A BETTER FUTURE

Green Paper #1
January 2019

What is the future of UK infrastructure development and finance?

How do we fix the relationship between the public and private sector?

Better industry

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Contents

Setting the scene

Critical questions: critical opportunities

This Green Paper is the first in a series of publications by Amey that are designed to stimulate thinking, discussion and, ultimately, prompt actions across the diverse range of partners and stakeholders operating in the infrastructure market.

The format is discussion-based and sets the context for further conversations designed to raise critical questions and highlight the opportunities around how the private sector can structure investments to deliver and realise the Government's infrastructure ambitions. It is a vital conversation as infrastructure investment becomes increasingly critical to the growth of the UK economy. A new approach to procuring this investment is needed to bridge the gap between dwindling public sector resources and increasingly available private capital.

Meanwhile, disruptive technologies and new digital tools, embracing artificial intelligence and the role of data and data analytics, are set to radically change the way that infrastructure is designed, constructed, operated and maintained in future. Such new thinking is starting to transform the delivery of public services and the private sector holds a key role in delivering the necessary innovation and investment.

These issues will be examined during this programme of work, including the implications of government procurement in either stimulating or stifling private sector investment and the creation of innovative solutions for the public sector across the following markets:

- **Mobility:** embracing Electric Vehicle Infrastructure Connected Autonomous Vehicles; Mobility as a Service; electric vehicle technology and Integrated transport systems
- **Energy:** development of battery storage technology; renewable power sources; vehicle to grid, microgrids and private networks
- **Waste and the environment:** the war on plastic waste; urban air quality; effective recycling and reducing carbon
- **Water and sanitation and the role of the regulator:** driving alternative funding options, such as Direct Procurement
- **Central and local government estate management:** identifying and incentivising the use of private sector expertise and innovation to meet changing challenges across property portfolios, such as estate reduction and rationalisation

This work will conclude with a final White Paper, that although created and published by Amey, will utilise and recognise the contributions from a variety of stakeholders that have been involved in some, or all, of this program.

The goal is to build on these publications and conversations to provide answers and make hard recommendation to solve the initial question raised around ***how the private sector can help governments to realise their infrastructure ambitions?***

Executive summary

What is the future of UK infrastructure development and finance?
How do we fix the public/private partnership relationship?

In his October Autumn Statement, Chancellor of the Exchequer Philip Hammond officially announced the death of the Private Finance Initiative.

He said that the UK Government will abolish the use of PFI and PF2 for future projects, noting that "I have never signed off a PFI contract as Chancellor and I can confirm today that I never will."

Even before the demise of Carillion, the PF2 model and earlier versions of the Private Finance Initiative model were beginning to look like an increasingly politically toxic way to procure and operate public infrastructure in the UK.

However, as pointed out in the July 2018 Public Administration Select Committee report: "After Carillion: Public sector outsourcing and contracting," the situation has been exacerbated by the long-term ineffectiveness of Government procurement.

By failing to properly understand the infrastructure market, it says, Government has contributed to the problems and "deliberately promoted an aggressive approach to transfer risk to the private sector" - risks that it has failed to properly analyse.

Hammond also confirmed that, with around half of the UK's £600 billion infrastructure pipeline still set to be built and financed by the private sector, he remained "committed to the use of public-private partnership where it delivers value for the taxpayer and genuinely transfers risk to the private sector."

So while it is clear that PFI and its successor PF2 are no longer options on the table, the UK Government confirmed in it latest National Infrastructure and Construction Pipeline that it would continue to use a "mixed model to fund and finance its infrastructure, using both public and private investment." What will the future form be of these partnerships? No one knows. To date, government has simply stated that it remains committed to private investment through "established tools such as the UK Guarantees Scheme, Contracts for Difference and the Regulated Asset Base model".

The challenge for the private sector and government is now to fix the problem. We need the public and private sectors to work in hand to secure investment for UK's infrastructure. But how to do that in a post-PFI world?

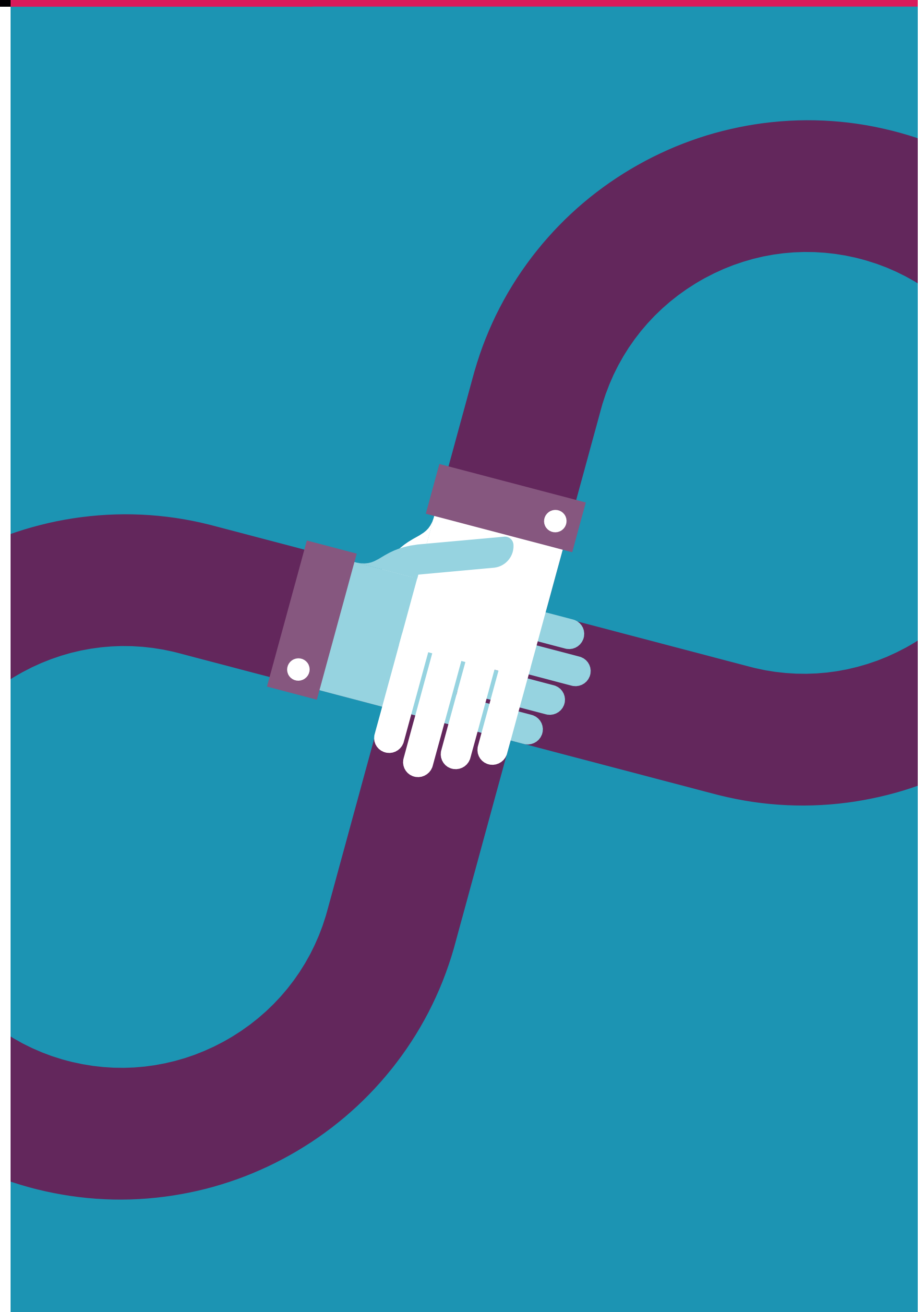
We need to start a conversation between the public and private sector; conversation that enables us to fundamentally refocusing the sector, away from simply managing assets towards delivering better outcomes and experience for the consumer and greater value for public money.

"At Budget 2018 the government announced that it will no longer use Private Finance 2 (PF2), the current model of Private Finance Initiative (PFI), however the government will continue to support private investment through other means."

Analysis of the National Infrastructure and Construction Pipeline
Infrastructure and Projects Authority, November 2018

Fundamental observations: what's missing?

Discussion about the challenge of applying private sector development to help realise the UK's infrastructure ambition tends to start with a number of recurring observations regarding what is missing to help kickstart change.



