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Road to recovery

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Executive summary

The UK is in the infrastructure slow lane, rated 34th behind Namibia and Spain, despite being the 6th richest country in the world. This poor infrastructure is important as transport, utilities and communications are powerful drivers of growth and represent the best value for government spending. The OECD's most recent survey of the UK economy found that inadequate investment is a key reason for low productivity – Britain spends less on this area as a proportion of GDP than any other OECD country. Yet the Government plans to halve public capital spending from 2010-11 to 2013-14. The Opposition proposals to protect health spending would add further pressure to capital spending.

The infrastructure departments are mired in confusing targets and politicised priorities. The Department for Transport (DfT) spends around £2 billion per year to promote “equality” and “fairness”; the Department for Energy and Climate Change (DECC) picks winners in energy production. The cross-party interest in a “green technology revolution” is a new corporatist agenda with as little hope as the “white heat” of the 1960s.

As a result, some projects have gone ahead that, on economic grounds, should not have done so (the Sheffield Supertram). Some projects have been blocked because they did not involve public finance (the Central Railway Group freight railway from Liverpool to the Channel). Some essential developments have been blocked by lack of political will (water metering) and political debate is dominated by white elephant projects without economic merit, such as high speed rail and offshore wind turbines.

A decade of fiscal tightness is the best possible backdrop to the new infrastructure policies recommended below. The impossibility of big public spending promises will shift attention to consumer charging and private sector investment, unlocking financing for many projects. Governments will no longer be able to fund infrastructure in the vain hope of stimulating general economic growth or securing some short-term political advantage. Instead, both public and private sectors will focus on augmenting existing infrastructure to get more for less.

A look at the recent history of UK projects reveals a clear road ahead:

- > A presumption for private rather than public finance, through a greater use of public private partnerships.

Case studies: Crossrail; Sizewell C nuclear power plant.

- > Charges not taxes. Regulated charges and metering on all infrastructure, from roads to water, and the phasing out of levies and taxes such as Renewable Obligation Certificates and the proposed broadband tax.

Case study: London congestion charging.

- > A government role focused on real economic benefit rather than social or industrial policy. DfT can save £1 billion in subsidised bus and train fares. DECC can save £1.3 billion in industrial subsidy and administration.

Case studies: A1 separated junction scheme from Peterborough to Blyth; the Docklands Light Railway.

- > A withdrawal of government from rail, road and renewable energy operations.

Case study: the M6 Toll Road.

- > Transparency in Whitehall decision-making. Publication of economic analyses of projects before and after completion.

- > Democratic accountability and market mechanisms for the Infrastructure Planning Commission.

1

The importance of infrastructure

Economic infrastructure – principally transport, communications, and the supply of water and energy – plays a key role in shaping the competitiveness of the UK’s economy. Previous failures to focus on infrastructure, namely in the 1970s, dented productivity and slowed growth. The recent focus on “investment” has not in fact translated into greater spending on infrastructure. If the UK is to find new prosperity after the recession, sound infrastructure policy will be vital.

Driver of growth

Since the Industrial Revolution, economic growth in the UK has been driven by ever faster railways and other transport links, generating more energy and a reliable supply of clean water. As Adam Smith argued in the *Wealth of Nations*, guaranteeing these “public works and institutions for facilitating the Commerce of Society” was one of the three duties of government, along with defending society and administering justice.¹ Better telecommunications have fuelled the development of a knowledge based economy and a more connected global society. Today’s global economy relies on effective and affordable international transport links and no economy can function without sufficient energy supply.

The OECD’s most recent economic survey found that the UK’s inadequate investment in infrastructure is a significant hindrance to raising productivity growth. It argued that improving infrastructure should be one of the UK’s top three policy priorities to ensure a return to growth in the medium term.² Poor transport infrastructure in particular slows productivity growth by raising transportation costs and by making the labour market less flexible.³ The 2006 Eddington report similarly found that inadequate transport infrastructure is a major dampener on economic growth. The report estimated that eliminating existing congestion on the UK’s road network, for example, would add £7-8 billion to annual GDP.⁴

The most effective use of taxpayer money

Infrastructure spending can generate great value for taxpayers’ money. A number of economic studies have outlined the relationship between government spending in different areas and economic growth. As summarised in Figure 1, the payoff for growth from public spending is highest for spending on infrastructure, followed by spending on education, then health and then social welfare. The finding of Gemmell, Kneller and Sanz that infrastructure and educational spending by governments is most growth-enhancing is consistent across studies and holds for both developed and developing countries.⁵

The pattern of public expenditure in the UK is the reverse of this, with spending being greatest in those areas (health and welfare) which have the smallest benefits in terms of economic growth.

1 Smith, A. (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations*.

2 Organisation for Economic Co-operation and Development (2009), *Economic Outlook No.85*.

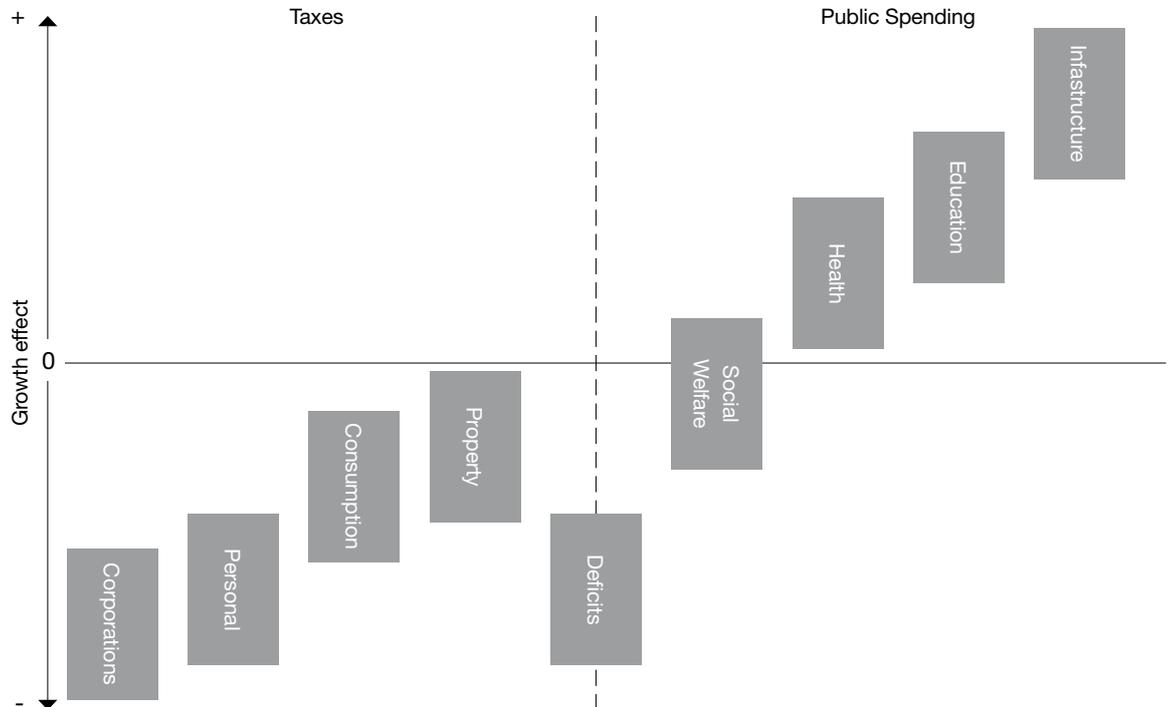
3 Ibid; Graham, D. (2005), *Wider economic benefits of transport improvements: link between agglomeration and productivity*, Centre for Transport Studies, Imperial College London.

4 HM Government (2006), *The Eddington Transport Study*. The report found that, if unchecked, congestion on the road network will increase costs to businesses and freight by £10 billion a year and a further £12 billion of wasted time for households by 2025.

5 Gemmell, N., Kneller, R. and Sanz, I. (2008), “The Composition of Government Expenditure and Economic Growth: Some Evidence from OECD Countries”, *European Economy*.

Figure 1: Effects of taxes and public spending on growth

Source: New Zealand Treasury (2009), *Tax working group session: the fiscal framework*, speech by John Whitehead, Secretary to the Treasury, 5 June.



While government expenditure on social welfare has relatively little positive impact on economic growth, investing in infrastructure is critical. Early academic studies examining the role of capital expenditure have suggested that the relatively slower growth in public capital accumulation in the 1970s and 1980s was largely responsible for the slowdown of productivity in the private sector.⁶ Britain’s economy, like all industrial nations, depends on an increasingly complex infrastructure network that has developed over centuries, boosted by technological innovation, competitive markets and consumer demand.

Prosperity and productivity...

The Eddington review noted that a “comprehensive and high performing transport system is an important enabler of sustained economic prosperity”.⁷ The report found that a better transport system improves business efficiency, innovation, competition and trade, as well as supporting agglomerations of economic activity and a mobile labour force.⁸ Other studies support the theory that there is an inherent relationship between transport and such agglomeration externalities. Transport systems play a role in attracting businesses and employees to an area, and firms locating in close proximity derive productivity gains from things such as greater opportunities for labour market pooling, knowledge interactions and the existence of public goods.⁹

...and quality of life

As well as improving economic productivity and giving high value for money, investing in the UK’s infrastructure can yield significant gains in public services and living standards. The introduction of electricity, central heating, telecommunications and running water has dramatically enhanced the quality of life and life expectancy for the UK’s population. Moreover, schools and hospitals are increasingly dependent on digital telecommunications to manage services electronically.

⁶ Aschauer, D. (1989), “Is Public Expenditure Productive?”, *Journal of Monetary Economics*, Vol. 23, March.

⁷ HM Government (2006), *The Eddington Transport Study*.

⁸ Ibid.

⁹ Graham, D. (2005), *Investigating the link between productivity and agglomeration for UK industries*, Centre for Transport Studies, Imperial College London; Graham, D. (2005), *Wider economic benefits of transport improvements: link between agglomeration and productivity*, Centre for Transport Studies, Imperial College London.

Too much of a good thing

However not all capital expenditure is productive or beneficial. High levels of spending on infrastructure projects in Japan during the 1990s failed to stimulate a significant improvement in productivity. Poor spending choices and failed investments on “bridges to nowhere” had no positive impact on economic growth.¹⁰ Taking a “build it and they will come” approach is a dangerous and potentially wasteful stance. Infrastructure spending is most effective when aimed at opening up existing bottlenecks and facilitating future demand.

Quality not quantity

Following the global financial crisis, governments world-wide have turned to 1930s ideas that grand public works projects, like the Hoover Dam, can stimulate the economy. Arguments that building more infrastructure generates economic benefits greater than the money invested are often based on multiplier analysis – where a change in demand in one industry or sector changes demand or economic activity in the wider economy. Paying workers to build an infrastructure project, for example, not only increases employment in that sector but also increases the wages those workers have available to spend in shops and this additional spending may in turn create downstream economic benefits (for example, shopkeepers taking on extra staff).

In practice, it is extremely hard to measure whether these projects add value in this way or not. Multipliers are useful for determining how economic activity in a given sector affects economic activity in other sectors, but they have limitations that require care in interpreting results.¹¹ In short, the problem in evaluating the economic benefit of building infrastructure is that the approach to measuring its value often assumes that the resources it employs are free and have no alternative uses. The methodology is silent on the opportunity costs involved – in other words, whether the infrastructure being built is the best use of scarce government resources.

Networks not projects

The above shows that it is quality not quantity that is crucial when it comes to infrastructure investment. This can also be seen in recent research which demonstrates the importance of developing effective “infrastructure networks”, rather than isolated projects, for maximum impact.¹² Successful investments need to be efficiently managed and targeted to improve the whole network – for example, a few specific programmes to improve transport connections can significantly enhance the integration of the system, while upgrading telecommunications infrastructure can improve the functioning of modern utilities and transport services that rely on knowledge sharing and information flows.

Danger that fiscal crisis will lead to cuts in critical infrastructure spending

Britain’s fiscal crisis will mean a significant cut in public spending and all spending departments will be squeezed. Capital spending is often the first casualty when governments seek to balance their books as it is usually politically easier than cutting revenue budgets. When the International Monetary Fund forced the British government to reduce public spending during 1976-79, for example, spending on housing and economic infrastructure projects was cut by £570 million and the financing of the nationalised industries was reduced by £250 million.¹³

Under current plans, capital spending is due to halve from 2010-11 to 2013-14.¹⁴ Data from the Institute for Fiscal Studies shows that the average annual cut of 17.3 per cent in investment expenditure from 2011-2014 is over three times the average annual reduction in investment spending during the Conservative Government from 1979-1997.¹⁵ Transport projects and energy initiatives are looking increasingly endangered, with Ministers cutting for short term expediency rather than long term economic interests.

10 Inoue, M. (2009), “Japan’s Big-Works Stimulus is Lesson”, *The New York Times*, 6 February.

11 Bailey, P. (2009), *Cement and concrete production*, NZIER. There are three main points which should be considered: multipliers assume that sectors combine inputs, and produce outputs, in fixed proportions; multipliers take no account of induced changes in relative prices; multipliers assume that labour and capital are available in unlimited quantities.

12 Organisation for Economic Co-operation and Development (2006), *Infrastructure to 2030: Telecom, land transport, water and electricity*.

13 Hansard (1976), Col.1528-35, 15 December.

14 HM Treasury (2009), *Budget 2009: Building Britain’s Future*. Public sector net investment will fall from 2.5 per cent of GDP in 2010-11 to 1.25 per cent of GDP in 2013-14.

15 Institute for Fiscal Studies (2009), *Budget 2009 briefing and analysis*.

2

Road to nowhere

In many respects the UK's infrastructure lags behind its international competitors. With the exception of communications, its major infrastructure networks do not command the same confidence as competing countries. Despite rhetoric about "investment" politicians have favoured year on year spending over long term capital. Advances made in the 1980s in greater private ownership have not been capitalised on. Meanwhile, the fog of diverted priorities and increasing bureaucracy has made it harder for the private sector to innovate.

Britain's lagging infrastructure

While the UK is ranked 6th in the world on GDP and 18th in the world on GDP per capita, its infrastructure is ranked 34th.¹⁶ The UK has developed a world leading telecommunications network, but its road, rail, electrical and air infrastructure have fallen behind its international competitors.

Table 1: World rankings of infrastructure quality

Source: World Economic Forum (2009), *The Global Competitiveness Report 2009-2010*.

