

⁴ Of which there are many – see chart 5 below.

⁵ Robbie Owen, Pinsent Masons: Public engagement essential for the long view too (Infrastructure Intelligence, April 2016).

People in the regulatory community will no doubt pay a lot of attention to the interactions between the NIC and the economic regulators – and I will describe some of those later. However, some of the most significant action resulting from the NIC's recommendations will be through the planning system. With the NIC producing a clear assessment of infrastructure needs, based on the best available evidence, and helping to build a degree of political and public consensus around its recommendations, there is less risk that projects will get bogged down in the planning system. With prior debate and evidence, there is less scope for the production of analysis and counter-analysis, challenge and counter-challenge and appeals on applications after application and project after project. The evidence for the planners to take into account, and the resulting guidance from government, will be in place and, one hopes, clear; and this in turn should help to generate clearer conclusions, with much less delay, from the planning process. That would be a great thing for the UK economy.

By recent standards, the government's consultation on how the NIC will operate says remarkably little about interactions with local government – though it notes that “recent devolution agreements with City Regions and local areas has given local leaders the power to drive growth in their areas, and will support the delivery of infrastructure projects.” The NIC will need to work with local government to draw on their analysis and priorities and to understand regional constraint on growth. The configuration of national infrastructure has a profound effect on the geographic distribution of economic activity, and it will be critical to get these relationships right.

The National infrastructure Commission and economic regulation

Regulators are positive about the development of the NIC as a new independent body and are already working with it to establish for example how analysis on long-term capacity needs and costed options will be developed and shared. The Government has consulted on a number of aspects of the way the NIC will work with other bodies, and there may be formal obligations on regulators and government departments to collaborate. But regulators are keen to help anyway – and of course it is in the interests of consumers now and in the future that they do.

As we have discussed in previous sessions at the Regulatory Policy Institute, regulators' duties are many and varied; but at the heart of these statutory duties are obligations to act in the interests of consumers, and to promote competition. How might new obligations to work with the NIC, to take account of its views on long-term infrastructure needs and to have regard to government's conclusions on the NIC's recommendations work alongside the regulators' existing obligations?

In fact mechanisms already exist in most sectoral regulatory regimes to take account of government priorities through statutory guidance, or their equivalent. Most of the mechanisms of regulation are focused on incremental investment and additions to existing capacity. It is a major role of government to plan for the long-term and to make strategic trade-offs between priorities. Indeed, in a democracy it is critical that the elected government sets direction on the big political questions in infrastructure. The regulators act independently, exercising their functions and statutory duties, within that context. Clarity on priorities from government, articulated through a statutory framework, together with accountability to Parliament and through the courts, is one of the things that gives the regulatory regime legitimacy. Things typically get difficult for regulators and the businesses they regulate where government is muddled about wants to achieve or refuses to address trade-offs, and regulators feel compelled to step into 'political' space in order to comply with their statutory duties. The NIC should help government to improve its long-term thinking, and thus improve the clarity of its guidance to regulators.

There are plenty of issues to work through in the interaction between the NIC and the regulators. These are not all straightforward, but are tractable provided they are thought through ahead of conclusions on future infrastructure commitments are reached.

Major infrastructure projects take a long time to deliver, so the provision of large-scale new capacity raises questions about who should pay for additional capacity, and who bears the risk. The provision of capacity ahead of need – providing infrastructure to facilitate subsequent property development – is one example of this. What weight should regulators give to growth objectives where they are not necessarily of direct benefit to consumers? Correspondingly what weight will the NIC give to the views of consumers on what they want and what they are willing to pay? Regulators are understandably focused on making sure that today's customers get good value from the services for which they pay. So it is essential to achieve clarity on who pays for which additions to capacity, and on how risks are allocated between today's and tomorrow's customers, taxpayers, developers and investors.

Affordability will be a difficult issue with which the NIC will have to wrestle. The government's proposals suggest that the Commission will be expected to adhere to a 'broad fiscal remit' as a percentage of GDP. But is this credible as a statement of affordability, as a constraint within which priorities have be established and trade-offs made explicit? Is there a case for the government to be clearer about the level of public resources which can be devoted to infrastructure – the equivalent of the government's statutory statement of funds available in rail? And perhaps also about the extent of access to the government's balance sheet?

To build or not to build? Because the capacity of existing infrastructure can be hard to establish, regulators often have difficult decisions to take on when new capacity is needed, and on how much more existing infrastructure can deliver. The trade-off between reducing leakage, or demand management, and building new reservoir capacity in the south east of England is one example. Building new roads as opposed to deploying new technology to optimise the use of existing capacity is another. Alignment between the regulators and the NIC on this will be essential.

Avoiding over-prescription The NIC will need to judge carefully how specific to be on the way capacity and services are delivered. The commission will need to specify the need for capacity, and key aspects of the way infrastructure needs to be configured – particularly for example where there are particular regional or local long-term constraints on growth. But over-specification reduces the ability of infrastructure businesses and investors to innovate and configure capacity to meet the need. This reduces the scope for greater efficiency and constrains regulators’ ability to drive dynamic efficiency. Over-prescription also risks restricting the scope for competition – both ‘in the market’ and in the supply chain. So the ‘hand-across’ - from the NIC’s recommendations and their translation into government guidance and on through the regulators - needs to leave businesses a high degree of freedom to find innovative ways to meet current and future needs.