- We need an honest conversation between the public and private sector about the role of both the public and private sectors in delivering better outcomes for society.
- Government has set out priorities for a £600bn spend over the next 10 years in its National Infrastructure and Construction Pipeline published in November 2018.
- We need to be open about past successes and failures. That may mean accepting that, in some cases, the private sector has occasionally prioritised the wrong outcomes.
- We need to fundamentally reassess what a good outcome from infrastructure investment looks like, establishing, across the sector, what is meant by value and, specifically, how that value can positively impact local and wider communities and stakeholders.
- The private sector must actively communicate the financial and social value it adds when managing public assets. If the public sector can deliver better outcomes then it should be allowed and encouraged to do so.

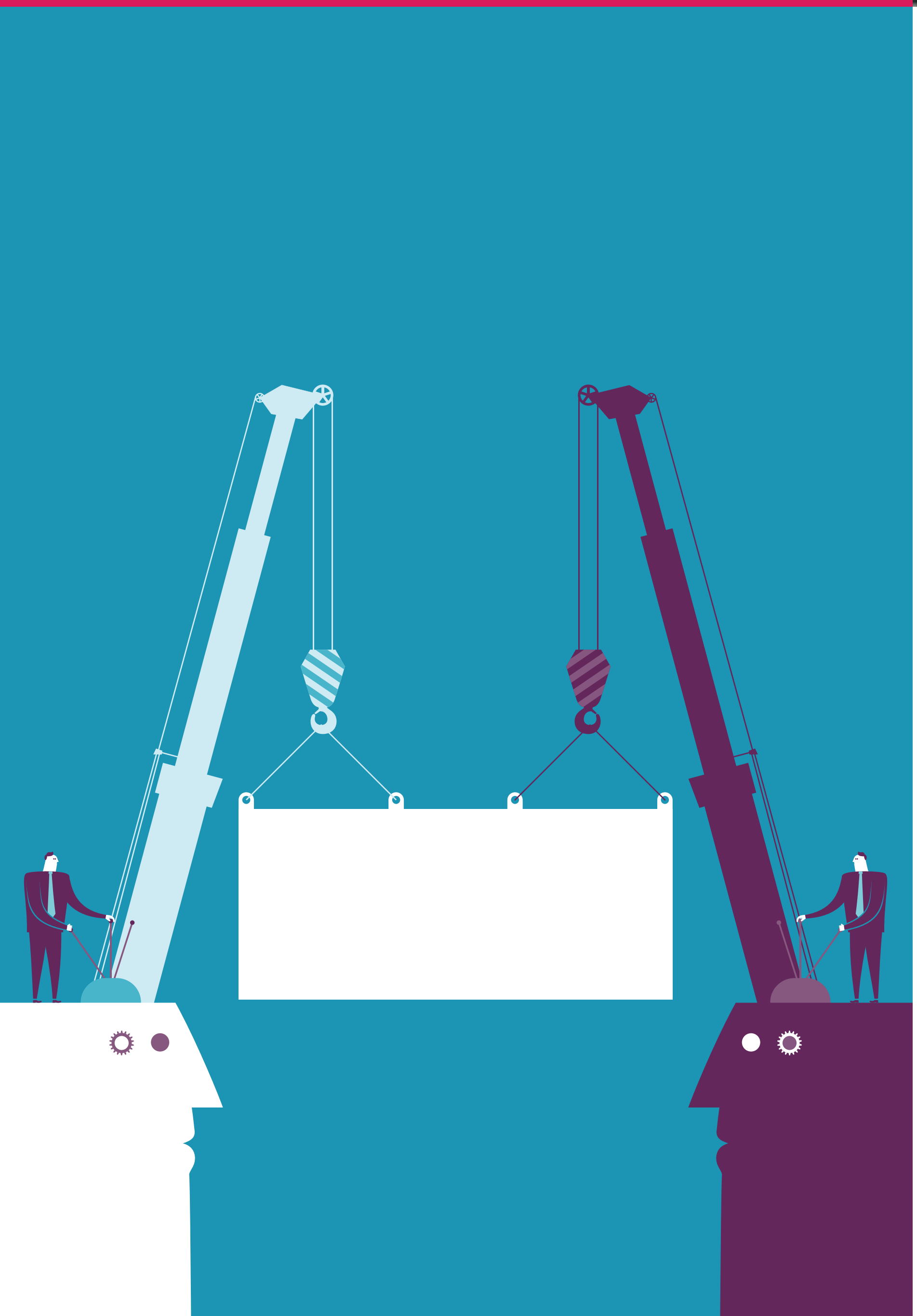
In particular, the need to embrace procurement change will be vital as Government looks to take advantage of the growing social and financial opportunities presented as innovation and new digital technologies, data management and artificial intelligence transform sectors such mobility, energy and waste/environment.

Partnerships for change: some recommendations

Driving this change requires a level of innovation which the public sector cannot alone be expected to nurture and invest in. Partnership between the private and public sector will be vital to enabling this future.

"Philip Hammond's abolition of PFI and PF2 was necessary given the toxic nature of debate and allows an opportunity to develop a new model free from the negativity of the past."

Paul Jarvis, Managing Editor
Partnerships Bulletin



The public sector should:

- Create a procurement environment that actively encourages the private sector into the market.
- Ensure the procurement environment encourages an outcomes-based approach, not a race to the cheapest price.
- Legislate to stimulate and encourage the creation of new markets and new technologies.
- Stand behind legislation to underpin long term, stable markets.
- Incentivise investment in long term outcomes.

The private sector should:

- Embrace and drive new opportunities with ideas and investment.
- Invest and innovate to create new markets that drive change.
- Focus on social value alongside financial return - and be willing to invest in measuring and tracking that social value.
- Be prepared to sacrifice short term returns for longer term gain.

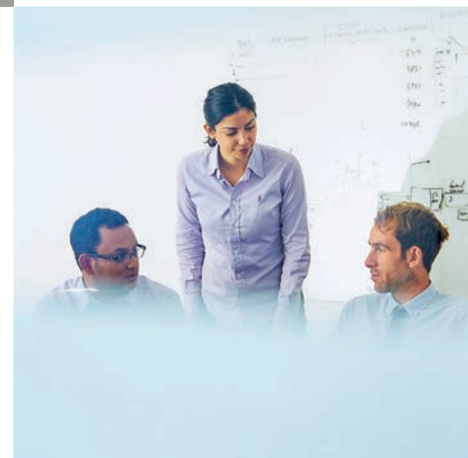
In simple terms, this means fundamentally refocusing the sector, from client down through the supply chain, away from simply managing assets towards delivering better outcomes and experience for the consumer and greater value for public money.

Key questions remain over what we mean by better outcomes and how do we define value for money. Certainly, we need a more grown-up conversation when tackling these questions and addressing the use of private sector capital and skills as part of a new approach to solving the UK's public sector budgeting crisis.

The private sector has to step up to the plate to meet the challenge. In many ways, the current lack of trust in the the use of private finance can be traced back to its past failure to communicate value. This must change.

We need to refocus attitudes towards delivering greater social value from public infrastructure investment. When private sector businesses are engaged in the delivery of public services they should do so in ways that support their supply chain and create a positive impact on the communities they serve.

This paper looks at some potential solutions to the issue. Drawing on conversations with a number of key experts in the sector, and using recent reports and examples of best practice, it explains why the future of UK infrastructure investment has to be based on a mix of enlightened private and public investment models.