	Quality of overall infrastructure	Quality of roads	Quality of railroad infrastructure	Quality of air transport infrastructure	Quality of electrical supply	Quality of telephone lines
Switzerland	1	4	1	5	6	1
Singapore	2	1	9	1	12	27
Hong Kong	3	3	3	2	3	9
Austria	4	6	12	13	10	31
France	5	2	4	9	5	8
Germany	6	5	5	4	7	2
Finland	7	12	6	8	4	39
Iceland	8	33	n/a	10	2	3
Denmark	9	8	14	6	1	19
Sweden	10	19	13	18	8	5
United Arab Emirates	11	7	n/a	3	16	35
Luxembourg	12	17	16	42	20	11
Canada	13	21	15	25	15	10
United States	14	11	17	20	17	14
Belgium	15	16	11	14	14	24
Barbados	16	32	n/a	16	24	17
Japan	17	22	2	53	11	30
Netherlands	18	25	10	7	9	22
Taiwan, China	19	18	7	41	32	4
Korea	20	14	8	21	21	23
Portugal	21	9	23	49	22	32
Oman	22	10	n/a	52	29	86
Chile	23	15	76	19	37	62
Cyprus	24	13	n/a	43	23	18
Namibia	25	20	25	55	54	97
Bahrain	26	23	n/a	22	70	45
Malaysia	27	24	19	27	39	72
Spain	28	28	18	37	42	20
Jordan	29	42	84	33	35	94
Slovenia	30	41	42	60	31	15
Norway	31	61	36	11	13	25
Saudi Arabia	32	38	53	51	33	71
United Kingdom	33	30	21	35	18	13

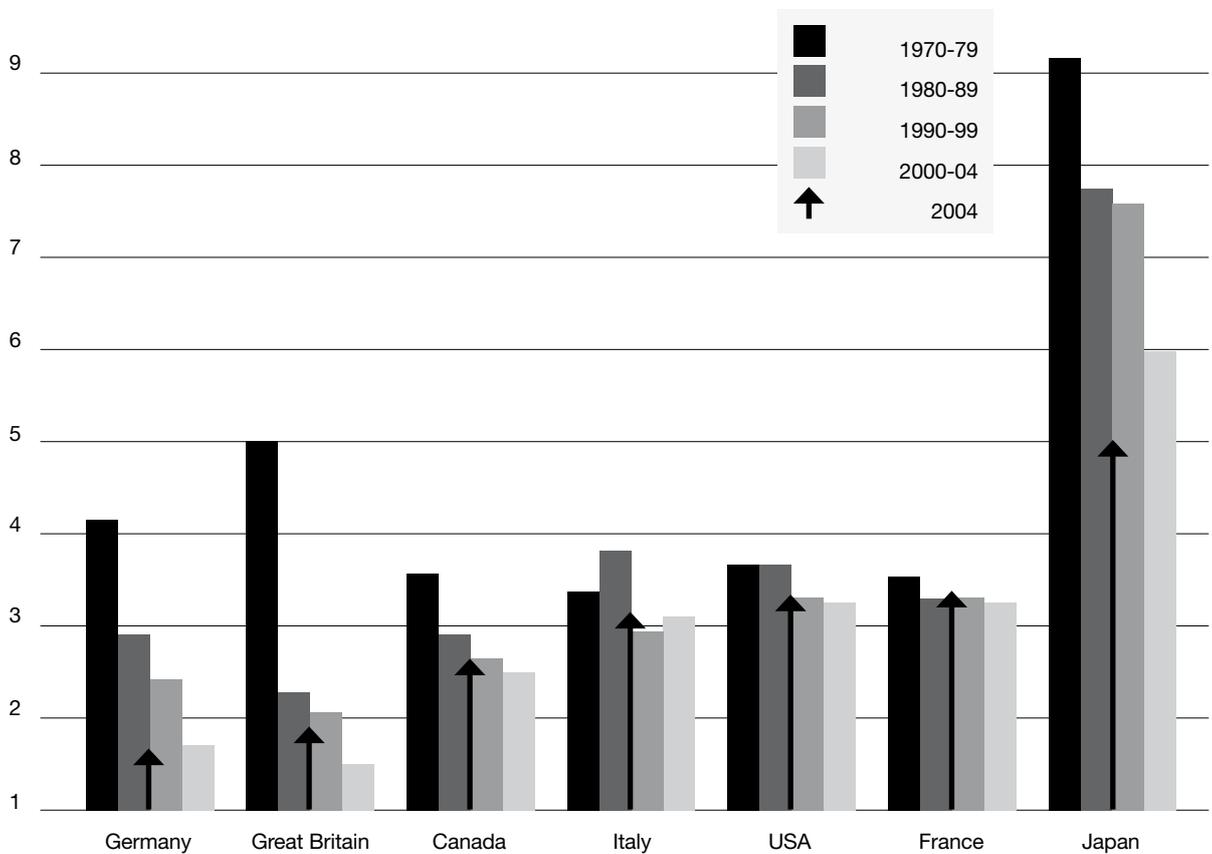
¹⁶ International Monetary Fund (2008), *World Economic Outlook Database*; World Economic Forum (2009), *The Global Competitiveness Report 2009-2010*.

The great investment mis-selling

Current government policy has sought to increase the trend rate of growth of the UK economy through “investment”.¹⁷ But “investment” and “spending” have become used interchangeably and the money has actually gone on current spending rather than “the investment of money or capital in order to gain profitable returns” – the true meaning of the term. After peaking in the mid-1970s at 5.5 per cent of GDP, government investment has fallen steadily averaging a mere 1.6 per cent of GDP over the last 35 years.¹⁸ While it has risen slightly since its historic low in the late 1990s, current Government plans see it fall again from 2010-11. It is not surprising that these numbers look meagre compared with other OECD countries.

Figure 2: General government gross fixed investment, period averages, per cent of GDP

Source: Organisation for Economic Co-operation and Development (2005), *Economic Survey of the United Kingdom 2005: Public Services and Infrastructure: Tracking the Improvements*.



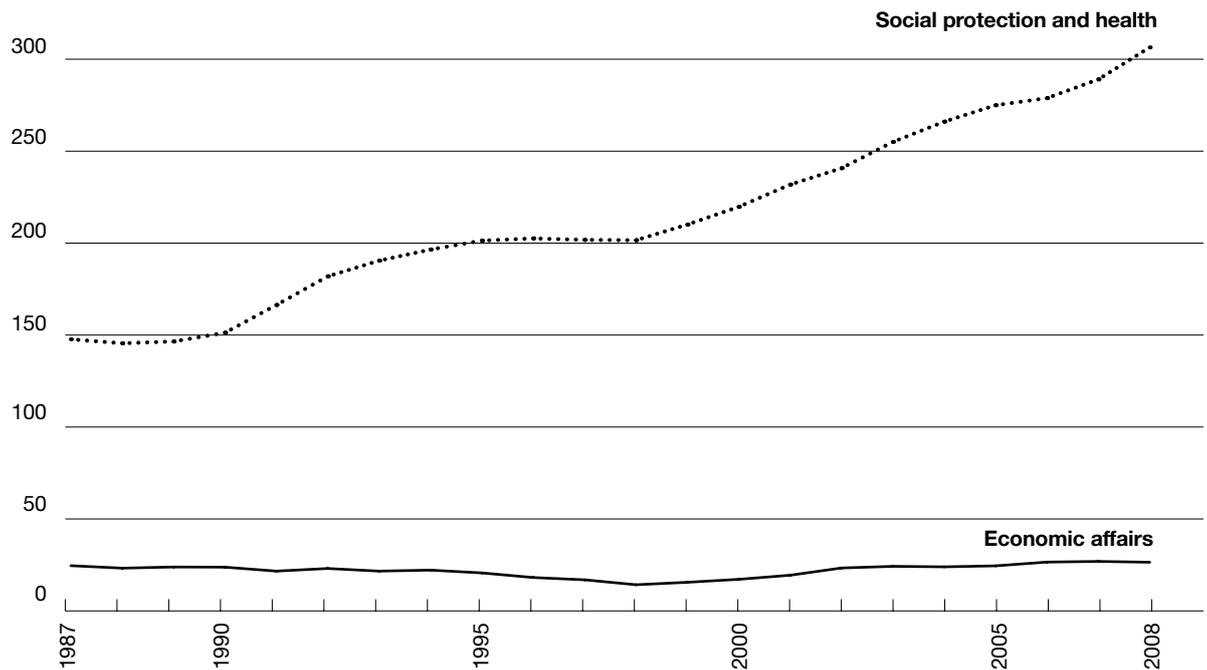
¹⁷ Brown, G. (1999), “Britain is best place for investment”, speech at the tenth Productivity Challenge Roadshow, 5 February: “Within our agenda for productivity, we are committed to investment in education, science and innovation and in our infrastructure to create a high productivity economy. Taken together with our sound public finances, low inflation and lower interest rates, this makes Britain the best place for investment for the future. We are determined that the extra £40 billion investment in health and education will deliver new standards, new targets and new disciplines”; Mandelson, P. (2009), Speech to Progress at the London School of Economics, 14 September: “The New Labour mantra of ‘invest and reform’ summed up a policy which has seen public spending on the NHS double in real terms since we took office. Per pupil funding in schools has also doubled.”

¹⁸ HM Treasury (2009), *Public Sector Finances Databank August 2009*.

In fact, the UK spends less on economic affairs (enterprise, development and transport) as a per cent of GDP than any other OECD country.¹⁹ Public expenditure in the UK is biased towards redistributive policies rather than those that will enhance economic development. In real terms, over the last twenty years social protection and health spending together has nearly doubled from £147 billion to £290 billion, while spending on economic affairs has remained flat.²⁰

Figure 3: UK public expenditure on economic affairs and social protection and health, real terms (2007-08 prices)

Source: HM Treasury (2009), *Public Expenditure Statistical Analyses 2009*; Reform calculations.



Britain's infrastructure has not benefited from a decade of significant public spending growth, with taxpayer funds being channelled into the less productive NHS and welfare budgets. While the private finance initiative has boosted infrastructure investment, by 2006 PFI had provided over £10 billion of finance for hospitals and schools, while it had provided less than £5 billion of investment in transport.²¹

19 Grimes, A. (2003), *Economic growth and the size and structure of government: Implications for New Zealand*, Motu Economic and Public Policy Research Trust and Department of Economics, University of Waikato Motu, Working Paper 03-10.

20 HM Treasury (2009), *Public Expenditure Statistical Analyses 2009*.

21 HM Treasury (2006), *PFI: strengthening long-term partnerships*.

Return of the bureaucrat

Following the failures of infrastructure policies in the 1960s and 1970s, efforts were made to make the sector more attractive to investors and bring in more modern systems of regulation. Privatisations in electricity, telecoms and water were widely considered a success by international standards, bringing in much needed capital expenditure to address the UK's under-investment. Over £2 billion more was being invested in utilities ten years after privatisation, while liberalisation of the energy and telecoms markets brought down prices and improved the quality of services.²²

However, in recent years government departments have started clawing back some of their powers and have become an activist force in shaping the UK's infrastructure. Starting with the renationalisation of Railtrack in 2001, the Department for Transport has taken greater control over the rail industry, for example, buying rolling stock, specifying timetables and regulating fares.²³ Following years of letting the market determine the UK's energy mix, the new Department of Energy and Climate Change is using public money to finance four demonstrations of carbon capture and storage schemes and to subsidise wind and tidal power generation.²⁴ While the launch of satellite TV and cable connections did not need state support, the Government's 2009 Digital Britain report announced a massive intervention in the telecoms industry to subsidise the rollout of next generation broadband.²⁵

The exception is transport where the Liberal Democrats have avoided the interventionist position of the other two parties, in particular through their support for national road charging and for much longer rail franchises in order to give greater freedom of management.²⁶

Diverted purpose

The expansion of the key departments delivering infrastructure has diverted them from their central purpose of ensuring that there is effective infrastructure to make the market work. Instead, goals such as reducing poverty, promoting British industry and equality have been added to these departments' objectives. DECC has been given responsibility for fuel poverty and "leading the global effort to avoid dangerous climate change"²⁷ and Ofcom for public service content delivery, while transport policy has been given a social justice agenda.²⁸ Multiple policy objectives detract from clarity of purpose. With central government giving the UK's main infrastructure departments contradictory orders, the policy framework has crumbled as civil servants have sought to micromanage different agendas.

The green heat of technology

In his speech at the 2009 Trade Union Congress conference, Ed Miliband suggested that "climate change is no longer just about the environment. It has got to be about jobs, energy security and fairness as well."²⁹ The Conservative Party has similarly called for a "green technology revolution".³⁰ But those companies in the sector who are unsuccessful blame Britain's planning regime, not a lack of government support.³¹

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- 22 Pollitt, M. (2000), "The Declining Role of the State in Infrastructure Investments in the UK", Judge Institute of Management Studies, University of Cambridge p.6; Pollitt, M. (2009), "Does electricity (and heat) Network Regulation have anything to learn from Fixed Line Telecoms Regulation?", Judge Business School, University of Cambridge.
- 23 Department of Transport (2009), *Delivering a sustainable railway*. "The Government has already started the process of procuring the new Intercity Express trains. Initial work is underway to develop a new generation of 'go anywhere' trains to replace diesel and electric multiple unit, such as the Pacer and Sprinter fleets."
- 24 HM Government (2009), *The UK Low Carbon Transition Plan*; HM Treasury (2009), *Budget 2009: Building Britain's Future*.
- 25 Department of Business Innovation and Skills and Department of Culture, Media and Sport (2009), *Digital Britain: Final report*.
- 26 Liberal Democrats (2008), *Fast Track Britain: Building a Transport System for the 21st Century*, Policy Paper 85.
- 27 Department for Energy and Climate Change (2009), *Annual Report and Resource Accounts 2008-09*; Foreign and Commonwealth Office (2009), *Departmental Report 2007-08*. DECC's annual accounts demonstrate that a key activity of the department is to lobby for environmental policy change at an international level. This duplicates the effort of the Foreign and Commonwealth Office which also has "promoting a low-carbon economy" as one of its eight strategic priorities: "The Global Opportunities Fund (GOF) was set up in 2003, its aim being to bring about change and influence at policy level in support of FCO policy priorities. In 2007-08 the GOF received a total of £66 million funding and oversaw programmes on: Afghan counter-narcotics; climate change and energy; counter-terrorism; drugs and crime; economic governance; engaging with the Islamic world; human rights and migration; Overseas Territories; reuniting Europe and sustainable development... Looking ahead, we want to make our projects more ambitious in scope and to focus our efforts on the FCO's new policy priorities. To underline the link between our policy goals and its activity, GOF will be renamed the Strategic Programme Fund from 1 April 2008."
- 28 Department for Transport (2009), *Annual Report and Resource Accounts 2008-09*. Foreword by the Secretary of State, Lord Adonis: "As well as helping to build a stronger economy, transport is also an essential means of creating a fairer society... As such, the transport policies we advance, and the solutions we devise, are also designed to encourage social inclusion and promote equality of opportunity."
- 29 Miliband, E. (2009), Speech at the TUC conference, 16 September.
- 30 The Conservative Party (2009), *A Green Technology Recovery*.
- 31 www.businessgreen.com (2009), "Vestas confirms Isle of Wight factory closure", 12 August. "In a statement released earlier today, the company reiterated its view that the closure of the plant had been necessitated by the failure of the UK to provide a stable market for onshore wind turbines, primarily as a result of the difficulty obtaining planning permission for wind farms."