Flexibility to adapt to new evidence The NIC’s recommendations need to build in a degree of flexibility. The process of putting specifications of capacity need into the market, and the process of challenge by regulators, invariably throws up new ways of doing things, of configuring networks, of applying technology, of delivering efficiently. The NIC’s recommendations will be based on the best available evidence and analysis. They will need to recognise that the evidence on how best to deliver will evolve, as businesses and engineers develop their thinking and innovate. This is likely to lead to different solutions and a changing balance of costs and benefits hard to envisage at the time of the initial analysis.

From the future shape of water resources to the ability of wires, runways, railway embankments to withstand more frequent extreme weather, the resilience of infrastructure to environmental change is already a big issue for regulators and businesses alike. It will be all the more significant in taking long-term decisions. UKRN recently reviewed the role of the regulators in making cross-sectoral resilience risks.⁶ For the future, both the NIC and the regulators will need to be able to make judgements on the level of resilience planned for across sectors, and the signals they send to businesses need to be consistent.

None of these issues seems to me to be intractable. Indeed the NIC and regulators both recognise the need to work through each of these issues, so that both sides are able to act transparently, and so that the two sets of independent bodies can maximise

⁶ UK Regulators’ Network: Cross-sector resilience (February 2016) http://www.ukrn.org.uk/?page_id=647

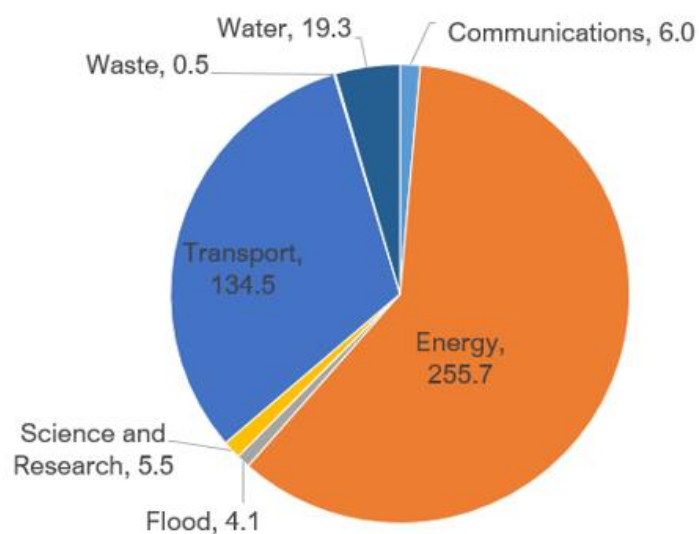
their effectiveness in acting for consumers, promoting competition and tackling long-term constraints to growth in the new institutional architecture.

The investment challenge (and opportunity)

There is one issue which is still not getting enough attention, in my view, and for which the governance of major projects is critical. That is the question of who finances major infrastructure investments, how they are funded, and on what terms.

First let's be clear that there is a big opportunity in the construction and finance of infrastructure. Looking first at the UK – and ahead of the first analysis by the National Infrastructure Commission - the current estimates of the UK's pipeline of infrastructure projects identifies some £425 billion of investment in 600 major projects, with £240 billion of that being spent by 2020.⁷ This figure excludes the renewal of existing infrastructure.

Chart 1: UK infrastructure pipeline: £425 billion in infrastructure projects planned, of which £240 billion by 2020. £ billions.



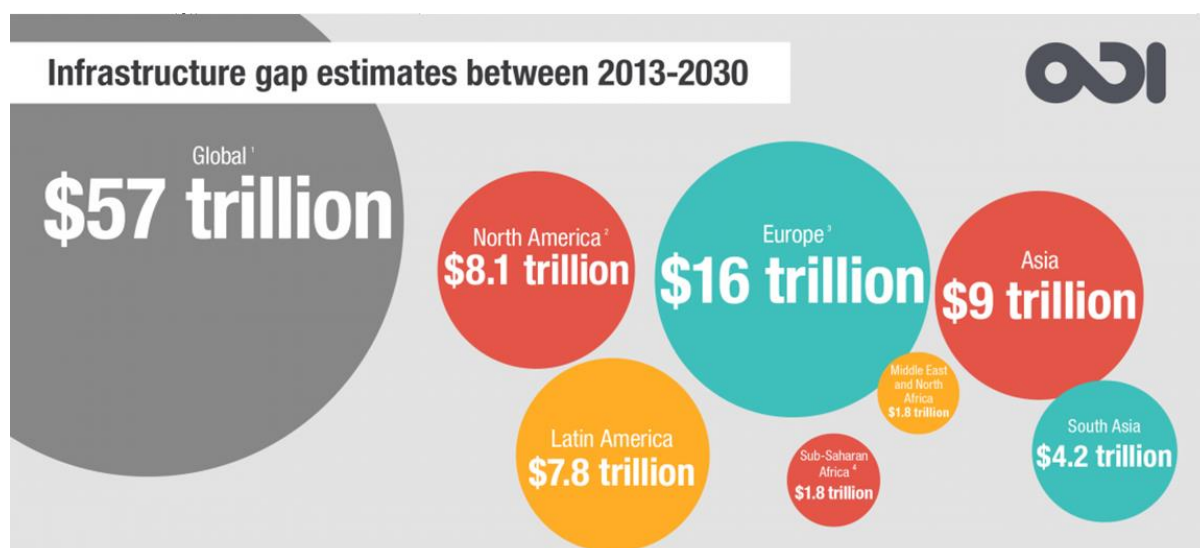
Source: Infrastructure and Projects Authority: National Infrastructure Plan 2016-2021 (March 2016)