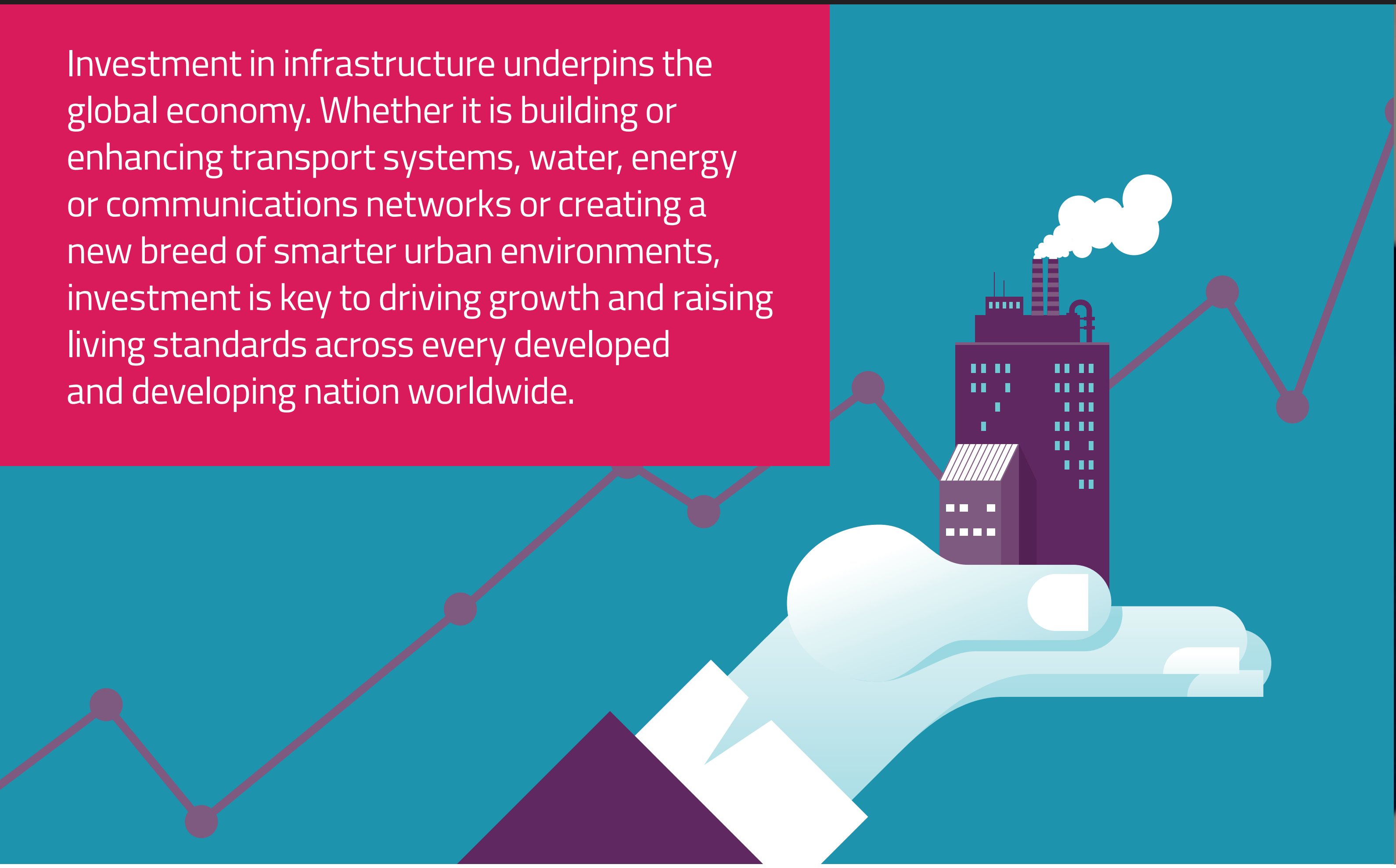


What is the future of UK infrastructure development and finance?

How do we fix the relationship between the public and private sector?

Background

Investment in infrastructure underpins the global economy. Whether it is building or enhancing transport systems, water, energy or communications networks or creating a new breed of smarter urban environments, investment is key to driving growth and raising living standards across every developed and developing nation worldwide.



"Over the last 50 years, the UK has seen an endless cycle of delays, prevarication and uncertainty. These have been driven in part by short term considerations, and the lack of a cross-sectoral approach to infrastructure."

Sir John Armitt, Chairman *National Infrastructure Commission, National Infrastructure Assessment Report, July 2018*

Globally, infrastructure remains a very attractive asset class with a wealth of available finance ready to invest. Most people accept that while the public sector can borrow cheaply, the private sector can, in many cases, deliver better overall services to the public and so allow government to deliver greater overall long term value for the public money that is ploughed in.

The latest National Infrastructure Commission UK Needs Assessment report, published in July 2018, reinforces this point stating that "the UK must take decisive action to have world leading infrastructure" to support sustainable economic growth across all regions of the UK, improve competitiveness and improve quality of life.

Yet according to research by McKinsey, we are consistently underinvesting. While the world today invests some $2.5 trillion a year on transportation, power, water, and telecommunications systems, the figure should be more like $3.3 trillion to support the United Nations' Sustainable Development Goals and our expected rates of economic growth.

The latest UK Infrastructure and Construction Pipeline highlights public capital invest at levels it describes as "not consistently sustained in 40 years". This equates to around £190 billion of planned investment to be delivered by 2020/21 - around £60bn a year - and a total over £600bn projected public and private infrastructure investment from 2018/19 to 2027/28.

Like all modern economies, the UK understands the need to have a mix of public and private investment - as the UK's National Infrastructure and Construction Pipeline points out, currently plans show that "around 50% of the pipeline to 2020/21 is funded and delivered by the private sector, of which just over 35% is in the regulated sectors".

Not only can this be shown to deliver greater financial returns on investment but, when appropriately managed, can also create substantial additional returns in social value and positive impacts for local communities and stakeholders.

The latest National Infrastructure and Construction Pipeline agrees and sets out planned public and private investment worth over £600 billion to the end of the decade and beyond. However, as confirmed by Chancellor of the Exchequer Phillip Hammond in his October 2018 Autmn Statement, with around 50% of this investment expected to be financed and delivered by the private sector by 2021 the challenge is finding ways to deliver this level of financing and funding.

"I remain committed to the use of public-private partnership where it delivers value for the taxpayer and genuinely transfers risk to the private sector," Hammond confirmed.

The industry must now work to address this new challenge. And as the National Infrastructure Commission's latest National Infrastructure Assessment report points out, this starts by overcoming the "lack of long term infrastructure strategy, siloed decision making in infrastructure sectors, fragile political consensus and short termism".

Private resources to underpin public policy

Growing pressure on the public purse means that modern economies need to have a mix of public and private investment. This is particularly true in the UK where sectors such as broadband, ports, airports and increasingly renewable energy, operate with limited or no government support.

A range of procurement and delivery tools plus various funding and financing sources is critical to ensure the necessary level of investment.

In general, the public sector has been very good at setting policy and running departments but less good at delivering major infrastructure projects consistently.

As the Global Infrastructure Investment Association points out, the availability of capital seeking long-term, stable returns has seen a transformation in the ownership of the world's economic infrastructure over the last decade. Some $1.7 trillion has been invested into global infrastructure assets since 2010 with many UK water assets, major airports, ports and passenger rail rolling stock now sitting within specialist infrastructure investor vehicles.

"Their natural focus on outcomes means that, without input and cross fertilisation from the private sector, [public sector owners] lack the incentive to become more efficient and to innovate."

Asif Ghafoor, Managing Director
Amey Investments

Understanding populism and a new desire for renationalisation

As the UK's infrastructure has been increasingly built and run by public-private partnerships, we have seen more political and economic debate over whether such deals actually deliver outcomes or lower costs.

This is even more important in the wake of the recent Carillion business collapse, which has inevitably but unfairly undermined political and public trust in the private sector's ability to deliver outsourced public services well for the benefit of all citizens.

This trust must be rebuilt by reaffirming the vital social contract between private sector delivery organisations and the public, communities and stakeholder which they serve. Private sector involvement should deliver not only good short term financial returns but most importantly, be catalyst for transforming longer term social value, creating better lives, greater employment opportunities and better places to live and work.

"The private sector needs to gather data from end users that can provide real life experiences of the benefits that the facilities are delivering to the public."

Paul Jarvis, Managing Editor
Partnerships Bulletin

"As an industry we really do need to get our act together. We don't have any right to a huge return on our investments so we must get the balance right – to protect customers and protect investors – and this needs to be articulated better."

Martin Stanley, Global Head
MacQuarie Infrastructure and Real Assets, speaking at the Infrastructure Investor Global Summit 2018

As the UK's infrastructure has been increasingly built and run by public-private partnerships, we have seen more political and economic debate over whether such deals actually deliver outcomes or lower costs.

As MPs on the Public Administration Committee point out in their July report into the demise of Carillion, contracting and outsourcing with the private sector is "a permanent feature of governments in mature economies across the world and it will remain so, whichever government is in power."

Yet populism has emerged, with politicians and public questioning why so many public assets are owned by the private sector and giving investors what is seen as a disproportionate return. A Jeremy Corbyn-led Labour government has promised to renationalise public assets. Quite how the private-public relationship might develop under such an arrangement – or be allowed to develop – remains unclear and so should not be seen necessarily as a threat to the private sector.

Yet so far, industry has failed to make a compelling case for their involvement, too often staying quiet rather than highlighting and demonstrating the benefits that are created for customers. More facts need to be brought into the debate about what infrastructure and private investment actually does. As the Public Administration Committee points out, steps must be taken "to ensure that the public gets the services they deserve from these companies, who themselves must demonstrate values the public can respect".

