





Department for Transport Great Minster House 33 Horseferry Road London SW1P 4DR

Telephone **0300 330 3000** 

Website www.gov.uk/dft

General email enquiries FAX9643@dft.gsi.gov.uk

© Crown copyright 2013

Copyright in the typographical arrangement rests with the Crown.

You may re-use this information (not including logos or third-party material) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit <a href="http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2">http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2</a> OGL or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail <a href="mailto:psi@nationalarchives.gsi.gov.uk">psi@nationalarchives.gsi.gov.uk</a>

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.







### Contents

Foreword	4
HS2 and the Growth Opportunity	5
Connecting Markets, Businesses and People	6
Unlocking Regeneration and Development	8
Delivering HS2 through our Industries and Workfo	orce 12
Next Steps	16
3.018	



### Foreword

If something is worth doing, then it is worth doing to the very best of our ability. We must strive to be *outstanding* and I know from experience that the UK is capable of delivering outstanding results. The London 2012 Olympic and Paralympic Games showcased British talent at its very best. Collectively, we delivered a globally-admired product and a legacy that will benefit our country well into the future.

This philosophy applies perfectly to the new north-south railway that is HS2. I have a firm belief that HS2 will offer immense dividends.

And so it should – we have an obligation to create the very highest return on this investment in this key infrastructure. By developing innovative solutions, challenging orthodoxies and taking best practice from our own major projects and those abroad, I believe we can rise to the opportunities HS2 presents.

That is what motivates me as chair of the HS2 Growth Taskforce; the desire to do everything possible so that HS2 showcases our strengths and delivers maximum benefit to all of us well into the future, whether we travel by train or not. I am proud to be joined by fourteen distinguished experts who are equally keen to take on this challenge.

For me, the potential is clear. HS2 will link eight of Britain's ten largest cities, providing vital new capacity to enable people and goods to make more reliable and faster journeys between the places that are important to the economy – our cities and international gateways.

Our cities must be prepared to realise the benefits by fully integrating HS2 into the fabric of their urban spaces and transport systems. And our workforce and industries must stand prepared for the skills and technological demands of constructing HS2.



As I have begun to travel around the UK with the taskforce, I have been impressed by the way in which cities are already taking up this challenge. They have their eyes on the prize – the chance to use HS2 to unshackle local growth from the constraints of poor capacity and connectivity; to reinvigorate their centres, to be more productive, to attract investment and to compete on a global stage. I am excited by their level of ambition.

The work of the taskforce has only just begun. This report describes the broad areas we believe are critical to maximising the economic return on HS2 investment. However, these benefits will not just fall into our lap: the role of the taskforce is to identify the work that must be done in advance to ensure we capture the full potential of this investment for our country. These are the areas we will explore as we develop our recommendations to present to Government in early 2014. My taskforce colleagues and I will not hold back. Our ambition is to challenge Government, cities and the private sector to step up to the transformational opportunity HS2 presents.

Lord Paul Deighton
Chair of the HS2 Growth Taskforce







## HS2 and the Growth Opportunity

High Speed 2 (HS2) is much more than a transport scheme. It's a once in a lifetime opportunity to support long-term UK-wide economic growth. Recognising this, the Government wanted a group of independent experts from different fields to advise it on how best to unlock the full economic potential of HS2. That is why we – the HS2 Growth Taskforce – were created. We are chaired by Lord Deighton, and our members are drawn from the private and public sectors, as well as the academic world.

We know that, under the right conditions, transport infrastructure can increase economic productivity and support growth. It is our job to understand these conditions and describe the environment into which HS2 must be integrated in order to realise its full economic potential. This will involve identifying barriers and constraints to growth and exploring what must be done to remove them, as well as making sure our cities, regions, industries and workforce are 'HS2-ready'.

The purpose of this report is to lay out the areas we want to explore and some of the questions we will address. We will identify the key issues, articulate essential actions and identify areas for further work or research. Where necessary we will challenge Government to do better. We want to make a set of recommendations that translate into a deliverable and affordable programme of work with a clear focus on extracting the greatest economic gains from HS2. We will report in early 2014, in good time to help inform this major infrastructure project in its planning stages, before construction begins, and to inform the second reading of the HS2 Phase One Hybrid Bill seeking powers to build, operate and maintain HS2 between London and the West Midlands.