This is not a UK issue alone – we are in a global market both for the supply of infrastructure and for investment. Drawing on recent evidence from around the world the Overseas Development Institute recently estimated that investment of nearly US\$60 trillion will be needed by 2030 to meet current assessments of infrastructure

⁷ UK Infrastructure and Projects Authority: National Infrastructure Delivery Plan, 2016 to 2021. March 2016.

needs across all countries (see chart 2).⁸ This includes both new ‘greenfield’ infrastructure and the renewal of existing assets.

Chart 2: Estimates of the global ‘infrastructure gap’



Source: ODI, November 2015; drawing on McKinsey (2013), American Society of Civil Engineering (2013), Chatham House (2014) and Ruiz-Nunez and Wei (2015).

The links between infrastructure and productivity are hotly debated, but the broad consensus among economists is that infrastructure investment, efficiently delivered, either stimulates economic growth or, at least, avoids constraining it⁹, prosperity, consumer value and choice, quality of life/place, environment. Though the UK ranks relatively high in infrastructure quality according to the World Economic Forum, several, including the OECD, warn that the UK is still in the process of correcting a

⁸ Tom Hart, Mark Miller and Philipp Krause: Infrastructure development: ambition versus reality (ODI, November 2015) <https://www.odi.org/opinion/10050-infographics-infrastructure-development-ambition-reality>. Cited in James Stewart: Can We Afford to Pay for the World’s Infrastructure Needs? We Can’t Afford Not To, KPMG, January 2016. See also Fernanda Ruiz Nunez and Zichao Wei: Infrastructure Investment Demands in Emerging Markets and Developing Economies. World Bank Policy Research Working Paper no 7414, September 2015.

⁹ Novella Bottini, Miguel Coelho, and Jennifer Kao: Infrastructure and growth, LSE and Growth Commission, 2012. See also Normaz Wana Ismail and Jamilah Mohd Mahyideen: The Impact of Infrastructure on Trade and Economic Growth in Selected Economies in Asia, chapter 5. Asian Development Bank Institute, Working paper No 553, December 2015; and, on econometric studies, Angel de la Fuente: Infrastructures and productivity: an updated survey, working paper, Instituto de Análisis Económico, CSIC, June 2010.

long-term historic underinvestment in infrastructure, and that this will become more obvious as future growth exerts pressure on existing capacity.¹⁰

The challenges in developing economies are more acute. The World Bank notes¹¹ that the lack of infrastructure comes at an enormous economic and social cost. More than 1.3 billion people, nearly one-fifth of the world's population, have no access to electricity. Around 770 million people worldwide lack access to clean water; and 2.5 billion have inadequate sanitation. The quality of transport networks can determine whether or not suppliers and businesses can reach their markets. Adequacy of infrastructure is fundamental to raising basic living standards for large parts of the population, as well as underpinning the growth needed to lift people out of poverty.

So we have a significant challenge for the UK, but in the context of a global challenge. Responding to the scale of this challenge we have seen many new commitments and initiatives from public bodies and policy makers around the world:

- the European Commission's Juncker plan, using EU and EIB money to leverage €315 billion private investment into infrastructure and other businesses across Europe over the three years to 2017 – about two-thirds of which has so far been allocated to infrastructure and innovation;¹²
- reforms allowing Infrastructure Canada to deploy federal gas tax revenues on strategic projects – to the tune of around C\$25 billion over the ten years to 2023;¹³
- Australia's infrastructure commission last month set out a list of 93 priority infrastructure projects and funding and market reforms to deliver them;¹⁴
- the World Bank's Global Infrastructure Facility, supporting project preparation and transaction structuring for developing economies, started work in April 2015, with an initial capitalisation of US\$100m, seeking to draw in private and public sector capital;¹⁵
- the launch of the Asian Infrastructure Development Bank, a Chinese initiative, establishing a new multilateral institution focused on financing Asia's infrastructure needs;

¹⁰ OECD: United Kingdom country survey, February 2015.

¹¹ World Bank: The Global Infrastructure Facility —bridging the infrastructure gap, 2015.

¹² European Commission: The Investment Plan for Europe: state of play, April 2016.

¹³ Infrastructure Canada: The Federal Gas Tax Fund: Permanent and predictable funding for municipalities, March 2014.

¹⁴ Infrastructure Australia: Australian Infrastructure Plan: The infrastructure priority list, project and initiative summaries; February 2016.