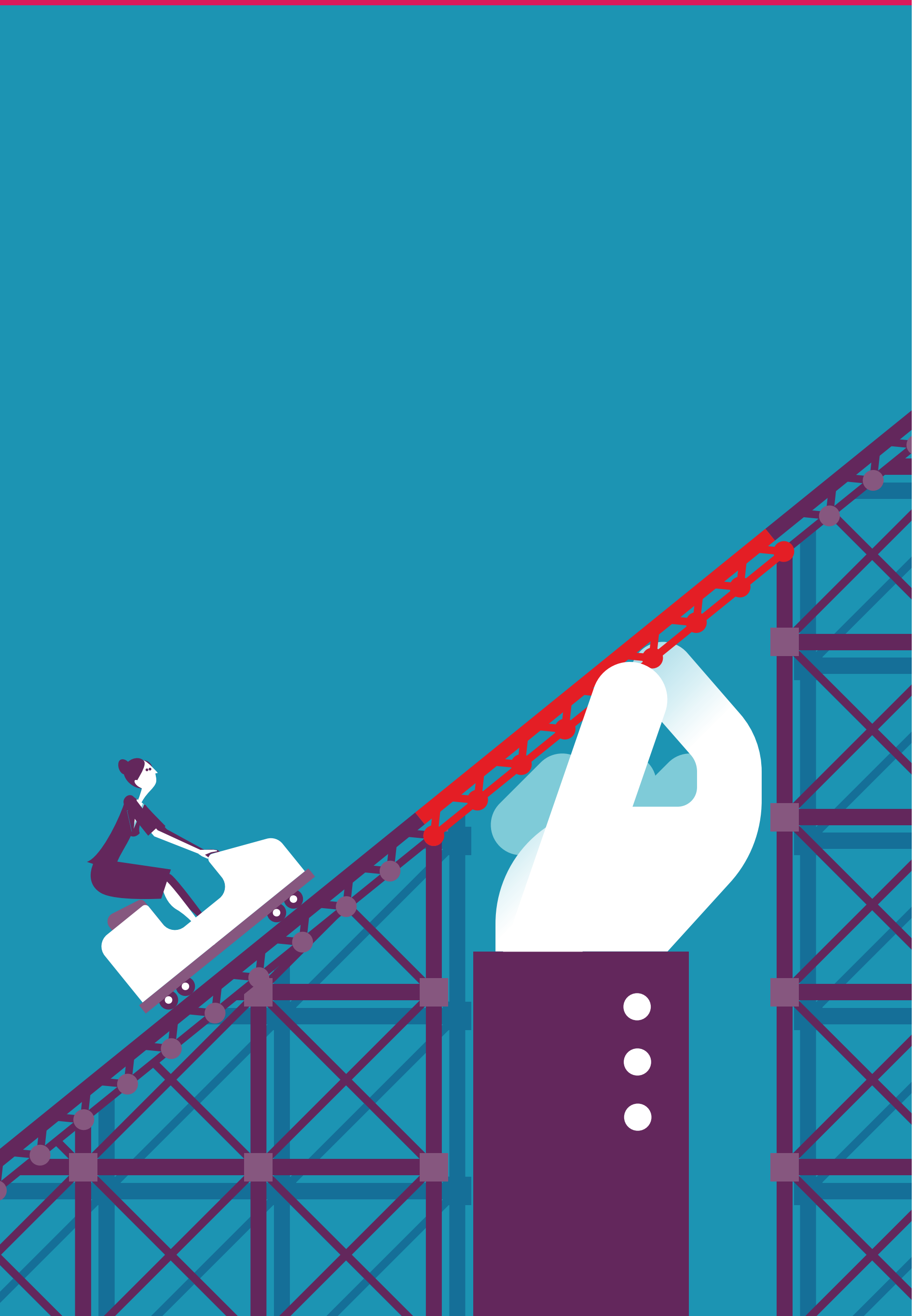
The use of PFI and its more recent replacement PF2 has for a some time been politically difficult in the UK making the latest decision by Chancellor Philip Hammond to rule out its future use perhaps unsurprising. According to the National Audit Office, the government's use of the PFI and PF2 models has fallen from an average of 55 deals each year in the five years to 2007-08 to only one in 2016-17. No matter what arguments might be constructed around long term value, increased efficiency and effective risk transfer, an alternative is inevitable.

The January 2018 National Audit Office report into the UK's current programme of 716 PFI and PF2 projects either under construction or in operation - together having a total capital value of £59.4 billion – concluded that the UK central and local government could be paying the potential £199bn bill until the 2040s. While it expressed no view on whether or not this represented good value for money, NAO highlighted a lack of data about the benefits of private finance procurement and the concerns by local authorities over cost efficiency and value for money.

The challenges need to be reframed to meet the government's desire for private investment to deliver "value for the taxpayer and genuinely transfers risk". We need a new way to solve the public sector budget crisis and to access the $120 trillion of institutional capital currently managed by banks and institutional investors as a means to continue the flow of investment into desperately needed projects and asset portfolios.

Restoring confidence in the private sector

The fallout from Carillion dramatically underlines the need for the entire infrastructure sector to reposition itself and rebuild trust and repair this broken trust between the private sector and politicians.



Outsourced businesses will undoubtedly be required to deliver and manage assets, but precisely how this arrangement might be structured remains less well understood.

Without open dialogue between the private and public sector there is the risk that an ideologically driven policy could overlook the fact that the fundamental aim of public-private partnerships is to deliver better outcomes for the public.

However, more clarity and discussion could make this an opportunity for policy makers and shareholders. If, by transferring these assets back to the public sector, we are able to deliver a better outcome for the public then, of course, this should happen. But it must be a decision made on this basis rather than simply being the result of dogma.

"Carillion's failure reinforced a widespread crisis of confidence in government reliance on the private sector to deliver public projects and services on which the public relies. The Government needs to move quickly to improve public confidence in the competence of its commercial capabilities."

Public Administration Select Committee Report
"After Carillion: Public sector outsourcing and contracting", July 2018

This challenge is being championed by the National Infrastructure Commission which points out in its latest National Infrastructure Assessment report the need for more work to be done to establish the costs and benefits of private financing and traditional procurement in the delivery of publicly funded infrastructure.

It has developed an analytical framework to evaluate the costs and benefits of financing options for new and existing projects, which it hopes will provide greater certainty over the costs and benefits of the use of private financing for public sector projects.

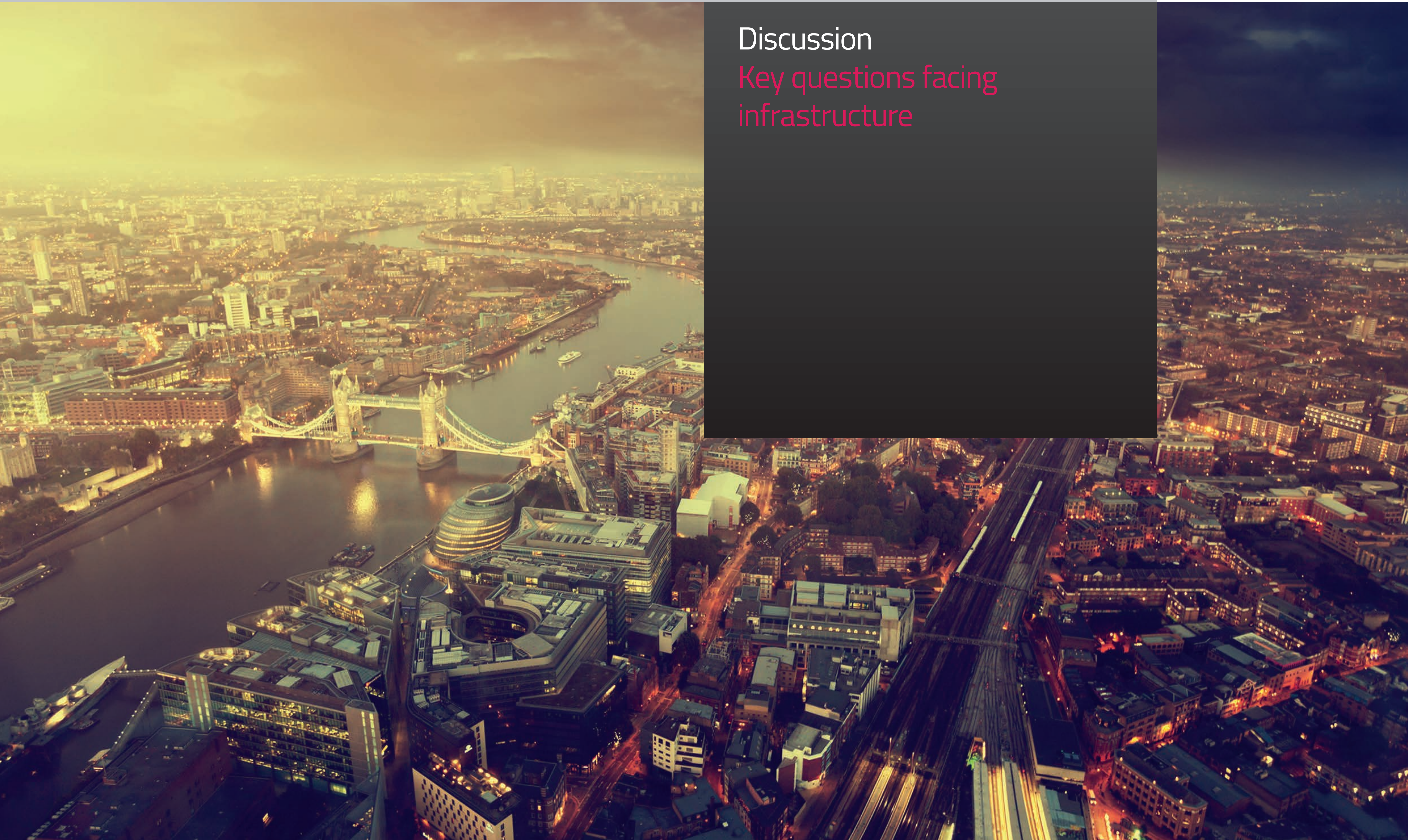
Politics aside, investors still know that in the UK their money will be invested in a normal free market. We need to restore the public-private sector trust and avoid the prospect of investors fleeing the UK market. We need to ensure that increased infrastructure investment goes hand in hand with the creation of increased social value.