This rhetoric plays on Harold Wilson's description of a "white heat" of technological revolution that would propel the UK economy into higher productivity.³² In fact, the corporatist approach of successive governments led to entrenched structural problems and low productivity, which required addressing through a new economic approach involving privatisation and deregulation. Green corporatism will be no more successful than this earlier version of corporatism.

All three major parties support a high level of official intervention into infrastructure markets. In energy, for example, all three have prioritised developing carbon capture and storage and renewable energy as key technologies, rather than improving the framework for UK private sector generators, distributors and suppliers.³³ This can be seen, for example, with the current proposed Energy Bill which would introduce a financial incentive – funded by electricity suppliers and ultimately consumers through a minimum £1 billion addition to bills – to support up to four carbon capture and storage commercial-scale demonstration projects.³⁴

The right approach for government is to be technology neutral, but currently the Government is actively subsidising wind and carbon capture and storage over other technologies. The structure of Renewable Obligation Certificates (ROC) reflects this political desire to advance certain technologies. For example, wave and tidal energy producers get 2 ROCs for every MWh, compared to 1.5 ROCs per MWh for offshore wind and 1 ROC per MWh for onshore wind.³⁵ The costs continue to rise as these forms of energy remain uneconomic – for example, the Government announced a temporary offshore wind rate of 2 ROCs for every MWh in 2009-10 and 1.75 ROCs per MWh in 2010-11.³⁶ These costs are passed on to the consumer, as would the £15 billion that the National Grid estimates will be needed to build a new offshore grid network to connect all this offshore wind energy.³⁷

Redistribution and intervention

As a result, much of the heavy spending of the infrastructure departments is used to redistribute funds to lower income households and to intervene in markets rather than to achieve a framework for private sector activity.

Department for Energy and Climate Change

The role of DECC should be to construct a framework in which the private sector – families and companies – act to provide energy and ensure its efficient use. Its actual activity is to tinker in energy markets through grants that are extremely expensive in terms of taxpayer resources but are negligible – token gestures – compared to the true costs of investing in the energy. It also spends hundreds of millions of pounds on home insulation where there is no evidence of market failure. There are clear incentives for households to invest in home insulation in terms of lower energy prices, and those incentives have become clearer as energy prices have risen.

32 BBC News Online (2006), "The white heat of Wilson", 31 March: "What Harold Wilson actually said was: 'The Britain that is going to be forged in the white heat of this revolution will be no place for restrictive practices or for outdated methods on either side of industry.'"

33 *Total Politics* (2009), "Total focus – energy", October 2009. Greg Clark, Shadow Secretary of State for Energy and Climate Change: "CCS is a key technology, both at home and internationally... Our national progress on renewable energy has been pretty derisory to date... Britain can, and must, do much better than we have been". Simon Hughes, Liberal Democrat Shadow Secretary of State for Energy and Climate Change: "This is why CCS technology has a big role to play in reducing emissions. We now need to go full speed to demonstrate it fully on an industrial scale... Ultimately we will be able to meet all of our energy needs from renewables. Liberal Democrats are committed to achieving this by 2050."

34 DECC (2009), Statement by Ed Miliband on coal and carbon capture and storage, 23 April; *The Guardian* (2009), "Clean coal push marks reversal of UK energy policy", 23 April. *The Guardian* reports: "Demanding carbon capture and storage (CCS) on all new coal plants is expected to cost around £1 billion for each plant and increase energy bills. Government and energy companies are in talks over how these will be funded but it is expected to come from a levy on all fossil fuel electricity generation in Britain. This could put 2 per cent, or roughly £8 per household a year, on a consumer's electricity bills by 2020."

35 Ofgem (2009), *Renewables Obligation: Guidance for generators over 50kW*, 27 March.

36 BWEA (2009), *BWEA briefing – Conservative conference 2009*.

37 Ibid.

The following table provides some examples, announced in 2009, of the Department's unnecessary spending.

Table 2: Examples of misguided spending initiatives by the Department of Energy and Climate Change, 2009

Source: Department for Energy and Climate Change

Date of announcement	Spending commitment	Detail
28 September	£20 million	For venture capital support for renewable energy. Latest spend from £405 million pledged in Budget 2009
28 September	£10 million	Low Carbon Communities Challenge – fund for local agents to bid: “The twenty successful communities will each receive support to pay for real measures selected by the local residents themselves.”
22 September	£22 million	<p>“Wave and tidal developers are invited from today to bid for £22 million in new government funding to accelerate the commercial development of marine energy in the UK.”</p> <p>“The Marine Renewables Proving Fund, announced in July as part of the Government’s Renewable Energy Strategy, will be designed and delivered by the Carbon Trust and will provide finance for the demonstration of wave and tidal technologies.”</p>
18 September	£397 million	Spending on “Warm Front” scheme in 2007-08. Government spending “for people on qualifying benefits.”
28 May	£10 million	“The first £10 million call under the Low Carbon Energy Demonstration (LCED) capital grants scheme was launched on 28 May 2009. It was designed to address a critical barrier facing the deployment of renewable offshore wind generation in the UK, namely the growth in demand for renewables generation beyond the capacity of the supply chain to deliver.”
15 July	£187 million	<p>“Smart grid” £11.2 million to help regions and local authorities prepare for and speed up planning decisions on renewable and low carbon energy.</p> <p>£180 million for low carbon investment funding to advance the offshore wind industry, wave and tidal energy.</p>
23 April	£959 million in three years to April 2011	An increase in Warm Front grants. Households connected to the gas grid are now eligible for grants of up to £3,500, up from £2,700, while those in areas off the gas grid can apply for funding up to £6,000, an increase of £2,000.
22 April	£940 million	<p>Budget 2009. “Budget 2009 announces an additional £375 million to support energy and resource efficiency in businesses, public buildings and households over the next two years, and £70 million for decentralised small scale and community low-carbon energy”;</p> <p>“£405 million to support low-carbon industries and advanced green manufacturing, to help make the UK a worldwide leader”;</p> <p>“£90 million to fund detailed preparatory studies in CCS.”</p>

Department for Transport

The Department for Transport rightly claims a “key role” in “setting a long-term strategy and a framework for delivery, within which both its own investments and those of the private sector (for example in airports and ports) can be planned and realised.”³⁸ But its actual objectives are broader and, as a result, wasteful of resources.

Very large sums are devoted to its objective “to promote greater equality of opportunity for all and achieve a fair society”.

Table 3: Department for Transport spending total and on equality and fairness

£ billion	2007-08	2008-09	2009-10	2010-11
Total departmental spending (real terms)	16.3	15.0	16.9	16.0
Total departmental spending (cash terms)	16.3	15.4	17.5	16.8
Total departmental spending “to promote greater equality of opportunity for all and achieve a fairer society” (cash terms)	2.4	2.0	2.3	1.8

The spending on equality and fairness contributes to the Department’s fourth Departmental Strategic Objective: “to promote greater opportunity for all citizens, with the desired outcome of achieving a fairer society”. The Department defines that objective as follows: “transport must be available, accessible, acceptable and affordable to those who wish to use it”. In practice this means subsidies for fares and capital spending to make vehicles and stations accessible.

Subsidies for fares have become very expensive. For buses, the Department reports that in 2009-10, £217 million will be provided in special grants for free bus travel for elderly and disabled people. As a result total funding for concessionary bus fares is now around £1 billion a year.³⁹

For rail, political tinkering has skewed spending priorities. Romantic notions about public transport, in particular railways, have seen about the same public spending on rail and road in the name of climate change, despite road accounting for 90 per cent of all passenger journeys and rail less than 7 per cent.⁴⁰ The Conservative Party has committed to a high speed rail line to Manchester and Leeds on environmental grounds, despite the lack of economic analysis to back this up.⁴¹

The policy of fare regulation (which covers around 60 per cent of all rail travel⁴²) has constricted the train operating companies’ control over their costs. When demand declines, as in an economic downturn, the operator’s hands are tied so it cannot cut services to reduce costs. The result is that the taxpayer rather than the passenger picks up the bill when a franchiser defaults, as with the recent East Coast Mainline example.

³⁸ Department for Transport (2009), *Annual Report and Resource Accounts 2008-09*.

³⁹ Department for Transport (2008), *Local Bus Service Support – Options for Reform – Consultation paper*. The Department for Transport estimated in 2008 the total subsidy to buses was £2.5 billion, which accounts for 40 per cent of the bus industry’s total income.

⁴⁰ Royal Automobile Club (2009), *Road v Rail – Is Government On The Money?*, 19 June; Hansard (1998), *Col. 1071*, 20 October. In June 1997 John Prescott said, “I will have failed if in five years time there are not...far fewer journeys by car. It’s a tall order but I urge you to hold me to it.”

⁴¹ Villiers, T. (2009), *Speech to Conservative Party Conference*, 6 October.

⁴² House of Commons (2009), *Transport Committee Eighth Report: Rail fares and franchises*. Regulated fares are capped at increasing by RPI+1%.

The 2007 White Paper set out the trade-off between greater taxpayer subsidy for rail and higher passenger fares. In recent years the public subsidy has risen and the cost of regulated fares has fallen.⁴³ The result has been a consistent increase in the proportion of rail costs funded by the taxpayer, with a 25–35 per cent subsidy in the second half of the 1990s becoming 40–50 per cent since 2000. In 2005–06, taxpayers paid for more of the railway than passengers did.⁴⁴ The 2007 White Paper described this as “clearly not sustainable”. Additional spending has also gone on improving accessibility for trains and rail stations, with £70 million per year listed in the current Annual Report.⁴⁵

Department of Culture, Media and Sport

In terms of media policy, the Department of Culture, Media and Sport should aim to provide a framework for competitive private sector activity (leaving aside the question of the future of the BBC). Instead, it takes a view both on the size of the media industry in the UK and on its outputs, for example in terms of broadband connection. The annual report of the Department of Culture, Media and Sport notes that its objective for media is to “maintain, support and protect dynamic media”.⁴⁶ In the *Digital Britain* report, Lord Carter said: “If Lord Reith was right in his assertion that the broadcasting system should be a mirror of the nation’s conscience, then surely our ambition should be for a broadband system that is the engine of the nation’s mind.”⁴⁷

A muddled framework

With the UK’s infrastructure managed by six different departments (DECC, DCMS, DfT, Defra, BIS and CLG), the Treasury and an array of quangos and regulators, governments have failed to provide a clear policy framework. Without long term strategies and consistent policies, the environment for investors has been complex and excessively risky. Helm identified a number of government and government sponsored bodies involved in infrastructure financing in the UK: the Public Works Loan Board, the Treasury Infrastructure Finance Unit (TIFU), the Centre for the Protection of National Infrastructure, Partnerships UK (PUK), the Infrastructure Planning Commission (IPC) and Infrastructure UK.⁴⁸

The UK’s infrastructure has a cornucopia of regulators. In transport, the number of separate regulators and executive bodies (including the Office of Rail Regulation, Civil Aviation Authority and Highways Agency) leads to a segregated approach and unnecessary cost. Responsibilities are blurred. The Highways Agency has a £7 billion budget to be responsible for the UK’s strategic road network, yet every road scheme it wants to implement has to be approved by the Department for Transport.⁴⁹ A Public Accounts Committee report highlighted the risk averse culture that this structure breeds, pointing to international counterparts which pilot innovative measures and technology to tackle congestion.⁵⁰ In water, Ofwat has similarly become complacent, neglecting to introduce changes to address failures in the market. It has pandered to industry and politicians instead of taking measures to incentivise better services through opening up the market to competition.⁵¹

43 Department for Transport (2007), *Delivering a sustainable railway*. “Ultimately, the money for the railways comes mainly from two sources – rail customers or taxpayers. Since 1997, the balance between these two sources of funding has changed significantly. Since privatisation, rail revenues have actually been growing more slowly than the growth in passenger numbers. This reflects the impact of fares regulation. Regulated fares account for 43 per cent of revenues. Between 1999 and 2004 these fares were capped at RPI – 1 per cent; since then they have been capped at RPI + 1 per cent. The net effect has been a small real-terms decrease of 1.6 per cent in these fares over the last decade.”

44 Department for Transport (2007), *Delivering a sustainable railway*.

45 Department for Transport (2009), *Annual Report and Resource Accounts 2008–09*.

46 Department of Culture, Media and Sport (2009), *Annual Report and Accounts 2009*.

47 Department for Business, Innovation and Skills and Department of Culture, Media and Sport (2009), *Digital Britain: Final report*.

48 Helm, D., Wardlaw, J. and Caldecott, B. (2009), *Delivering a 21st Century Infrastructure for Britain*, Policy Exchange.

49 The Highways Agency (2009), *Annual Report and Accounts 2008–09*; www.highways.gov.uk.

50 House of Commons (2005), *Select Committee on Public Accounts Twenty Fifth Report: Tackling congestion by making better use of England’s motorways and trunk roads*. The report found that the Highways Agency had been “too risk averse in testing out and adopting measures used abroad to tackle congestion, falling behind leading countries such as the Netherlands, Germany and the United States.”

51 See for example, Water Industry Commission for Scotland (2009), *Competition in Water*.

Planning to fail

The planning system for approving major infrastructure projects in the UK is notoriously slow, bureaucratic and cumbersome. With on-going inquiries, appeals and the uncertain role of ministers, decisions on major infrastructure projects regularly take years.⁵²

Table 4: Case studies of major transport decision timings, months taken

Source: HM Government (2006), *Barker Review of Land Use Planning*.

Scheme	Years	Application to inquiry	Length of inquiry	Close of inquiry to receipt of report	Receipt of report to decision	Total time
M6 Toll Road	1992-1997	28	16	17	24	85
Heathrow Terminal 5	1993-2001	27	46	21	11	86
London International Freight Exchange	1999-2002	13	7	6	15	41
Upgrade of West Coast main line	2000-2003	11	11	7	8	37
Dibden Bay Port	2000-2004	14	13	9	7	43
Camden Town tube rebuilding	2003-2005	11	5	5	6	27

New directions

The Government has recognised the difficult environment for investors created by the UK's cumbersome planning system and recently announced the establishment of the Infrastructure Planning Commission (IPC) to take decisions on planning applications for nationally significant infrastructure projects.⁵³ This new, independent body will begin hearing cases from January 2010 and is charged with speeding up the decision making process to twelve months.⁵⁴ The IPC can decide to review only what it considers to be the pertinent issues and it has a legal responsibility to determine an application within a six month time timeframe.