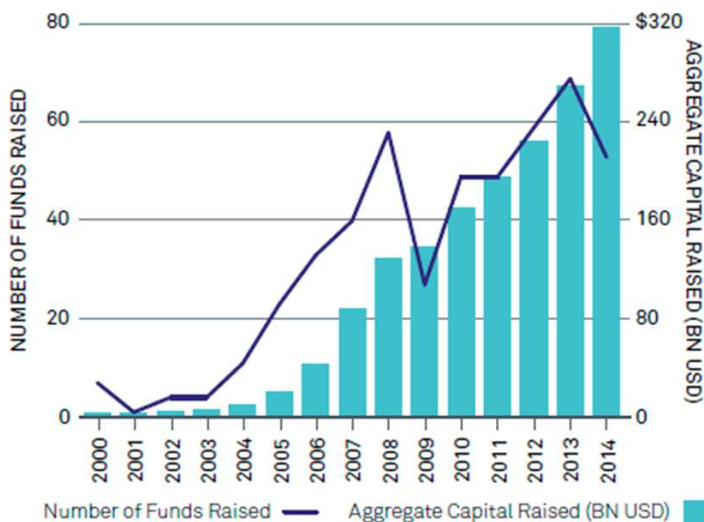
¹⁵ World Bank: The Global Infrastructure Facility —bridging the infrastructure gap, 2015. See also Jordan Z. Schwartz: Institutional Investment in Infrastructure: A view from the bridge of a development agency, World Bank, April 2015.

- and notwithstanding a hiatus in policy in the US ahead of the presidential election, there is a widespread recognition that a sustained focus will be needed to restore life-expired infrastructure, notably in energy and highways.

Nevertheless in many economies public funding remains constrained, and the balance sheet capacity of public sector is not limitless. This leaves a substantial gap between infrastructure ambitions and the scale of finance required.

The good news is that there is growing appetite among several different classes of private investors to invest in infrastructure. Over the last five years or so we have seen rapid growth in the numbers of funds raised and deployed on infrastructure – with around \$180 bn raised whether in existing networks or on new ‘greenfield’ projects, bringing total infrastructure funds under management globally to around \$320 bn (Chart 3).

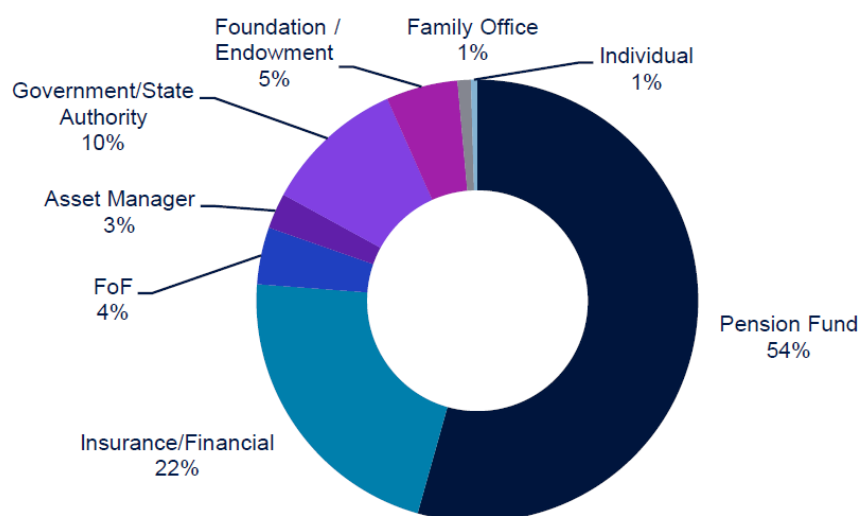
Chart 3: Growth in infrastructure funds under management, 2000 to 2014



Sources: Blackrock, February 2015; Prequin; *Infrastructure Investor* (data from December 2014). Aggregate capital raised (right scale) is cumulative, while number of funds raised (left scale) is on a year-by-year basis.

What is driving this? Chart 4 shows the sources of funds over the last couple of years – with pension funds, insurers and other financial institutions the largest in a fairly diverse group of investors, with a range of different investment priorities and a healthy variety of attitudes to risk. Within this group we have seen growing interest among a range of private equity investors, attracted by the fundamentals of infrastructure – long-term assets, stable and reasonably predictable returns, and – with a reasonable variation on risks and yields across some heterogeneous assets – attractive rewards in relation to the risks.

Chart 4: \$12.5 billion of primary capital raised globally in 2014 and 2015 for infrastructure and energy



Source: James Wardlaw: Institutional Investors perspective of the UK from outside, UKRN annual conference. Campbell Lutyens, April 2016

What is attracting investors to infrastructure? Firstly, bond yields are historically low, and investors are looking for alternative ways to deploy their money. More fundamentally, though, investors including pension funds have found that long-term investments in infrastructure assets are helpful as part of their portfolios to match the structure of their pension liabilities. With growing scale and consolidation among pension providers, we are seeing an increasingly active and sophisticated set of investors: this is now being replicated in the UK with the consolidation of the local government pension schemes.

Sovereign wealth funds have also increasingly entered the infrastructure investment market. And – after a hiatus while Solvency II rules on the risk weighting for infrastructure equity were resolved – there is renewed interest in infrastructure exposure from the investment arms of the big insurers.

A different kind of investment gap: what is preventing finance from getting to projects?

This is a significant step in the right direction – but it does not solve the problem. Ironically there is a lot of cash in the market searching for assets in which to invest; and on the other side a large number of big strategically important projects or renewals backlogs needing finance, but not getting to market.