"There is also a need for a better understanding of the costs and benefits of private financing and traditional procurement in the delivery of publicly funded infrastructure."

National Infrastructure Commission
National Infrastructure Assessment Report, July 2018

Discussion

Key questions facing infrastructure



1

Should modern economies still have a mix of public and private infrastructure investment?

"Public funds will never come close to being sufficient. If we want the world to be a better place, we need public and private investment."

Richard Threlfall, Partner
KPMG

"It is important for governments to have a range of procurement and delivery tools and various funding and financing sources to ensure the necessary level of investment in infrastructure."

Darryl Murphy,
Head of Infrastructure Debt
Aviva Investors

In short, yes. Every developed economy now realises that, while the state has an important role to play in delivering and maintaining vital infrastructure there is still a place for the transformative possibilities of private infrastructure support.

Fundamentally, strong partnerships between government and the private sector guarantee a range of procurement and delivery tools are available to deliver public sector infrastructure policy. Such relationships provide the financing sources and, most importantly, a range of funding options that support the available public purse and ensure that the necessary and desired level of long term investment in infrastructure is consistently achieved.

This is particularly important in critical infrastructure sectors such as water, energy, communications and ports in which the levels of public support either no longer exist or are being reduced.

With the global population expected to reach 9.7bn by 2050, the scale global of the infrastructure challenge simply cannot be met by public sector financing alone. The combined impact of population growth, climate change and urbanisation, which in 30 years' time could see some 70% of the global population living in cities, means that we need to rethink our current infrastructure investment plans. McKinsey estimates that the world will need to invest around $70 trillion by 2035 just to meet the United Nations' Sustainable development goals.

The UK is also facing major and on-going pressures in terms of providing sufficient public funding to meet its economic driving ambition for infrastructure investment. The post financial crisis austerity programme has seen savage cuts to public spending across both central and local government leading to huge pressure on maintenance and renewal of the public realm. The consequential knock-on impact of these cuts has been to undermine community and social cohesion, and reduction in skills and training. Focus on austerity has too often created an over-emphasis across public sector procurement on lowest cost and lowest risk at the expense of value creation.

The early-80s government led programme of public asset privatisation seen across water, energy and communications has seen these regulated industries roll out hundreds of billions of pounds worth of investment over the last three decades. It is an investment programme that, underpinned by strictly regulated public payment terms, continues today, with over 50% of the £600bn national infrastructure spending pipeline over the next 10 years coming from the private sector and with private companies providing skills to maintain and operate the publicly-owned rail and road networks. The water industry, for example, has been transformed, by investing to meet the growing demands of new legislation while delivering customers with unlimited drinkable water for as little as £1 per day.

According to the National Infrastructure Commission's latest National Infrastructure Assessment report, delivering its recommendations to transform the UK infrastructure will require a combination of public and private financing. "Financing itself is not in short supply," it says. "However, state financing institutions can help to encourage private investment and catalyse activity in new markets."

Convincing voters about the value of the current procurement and asset management model means not only explaining how it translates infrastructure vision into reality, on time and within budget, but also, most importantly, helps build sustainable businesses and create jobs. Specifically, how investment in infrastructure by the private sector can bring about greater social value to the communities in which and for whom they operate.

Many believe we need to focus our efforts on helping politicians recognise that the most important consideration when planning and delivering infrastructure is identifying what will provide the best outcome for customers and taxpayers. Explaining why the private sector, underpinned and challenged by a strong regulator, creates better public outcomes than an ideologically-driven public sector-led solution.

"The private sector is a huge and underused tool for the public sector to force performance – to create pain if they do not supply. Governments need to step up and force compliance and discipline – they are uniquely qualified to drive outcomes."

Andrew Marino,
Managing Director
Carlyle Global Infrastructure Opportunity Fund, speaking at the 2018 Infrastructure Investor Global Summit

2

How do we make infrastructure projects attractive to a wider pool of investors such as pension funds, overseas investors and the service/construction sector?

The key to attracting private sector investors to infrastructure projects is establishing consistent and transparent government policy, backed by strong regulation, which sets out clear measures for success and reward across the public-private relationship.

That means creating a fair and equitable allocation of risk, a clear means to safeguard appropriate rewards and guarantees over the delivery of appropriate outcomes for the customer.

The widespread use of the Private Finance Initiative and its successor PF2 has received substantial criticism in the last few years for its failure to meet these simple tests, to the extent that, even before the UK Government abolished its future use in the October Autumn Statement, it was no longer a viable vehicle for bringing the private sector into infrastructure development or management. Rightly or wrongly, the criticism raised by the National Audit Office and politicians has centred on the costs of capital to pay for facilities and the cost of running them.

"The UK Government and the general public seem to have lost trust with the [PFI] model, in large part because the private and public sector have not addressed the weakness highlighted in many previous reviews, which is the lack of detailed evidence to demonstrate value for money."

Darryl Murphy,
Head of Infrastructure Debt
Aviva Investors

Even as limited opportunities continued to be discussed, notably for the Lower Thames Crossing and for the A303 project at Stonehenge, the UK Government and public had lost trust in the model. This form of procurement is now firmly off the political agenda although existing contracts will be honoured, the UK Government has confirmed, with a new centre of excellence created to "actively manage these contracts in the taxpayers' interest starting in the health sector."

Perhaps as a catalyst to this decision, the recent report by the Public Administration and Constitutional Affairs Committee into the Carillion collapse emphasised concerns over PFI/PF2 stating bluntly that: "The Treasury and the Government should not approve any further PFI projects until they can clearly justify, based on evidence, their claims about the benefits of the scheme."

It added: "The Treasury should scrutinise in particular the recently approved transport projects (the A303 Stonehenge tunnel and roads and the £1.5 billion approach roads to the Lower Thames Crossing) to ensure that there is good evidence that private finance represents the best value for money in these cases."

Interestingly, the UK Government's response to the Public Administration and Constitutional Affairs Committee's report, published on the same day as the Autumn Statement, was less committed to abolition. "Treasury and IPA's preferred model of Public Private Partnership is now PF2," it confirmed, clearly out of step with the Chancellor's thinking.

"The Government believes firmly that value for money is of primary importance and applies a strict scrutiny process to projects with the aim of ensuring that a decision to use private finance is only made where it can be demonstrated to provide value for money over conventionally procured and government-financed alternatives," explained the Government response.

The response added: "It is for procuring authorities to determine the procurement route to be used based on the value for money assessment process set out in the Green Book."

However, as pointed out by the January 2018 NAO report, projects delivered under the PFI have consistently failed to address criticism over the lack of detailed evidence demonstrating how private sector involvement generates greater value for money. Similarly, project sponsors have been unable to show how private sector investment has increased delivery quality for the users and the community.

It is also worth noting that, despite the large amount of political noise associated with them, such PFI deals only actually represent around 5-10 % of the total investment made in infrastructure. As such, even radical reform of this procurement method is unlikely to move the dial in terms of future financing.

On this basis, the solution should be fairly straightforward – come up with a model for public-private infrastructure investment which is in the clear public interest – which "delivers value for the taxpayer and genuinely transfers risk to the private sector" as required by the Chancellor. Straightforward because there is no shortage of global institutional investors ready to finance major economy and community transforming projects.