However, the IPC represents a worrying step towards further interference, with the various departments still being responsible for the detail. According to CLG which is in charge of the planning system, the underlying National Policy Statements will "integrate economic, environmental and social objectives".⁵⁵ In reality, they will add another layer of bureaucracy. DECC alone is charged with producing six policy statements: one on overarching strategy, the others covering renewables, fossil fuels, oil and gas, nuclear and national networks. DfT has to produce three on sea ports, airports and national networks (road and rail), although, curiously, no overarching strategy. Defra has to address water supply, waste water and the disposal of hazardous waste.⁵⁶

The Government has also announced the establishment of a new advisory body, Infrastructure UK, to take a more strategic, overarching view of the UK's infrastructure. The body will identify the UK's long-term infrastructure needs over a 5 to 50 year period.⁵⁷ Again, this objective is an important one, but without the corresponding removal of some responsibilities from the individual infrastructure departments, it risks merely creating an extra layer of bureaucracy and additional cost.

52 HM Government (2006), *Barker Review of Land Use Planning*. Heathrow Terminal 5 took seven years to gain consent, requiring 37 applications under seven different pieces of legislations, while the 2000 Thameslink scheme took eight years before it could be implemented, requiring 30 consents under four different acts.

53 HM Government (2006), *Barker Review of Land Use Planning*; HM Government (2006), *The Eddington Transport Study*. While the IPC is nominally independent, the new regime maintains considerable responsibility for the Secretary of State, who sets the decision making framework through "national policy statements".

54 Burges Salmon LLP (2009), "Consenting major energy projects under the Infrastructure Planning Commission", *in-houselawyer.co.uk*. The period from submission of the application to the examination hearing is expected to take about three months, though this is not laid down in the Planning Act 2008 or elsewhere. Once the preliminary meeting has been completed, the Planning Act requires the examination to be completed within six months and the decision issued within a further three months.

55 Communities and Local Government (2009), *Infrastructure Planning Commission: Implementation route map*. Twelve national policy statements in all will be produced, with the first on energy and sea ports likely this autumn.

56 Communities and Local Government (2007), *Planning for a Sustainable Future – White Paper*; www.infrastructure.independent.gov.uk.

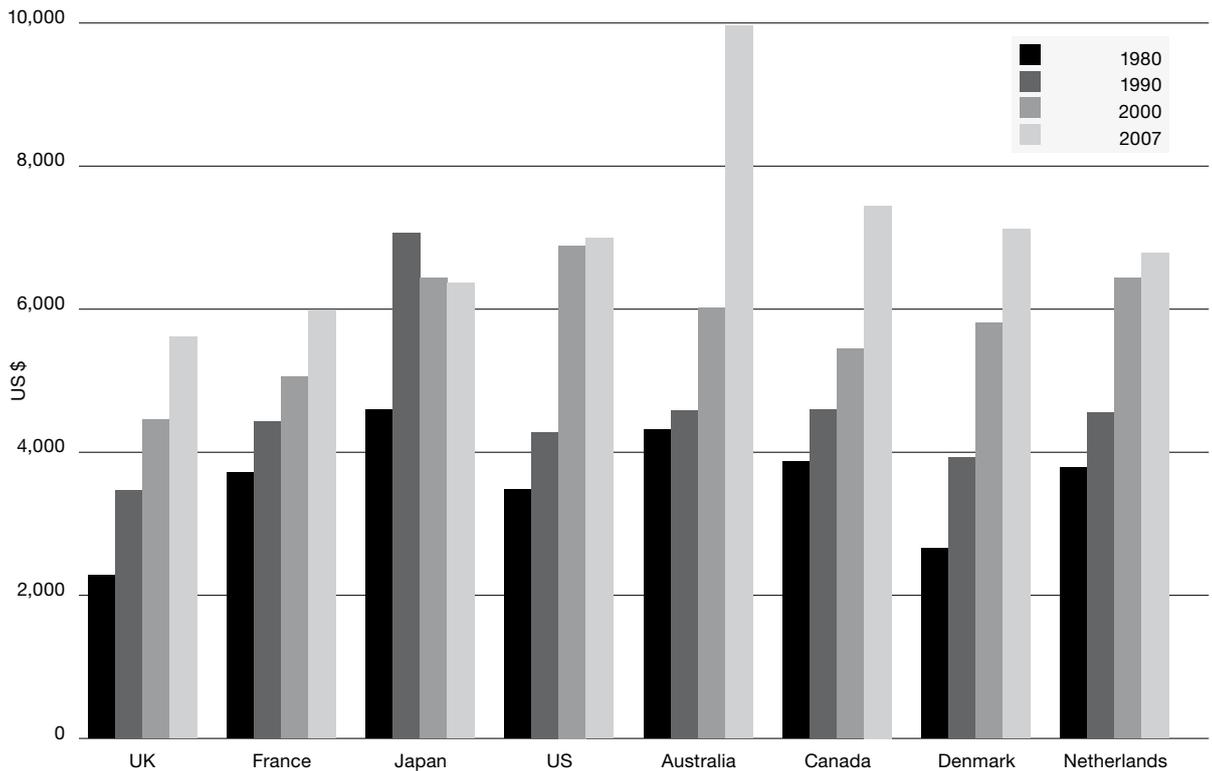
57 HM Treasury (2009), *Budget 2009: Building Britain's Future*.

Growing private sector investment

In terms of investment, there have also been some improvements. There has been greater capital investment by the private sector in the past 20 years with the UK's level of gross fixed capital formation per capita almost tripling.

Figure 4: Gross fixed capital formation per capita, real prices, constant purchasing power parities, reference year 2000, 1980-2007

Source: Organisation for Economic Co-operation and Development (2009), *StatExtracts: Gross Domestic Product database*.



This boost in investment has been largely due to the success of the Private Finance Initiative (PFI). Initially brought in by the Major Government in 1992, PFI has received criticism from the current Conservative Party, presenting PFI deals as an accounting fiddle to hide government debts.⁵⁸ Yet it has played a significant part in getting more investment into the UK's infrastructure by providing financial support for public-private partnerships. It has contributed an average of 20 per cent of the government's capital budget each year.⁵⁹ The role of the banks in PFI brings an element of discipline and a greater appreciation of risk. Many PFI projects, such as the M6 toll road and the DLR extension, have been completed ahead of schedule and under budget. The infamous Metronet failure occurred because the government effectively provided a 95 per cent guarantee of Metronet's debts, meaning the lenders took a more relaxed view of the risk.⁶⁰

This Government's fiscal rules have helped in part to address under-investment in infrastructure. The "golden rule" distinguishes between capital and current spending, helping to avoid long-term capital investment losing out to short term expediency.⁶¹

58 Osborne, G. (2008), "We have work to do and a future to build", speech on 29 September: "Your government has hidden billions of PFI debts where the public can't find them... We will put sound money first... No more fiddling of the rules. No more dodgy statistics. No more hidden PFI borrowing"; Osborne, G. (2009), "A New British Economic Model", speech on 9 June: "We are working on reforms to the discredited PFI model that are transparently accounted for and genuinely shift risk to the private sector."

59 Pollitt, M. (2000), "The Declining Role of the State in Infrastructure Investments in the UK", Judge Institute of Management Studies, University of Cambridge.

60 National Audit Office (2009), *Department for Transport: The failure of Metronet*, Report by the Comptroller and Auditor General, HC 512 Session 2008-2009. Although it did not guarantee Metronet's borrowing formally, the Secretary of State had given assurance to Metronet's lenders.

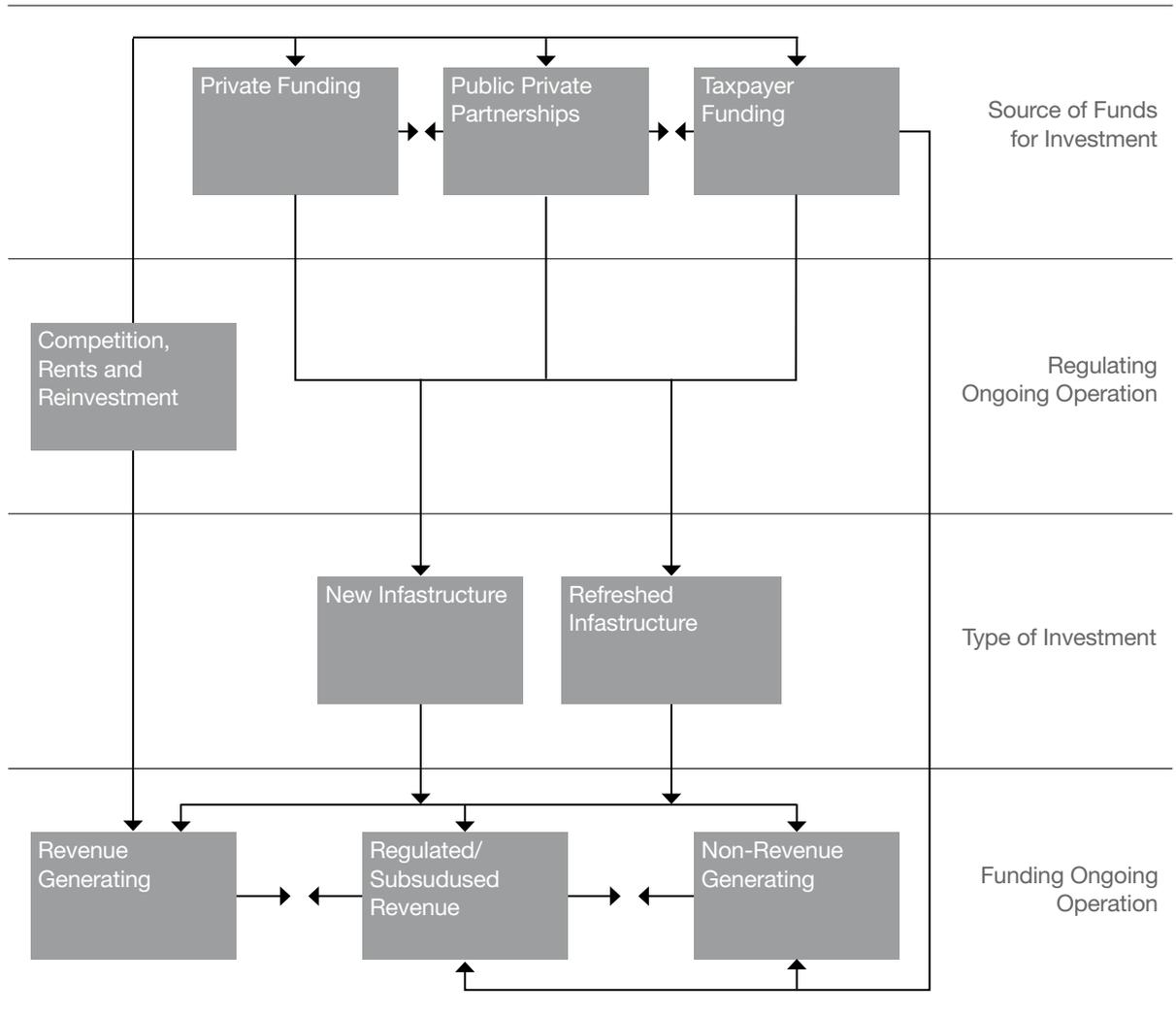
61 Organisation for Economic Co-operation and Development (2005), *Economic Survey of the United Kingdom 2005: Public Services and Infrastructure: Tracking the Improvements*.

3

The key principles of good infrastructure policy

Britain has been a first mover on many key innovations in infrastructure development, both in government and the private sector, for example privatisation and leading financing techniques, such as PFI. Yet too often infrastructure policy is considered on a “build and provide” basis. As the diagram below illustrates, there are several ways government can secure more effective infrastructure without necessarily building it itself. This is a stylised figure that aims to illustrate key roles that the government could play. This figure highlights that as well as providing direct funds there are a range of other policy levers that government may employ. Increasing the level of infrastructure investment does not simply require government to spend more, but can come from taking a smarter and more joined-up approach to infrastructure policy.

Figure 5: Financing infrastructure



These possible functions of government include:

- > **Generating private capital funding:** As part of a public-private partnership.
- > **Harnessing operational funding:** The revenue stream can be harnessed by providers to cover the cost of capital. Where revenue streams are lower than the cost of capital (sometimes intentionally – for example user charges), government may increase revenue through a subsidy and/or regulating prices facing users.
- > **Regulating competition, rents and reinvestment:** A firm may invest in an infrastructure asset to provide a barrier to entry to a market and in turn generate economic rents. Competition policy may be used to reduce these barriers, for instance, by requiring the owner of the asset to provide competing firms with access to it (usually at a regulated price).

This framework highlights trade-offs involved. A private firm may, for example, invest in infrastructure in order to generate economic rents, but while these rents create an incentive for investment they may also reduce competition and force consumers' prices higher.⁶²

The UK's infrastructure successes and failures

The UK's best infrastructure projects have succeeded because they have followed five key principles of good infrastructure policy. These are: strong economic rationale, an element of private money, user charges not taxes, sweating existing assets and government as enabler not provider. These principles are absent from the UK's infrastructure failures. Going forward, these principles should form the basis of all infrastructure projects.

Table 5: Success and failure in UK infrastructure

Key principle	Top 5 infrastructure successes	Top 5 infrastructure failures
Economic rationale – better investment choices	A1 Peterborough to Blyth: £45 million investment with expected benefit of 20 times the investment	Proposed high speed rail: £34 billion cost with expected benefit of 1.3 times the investment
Getting more private money into infrastructure	M6 toll road: user charging, profitable and low congestion	Freight railway from Liverpool to Channel: government blocked, even though it would be funded by private sector and would reduce congestion
Charges not taxes	London congestion charging: user charges have reduced congestion by up to 15 per cent and are raising net revenue of £137 million per annum	Broadband roll out: extra £200 million tax, no user charging
More for less – sweat existing assets	Smart electricity metering: customers incentivised to use electricity better	Fixed water pricing: lack of meters is stopping best use of resources
Government as enabler not provider	Sizewell C nuclear station: no subsidy required for low carbon energy, high local support	Offshore wind farms: uneconomic power source subsidised by energy consumers

⁶² Productivity Commission (undated), *Review of the National Access Regime: Inquiry Report*, cited in New South Wales Treasury (2004), *Weighted Average Cost of Capital: Response to IPART Draft Determination – NSW Electricity Distribution Pricing 2004/05 to 2008/09*, p. 3.

Principle 1: Economic rationale – better investment choices

The fiscal crisis will mean severe restriction on funds. The focus must be on value for money. Ministers' penchant for *grands projets* must be abandoned in favour of sound economic analysis. This would mean, for example, lengthening trains rather than high speed rail, moving from road building to using hard shoulders and considering airport expansion on the basis of existing infrastructure.

Economic analysis of infrastructure projects should not just employ multiplier analysis, but should also consider the opportunity costs (the cost of capital). It should additionally incorporate an evaluation of the relative effectiveness of different vehicles for investment – direct investment in new infrastructure, direct investment in refreshing infrastructure, investment in public-private partnerships and the provision of subsidies to owners of infrastructure assets.