We know that HS2 will mean different things to different places, and that economic opportunities will vary by location. We will make overarching recommendations that are nationally applicable - but which can be interpreted locally.

It will not be enough to draw solely upon our collective expertise. We have begun gathering a wide range of evidence from across the public and private sectors by engaging cities and business leaders, Local Enterprise Partnerships (LEPs), and other partners in areas that will be both directly and indirectly served by HS2.

We are gathering lessons from major infrastructure projects in the UK and around the world, such as the Olympics, London's Crossrail and high speed rail overseas. As well as learning from success stories, we must learn from others' mistakes and not repeat them. We will also draw upon the substantial existing evidence base for HS2 and consider the implications and opportunities for local areas of existing Government policy and reforms. We will scrutinise the opportunities for accelerating the benefits from HS2 and, in doing so, mitigate or minimise any short-term blight to businesses.

As well as compiling good practice, this report sets out the questions we will ask as we explore the three areas that are critical to maximising the economic opportunities presented by HS2. Our key themes are connecting markets, businesses and people, unlocking regeneration and development and delivering HS2 through our industries and workforce. For us, these themes represent the key issues that must be part of any conversation about how we should plan for and deliver HS2 to reap the greatest rewards.

We do not draw any conclusions at this stage. Instead we have devised a series of questions on each theme that we intend to consider over the coming weeks and upon which we will make recommendations to Government in our final report in early 2014.







# Connecting Markets, Businesses and People

HS2 presents a once in a generation opportunity to reshape the economic geography of the country – connecting goods and services with new markets, prospective employees with job opportunities, and creating potential for new economic activity that simply wouldn't have been possible without these connections. Businesses in Leeds and Manchester will be able to compete with those in Birmingham to access customers in London, Paris and beyond.

But it's not just about HS2; released capacity on the classic rail and road networks will benefit all places along the transport corridor with effectively 'new' transport links, even if they don't have an HS2 station. And we have an opportunity to open new routes for freight transport right through from the north of the country direct to the continent, getting it off the roads and creating new business opportunities. This is our first opportunity and our first challenge.

## **Creating opportunities for economic growth**

By effectively bringing our cities and international gateways closer together, the improved connectivity offered by HS2 will help our cities to grow economically, compete internationally and generate more local jobs.

Better connectivity brings the potential for higher economic productivity<sup>1</sup>. Better integration with national and international markets makes cities and their surrounding areas more attractive locations for investors, offering large benefits to cities outside London. The UK has recent, first-hand experience of the transformative impact of better connecting people and places. We need only look at the economic benefits of the Channel Tunnel in helping to connect British markets with the continent or at the Docklands Light Railway and Jubilee Line extension in connecting Canary Wharf to the rest of London. As these projects did for London, HS2 offers our regional cities potential for a far stronger international profile, offering investors broader choice and thereby supporting a more even spread of growth across the country.

To harness HS2's potential to enable economic growth it will need to be complemented by the appropriate conditions and cities will need to plan strategically for the best local outcomes. By considering local plans we want to understand the nature of the barriers to growth and explore what we can do to remove them.

We want to understand what is needed to create the right conditions for inward investment and job creation in areas of need. We also want to explore the opportunities to ensure that cities and regions are HS2-ready and benefiting from the benefits HS2 can unlock ahead of the first HS2 train hitting the tracks.







### Integrating HS2 with the existing transport network

HS2 will form the spine of an integrated national transport system to better connect our people and places. This integration of HS2 into existing transport systems is what will drive economic growth in the regions surrounding our cities. This will offer local areas better accessibility to airports and ports and allow them to draw upon wider labour and business markets of the surrounding areas and to spread wealth more widely.

In our view the transformational benefit of HS2 lies in this potential not only to connect our major cities, but to integrate surrounding areas into those cities. Regions should both support and benefit from the economic opportunities our cities offer.