"Private finance is involved in many infrastructure sectors. The starting point should be fair allocation of risk, good regulation and consistent government policy. These together with excellence of delivery should result in profit and satisfied customers."

Sir John Armitt, Chairman
National Infrastructure Commission

2

How do we make infrastructure projects attractive to a wider pool of investors such as pension funds, overseas investors and the service/construction sector?

This focus on investment outcomes is the driver for on-going work by the Institution of Civil Engineer's supported Project 13 programme, which was initiated in response to the growing number of projects running over budget, past deadline and below par. The programme is being driven by the influential Infrastructure Clients Group and seeks to reshape the sector with a new business model to "boost certainty and productivity in delivery, improve whole life outcomes and support a more sustainable, innovative, highly skilled industry".

Thames Tideway is one recent example of a privately financed project which is aligned to the Project 13 principles and so focused on delivering greater outcomes rather than simply lower costs. Other examples include the £1.2bn investment programme being delivered by the Anglian Water @One Alliance team, and the recent public private collaboration to deliver the London Underground Bank Station upgrade.

The United Utilities Network Maintenance Alliance with Amey provides clean and waste water repair and maintenance services of over 42,000km of water pipes and 76,000km of sewers from Cumbria to Cheshire.

Again, with focus on outcomes for customers, this partnership covers a range of activities from repairing a leaking stop tap and jetting blocked sewers, through to major civil engineering works.

The diversity of projects and financing methods demonstrates how attractive infrastructure has become as an asset class. The ability to deliver investors long term, predictable, if somewhat, conservative returns makes both construction and operation projects an attractive option for pension funds, both as debt and equity vehicles.

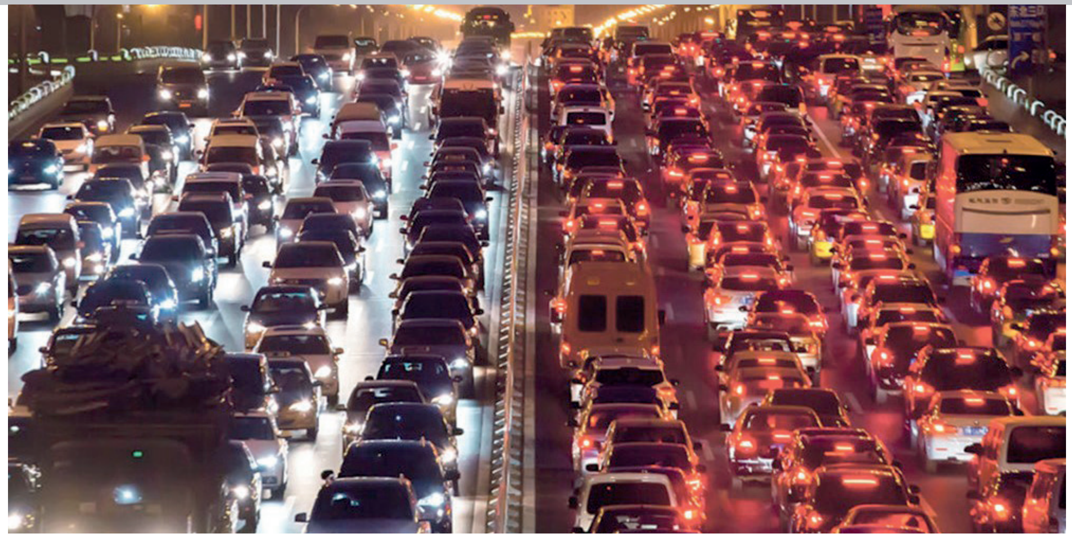
As has been said many times by many commentators, the issue is not so much the availability of finance as how to fund that investment and pay for assets. It is about how to match long-term, low return pension funding to the intrinsically high risk, long-term investment needs of infrastructure.

Pension funds and other institutions cannot – or will not – take on the levels of risk associated with the politics, planning, construction and management of complex modern infrastructure. The Thames Tideway demonstrates how this problem can be solved if government simply protects and encourages investors using policies such as its £40bn UK Guarantees scheme and other risk mitigations as an appropriate backstop.

The National Infrastructure Commission also highlights potential post Brexit challenges facing the UK infrastructure sector when it comes to encouraging private financing for public infrastructure. A UK infrastructure finance institution, should, it says, be established if access to the European Investment Bank ceases after the UK exits the EU.

3

How can the infrastructure sector shift its current procurement model from one of confrontation, cost reduction and transfer of risk towards one that drives greater collaboration, better outcomes and longer term value for the public?



"The sector has been further tarnished by the Carillion collapse adding to the on-going political and public backlash against outsourcing, against the use of private financing and against the way businesses like Carillion are currently managed and monitored."

Asif Ghafoor, Managing Director
Amey Investments

"A change in infrastructure procurement can only be led by clients. There are some excellent examples and Project 13 is an opportunity."

Sir John Armitt, Chairman
National Infrastructure Commission

Establishing a consensus on a fair allocation of risk and reward has become significantly harder since the collapse in January 2018 of Carillion, one of the UK Government's biggest infrastructure service outsourcing suppliers.

The continuing shockwaves from this collapse underline the emerging lack of appetite by contractors to take fixed price cost risk for public private partnership projects and its impact on project sponsors ability to raise project finance.

As pointed out by MPs on the Public Administration Committee in their July 2018 report into the Carillion collapse, Government procurement has been driven by price with little appreciation of differences in quality that contractors may be offering. "We recommend a fundamental change of attitude by the Government towards its partners - ensuring that risk transfer is realistic and that quality, an appreciation of systemic risk and economic impact as well as price drives decision making," it says.

This situation has to be examined alongside other macro economic issues affecting the UK, not least those surrounding Brexit and around the government's commitment to delivering and funding its infrastructure pipeline. In this context, the issue is more to do with availability of deals. In the face of these risks lenders will be more likely to invest in sectors, assets and regions where there is more certainty.

Amey's position as a vital and varied service provider in almost every county in the UK means we already have a big impact on the communities we serve. We want to work effectively with communities, through designing services personal to them using local partners to meet their individual needs and priorities. We believe that by designing our services to create positive social outcomes - or 'social value' – we will differentiate ourselves from the wider market and exceed customer expectations.

Infrastructure clients hold the key to driving this change. Its community of infrastructure owners and suppliers in the ICE/ICG backed Project 13 programme are committed to breaking away from transactional, cost driven procurement of individual assets towards, as it puts it, "value driven, collaborative teams capable of delivering investment programmes which secure the outcomes demanded by clients and the public."

This means fundamentally refocusing the sector away from simply managing assets toward delivering outcomes and experience for the consumer.

This approach is crucial to securing appropriate future project financing. An inevitable consequence of Carillion is that it is going to get a lot harder to build a public-private relationship in future. Lenders will scrutinise construction risk along and the financial strength of contractors and their underlying ability to support sub-contracts more heavily. In short, the key to financing construction projects will be the willingness of the contractor to post adequate surety to ensure the overall project meets the grade for debt investors.

The Carillion collapse shows that fixed-price contracts for fixed outputs are ultimately a false economy both for infrastructure owners as well as the supply chain. In reality, the solution to making infrastructure projects more attractive to a wider pool of investors must be setting up contract – for construction, maintenance or operation – on the basis of partnerships down the supply chain, fairly and transparently sharing and pricing risk.

Current procurement models are based on driving down cost and transferring risk down the supply chain – usually to parties less able to manage that risk. As the ICE's Project 13 demonstrates, we need a fundamental shift towards procurement models that drive greater value for the customer.

Carillion also shows the importance of governance and effective management of parties delivering services on behalf of the public sector and we should encourage more public/ private joint-ownership models to underpin the incentives and shared motivations and benefits.

Both public and private sectorsneed to embrace the principles advocated by programmes such as Project 13 to make it work. Construction is a hugely fragmented industry in which the supply chain has little or no market power.

"If we don't engage now we are going to face an increasingly difficult environment in which to provide a good service and get a good return. The private sector should think more about how they help the public sector; and the public sector should think more about how the private sector can help them."

Neil King, Managing Director
Canadian Pension Plan Investment Board, speaking at the 2018 Infrastructure Investor Global Summit

"It is in the gift of clients to drive change. If clients buy short-term outputs for the cheapest price whilst trying to pass all the risk, they get what we have got - a systemically vulnerable and inefficient industry."

Richard Threlfall, Partner
KPMG

What are the best options for financing and delivering infrastructure in the future?

"We should be contracting on the basis of partnerships between infrastructure owners and the supply chain, fairly and transparently sharing and pricing risk."