Despite departmental commitments to the evaluation of policies and interventions, there is little evidence of the assessment of the impacts of infrastructure projects on the national and regional economy once up and running.⁶³ The Highways Agency's Post Opening Project Evaluation (POPE) is a step in the right direction, but an independent study found that it is too limited and rigid in scope, under-resourced and not sufficiently linked to future policy.⁶⁴ While more rigorous analysis may be expensive, it should become an integral part of the process to enable better future evaluations.

Principle 2: Getting more private money into infrastructure

There is no such thing as an “infrastructure free lunch”. The costs of infrastructure should more often be borne by those who will benefit from the investment, not through taxpayer subsidy. This could be house builders who can develop around a new rail line, or businesses that will benefit from improved infrastructure in their areas. Users can also directly gain from infrastructure developments, both in better access to earnings opportunities and through higher property prices.

There are some projects where a significant element of externality or social cost may justify an element of direct public funding; but the social cost issue has been over-extended and exaggerated to provide a justification for tax funding.

The principle that projects should be financed from revenue through services has several advantages. Firstly, it brings into account revenues over a longer term allowing fuller use of local borrowing powers for local projects. Secondly, it creates maximum incentive to finish projects quickly so as to earn a return. Thirdly, it allows transfer of risk to the managers of the project. Lastly, it encourages a focus on the customers and their willingness to pay.

⁶³ House of Commons (2005), *Select Committee on Transport Seventh Report: Road Pricing: The Next Steps*.

⁶⁴ Department for Transport (2005), *How should the ex post evaluation of trunk road schemes be enhanced?* The study by Oxera Consulting concluded that the benefits of additional evaluation would exceed additional costs.

Principle 3: Charges not taxes

Too much money is being spent on unnecessary investment financed through fixed charging and taxpayer funding. Levies and taxes that are not related to the economic cost or benefit of infrastructure skew the market and stymie private investment. They incentivise poor usage of resources and do not provide helpful demand signals to providers. A more demand related approach should be taken.

Politicians assume that voters will not like the concept of greater user contributions to the costs of infrastructure, but the public is in the dark when it comes to the costs they already pay. British drivers, for example, currently pay over £45 billion every year in various motoring taxes, with less than a fifth of this being invested back into the road network.⁶⁵ Research by the RAC Foundation has found that 89 per cent of motorists would like greater clarity over where their motoring taxes are spent.⁶⁶

In the UK, studies suggest that a national road pricing scheme, charging variable rates as high as 80 pence per-kilometre at rush hour, could reduce congestion by 50 per cent. This would reduce the costs of additional investment by 80 per cent and bring benefits totalling £28 billion a year by 2025.⁶⁷

Lessons can also be learnt from overseas. In America, Lexus lanes have been seen as a good way of enabling private investors to recoup money while also managing traffic flows.⁶⁸ A national “price-per-kilometre” charge for all vehicles is currently being introduced in the Netherlands, and Germany has introduced tolls for lorries using its motorways.⁶⁹ The Irish Government’s recent review of public spending noted that a “comprehensive and integrated nationwide road pricing system” would be necessary in order to make the advances on transport infrastructure needed in the coming years.⁷⁰ China is raising over US\$300 billion through tolls on all major highways and other user charges to fund a massive programme of investment in its road network.⁷¹

Principle 4: More for less – sweat existing assets

The greatest economic return can frequently be derived from making existing assets work better. This means thinking innovatively about new solutions. Private sector involvement and appropriate incentives facing managers are often key to encouraging this innovative thinking. Technological advancements can be used to create more “intelligent infrastructure”, which can incorporate greater responsiveness and flexibility to maximise the potential impact on economic productivity.⁷²

Principle 5: From provider to enabler: smarter government

Current policy is too focused on a “build and provide” basis. Instead it should create a positive environment for investment in infrastructure through streamlined planning, a clear policy framework and reducing regulatory barriers. This means learning from the successful industries – these are generally those in the private sector and with minimal regulation.

65 Road Users’ Alliance (2008), *Road File 2008/09*.

66 Royal Automobile Club Foundation (2009), *RAC Report on Motoring 2009*. The survey also found that 79 per cent of motorists would like to see all the money raised through motoring taxes invested back into the transport system.

67 HM Government (2006), *The Eddington Transport Study*.

68 *The Times* (2006), “Lexus lanes will make drivers pay more to go faster”, 7 October; www.wordspy.com. A Lexus lane is a high occupancy toll lane (a HOT) – a highway lane that is normally restricted during rush hour to vehicles carrying multiple passengers, but can also be used for a fee by single-occupant vehicles. The term Lexus lanes came from the belief that they would only be used by the rich.

69 House of Commons (2009), *Select Committee on Transport Sixth Report: Taxes and charges on road users*.

70 Government of Ireland (2009), *Report of the Special Group on Public Service Numbers and Expenditure Programmes, Volume II: Detailed Papers*, Department of Finance.

71 Ojiro, M. (2003), *Private sector participation in the road sector in China*, United Nations ESCAP.

72 Organisation for Economic Co-operation and Development (2006), *Infrastructure to 2030: Telecom, land transport, water and electricity*.

Industries on the right track

Telecoms – 100% private sector

With the least government intervention and a highly competitive market, the UK's telecommunications industry has emerged as a world leader. Open markets have driven innovation and investment. With the introduction of new technologies, such as GSM and 3G mobile services and cable and fibre optic networks, new entrants have been able to enter the market.⁷³ Breaking the BT monopoly over the "local loop" and introducing a wholesale/retail split in the telecoms industry dramatically improved competition.⁷⁴ Consequently, prices were deregulated and there has been substantial new investment and innovation, driving up service quality while real prices have declined since 2002.⁷⁵ However, the UK is now falling behind the US, Japan and France as their new networks are based on fibre. Less than 1 per cent of UK internet access is done using fibre optic technology, compared to an OECD average of around 8 per cent and nearly 50 per cent in Japan.⁷⁶ New ideas are needed to drive innovation in the UK's telecoms sector.

Aviation – 100% private sector

The UK's aviation industry operates essentially without subsidy. In the last ten years, it has grown by 40 per cent (available seat kilometres) and in the ten years before that from 1988 to 1998 it grew four times as fast as the economy as a whole. In 2004 it is estimated that the aviation industry contributed £11.4 billion to UK GDP, supported the employment of 706,000 people and generated much higher output per worker than the UK average, reflecting high levels of capital intensity and operational efficiency.⁷⁷ Aviation deregulation in the early 1990s allowed the low-cost model to emerge. Starting with Ryanair in 1991 and then Easyjet in 1995, low cost airlines revolutionised the way people travel, by making flights available to more people, competing with other modes of transport and forcing traditional airlines to change their strategies to compete.⁷⁸

Major ports – 100% private sector

The UK's major ports operate through successful private ownership.⁷⁹ Over 95 per cent of the UK's international trade is handled through its 120 seaports – important transport modal hubs and centres of local economic activity, with much industry (such as oil refineries and power stations) located in or near ports.⁸⁰ In 2007 the UK's ports are estimated to have contributed £18 billion to UK GDP.⁸¹ The Government has stated that it will continue to take a laissez faire approach to ports.⁸² However, the House of Commons Transport Committee's recent report found that "cumbersome planning procedures" were a major barrier to much needed port development and a threat to the competitiveness and viability of the industry. It concluded that the planning system was too slow and too expensive.⁸³

73 Caio, F. (2008), *The next phase of Broadband UK: action now for long term competitiveness*.

74 Pollitt, M. (2009), *Does electricity (and heat) Network Regulation have anything to learn from Fixed Line Telecoms Regulation?*, Judge Business School, University of Cambridge.

75 Caio, F. (2008), *The next phase of Broadband UK: action now for long term competitiveness*; Tech Watch (2009), "Cisco study ranks UK broadband a poor 25th", 1 October. In 2008 broadband access is among the highest in Europe reaching 58 per cent of households, digital television is on the way to universal availability and 86 per cent of all adults own a mobile phone. However, the recent Cisco study suggests that on speed, the UK's broadband is poor by international standards.

76 Hunt, J. (2009), Speech to Conservative Party conference, 7 October.

77 Oxford Economic Forecasting (2006), *The economic contribution of the aviation industry in the UK economy*.

78 BA for example has streamlined its internet booking facility, which now highlights fares which compare favourably with low-cost ticket prices.

79 House of Commons (2007), *Select Committee on Transport: The Ports Industry in England and Wales*. Around 65 per cent of all ports are in private sector ownership. About a quarter of the smaller ports are independent trust ports – independent statutory corporations but without shareholders that operate on a quasi-commercial basis with any profits retained in the undertaking. Around 10 per cent of the UK's ports belong to local authorities, notably Portsmouth and the oil terminals in Orkney and Shetland. A number have moved into foreign hands and finance and investment companies are showing an interest in bidding for UK ports.

80 Oxford Economics (2009), *The economic contribution of ports to the UK economy*. This measure is by volume; by value about 75 per cent of the UK's international trade is handled through ports.

81 Ibid. Of this £18 billion, £7.7 billion is generated in the ports themselves, £6.7 billion in their supply chain and £3.4 billion in supplying consumer goods and services to their staff.

82 Department for Transport (2007), *Ports policy review interim report*.

83 House of Commons (2007), *Select Committee on Transport: The Ports Industry in England and Wales*.

Industries on the branch line

Energy – mostly private sector, increasing government involvement

Throughout the 1990s the UK's privatised energy industry succeeded in meeting the country's needs, as competition was gradually introduced and price controls deregulated.⁸⁴ However there has been a reverse shift in recent years. Volatile international prices and the depletion of the UK's gas and coal stocks have provoked concerns over fuel security and prices. The new Department for Energy and Climate Change was set up to provide the strategic leadership needed, but has put cutting carbon emissions above economic rationale.⁸⁵ Government plans have placed an unsustainable emphasis on renewable energy and risk price rises and potential blackouts as soon as 2017.⁸⁶ Attempts to tailor the UK's energy supply through initiatives such as banded renewables obligations and policy targets have created considerable regulatory complexity and uncertainty. Only recently has the Government backed nuclear power, providing investors with the certainty needed to invest over a long time scale.⁸⁷

Water – private sector with poor levels of competition

Privatisation of the water industry failed to induce a competitive market and consequently a prescriptive and complex regulatory architecture was introduced. After years of chronic underinvestment, privatisation and Ofwat's periodic price reviews encouraged an increase in capital expenditure, with £80 billion invested over twenty years.⁸⁸ However, this has been spent on expensive projects increasing supply rather than better demand management. The regulatory framework encourages short term capital expenditure over incremental operating improvements and long term investment.⁸⁹ In Scotland, under the steer of the Water Industry Commissioner, a new regulatory framework has been created, separating the retail and wholesale arms of Scottish Water and opening up the market to new entrants. Scottish Water's retail arm saved £10 million from the changes to pass on to consumers and in just over a year nearly one third of businesses have changed, reviewed or renegotiated their supplier.⁹⁰

Industries on the sidings

Renewable Energy – private sector – heavily dependent on cross-subsidy

The Department for Energy and Climate Change has become an activist force in the energy market, attempting to shape, support and subsidise specific "solutions" to the UK's energy needs. As the House of Lords Economic Affairs Select Committee recognised, "there would be little investment in renewable energy without substantial Government support."⁹¹ Overly ambitious targets have meant greater state intervention, with a succession of plans, statements and funding initiatives worth £30 billion over the next ten years.⁹² The additional cost to consumers to reach this target has been estimated at £8.6 billion.⁹³

84 Confederation of British Industry (2005), *Powering the future: enabling the UK energy market to deliver*.

85 Miliband, E. (2008), "The rise and fall and rise again of a Department of Energy", Speech to Imperial College, 9 December.

86 Department for Energy and Climate Change (2008), *Renewable Energy Strategy*; *The Daily Telegraph* (2009) "Britain facing blackouts for the first time since 1970s", 31 August.

87 Ernst and Young (2009), *Securing the UK's Energy Future – seizing the investment opportunity*, July.

88 Hawkins, N. (2009), "Aqua Britannia!", *Economic Research Council*, August.

89 Council for Science and Technology (2009), *Improving innovation in the water industry: 21st century challenges and opportunities*, p.5

90 Water Industry Commission for Scotland (2009), *Competition in Water*.

91 House of Lords (2008), *Select Committee on Economic Affairs: The Economics of Renewable Energy*.

92 Department for Energy and Climate Change (2008), *Renewable Energy Strategy*. Current Government plans are for the UK to produce 30 per cent of its energy from renewable sources by 2020.

93 At today's prices.

Roads – nationalised

The road network is nationally controlled and inefficient in its delivery. It fails to take advantage of innovations used in other countries such as road sponsorship, increased takings from advertising and service stations on route and most importantly road tolling. Some positive steps forward (M25 contracting; M6 toll road) have failed to move a nationalised sector. Decision making has become short term and politicised, focusing on *grands projets* and extending connectivity rather than improving capacity in the most congested areas.

Rail – under government control with subsidies

Rail is especially dominated by political considerations and as such is a high cost, low innovation sector.⁹⁴ The recent changes mean the Secretary of State has sole responsibility for specifying what he wants the railway to deliver in England and Wales (through the High Level Output Specification) and for determining the level of funding from central government (set out in the Statement of Funds Available).⁹⁵ The regulator assesses whether the two are consistent and determines the outputs required from Network Rail to deliver the HLOS, and the access charges it will receive to fund these costs. About 80-85 per cent of the train operating companies' costs are fixed, through fixed access charges, regulated fares and minimum service specifications. As such they are unable to respond to changes in demand (for example, in an economic downturn) and the result is considerable inefficiency and lack of innovation. There is no reason this is sacrosanct, with other countries such as Japan, running successful private rail networks.⁹⁶

94 Current Government policy is that passenger rail services are publicly specified, procured and, where necessary, funded, but are privately delivered by train operators.

95 Department for Transport (2006), *Briefing note on the development of the High Level Output Specification*.

96 Tamamura, H. (2003), "The Actual State and Effect of Privatization in Japan", College of Business Administration, Ritsumeikan University.

4

An infrastructure revolution

The lack of rational justification for public spending on long term projects and crude cost cutting on vital infrastructure cannot go on in a new era of austerity. A new approach is required that involves a much greater level of transparency about investment decisions and a better industrial framework to enable private investment. Government departments and the private sector should be incentivised to value the long term impact of projects.

Tight money = better decisions

A decade of fiscal tightness is the best possible backdrop to the new infrastructure policies recommended below. The impossibility of big public spending promises will shift attention to the potential for consumer charging to unlock financing for many projects. Governments will no longer be able to fund infrastructure in the vain hope of stimulating general economic growth or securing some short-term political advantage. Instead both public and private sectors will focus on augmenting existing infrastructure to get more for less. For taxpayers, that will mean obtaining the best bang for their buck from the annual £20 billion that the Government spends on infrastructure.⁹⁷

The UK needs a second revolution in infrastructure. The first was driven by Victorian engineers and financiers, who built a network of railways and an urban infrastructure that still underpins much economic activity today. The second will be driven by consumers whose resources can be channelled into infrastructure via new technology and charges.