The challenge for Government will be to optimise the impact of HS2 upon the whole transport network. Strategic planning and coordination at national and local levels will be needed to deliver more integrated services. Network rail and others agencies, like the Highways Agency, will need to work with local areas to develop integrated approaches. We want to explore what progress has been made to develop integrated transport strategies. We want to see what learning can be shared from the experience of cities like Manchester where area-wide approaches are already being developed.

#### Making the most of increased capacity

HS2 offers a step-change in rail capacity as well as much better connections for people and goods between our major cities and international gateways. Towns and cities not directly served by HS2 stand to benefit from capacity released on our existing network, which could be used to provide additional commuter and regional services. All of this additional capacity will be vital to meeting the demand created by our growing UK population (set to reach 70 million by 2030) and ensure the economic prosperity of our towns and cities.

Our rail system will look fundamentally different in 2033 and we need to make sure that it is shaped to respond to future needs. Additional capacity for freight transportation will be needed to meet growing demand (projected to increase by up to 140% by 2030).

Realising the opportunities for freight may also unlock a number of other benefits that are yet to be fully calculated – for example, alleviating pressure on the road network and improving access to ports. We are keen to explore this as part of our work programme.



What are the necessary conditions to ensure local areas can maximise local jobs and growth as a result of HS2?

- Do cities have visions and strategic plans to maximise growth from HS2?
- How are our cities, Network Rail, and other key partners working together to prepare for HS2 and maximise integration with local transport networks?
- What opportunities are there to meet the growing demand for more freight movement by rail?







# Unlocking Regeneration and Development

HS2 presents an unparalleled opportunity to develop the towns and cities along its route, driving new economic activity by supporting new homes, businesses and jobs. Experience shows that new and refurbished stations and rail depots can provide a launch pad to attract private investment in new retail, business, housing and leisure developments. If we get it right this effect could spread beyond the immediate vicinity of stations to the local area, creating a wider transformational impact. This isn't straightforward to achieve and there are examples of both successful and failing efforts to create the right conditions for local growth. We want to learn from this to make sure HS2 galvanises local development and succeeds where others may have failed. This is our second opportunity and our second challenge.

### Maximising local growth opportunities

Enabling local areas to harness the regeneration and development potential of HS2 will depend on areas being ready for the arrival of HS2. Investing in early delivery of developments and supporting infrastructure around stations, like interchanges, could help to accelerate and unlock the benefits from HS2 earlier and help to mitigate blight to business.

Maximising local growth and attracting investment will rely on many practical things, including, but not limited to, effective strategic planning, assembling land and creating effective connections into and out of HS2 stations. All will help to create an element of certainty vital to attracting private sector investment.

Land acquisition and planning powers are key issues. If we are to extract greatest value from the regeneration and growth opportunities presented by HS2, then we must be able to act early and quickly, and in the long-term interest of local areas.

Local partners, including LEPs, have a role in attracting inward investment. There are lots of existing powers, levers and funding streams that they can bring to bear to help attract investment and incentivise growth, including Enterprise Zones, the new Single Local Growth Fund, the Regional Growth Fund, and, where appropriate and affordable, tax increment financing arrangements.

In addition, local partners can explore ways of raising income to help stimulate growth and regeneration via planning powers, such as the Community Infrastructure Levy (CIL) and Section 106 (stipulations on developers), and locally raised businesses rates. Local partners can further support this through the ability to establish suitable legal structures such as joint venture agreements, special purpose vehicles and local authority-owned companies that may help them deliver the development they need.







We want to explore how areas can use these powers and what additional support, if any, could be provided from central Government. There are other structures and mechanisms that may be useful. For example, London has the power to create Mayoral Development Corporations, such as the London Legacy Development Corporation, to help promote and deliver regeneration in particular areas.

There may also be opportunities for local areas to pursue private financing options to support or bringforward development, for example by assembling land. We are interested in how local areas can best take advantage of these opportunities and the support they may need from central Government.

We want to gather the evidence in order to expose any barriers to promoting growth and challenge the orthodoxies around the status quo.