There is a gap in the middle of the market, between investors and investable assets. Finance is increasingly available, but the flow to market and packaging of assets (particularly greenfield assets which are yet to be constructed), and the volume and

structure of the underlying funding, is not yet adequate to draw finance into projects on the right scale. The longer this gap persists, the less likely it becomes that private investor capacity and capability will continue to grow to come close to the scale of the estimates of aggregate investment need. It is partly an issue of the quality of information in the market, but it is largely a gap in policy. Action is needed to address it.

To understand what needs to be done, we first need to understand why this gap exists and what prevents projects from becoming 'investable'. I highlight five key areas, and will discuss each in turn:

- the ability of the market to bear and price risk;
- the role of government;
- consistency of dealflow;
- transparency of the risk/policy landscape; and
- the quality of information in the market.

Risk is a big part of the explanation. The market often misprices or cannot adopt risk, so in one form or another, public support is needed. We have seen a great deal of progress here – with guarantees in the UK generation market, a careful allocation of risks in the construction of the Thames Tideway project; or the provision of first-loss mezzanine capital from institutions like the European Investment Bank and Asian Development Bank. These alternative approaches are designed to cover the risk gap, leverage public sector balance sheets, and attract private capital on terms which offer value for taxpayers and consumers.

The role of government can be a source of confusion and delay. Government has often conflated its roles in planning, procurement, funding and governance or ownership, and not just in the UK. This can be exacerbated by departmental or sectoral silos, and weak short-term governance which does not match the long-term sustained focus needed to ensure effective development and delivery of major projects. Changes in key personnel, political commitment and bureaucracy can all get in the way of governments bringing projects to market in a sustained and pacy way.

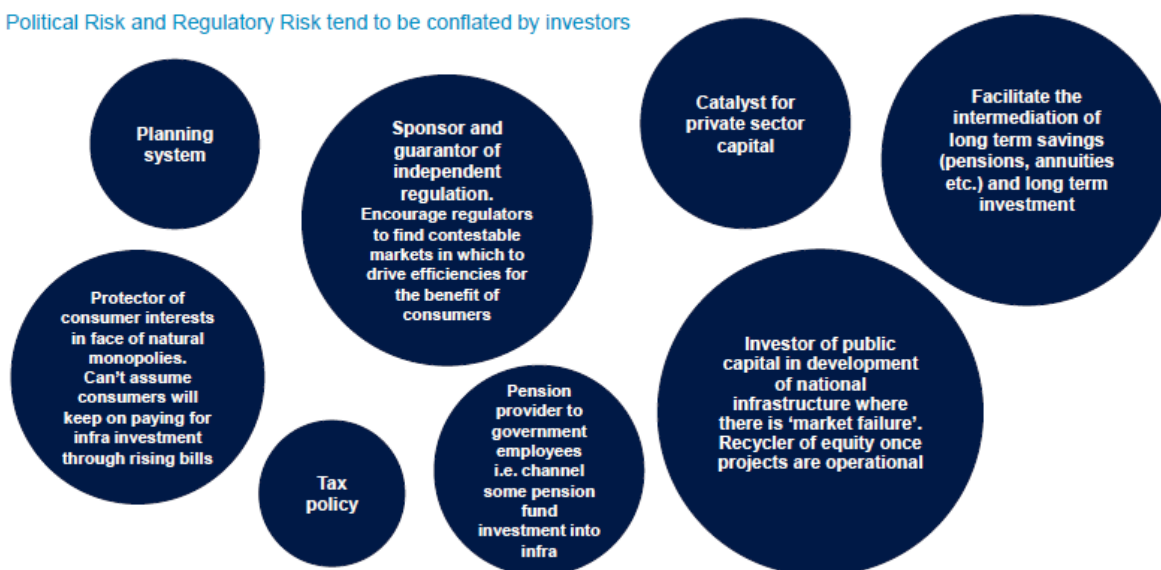
This matters hugely for investors. This slowness and uncertainty can undermine consistency of **dealflow**, which may be a relatively minor issue for governments focused on individual projects, but is a major concern for funds – which need to make judgements on how to deploy their own people across projects and sectors. There is limited interest in growing teams and investment capacity where the dealflow does not justify it. This can undermine access to capital for major projects and reduce competition in the market for finance.

Transparency of the risk and policy landscape also matters. The public sector can make it very hard for investors to understand the risk landscape they are dealing with. Chart 5, prepared by James Wardlaw for the UK Regulators' Network, shows the range

of interests across government and the public sector, often involving multiple overlapping public bodies. It reminds us that regulation and planning are only part of the matrix of risks and uncertainties investors need to navigate when making judgements about individual assets in each country. Moreover regulatory and political risk are often conflated in the minds of investors – perhaps increasingly so since the affordability crisis following the financial crash. Regulators have to respond to changed circumstances to protect consumers’ interests, but investors often refer to increasing regulatory risk when what they really mean is increasing *political* risk.