Table 6: The road to recovery

	Old	New
Financing	Presumption public	Presumption private
Rail	High speed	Commuter
Renewable energy	Subsidised	Reduce barriers
Roads	Petrol tax	User charges
Planning	Slow, undemocratic	Fast, democratic
Objectives	Muddled and many	Economic growth
Decisions	Local, regional <i>and</i> national	Local <i>or</i> national

A mindset change

This new vision requires radical changes in the policies of both Government and Opposition. The Government currently sees infrastructure as part of its short-term economic stimulus package. This short-term approach greatly increases the risk of poor quality decisions and white elephant projects. While the Opposition sees infrastructure as part of a long term vision of economic renewal, that vision involves too great a role for national government in the choice of acceptable projects, whether that results in a positive decision (high speed rail) or a negative one (a third runway at Heathrow).⁹⁸ Both parties support an unacceptable level of government involvement in rail (with the Government supporting a greater level of involvement than the Opposition). Both parties have gone cold on road pricing.⁹⁹

⁹⁷ This is an approximation based on the entire transport budget and parts of the budgets of other departments with responsibility for infrastructure.

⁹⁸ *The Guardian* (2009), "We need a new model economy", George Osborne, 15 September. "No single policy can achieve recovery on its own, but we have set out a programme of reform no less radical than the one that restored the UK's economic competitiveness in the 1980s and 1990s: lower corporation tax rates and a simpler tax system; radical school reform, welfare reform and better skills; more private investment in infrastructure and other long-term productive assets such as high-speed rail and smart energy networks; the transition to a low-carbon economy; regulatory reform to create a financial system that serves the long-term interests of the economy, not its own short-term interests."

⁹⁹ www.conservatives.com (2009), accessed 24 September. "We will scrap Labour's attempts to bully local councils into introducing local road-pricing in return for vital transport funding. We will liberate this money, turning it into a Transport Carbon Reduction Fund, allowing local councils and voluntary groups to apply for funding for the green travel initiatives that will work best for their communities, including projects to encourage cycling and improve real-time information and priority measures for bus services." On 24 June 2009, it was widely reported that Lord Adonis said: "We will definitely not proceed with a national road-user charging scheme in the next Parliament."

The key objectives of a reformed infrastructure policy should be to:

- > Harness the available private capital to secure investment.
- > Streamline the infrastructure departments' budgets and functions.
- > Take infrastructure decisions at the right level.

Unleash private innovation

The primary way to attract more of the right infrastructure to the UK is through strong private investment. Yet there are far too many hurdles which prevent available capital being used in the right way. Funding routes are denied and taxes are levied. Ways of unleashing private innovation include:

- > Expand Public Private Partnerships: PPPs bring in greater financial and operational discipline. These efforts should be extended. Although the UK is by international standards already high up the maturity curve for the use of PPPs, there is a continued need to improve government capacity to execute and manage innovative partnerships.¹⁰⁰ There is also a challenge in ensuring that PPP projects can be financed in current market conditions, with the global financial crisis being associated with greater difficulty in securing long-term debt finance.¹⁰¹
- > Open up existing networks: In our later recommendations we propose opening up the rail and road networks. Broadband is another good opportunity. The UK's broadband infrastructure should be opened up as is happening in France, where the telecom regulator is forcing France Telecom (FT) to open up its network to rival operators.¹⁰² BT's ducts should be opened up and other operators should be allowed the opportunity to lay fibre in these ducts.
- > Create one-stop shops for permits: Where possible permits for new infrastructure should be issued by regulators at a one-stop shop (for example, operational and health and safety permits).
- > Allow regulated charging and metering on all infrastructure: Government should allow regulated charging on all infrastructure. Water metering, for example, is essential if consumers are to manage demand of that scarce resource. Charging for new roads should encourage expansion of the road network. Copayment should also be sought from commercial beneficiaries. For example, house builders who would be able to build along new or improved railway lines could contribute to the capital investment, as proposed by the Association of Train Operating Companies (ATOC).¹⁰³
- > Abolish levies, taxes and obligations: Renewable Obligation Certificates, the Climate Change Levy and the proposed new carbon capture and storage levy – a total cost of around £2.6 billion to industry and the consumer¹⁰⁴ – should be phased out (or the funds generated used to plug the fiscal gap). DCMS and Ofcom should allow the telecommunications industry to fund their own infrastructure through direct customer charges rather than imposing a broadband tax (a total of £150-175 million per year to consumers and industry¹⁰⁵). New proposals for the Community Infrastructure levy should be abandoned in favour of levies for individual projects (like Crossrail).

A new role for government

Infrastructure investment led by private sector innovation will demand a new approach from government – one that focuses on a framework for private sector action. Clarifying the role of the departments will deliver better policy and help reduce government expenditure and the national deficit.

Reform has identified £2.2 billion of unnecessary expenditure in government infrastructure departments in 2010-11:

100 Deloitte (2008), *Closing the Infrastructure Gap: The Role of Public Private Partnerships*.

101 KPMG (2009), "Financing Australian PPP Projects in the Global Financial Crisis", Infrastructure Group, KPMG Australia.

102 Caio, F. (2008), *The next phase of Broadband UK: action now for long term competitiveness*, Department of Business, Enterprise and Regulatory Reform; Hunt, J. (2009), Speech to Conservative Party conference, 7 October. Jeremy Hunt, Shadow Culture Secretary, has proposed this idea.

103 ATOC (2009), *Connecting Communities: Expanding Access to the Rail Network*.

104 HM Treasury (2009), *Budget 2009: Building Britain's Future*; Ofgem (2009), *Renewables Obligation: Annual Report 2007-08*; *The Guardian* (2009), "Clean coal push marks reversal of UK energy policy", 23 April. The cost of the government funding the development of carbon capture and storage technology is estimated at £1 billion.

105 See Appendix 1 for more on the broadband tax.

DECC should abandon its role as global ambassador on climate change, fuel poverty and other marginal activities, and reduce its administrative budget accordingly. Saving £1.2 billion.

DfT should reduce its subsidies to bus and rail in the name of “equality and fairness”. Saving: £1 billion.

These recommendations are consistent with the other recommendations in this chapter. For example, a reduction in bus and rail subsidy is consistent with a shift to charging.

Table 7: Budget reductions in key infrastructure departments

Department	Programme	Saving in 2010-11	Comment
Department for Energy and Climate Change	“Supporting affordable, secure and sustainable energy”	£0.1 billion	
	“Bringing about a low-carbon UK”	£0.6 billion	
	“Promoting low carbon technologies in developing countries”	£0.3 billion	
	Administration	£0.3 billion	Represents a third of current administrative budget
Department for Transport	“To promote greater equality of opportunity for all and achieve a fairer society”	£1 billion	Reduction in bus and train subsidies

The three Rs

There are three key areas where the government needs to withdraw from operational decisions.

- > **Rail:** There should be a moratorium on civil servants making commercial decisions, such as ordering new train carriages and determining timetables. Successful parts of the network should be contracted out from Network Rail (this would currently have to be compatible with EU competition law) and vertical integration allowed. This would give the advantage of single point responsibility for train and track. Stations should be separated from tracks and open to being franchised out to different bidders. Fares should be deregulated to allow operating companies greater control over their costs (meaning the user rather than the taxpayer would bear the cost of economic downturns, for example) and more opportunities to innovate. Franchise periods should be lengthened to secure an acceptable return – 40 or 50 years rather than 7 or 10.¹⁰⁶
- > **Road:** Government should float ownership of the road network, either on long term concession or on ownership basis. The best economic solution would be to allow tolling on these roads, although companies could also use a shadow toll or an availability payment by the government. They should also be able to raise other commercial income, for example, by road-side advertising and more attractive service stations or other on route facilities.
- > **Renewables:** Barriers to renewable energy development should be removed (for example the number of permits required). The government should abandon sponsoring technology and investment in favour of technology neutrality. Research and development (R&D) should be the domain of education rather than the energy department and valued against other areas of potential research funding – there is no *prima facie* reason why Britain should specialise in so called “green technology” – saving £100 million.¹⁰⁷

¹⁰⁶ House of Commons (2009), *Transport Committee Eighth Report: Rail fares and franchises*. Most current franchises are between 7 and 10 years. Since 2003, no franchise has been awarded for more than ten years.

¹⁰⁷ Department for Business, Innovation and Skills (2008), *R&D Funding for Renewable Energy*.

Better, more open investment decisions

Reform's research on civil service reform has concluded that the performance of Whitehall will be improved if its internal decision-making is made transparent and accountable.¹⁰⁸ Infrastructure decision-making is no different. Whether in regard to actual investment or to regulatory decisions, infrastructure departments should ensure the following:

- > **Ex-post evaluation:** Rigorous evaluations should be conducted after projects are running to enable future economic assessment to be more accurate.
- > **Open project economics:** Government should publish (online) project economics before project approval. This should include all of the assumptions made so that external contributors can help review the analysis. At this stage private investors could be encouraged to become involved if they may benefit from the project. Ministers should justify decisions with reference to the economic case and a rationale for state funding. This will naturally lead to fewer pet projects and white elephants emerging.

Planning to succeed

The new Infrastructure Planning Commission (IPC) has some positive aspects, namely a guillotine on time taken for consideration of planning, with a duty to consider the pertinent evidence rather than all evidence. Also, there is a required acknowledgment that there are national strategic projects that should be pursued. However there is a failure to apply market mechanisms or democratic accountability to this process. There are also doubts about value for money for its £15 million budget.¹⁰⁹

Addressing the democratic deficit

The IPC should be absorbed into the Department of Communities and Local Government and ultimately report to the Secretary of State, who should decide on the merits of investment proposals within a six month timeframe. It is better if ultimate political accountability is openly acknowledged and developers understand that a project will only go ahead on this basis.

Applying market mechanisms

Every effort should be made to ensure that market based arrangements are used to compensate losers. This will speed up projects and reduce objections. A market based mechanism for compensation would require government to focus on lowering the costs of negotiating levels of compensation and ensuring that property rights are clear and enforceable. The Coase theorem predicts that in such an environment developers and the people affected could reach an agreement on whether the development should go ahead and, if so, on the level of compensation required.¹¹⁰ Along these lines, the expansion of private sector mechanisms such as Community Partnership schemes, which secure local support in exchange for equity in the scheme, are a good way forward. There needs to be greater flexibility in setting compulsory purchase prices to reflect the appropriate level of compensation required. Other incentives should also be considered. For example, individuals wanting to build an energy efficient power plant could receive the same tax break as companies are entitled to through the capital allowances tax regime.¹¹¹

Openness and transparency

A pipeline of projects should appear on the internet with ability for all to discuss merits and contribute views. The reasons for the decision should be given clearly by the Secretary of State. This should be a model for local authorities to operate.

Policy statements

Government policy should encourage the building of new infrastructure by the private sector. It should not "pick winners" but instead seek to assess the broad costs and benefits of the project.

Small is beautiful

Unless decisions are of strategic national importance, for example a major airport such as Heathrow, money should be raised and decisions should be made locally.

108 Rosen G. et al (2009), *Fit for purpose, Reform*.

109 Hansard (2009), Col.139, 21 April. The IPC is set to have a £15 million budget in its first year and then a £9 million budget every year after that.

110 *The New York Times* (2007), "A Freakonomics Contest: The Coase Theorem Online", 13 November.

111 HMRC (2009), "Enhanced capital allowances for energy-saving and water efficient (environmentally beneficial) technologies", 22 April.

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Appendix: Infrastructure case studies

Principle 1: Economic rationale – better investment choices

The good

A1 Peterborough to Blyth Grade Separated Junctions scheme

Specification: Replacement of six single level roundabouts with grade separated junctions to reduce congestion, queuing and delays, and to improve a poor safety record.¹¹²

Timing: It entered the Government's Programme of Major schemes in 2002 and commenced in 2006 with an initial completion date of October 2008. The project will now be completed by October 2009.¹¹³

Demand assessment: There are between 36,000 to 50,000 vehicles – with between 22 per cent and 30 per cent being heavy goods vehicles – using each of these junctions every day, causing congestion, delays and above average accident rates. Prior to this project there was no provision for pedestrians and cyclists crossing the A1 at these points.¹¹⁴

Project cost: Total cost of £45 million.¹¹⁵

Economics: The scheme was given a benefit-cost ratio of 20.5 by the Department for Transport, and a value for money rating of “high”.¹¹⁶

Project funding: The Highways Agency contracted out the project to Interserve under a 100 per cent quality assessment tender, including early contractor involvement in the design and planning processes.¹¹⁷

Outcome: All upgrades except Colsterworth (A151) and the junction with the B6403 are completed, and have come in under budget (by £454,000) and ahead of time (by six weeks).¹¹⁸ The impacts are yet to be assessed but given the reduced costs it is anticipated that the estimated cost benefit ratio will be achieved.

Docklands Light Railway

Specification: One of the first light rail systems in Britain, the DLR was originally built to serve the London Docklands with 11 trains and 15 stations running between Tower Gateway, Stratford and Island Gardens. It has since extended to Bank (1991), Beckton (1994), Lewisham (1999), London City Airport (2005) and Woolwich Arsenal (2009).¹¹⁹

Timing: The original DLR was given the green light in 1984 and opened in 1988.¹²⁰ Extension has continued since 1991 to the present day.

Demand assessment: Plans for the Canary Wharf estate and surrounding East London area to rise by 210,000 employees and 52,000 homes as part of the Docklands regeneration.¹²¹ Demand has consistently outstripped transport supply since the original line was opened.¹²²

Project cost: Original cost of £77 million and over £1 billion on extensions and upgrades since.¹²³

Economics: The DLR was assessed in relation to the effects the railway would have on creating the development it was designed to serve, not just on transport benefits. Site-by-site analysis of key areas adjoining the railway was carried out by the LDDC to establish the likely development with and without the railway. From this work it was found that the railway could stimulate different kinds of development, including high employment and high value industries rather than warehousing and distribution.¹²⁴

112 www.highways.gov.uk.

113 Hansard (2009), Col.2100W, 14 September.

114 www.highways.gov.uk.

115 www.gov-news.org, A1/A614 Blyth: EM/75/03, 31 March 2003.

116 Department for Transport (2006), *Data on investment returns from transport schemes considered by the Eddington Study*.

117 www.sectors.interserve.com.

118 www.sectors.interserve.com.

119 Transport for London (2009), *DLR fact sheet, spring 2009*.

120 www.tfl.gov.uk.

121 House of Commons (2005), *Select Committee on Transport Tenth Report: The Future of Light Rail and Modern Trams in the United Kingdom, Written Evidence: Memorandum by Docklands Light Railway*.

122 *Ibid*, *Written Evidence: Memorandum by Mott MacDonald*.

123 www.tfl.gov.uk.

124 www.lddc-history.org.uk.