#### **Development potential**

Stations form the first and last impressions of our cities and are therefore key to how they are perceived. They can act as a catalyst for regeneration and development schemes, attracting investment from businesses looking to benefit from the station as a destination for travellers, residents and shoppers alike.



### Kings Cross, St Pancras – a destination in its own right

Harnessing the benefits from HS1 (Eurostar), the redevelopment of the stations at Kings Cross-St Pancras shows how the alignment of growth plans with transport hubs can create compelling investment opportunities. The £800 million investment in the station has delivered an annual footfall of 40 million people, a quarter of whom are not travelling, but making use if its array of 90,000 square meters of retail space packed with bars, shops and attractions. At Kings Cross Central, 22,000 jobs are planned by 2020 as well as 2,000 new homes.







Retail, business, housing and leisure developments directly around station sites are obvious opportunities. But there are others. The ripple effects of improved connectivity and station 'places' will provide opportunities for wider growth, as better business links and access to wider labour markets can attract new investments. This will be particularly important in the areas around the proposed East Midlands, Sheffield and airport stations.

We want to look at the opportunities beyond stations, and understand the potential for HS2 to help 'shape places' and extract even greater value for cities than investment directly around a station. We must aim high and use HS2 to transform our urban centres.

While HS2 stations offer opportunities to change the urban landscape around a station, they will not create growth alone. We want to better understand the conditions under which in Japan, for example, cities with HSR stations saw increases in employment of 16-34%<sup>2</sup> and land values go up by 67%. We want to understand why some stations in Spain, such as Ciudad Real, experienced a wide range of urban development in retail, offices, hotels and housing, but others didn't. We want to extract lessons of what worked and what could have worked better from international experiences to inform our recommendations.

HS2 can begin to shape places now by influencing the focus of future development plans<sup>3</sup> for stations and surrounding areas. Cities don't need to wait until the first HS2 train in 2026 to begin to benefit. We believe that they can harness the potential if they are prepared and can offer some certainty to potential investors by having bold and visionary plans agreed. It is imperative that cities are able to put in place the appropriate structures to drive progress against those plans.

We are mindful that different locations will adopt different approaches and will have different needs. As we continue to gather evidence we will be interested in learning more from cities and their local partners about how they see their role and their capacity to turn HS2 potential into reality.

### Aligning resources and policies

Local areas must take the lead role in developing 'HS2 master plans' to drive growth and regeneration. Our role should be to see how we can support and enhance their drive.



Local areas will need integrated strategies spanning transport and regional connectivity, growth, regeneration, housing, skills and employment in order to turn visions of growth and regeneration into reality. We will be keen to understand how HS2 opportunities are being considered in the strategic economic plans and wider growth deals LEPs are currently formulating.

We believe close cooperation and collaboration between cities, their local partners, businesses and central government will be crucial to maximising value for money to the taxpayer and providing benefits as early as possible. To achieve this, we believe it will be necessary to do things differently. We want to explore innovative ways of streamlining, improving and accelerating development around HS2 stations, as well as making the most of existing tools, like compulsory purchase orders and strategic planning frameworks. We believe we can work with local areas to design optimal models for delivering growth and regeneration.







#### What can we learn from other major infrastructure projects?

France, a global leader in high-speed rail travel shows us the extremes of success and unrealised opportunity. Lille is a recognised success story whereas Gare de Creusot hasn't lived up to its original vision. Developing Gare de Creusot's TGV station was expected to regenerate an old industrial area and create a local centre of economic activity. In hindsight, the lack of existing local business activity



or incentives to attract new business, combined with the lack of integration into local transport systems could be to blame.

We should not to be afraid to look at the factors that maximise and constrain local economic growth. Where possible we want to extract any causal evidence and apply this to our planning of HS2.