Chart 5: The roles of government and regulators in infrastructure: Political and regulatory risk tend to be conflated by investors

Political Risk and Regulatory Risk tend to be conflated by investors



Source: James Wardlaw: Institutional investors’ perspective of the UK from outside, UKRN annual conference. Campbell Lutyens, April 2016

The UK is consistently ranked as one of the top 3-4 places in the world to make infrastructure investments, and we are told by investors that the attitude of government and the regime of independent economic regulation play a big part in that. But we can do more to help investors to understand the landscape? For example bringing new assets to market in a way which makes them more comparable and easily ‘read’ by prospective investors – an area in which the G20’s Global Infrastructure Hub in Sydney aims to make progress by establishing best practice. Or doing more to explain how investors can expect regulators and government to work –

as we have for example with dialogue around our investor guide published by the UK Regulators' Network a little over a year ago.¹⁶

Dialogue can also help to give greater confidence to investors spooked by what they regard as capricious or retroactive policy changes – for example changes to subsidy levels and tax rates for existing solar power capacity in Spain and Italy; and the cut in tariff rates for the Gassled pipeline in Norway.

The quality of information in the market is an important limiting factor. The market itself finds it difficult to price risks in different contexts. Though the market in infrastructure investment has grown and matured rapidly over the last ten years, the amount and quality of information in the market which can be used to make comparisons and price risks is less than ideal. Initiatives are in progress to address this: for example the Long Term Infrastructure Investors Association and the Singapore-based EDHEC Infrastructure Institute have a joint initiative to collect data and develop asset benchmarking and pricing tools – the first results of which were published last week.¹⁷ The Global Infrastructure Investors Association is also looking at ways in which members can develop better intelligence on the global infrastructure market. These initiatives by investors acting collectively will help improve the quality of information in the market and give greater confidence. They will also help the public sector to get a better understanding of the pricing of different components of risk.

Bridging the gap

We need to be confident that consumers and taxpayers are getting value for money – both in the construction and delivery and operation of new infrastructure; and in the pricing and distribution of risk, where taxpayers and customers are taking on risks as the ultimate funding guarantors. There is a growing industry of international initiatives seeking to develop better practice in the way the public sector brings assets to market and helps the private sector to understand what is on offer and engage, so that the market is competitive and there is a better prospect of getting good value. But there are only a few good examples of projects which have been through an process of market testing the financing costs, as well as securing efficient whole-life costs for the physical delivery and operation of the new infrastructure.

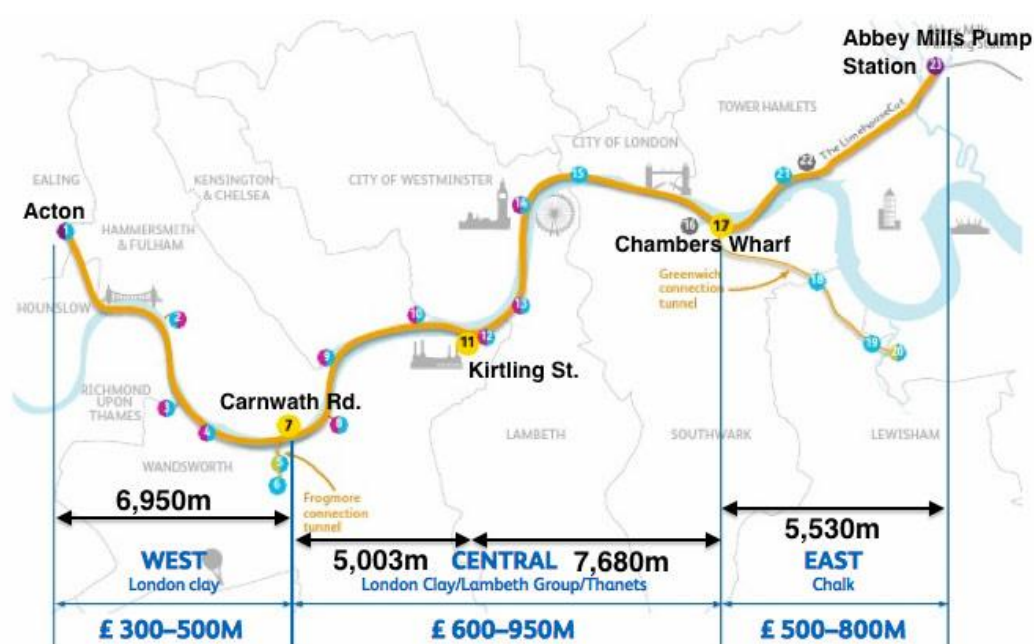
Happily, one of those is here in London. The Thames Tideway Tunnel followed an innovative approach, shaped by Defra, the Treasury, Ofwat and Thames Water. The

¹⁶ UK Regulated Infrastructure: An investor guide' can be accessed at the UKRN website here: http://www.ukrn.org.uk/?page_id=182

¹⁷ Frédéric Blanc-Brude, Majid Hasan, Tim Whittaker: Revenue and dividend payouts in privately-held infrastructure investments, EDHEC Infrastructure Institute, Singapore, March 2016. See also Grace Chen: How to judge when infrastructure is a good investment, Infrastructure Intelligence, March 2016.

project – a £3 billion super-tunnel to take London’s sewage and avoid it overflowing into the river – was brought to market as a stand-alone infrastructure project, recognising its very different characteristics, risk profile and scale compared with the core Thames Water business.