Project funding: The original DLR was publicly funded by the London Docklands Development Corporation with funds generated by the sale of land at increased value as a result of the development of the light railway.¹²⁵ Subsequent extensions have been successfully funded by PFI.

Outcome: Patronage of the DLR rose from 8.3 million in 1990 to 66 million in 2009.¹²⁶ The scheme has had a substantial impact on the London Docklands and “significant regeneration benefits”.¹²⁷

The bad

Proposed high speed rail

Specification: The Government is investigating proposals for a new high speed rail link connecting London with the Midlands, North-West and Scotland.¹²⁸

Timing: Proposals from Network Rail suggest that it would take another five years to decide the route and complete the planning stage. The first section of the line (London to Birmingham) could then be completed by late 2020 with the line fully operational by 2030.¹²⁹

Demand assessment: There is little demand for high speed rail, with the UK’s cities already well connected and high speed rail bringing only marginal time savings.¹³⁰ The main motivation seems to be that other developed countries have one so the UK must follow suit.¹³¹

Project cost: Network Rail’s proposal estimates a cost of £34 billion for a high speed line from London to Glasgow.¹³² The Atkins study commissioned by the Strategic Rail Authority estimates costs of between £10 billion for the shorter London to the West Midlands and Stafford route and £33 billion for the full London to Scotland line.¹³³

Economics: Atkins estimates a benefit-cost ratio of between 1.3 for the full line option and 1.4 for the shorter Stafford route over a 50 year period.¹³⁴ Network Rail’s study only finds a positive benefit-cost ratio when high speed lines are extended north of Manchester, then producing a benefit-cost ratio of 1.8 over 60 years.¹³⁵

Evidence submitted to the Eddington report found that potential wider economic benefits were minimal; business was concentrated in London and would remain so despite a high speed link.¹³⁶ Eddington also found that the most optimistic assumptions of carbon saving adds very little to the business case, with higher prices likely to discourage car users from using the line and minimal time savings providing little incentive for airline passengers to switch.¹³⁷

Project funding: A public-private partnership is being considered. However, the Atkins study found that “whichever project structure is adopted, the call on public funds will be considerable, both in the short term, for project development, and in the medium to long term, to finance the capital costs of the project.”¹³⁸

Outcome: The Government has set up a new company, High Speed Two, to investigate the various high speed proposals, at a cost of £5 million.¹³⁹ The Secretary of State is expected to make a decision before the end of the year on the desirability of continuing to fund these investigations.

Offshore wind

Specification: There are currently 8 offshore wind farms in the UK, producing 598 megawatts of energy, A further 6 offshore farms are under construction and another 9 approved.¹⁴⁰

125 House of Commons (2005), *Select Committee on Transport Tenth Report: The Future of Light Rail and Modern Trams in the United Kingdom, Written Evidence: Memorandum by Mott MacDonald (LR 87)*.

126 Department for Transport (2009), *Annual Report and Resource Accounts 2008-09*; Transport for London (2009), *DLR Performance Update: Quarter 2*.

127 House of Commons (2005), *Select Committee on Transport Tenth Report: Select Committee on Transport Tenth Report: The Future of Light Rail and Modern Trams in the United Kingdom*.

128 www.hs2.org.uk.

129 BBC News online (2009), “New high-speed rail plan unveiled”, 26 August.

130 Mann, M. (2006), *Step change transport improvements: An assessment of the potential for ‘step change’ transport improvements to generate wider economic benefits*, evidence submitted to *The Eddington Transport Study*.

131 New Civil Engineer (2009), “Adonis issues clarion call for new high speed rail lines”, 22 May.

132 BBC News online (2009), “New high-speed rail plan unveiled”, 26 August.

133 Department for Transport (2008), *Atkins High Speed Line Study: Milestone 15 Summary Report*.

134 Ibid.

135 Network Rail (2009), *New Lines Programme: Strategic Business Case*.

136 Mann, M. (2006), *Step change transport improvements: an assessment of the potential for “step change” transport improvements to generate wider economic benefits*.

137 HM Government (2006), *The Eddington Transport Study*.

138 Department for Transport (2008), *Atkins High Speed Line Study: Milestone 15 Summary Report*.

139 Department for Transport (2009), Letter from the Permanent Secretary to Bob Linnard, High Speed Two (HS2) Limited, 14 January.

140 www.bwea.com.

Timing: The UK's first offshore wind farm was commissioned in December 2000 off Blyth Harbour in Northumberland. Offshore wind turbines have an expected lifespan of approximately 20 years.¹⁴¹ It is hoped that the expansion of wind power will provide a significant proportion of the Government's target to have 30 per cent of energy from renewable sources by 2020.¹⁴²

Demand assessment: Currently wind farms provide 2 per cent of the UK's energy supply.¹⁴³ The Government has committed to cutting the UK's carbon emissions by 18 per cent between 2008 and 2020, while in the same time much of the UK's energy infrastructure will need to be replaced.¹⁴⁴ There are substantial local objections to onshore wind farms.

Project cost: The London Array wind farm, which will be the world's largest offshore wind farm, is expected to cost £2 billion.¹⁴⁵ However, costs are rising.¹⁴⁶ A 2007 study for the DTI estimated that the overall costs of offshore wind generation will rise from approximately 1.6 million £/MW to approximately 1.75 million £/MW in 2011 before falling by around 20 per cent of the total cost by 2020.¹⁴⁷

Economics: Offshore wind is still around 50 per cent more expensive than onshore wind.¹⁴⁸ Offshore wind farms are only viable due to subsidies via the Renewables Obligation, which is claimed to have help tripled the supply of renewable energy in six years, and the Government's capital grant scheme.¹⁴⁹ Most current economic analysis suggests that offshore wind represent poor value for money, costing around 8.1 pence per kWh.¹⁵⁰ The DTI report highlighted "the poor economics of offshore wind farms in the UK".¹⁵¹

Project funding: All wind farms are privately backed. However, the Government provides capital grants (totalling £92 million to date¹⁵²) and the cost of the Renewables Obligation Certificates is passed on to the consumer.

Outcome: Offshore wind farms are currently not economic and on any scale could be a serious danger to shipping, in effect setting up a fence round much of the British Isles.¹⁵³ The development of wind farms relies on government subsidies, the costs of which get passed on to the consumer.

Sheffield Supertram

Specification: The Sheffield Supertram was one of seven inner city light rail projects that were built in the UK between 1980 and 2004.¹⁵⁴

Timing: It was approved by Parliament in 1985 and was opened in 1994-95.

Demand assessment: Patronage base changed significantly between approval and completion of the project, with many council housing estates in the planned route demolished or redeveloped in the early 1990s.

Economics: Promoters expected that the Supertram would carry 12.6 million passengers in its first year and make a profit of £150,000. After five years it was expected there would be 22 million passengers.¹⁵⁵

Project cost: Construction costs reached £241 million.¹⁵⁶

Project funding: While the Department of Transport initially limited its contribution to construction costs to 75 per cent, it was soon forced to provide £220 million, or 91 per cent, of the funding for the project.¹⁵⁷

Outcome: Immediately after its launch the Supertram encountered financial difficulties making a £5.4 million loss in its first year. Expected passenger numbers were exaggerated by promoters and after eight years, passenger numbers were only 45 per cent of the original predictions. The conclusion of the National Audit Office was that supertrams in the UK were "too costly and underused", with "civic pride" blocking economically rational decisions of local authorities.¹⁵⁸

141 Ibid.

142 Department of Energy and Climate Change (2009), *The UK Low Carbon Transition Plan*.

143 Department of Energy and Climate Change (2009), *The UK Low Carbon Transition Plan*; Reform calculations

144 Ibid. Confederation of British Industry (2009), *Decision time: Driving the UK towards a sustainable energy future*.

145 *The Times* (2009), "Budget incentives rescue the London Array wind farm project after years of wrangling", 13 May.

146 www.bwea.com. Cost increases are mainly due to a rise in the cost of materials and a growth in demand with limited manufacturing capacity.

147 Department of Trade and Industry (2007), *Study of the costs of offshore wind generation*.

148 www.bwea.com.

149 Department of Energy and Climate Change (2009), *The UK Low Carbon Transition Plan*.

150 House of Lords Select Committee on Economic Affairs (2008), *The Economics of Renewable Energy*, p.28.

151 Department of Trade and Industry (2007), *Study of the costs of offshore wind generation*.

152 Department of Trade and Industry (2003), *Capital grant scheme for offshore wind: Guidance notes*.

153 Reform calculations; *The Sunday Telegraph* (2008), "Wind farms may pose risk to shipping", 25 October.

154 National Audit Office (2004), *Improving public transport in England through light rail*, Report by the Comptroller and Auditor General HC 518 Session 2003-2004.

155 Ibid.

156 Ibid.

157 Ibid.

158 Ibid; *The Guardian* (2004), "Tram systems 'too costly and underused'", 23 April.

Principle 2: Getting more private money into infrastructure

The good

M6 Toll Road

Specification: The project created the UK's first and only toll motorway, providing a new strategic route to the north east. A new 27-mile long dual three-lane motorway was built to bypass the most congested section of the M6, running from junction 3a on the M6, arcing around the north-east of the West Midlands conurbation and rejoining the M6 at junction 11a.¹⁵⁹

Timing: Its origins stretch back to 1980, when the government realised there was a need to ease congestion through the West Midlands conurbation. The government decided on a privately funded venture and in 1991 Midland Expressway Ltd was announced as the bid winner. It opened six weeks early in 2003.¹⁶⁰

Demand assessment: The M6 was built to carry just 72,000 vehicles a day, but numbers had reached up to 145,000.¹⁶¹

Economics: Prior to the M6 Toll, it was estimated that gridlock was costing the West Midlands £2 billion per annum.¹⁶² Toll rates are set at the discretion of the operator at six-monthly intervals and there is no cap on the rates charged.

Project cost: Total costs reached £900 million.¹⁶³

Project funding: Privately financed under a 53 year concession, with only an £18 million government contribution which was to upgrade part of the connecting M42.¹⁶⁴

Outcome: The M6 Toll was delivered on budget and ahead of schedule.¹⁶⁵ The Transport Select Committee's assessment found maximum time savings of around 30 minutes in the peak hours for a midweek day and up to 70 minutes on Fridays. Weekday traffic has been reduced on the bypassed section of the original M6 by around 10 per cent and on average 45,000 vehicles a day are using the M6 Toll.¹⁶⁶ The West Midlands Regional Development Agency believes that the new road has increased land values and commercial interest in the area.¹⁶⁷

Crossrail

Specification: The project will build a new railway to connect the City, Canary Wharf, the West End and Heathrow Airport to commuter areas east and west of the capital.¹⁶⁸

Timing: The Crossrail Bill received Royal Assent enabling work to start in May 2009. It is expected to be operational in 2017.

Demand assessment: Between 1988 and 2007, London grew by nearly 800,000 people, and 220,500 jobs were created. The current population stands at 7.6 million. It is projected to grow to 8.2 million by 2016, and 8.7 million by 2026. Over 636,000 new jobs are projected by 2016 and 900,000 by 2025. Population growth will be dispersed across the capital, although with a marked rise in new housing in north and east London.¹⁶⁹

Economics: The Department for Transport gave Crossrail a benefit-cost ratio of 2, with a further £15 billion of wider economic benefits due to agglomeration effects expected.¹⁷⁰

Project cost: Total budget of £15.9 billion.¹⁷¹

159 www.m6toll.co.uk.

160 *Ibid.*

161 *Ibid.*

162 *Ibid.*

163 House of Commons (2005), *Select Committee on Transport Seventh Report: Road Pricing: The Next Steps*.

164 *Ibid.*

165 www.m6toll.co.uk.

166 House of Commons (2005), *Select Committee on Transport Seventh Report: Road Pricing: The Next Steps*.

167 *Ibid.*

168 www.crossrail.co.uk.

169 *Ibid.*

170 Crossrail (2009), *Distribution of Crossrail Benefits*.

171 www.crossrail.co.uk.

Project funding: After lengthy delays, the project became viable once private investment – around a quarter of the total – was secured. Government and Transport for London funds are being supplemented with a levy on London businesses (forecast to raise £3.5 billion), planned user charges and contributions from beneficiaries, including the City of London Corporation, BAA, the Canary Wharf Group and Berkeley Homes (totalling around £730 million).¹⁷² TfL has subsequently secured a £1 billion loan from the European Investment Bank to finance 40 per cent of the £2.5 billion it needed to raise.¹⁷³

Outcome: The success of the project is yet to be seen and largely depends on the accuracy of the projected forecasts of population and employment growth in London. However, the project is an example of successful recruitment of private sector investment into an infrastructure project.

Proposed Sizewell C nuclear power plant

Specification: British Energy proposes to build a 1600MWe nuclear power unit adjacent to the existing Sizewell plants.

Timing: The Government White Paper on nuclear energy approved privately constructed nuclear plants in 2008.¹⁷⁴ Planning and assessments are underway and a submission for construction is expected in 2010-11. The decision could then be made by 2012 under the new IPC and if approved the plant could be operational by 2020-21.¹⁷⁵

Demand assessment: There is local support for a second plant at Sizewell given the £30 million annual contribution Sizewell B makes to the local economy.¹⁷⁶ The UK will have to meet an energy shortfall of 20 per cent as existing nuclear plants close over the next 20 years. Building nuclear plants maintains a degree of diversification in the UK energy sector that helps reduce the reliance on foreign fuel sources, improving price and supply security.¹⁷⁷ The plant would be a cost effective form of carbon abatement.¹⁷⁸

Economics: Nuclear has a cost effectiveness of £18 per tonne of carbon, compared with £125 for onshore wind and competes with retrofitted CCS plants which range between £7-60 per tonne.¹⁷⁹ It would save £1.4 billion/GW over 40 years in carbon charges with a carbon price of £25 per tonne and removes the need for back up to the national grid saving £100 million per year.¹⁸⁰

Project cost: Around £3 billion for each EPR reactor.¹⁸¹

Project funding: EDF has said it does not require government subsidies provided the right framework is in place.¹⁸²

Outcome: The project is currently going through a preparation and consultation phase, but it represents a subsidy free approach to generating low carbon energy.

The bad

Jubilee line extension

Specification: The project extended the Jubilee underground line east from Green Park to Stratford.

Timing: Work started in December 1993 and was completed in 1999.¹⁸³

Demand assessment: The DLR was unable to cope with the sudden increase in passenger numbers created by the rapid growth of Canary Wharf. Central London underground congestion meant an extension from the centre was a rational option. It was expected that 133 million passengers would use the extension each year.¹⁸⁴

172 www.crossrail.co.uk. Beneficiary contributions include the provision of services as well as direct funds. For example, the Canary Wharf Group is designing and building the new station at Canary Wharf and Berkeley Homes is constructing a station box at Woolwich.

173 *City A.M.* (2009), "TfL secures £1bn loan from EIB to help fund Crossrail", 8 September.