Richard Threlfall, Partner
KPMG

"General investment models need to change to adapt to the impact of technology on the nature of infrastructure assets. Investors are going to have to embrace a world where there may be less absolute contractual or regulatory certainty."

Darryl Murphy,
Head of Infrastructure Debt
Aviva Investors

The scale of global infrastructure ambition combined with the desire by investors to find secure, long term returns for significant funds makes the sector extremely exciting and ripe for innovative delivery models. The backlash against established PFI procurement is also a clear driver for the market to embrace change.

Re-establishing the fundamental relationship and trust between the public and private sectors is the only way to begin to develop new and different infrastructure investment models. Once nurtured, we may well see a range of new models developed and real opportunity for infrastructure investors in global developed economies.

Sector by sector there are a number of interesting models that are distinguished by the strength of public private relationships and the mutual trust they have developed.

The recent roll out of the fibre optics communication network in France is a good example of building this relationship. Having set a goal of building the fibre network to deliver high speed communications across the entire nation, the French Government recognised that the best technical solution would lie with the private sector.

In cities it was clear that, due to the scale of the available market, subsidies would not be required. Instead, what was needed was an environment and regulated framework that promoted competition and created funding support. However, when establishing connections in the countryside, government recognised that support would be necessary since it was clearly much harder to get the required customer volumes needed to get the market moving.

The UK water regulator Ofwat is also recognising the value of establishing a robust public-private relationship. In the next review period it will be driving the market towards clear focus on delivering better outcomes for customers by introducing direct procurement – large TOTEX schemes procured separately by a project financed model.

The impact of digital technology, artificial intelligence and the role of data and data analytics is set to radically change the way that infrastructure is designed, constructed, operated and maintained in future. This ability to monitor performance on a live basis will alter risk profiles across the asset lifecycle, impacting rates of return for investors.

Government procurement strategy has a key role to play in de-risking and incentivising private sector investment in these new technologies and to encourage SME's and start-up businesses to innovate and embrace the opportunity.

Technology and data-led solutions will also drive the growth in decentralised, community level infrastructure systems across sectors like energy, transport and communication. Financing models will change to focus on the growing market for smaller, locally driven schemes, with a new market already emerging based on community and crowdfunding models. These allow local people to use crowdfunding and their ISAs to invest in local projects. Although a small market at present, it is one that is likely to grow, based on the desire of the public to be able to influence their local environment.

Similarly in Scotland, regional hubs are opening up smaller local projects to private investment. By grouping projects together, it creates the necessary volume to bring investors on board.

Overall, the shape of future private sector infrastructure investment will change, with different models becoming not only available but also viable and attractive for investors. The private sector is in a key position to help drive these models forward with both new financing solutions and funding strategies that are capable of unlocking the trillions of dollars of global wealth held in investment funds.

Innovative technical and financial solutions will help the infrastructure sector put this wealth to work, create economic growth, reduce poverty, create sustainable quality of life and, overall, make the world a better place.

" We need to start talking and start listening more. There is too little of either in this space going on around how we can actually identify and deliver the infrastructure the UK needs in the 21st century to improve the quality of life of its citizens."

Asif Ghafoor,
Managing Director,
Amey Investments

Conclusions

We need to accelerate and improve the quality of the current conversation about role of public and private sector in delivering better outcomes for society.

- Government has set out priorities in the National Infrastructure and Construction Pipeline. We must establish timelines and start a dialogue with the public about how and why this will be delivered and the role that the private sector can play.
- Having abolished the use of the Private Finance Initiative model, UK Government remains committed to the use of public-private partnership where it delivers value for the taxpayer and genuinely transfers risk to the private sector. We must engage to demonstrate that this is possible.

The entire sector needs to be honest about the successes and failures of the past.

- We now find ourselves on the back foot trying to justify the private sector's involvement in infrastructure delivery. We need to start talking and start listening more - to take this opportunity to avoid being shy of criticising the way PFI has evolved across infrastructure delivery.
- We may need to accept that, in some cases, the private sector has occasionally prioritised the wrong outcomes. Emphasis needs to switch back to the creation of greater social value for the communities and stakeholders we serve.

The private sector needs to communicate the value that it adds during the outsourced management of public assets.

- If the public sector can deliver this outcome more effectively then it should be allowed to do so. This is a two-way conversation.
- Public sector clients must also recognise that when they continually press suppliers for greater returns, the likely result is that they will over promise and wind up giving the keys back.

We need to fundamentally reassess the definition of a good outcome from infrastructure investment.

- Private infrastructure investment policy has lost its way. Across the sector we must re-establish what is meant by value for the taxpayer and genuine transfer of risk.
- When the original PPP policy was launch 20 years ago it came with the infamous value for money test – the public sector comparator. This was not just based in the cost of the investment but also on whether the deal was going to deliver a better overall outcome for the public – can assets be procured more effectively in the private sector compared to the public sector?

Government must lead the procurement of new data and technology-led solutions to the UKs infrastructure challenges and, importantly, to set out how it will incentivise private sector to investment.

- In particular, areas such as mobility and energy storage will become increasingly central to the UK's infrastructure solution.
- A clearer understanding of how government procurement can support private sector investment and market development by SMEs and start-ups is crucial to help de-risk investment and encourage the free flow of innovation.
- Central and local government should embrace and encourage new financing models that change focus towards the growing market for smaller, locally driven schemes backed by community and crowdfunding financing models.

" Infrastructure projects can be attractive to the private sector with a fair allocation of risk between the parties. The cost of capital will simply reflect risk as analysed by the lender."

Sir John Armitt, Chairman
National Infrastructure Commission

Partnerships for change: some recommendations

Driving change requires a level of innovation which the public sector cannot alone be expected to nurture and invest in. Partnership between the private and public sector will be vital to enabling this future.

The public sector should:

- Create a procurement environment that actively encourages the private sector into the market.
- Ensure the procurement environment encourages an outcomes-based approach, not a race to the cheapest price.
- Legislate to stimulate and encourage the creation of new markets and new technologies.
- Stand behind legislation to underpin long term, stable markets.
- Incentivise investment in long term outcomes.

The private sector should:

- Embrace and drive new opportunities with ideas and investment.
- Invest and innovate to create new markets that drive change.
- Focus on social value alongside financial return - and be willing to invest in measuring and tracking that social value.
- Be prepared to sacrifice short term returns for longer term gain.

In simple terms, this means fundamentally refocusing the sector, from client down through the supply chain, away from simply managing assets towards delivering better outcomes and experience for the consumer and greater value for public money.

Next steps

Plotting a vision for the way forward

Fundamentally, the private investment model for infrastructure delivery and management isn't broken.

But it does need reform and review, not least in the wake of Government recent abolition of the PFI/PF2 model.

People from across both the public and private sector have lost sight of their original vision to improve outcomes for customers and returned to a model which is all about cost and financial return. A rebalance is needed.