Chart 6: Thames Tideway Tunnel: cost and geography



Source: Office of Water Services

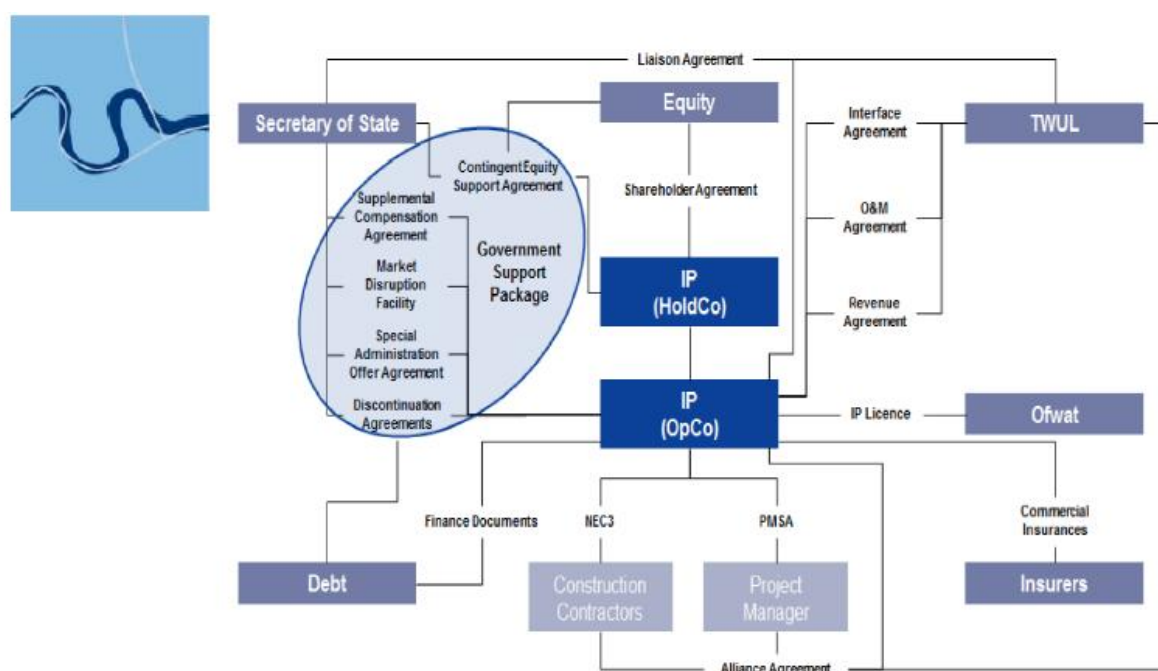
The structure and governance of the project is shown in Chart 7. A Government Support Package was constructed to address extreme risks – for example risks and to achieve investment grade credit rating.¹⁸ Ofwat aimed to use a framework which investors would be used to, “*adopting and adapting a number of elements of the current regulatory framework that are familiar to investors seeking utility-like risk profiles*”.¹⁹ The project was market-tested in two parts, with a regulatory wrapper around the whole. First, the main contractors were procured through a competitive tender and second, financing costs were separately market-tested, resulting in significant savings. This is the first time in the sector that the cost of capital has been set through a competitive process, and this has been a big step in revealing the efficient cost of financing and delivering the project.

¹⁸ Keith Mason: Thames Tideway Tunnel: An introduction; UK Office of Water Services, March 2016. See also Cambridge Economic Policy Associates: Thames Tideway Tunnel – Cost of capital (August 2015);

¹⁹ Ofwat (2014): ‘Consultation on the regulatory framework for the infrastructure provider that will deliver the Thames Tideway project’

The bid cost of capital for this project was very low, just 2.497%,²⁰ and has resulted in a significant reduction in the cost to customers – from a previous worst case forecast which added £70 to £80 per year to the average consumer bill, down to around £20 per year.

Chart 7: Thames Tideway Tunnel: a model for other projects?



Source: Office of Water Services; Keith Mason: Alternative investment models to meet our infrastructure needs: UKRN conference, April 2016.

It is worth considering whether more can be made of this approach for other kinds of infrastructure. In a market where investors are keen to add this kind of asset to their portfolios, can financing costs be market-tested and competed more rigorously? Does the regulatory form of the project – albeit a bespoke one – help in terms of the familiarity to investors, transparency and predictability? Indeed could this model be taken further? Some have argued that investors themselves should have a role in the procurement of the construction phase so that they can ensure the incentives on the contractors are fully aligned with those of the investors, and as a check on the optimism bias from which public authorities often suffer. And is there a way in which additional transfers of risk could be market-tested? Others have argued that in the case of Tideway perhaps government gave too much away in taking on some components of risk – and in practice some investors might have been willing to take additional risk at a higher premium, in a way which would have improved value for money overall.

²⁰ Real, post-tax bid weighted cost of capital, which applies during the construction phase of the project.