174 Department for Business, Enterprise and Regulatory Reform (2008), *Meeting the Energy Challenge, A White Paper on Nuclear Power*.

175 British Energy (2009), *Sizewell public consultation leaflet*.

176 *Ibid*; Department for Business, Enterprise and Regulatory Reform (2007), *Talking energy: the future of nuclear power*, Meeting with site stakeholder groups and other community representatives.

177 Cabinet Office (2001), *The Economics of Nuclear Power: PIU Energy Review Working Paper*.

178 Department for Business, Enterprise and Regulatory Reform (2008), *Meeting the Energy Challenge, A White Paper on Nuclear Power*.

179 Department for Business, Innovation and Skills (2007), *Nuclear power generation cost benefit analysis: consultation document for energy review*.

180 Department for Business, Enterprise and Regulatory Reform (2008), *Impact assessment of government's white paper on nuclear power*.

181 www.british-energy.com.

182 BBC News online (2008), "Q&A: The costs of nuclear energy", 10 January.

183 www.tfl.gov.uk.

184 Mitchell, B. (2003), *Jubilee Line Extension: from conception to completion*.

Economics: The project was initially approved with a benefit-cost ratio of 0.95, but with an expectation that there would be substantial, though unquantified, benefits from the regeneration of the South Bank and the creation of new jobs in Canary Wharf not captured in the conventional social cost benefit assessment of the time.¹⁸⁵

Project cost: Total cost of £3.5 billion.¹⁸⁶

Project funding: Initially British Gas had agreed to contribute around £25 million to the extension and Canary Wharf group (then Olympia & York) £398 million. In the end, Canary Wharf group paid only £145 million, meaning that only 5 per cent of the total costs were met by private investors.¹⁸⁷

Outcome: Studies commissioned by TfL and the Transport Department have found that the extension created 32,000 (mainly high productivity) jobs between 1998 and 2000, 12 million square foot of commercial development and an uplift in land values of £2 billion at Canary Wharf and £800 million at Southwark, with house prices along the line rising by up to 20 per cent over the first two years of opening.¹⁸⁸ A post-project analysis using current DfT appraisal methods estimated the extension had delivered a benefit-cost ratio of 1.75.¹⁸⁹ Given the estimated benefits and the number of beneficiaries from the extension – including businesses based in Canary Wharf, house builders and other developers – far more of the money should have been secured from the private sector.

Central Railway's rejected freight railway proposal

Specification: Central Railway Group proposed to build and operate a lorries-on-trains freight railway from Liverpool to northern France via the Channel Tunnel, running mainly along renovated and improved existing railway corridors.¹⁹⁰

Timing: Proposals were rejected by the government in 1996 and again in 2004.¹⁹¹

Demand assessment: Central Railway believed that the new line would be able to relieve significant road congestion. The company believed there was a commercial market for providing fast, high gauge, very long freight trains drawing road based lorry traffic travelling between the UK and mainland Europe.¹⁹²

Economics: The proposal estimated that the project would give an overall pre-tax rate of return of approximately 15 per cent a year.¹⁹³

Project cost: Central Railway estimated total costs of £5.7 billion.¹⁹⁴

Project funding: Central Railway's proposal was on the basis that it could fund the entire project through the private sector. In addition, Central Railway had entered into a formal memorandum of understanding with SNCF, under which SNCF would support the company in the promotion and development of the railway.¹⁹⁵

Outcome: The Strategic Rail Authority carried out a review of the proposal and concluded that it was not a viable proposal, on the basis that it did not agree with Central Railway's estimates of the costs and returns of the project. A House of Commons Standard Note also highlighted the SRA's aversion to the model of an entirely privately built and operated line, noting it was "a fundamental departure from current industry practice."¹⁹⁶

185 Transport for London (2004), *Summary of the main benefits of the Jubilee Line Extension*.

186 www.tfl.gov.uk.

187 Hansard (2007), Col.WA 125, 28 November.

188 Transport for London (2004), *Summary of the main benefits of the Jubilee Line Extension*.; House Price Crash (2006) "Will Improved Transport Links Affect Hpc In Some Areas?", 2 November.

189 Ibid.

190 House of Commons Library (2007), *Central Railway: Standard Note SN/BT/688*.

191 Ibid.

192 Ibid.

193 Ibid.

194 Ibid.

195 Ibid.

196 Ibid.

Principle 3: Charges not taxes

The good

London congestion charging

Specification: A daily charge is paid by road users in a defined central London zone, Monday to Friday, between 07.00 and 18.00.

Timing: It was introduced in 2003 with a £5 per day rate which was increased to £8 in 2005, while the charging area was extended in 2007.¹⁹⁷

Demand assessment: It was estimated that congestion in the capital was costing between £2-4 million each week.¹⁹⁸ The charge was also aimed at raising money for public transport in London.

Economics: The proceeds from the £8 congestion charge together with revenue from late payment fines raised net revenue of £137 million in 2008.¹⁹⁹

Project cost: Infrastructure costs of around £162 million were incurred in implementing congestion charging.²⁰⁰

Project funding: Transport for London contracts out the running of the scheme to a private service provider for a fee.

Outcome: An ex-post evaluation of the scheme has identified a benefit-cost ratio of 1.7 on the basis of the £8 charge and 1.5 with the £5 charge.²⁰¹ Congestion has been reduced by as much as 15 per cent.²⁰² Time and reliability savings for road users are estimated to total between £224 million and £260 million a year.²⁰³ Proposals to use more intelligent technology to introduce more variable charging into the scheme – where road users are charged more during peak times and at major congestion areas – has the potential to yield greater and fairer benefits in the future.²⁰⁴

The bad

Broadband roll out

Specification: A 50p per month flat rate charge for consumers using copper wire lines (the majority of households) to provide additional funding for the rollout of next generation broadband.²⁰⁵

Timing: Announced in the Government's 2009 *Digital Britain* report, it is to be introduced before the next general election and continue for seven years until 2017.²⁰⁶

Demand assessment: The UK has achieved very high rates of broadband penetration, but improving the speed of broadband connections will require renewed investment. Currently, the market is already delivering. BT and Virgin Media have announced plans to introduce next generation access to 22.5 million homes in the next few years. With a competitive market already delivering, the Caio Report concluded that the case for a major state intervention to enable the market to deliver next generation broadband is weak.²⁰⁷

Economics: The proposed “broadband tax” is expected to raise £150-175 million a year and £1 billion in six years for the “Next Generation Fund”.²⁰⁸

Project cost: Estimates vary between £5-29 billion for national broadband rollout, depending on the type of technology used.²⁰⁹

Project funding: The levy will be used to subsidise the rollout by making “commercially viable”.²¹⁰

Outcome: Such government support has the potential to distort the market and undermine private investment, as well as taxing the many to benefit the few.

197 Transport for London (2007), *Central London Congestion Charging Scheme: ex post evaluation of the quantified impacts of the original scheme*.

198 www.tfl.gov.uk.

199 House of Commons (2009), *Select Committee on Transport Sixth Report: Taxes and charges on road users*.

200 Transport for London (2007), *Central London Congestion Charging Scheme: ex-post evaluation of the quantified impacts of the original scheme*, p.5.

201 Ibid.

202 HM Government (2006), *The Eddington Transport Study*.

203 Transport for London, *Central London Congestion Charging Scheme: ex-post evaluation of the quantified impacts of the original scheme*.

204 Such as proposed for Manchester, see www.gmfuturetransport.co.uk.

205 Department for Business, Innovation and Skills and Department of Culture, Media and Sport (2009), *Digital Britain*, pp. 64-65.

206 Ibid.

207 Caio, F. (2008), *The next phase of Broadband UK: actions now for long term competitiveness*, Department of Business, Enterprise and Regulatory Reform.

208 Department for Business, Innovation and Skills and Department of Culture, Media and Sport (2009), *Digital Britain: Final report*, p. 65.

209 Broadband Stakeholder Group (2008), *The costs of deploying fibre-based next-generation broadband infrastructure: Final Report*.

210 Ibid.

Principle 4: More for less – sweat existing assets

The good

Smart metering

Specification: Consumers can see a detailed read out of their electricity and gas use.

Timing: Under current Government plans some 26 million electricity meters and 22 million gas meters will be fitted by 2020.²¹¹

Demand assessment: The Government's commitment to rolling out smart electricity and gas meters reflects a desire to manage demand and sweat assets that is needed across the whole of the UK's infrastructure.²¹²

Economics: Smart metering, has the potential to maximise the performance of the energy industry. The rollout envisaged under current Government plans would bring total savings of £11.8 billion.

Project cost: Installing smart meters across the whole of the UK would cost £9.3 billion.²¹³

Project funding: Installation costs will be met by the energy industry and 33 per cent will be transferred to consumer bills.²¹⁴

Outcome: While the success of smart metering for energy consumers has yet to be seen, for minimal cost, smart metering has the potential to revolutionise demand management of energy and maximise the use of a limited resource.

Using hard shoulders and traffic flow management

Specification: Following a pilot study on the M42, the use of the hard shoulder will be implemented on the M6 before being eventually rolled out to the M6, M5 and M60 amongst others adding over 340 additional lane miles to the strategic road network.²¹⁵

Timing: In January 2009 the Government announced the scheme. Work will start on site in 2010 and the hard shoulder should be fully operational in 2012, with more schemes opening up by 2015.²¹⁶

Demand assessment: Congestion on the UK's road network will prove the greatest challenge for the transport infrastructure network, costing the economy around £22 billion by 2025.²¹⁷

Economics: Hard shoulder running can save between 40-60 per cent of costs compared with conventional road widening.²¹⁸

Project cost: Project cost of £6 billion over six years.²¹⁹

Project funding: The Highways Agency is funding the project.²²⁰

Outcome: Through an extensive system of signalling the flow of traffic was managed effectively to use hard shoulders, average weekday journey times fell by more than a quarter on the northbound carriageway and drivers ability to predict their journey times increased by 22 per cent boosting individuals and businesses confidence in the reliability of the road network.²²¹

211 BBC (2009), "New smart meter plan is unveiled", 11 May.

212 Department of Energy and Climate Change (2009), *The UK Low Carbon Transition Plan*.

213 Ernst and Young (2009), *Securing the UK's energy future-seizing the investment opportunity*.

214 Ibid.

215 Department for Transport (2009), *Britain's Transport Infrastructure: Motorways and Major Trunk Roads*.

216 www.highways.gov.uk. Department for Transport (2009), *Britain's Transport Infrastructure: Motorways and Major Trunk Roads*.

217 Department for Transport (2008), "Road Pricing Conference", speech by Paul Clark MP, Parliamentary Under Secretary of State for Transport, 4 November.

218 Department for Transport (2008), *Advanced motorway signalling and traffic management feasibility study*.

219 Department for Transport (2009), *Britain's Transport Infrastructure: Motorways and Major Trunk Roads*.

220 Ibid.

221 Highways Agency (2009), *Managed Motorways: M62 Junctions 25-30*.

The bad

Fixed water pricing

Specification: Only a third of all households in England and Wales have water meters, with the vast majority of water bills linked to the rateable value of the property.

Timing: Metering has been introduced slowly and with the greatest increase in penetration occurring in the past five years. In 2009 the Environment Agency called for “near universal” water metering by 2050.²²²

Demand assessment: Water is an increasingly scarce resource; climate change will lead to a 15 per cent reduction in river flows by 2030, while demographic changes are leading to a growing population in the south east and a greater proportion of single occupancy households is creating growing demand.²²³ Consequently, household bills have increased by 43 per cent since 1989.

Economics: The water bills of households with water meters are 16 per cent lower than unmetered households.²²⁴

Project cost: On average the cost of installing a water meter is £220, and together with costs for meter reading and maintenance represents a cost of £30 per household per year over 30 years.²²⁵ Installation costs can be reduced by as much as 50 per cent under a compulsory scheme and water companies can save £44 per household per year in high water value areas.²²⁶

Project funding: Water meters are currently optional and have no additional price, although the costs for installation and maintenance are returned to the consumers via water bills.

Outcome: As well as reducing costs, metering would allow water companies to manage demand, for example by charging people less to run their washing machines at night or putting up prices in the summer. Without demand management there has been a surge of investment in infrastructure to increase supply, through building new reservoirs and decontamination facilities. Rather than investing billions in infrastructure representing the technology of the 19th and 20th centuries, compulsory metering and more detailed and transparent billing showing the breakdown of costs would significantly improve the performance of the UK’s water infrastructure.²²⁷

Unutilised capacity at Waterloo International Terminal

Specification: The five platform station at Waterloo is sitting unused since relocation of Eurostar to St Pancras.

Timing: Closed since 2007. According to the Department for Transport, re-using options are still being considered within Network Rail’s High Level Output Specifications. Although there were plans to convert WIT for suburban use by the end of December 2008, WIT will not be re-opening until at least 2013-14.²²⁸

Demand assessment: Waterloo Domestic accommodates 260,000 journeys per day with more than 80,000 passengers, operating at full capacity, and an increase in demand of 20 per cent expected in next 20 years.²²⁹ Official figures show that rail services are carrying 3.5 per cent more passengers than allowed.²³⁰

Economics: It is costing taxpayers £500,000 annually to keep this terminal closed. TfL has estimated that using WIT to increase capacity on selected main line fast services with increased numbers of cars (up to 15) and a single-track flyover north of Clapham Junction to enable access to WIT has a benefit cost ratio of 3.1.²³¹

222 BBC News Online (2009), “Call for widespread water meters”, 30 March.

223 Department for Environment, Food and Rural Affairs (2008), *Future Water: The Government’s water strategy for England*.

224 Department for Environment, Food and Rural Affairs (2009), *The Independent Review of Charging for Household Water and Sewerage Services*.

225 *Ibid.*, p. 78.

226 *Ibid.*, p. 80.

227 Council for Science and Technology (2009), *Improving innovation in the water industry: 21st century challenges and opportunities*.

228 *Evening Standard* (2009), “Delayed platforms for Waterloo commuters will not arrive until 2014”, 10 September.

229 London Assembly Transport Committee (2009), *The Big Squeeze: rail overcrowding in London*.

230 *Ibid.*

231 MVA Consultancy (2006), *Transport for London’s South Western Rail Corridor Plan*.

Project cost: The indicative cost for a “do minimum” scheme to divert Windsor Lines into WIT with no track layout alterations and a “do minimum” station conversion is £10 million.²³² The Clapham Flyover scheme to allow South Western Main lines to use WIT has an estimated cost of £300 million.²³³

Project funding: Funding is the responsibility of TfL. Network Rail has allocated £718 million from its HLOS capacity specifications to include a WIT project.²³⁴ Private sector investment should be brought in.

Outcome: Platforms are unused while capacity at Waterloo is full.

232 Strategic Rail Authority (2005), *Alternative Uses for Waterloo International Station: Final Report*.

233 www.dft.gov.uk.

234 Department for Transport (2009), *FOI requests and responses: FOI F0005602 & F0005603*.