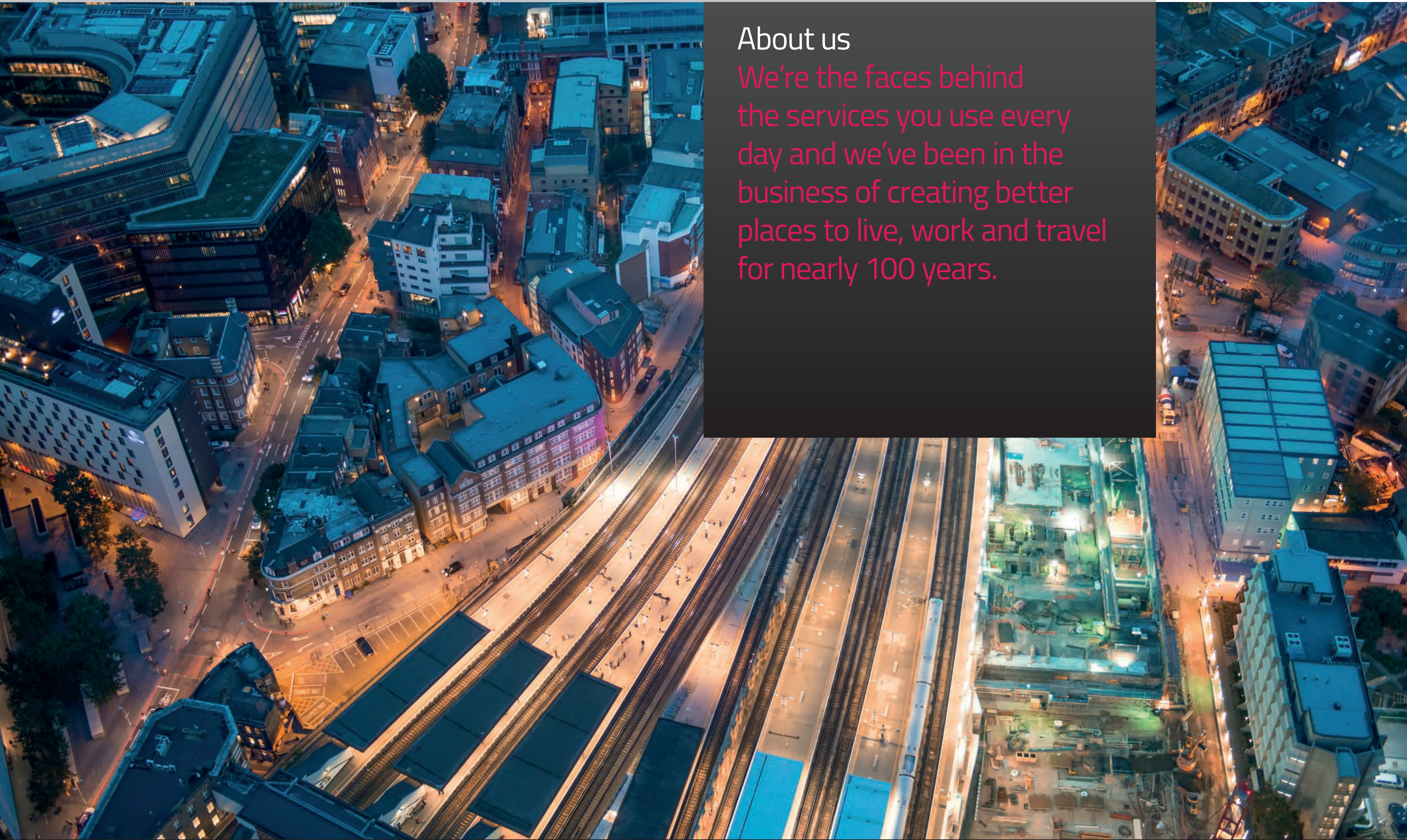
This rebalance will include a clearer explanation of what constitutes a good value, both in terms of social and financial outcomes; creating a more open and honest discussion is vital to ensure that both the public and private sector can invest, innovate and take advantage of the transformations being driven by new technology, artificial intelligence and data management.

This Green Paper represents the start of Amey's programme of events and publications that are designed to raise and discuss the questions of how the private sector can structure investments to deliver and realise the governments infrastructure ambitions.

Quarterly papers and events will examine the way that government procurement can stimulating private sector investment across the following markets:

- **Mobility**
- **Energy**
- **Waste and the environment**
- **Water and sanitation and the role of the regulator**
- **Central and local government estate management**

The goal is to start a discussion and drive the necessary change, innovation and investment that will enable the private sector to consistently help the UK Government to realise its infrastructure ambitions.



About us

We're the faces behind the services you use every day and we've been in the business of creating better places to live, work and travel for nearly 100 years.

About us

Our team of 20,000 people and the depth of services we deliver, makes us a leading supplier of consulting and infrastructure support services in the UK and internationally.

We design, build, maintain and invest in services and infrastructure and we're proud to make a difference. Serving the communities we work in, whatever the weather and whatever the challenge.

Amey Investments has been helping to structure and fund vital infrastructure and services projects for nearly 20 years.

Our dedicated Investments team help our Government and Utilities clients to make and set up, really smart, innovative funding and financing structures – meeting the UK's infrastructure challenge of today and deliver technology led infrastructure solutions for our future. Over the past 15 years we've raised over £4bn of private finance, including traditional bank debt, bond issues, prudential borrowing and European Investment Bank funding.

Combining the skills of lawyers, estimators, financial modellers, commercial managers and bankers, the Investments Team has a range of specialist knowledge rarely found in companies such as ours. We help our clients structure solutions to unlock the major funding sources that transform major projects into reality.

Our objective: financial solutions to secure infrastructure ambitions. We are part of the solution – helping to solve the UK's budget challenges.

Strategic Business Development:

- Our strategic thinking creates tangible, long-term, high value infrastructure business opportunities, to meet the UK's future infrastructure needs.
- We solve complex problems facing public and private sector clients, helping them deliver better outcomes for their customers.

Financial and Commercial Solutions:

- We are experts in; commercial structures, raising capital, financial modelling, risk management and negotiation. We solve clients' funding and financing problems to deliver the best project outcome.

Investment and Stakeholder Management:

- We work with our clients and other stakeholders to build the long-term relationships needed to influence better outcomes across their evolving investment objectives. Our structuring and investment management expertise protects the assets and enables our clients to maximise the value of their investments.

We drive Amey's strategy into new markets with modern technologies. Our aim is to keep the UK a global leader in infrastructure.

- Expertise in banking, equity finance, law, financial modelling, technical advisory and engineering.
- Supporting **20,000 people in 300+ locations** in the UK and overseas.
- Over **£4bn of private finance** raised over the past 15 years.
- Manage SPVs on behalf of **over 40 banks and 20 equity investors**.
- Invested over **£200m** of Amey equity.

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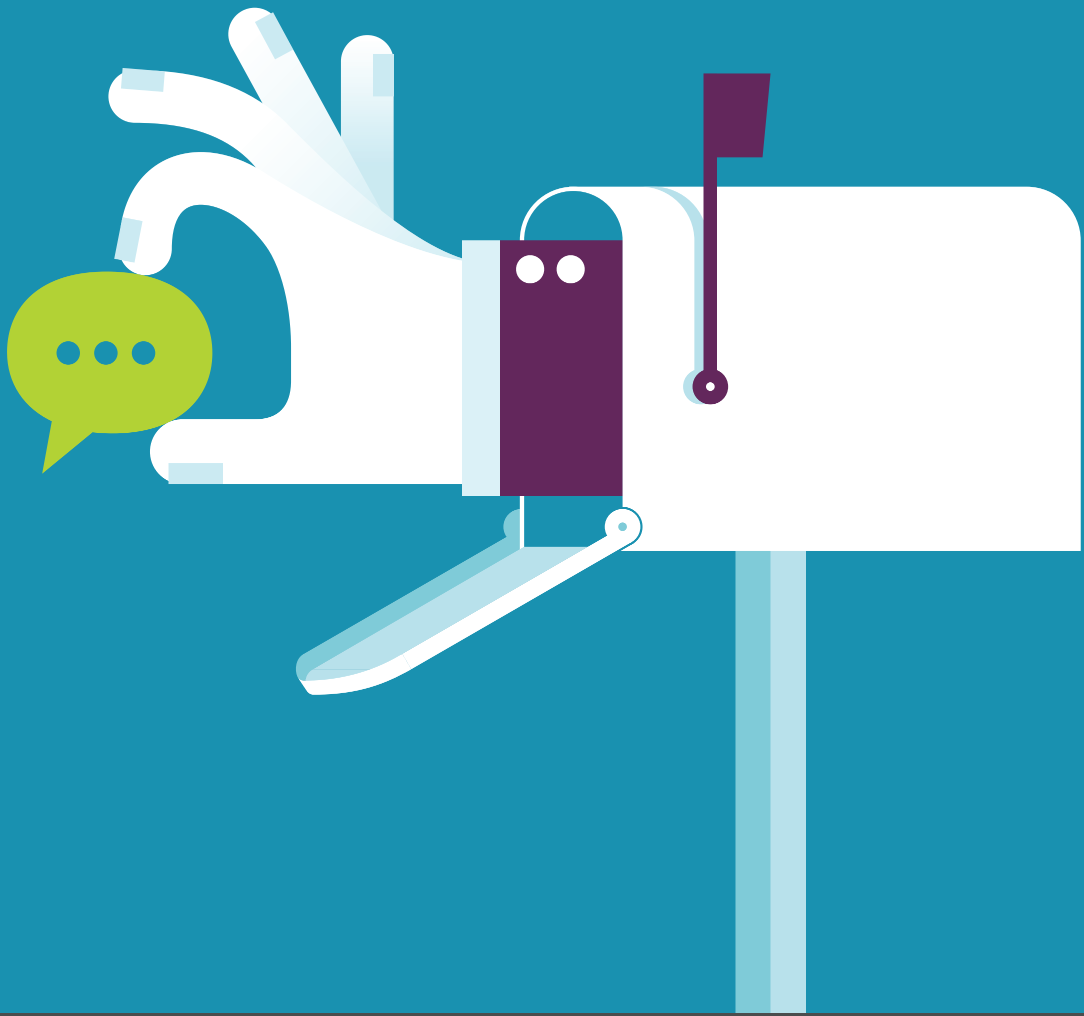

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