My view is that variants of the Tideway model are more broadly applicable, both for greenfield assets such as power plants, and for major renewals or enhancements of existing assets – such as parts of the US road network. Elements - such as the use of standardised availability-based licensing and tender regulations, repeat tendering using a consistent framework, and providing clarity about a programme of opportunities - have been used effectively in UK electricity transmission.²¹ Moreover, the Tideway approach offers an attractive alternative to conventional PPP arrangements, because it robustly market tests the whole life costs of delivering the project and financing, encouraging competition for both, and it does so in a way which is transparent and ‘readable’ in the market. An extension of this model could help to make the pricing of risk more competitive and more transparent than the existing variety of bespoke guarantees – notably in energy generation. It also has the benefit of a reasonably familiar regulatory wrapper, with its ability to create dynamic incentives to improve efficiency and customer service once in operation.

Conclusion

The NIC is a significant step in the right direction, and the regulators are looking forward working with it.

There remains a significant policy gap in the way investment need is matched up with the finance now available in the market. This needs to be addressed. Governments have a major role to play in identifying strategic need and shaping the project pipeline – and the NIC and its equivalents emerging in other countries will help. Bringing projects to market and improving access to capital in a way which establishes efficient financing costs and makes the best use of public sector balance sheets is critical. The Tideway example, benefiting from a mix of government action to enhance project creditworthiness combined with the use of more familiar regulatory technology, is one which may well be applicable elsewhere.

The ability of all institutions to demonstrate the benefits of infrastructure projects, to keep their governance and commercial arrangements transparent, and to show that they offer the best possible value, are all critical if we are to get the confidence and support of consumers and the public.

Richard Price
May 2016

²¹ Cambridge Economic Policy Associates: Evaluation of offshore electricity transmission owner (OFTO) Tender Round 2 and 3 benefits (March 2016).

Bibliography

Richard Abadie: Infrastructure investment in the wake of crisis; PwC, London, 2012.

Berwin Leighton Paisner (2016): The National infrastructure Commission: a progress update; Berwin Leighton Paisner, London, March 2016.

Frédéric Blanc-Brude, Majid Hasan, Tim Whittaker: Revenue and dividend payouts in privately-held infrastructure investments, EDHEC Infrastructure Institute, Singapore, March 2016.

Novella Bottini, Miguel Coelho, and Jennifer Kao: Infrastructure and growth, LSE/Growth Commission, London, 2012.

Cambridge Economic Policy Associates: Evaluation of offshore electricity transmission owner (OFTO) Tender Round 2 and 3 benefits; London, March 2016.

Grace Chen: How to judge when infrastructure is a good investment, Infrastructure Intelligence, March 2016.

Balázs Égert and Tomasz Koźluk and Douglas Sutherland: Infrastructure and growth; empirical evidence, Working Paper no 685; OECD, Paris, 2009

European Commission: The Investment Plan for Europe: state of play; Brussels, April 2016.

Angel de la Fuente: Infrastructures and productivity: an updated survey, working paper; Instituto de Análisis Económico, CSIC, June 2010.

Tom Hart, Mark Miller and Philipp Krause: Infrastructure development: ambition versus reality; Overseas Development Institute, November 2015.

HM Treasury: National Infrastructure Commission: consultation; HM Treasury, January 2016.

Georg Inderst: Getting infrastructure financed: The role of bonds, project finance and public-private partnerships in infrastructure investment; i3, London, April 2014.

Infrastructure Australia: Australian Infrastructure Plan: The infrastructure priority list, project and initiative summaries; February 2016.

Infrastructure Canada: The Federal Gas Tax Fund: Permanent and predictable funding for municipalities; March 2014.

Infrastructure and Projects Authority: National Infrastructure Plan 2016-2021; March 2016.

Institute of Civil Engineers: National Needs Assessment - Call for evidence; London 2015.

Keith Mason: Thames Tideway Tunnel: An introduction; Office of Water Services, March 2016.

Normaz Wana Ismail and Jamilah Mohd Mahyideen: The Impact of Infrastructure on Trade and Economic Growth in Selected Economies in Asia, chapter 5. Asian Development Bank Institute, Working paper No 553, December 2015.

Keith Mason, James Wardlaw, Alastair Ray and Philippa Eddie: Alternative investment models to meet our infrastructure needs; UK Regulators' Network annual conference, April 2016.

OECD: United Kingdom country survey, February 2015.

Robbie Owen, Pinsent Masons: Public engagement essential for the long view too; Infrastructure Intelligence, April 2016.

Athena Panayiotou and Francesca Medda: "Attracting Private Sector Participation in Infrastructure Investment: the UK case", Public Money and Management Journal, 34(6), pp. 425-431; 2014.

Marco Ponti: PPPs in transport: the Italian case; Politecnico Milano, June 2013.

Fernanda Ruiz Nunez and Zichao Wei: Infrastructure Investment Demands in Emerging Markets and Developing Economies. World Bank Policy Research Working Paper no 7414, September 2015.

Jordan Z. Schwartz: Institutional Investment in Infrastructure: A view from the bridge of a development agency, World Bank, April 2015.

James Stewart: Can We Afford to Pay for the World's Infrastructure Needs? We Can't Afford Not To; KPMG, January 2016.

UK Regulators' Network and KPMG: UK Regulated Infrastructure: An investor guide; UKRN, December 2014.

UK Regulators' Network: Cross-sector resilience; UKRN, February 2016.

James Wardlaw: Institutional investors' perspective of the UK from outside, UKRN annual conference. Campbell Lutyens, April 2016.

World Bank: The Global Infrastructure Facility —bridging the infrastructure gap, 2015.