## What are the opportunities and barriers to delivering maximum regeneration and development from HS2?

- What opportunities are there for station sites to help transform and regenerate their surrounding areas?
- What is the scope to use HS2 stations and the improved connectivity they offer to kick-start wider economic growth in the local area? Are local areas sufficiently resourced to deliver this?
- What are the most effective local structures and governance arrangements to set the vision, develop the strategy, and deliver the necessary development to maximise the benefits from HS2?
- What more could central Government do to remove barriers or facilitate local economic growth as a result of HS2?
- How can we maximise the potential for accessing private finance and securing effective business participation?
- What can we learn from other major infrastructure projects?







# Delivering HS2 through our Industries and Workforce

HS2 will create thousands of new jobs across the country during the construction and future operation of the new railway. These opportunities should extend through a UK-wide supply chain of businesses of all sizes that will provide the necessary goods, materials, services and people required to build and operate an entirely new railway. But this opportunity is not just about creating jobs over the next two decades. HS2 must be part of a sustained drive to develop new skills, technologies and businesses that can be exported all over the world, making the UK a world leader in railway technology and delivery for decades to come. This is our third opportunity and our third challenge.

### Harnessing economic growth through procurement and the supply chain

Constructing HS2, delivering the inter-connectivity with this new spine, and delivering the local projects needed to unlock growth, will rely on procuring goods and services from a wide range of companies. The procurement processes used to deliver HS2 and local plans need to offer best value to the UK taxpayer by securing the optimal balance of quality and cost.

In order for UK-based firms to exploit the huge opportunities presented by HS2, they must be in a position to tender competitively for HS2 contracts. We believe that companies can step up to this challenge. We have proven to ourselves that our businesses and our workforce talent can compete and win contracts. HS2 could stimulate renewed commitment to innovation in the UK and help to demonstrate that our goods and services can rival those from anywhere else in the world.

While not detracting from the ultimate responsibility of the private sector to prepare itself to win business, we are interested in how we can assist companies the length and breadth of the UK – especially SMEs – to be in the best possible position to tender competitively for HS2 contracts.

We will be looking at examples like the Olympics and Crossrail, which attracted companies from all around the UK. With more than 95% of Crossrail's budget to date being won by UK-based companies, we will look at how HS2 can replicate and build on this success for our British businesses and workforce.











### Delivering the London Olympics was a game-changer for UK business

The Olympics gave the UK an opportunity to showcase its skills and experience of delivering major infrastructure projects. This has enabled UK companies to access opportunities across the world in sectors such as sustainable cities, urban renewal and sustainable design, including the expansion of the Qatari Rail Network, the development of the Delhi-Mumbai Industrial Corridor and the creation of the world's biggest airport in Beijing. We want HS2 to lead to further opportunities for UK businesses overseas.

We must also consider how to set standards in the awarding of contracts, just as we did during Crossrail and the Olympics, to ensure that the people who live in the vicinity of developments and underrepresented groups can compete for jobs and develop their skills through provision for apprenticeships. We proved we can achieve this through the Olympics and Crossrail - we want to help Government achieve it again with HS2.

The considerations for maximising benefits for UK businesses are similar for skills and labour; absolute clarity on the contract pipeline is crucial to preparing the adequate skills base and labour force, just as it is for the readiness of businesses and the supply chain.

#### **Crossrail: A pathway into skilled employment**

During Crossrail, Jobcentre Plus helped to ensure that local people along the route were informed of training and employment opportunities on the programme. In addition, all contractors working on Crossrail were required to advertise any new opportunities with the local Jobcentre Plus 48 hours before they were advertised elsewhere.

For its part, Jobcentre Plus worked with a network of local job brokerage and outreach agencies to match Crossrail vacancies to suitable candidates and prepare them for interview. Crossrail also committed to delivering at least 400 apprenticeships through its supply chain over the lifetime of the project. We want to explore how HS2 Ltd plans on applying good practise like this to the delivery of HS2.







### Investing in the UK labour market

Not withstanding the jobs that could be created in the wider economy through regeneration and development, HS2 will generate many jobs through its construction and supply chain. Being in a position where UK companies can compete for contracts and offer these jobs to our home-grown workforce will rely on the right skills being available. We believe it is crucial that HS2 engineering and construction jobs benefit the UK economy and our workforce, particularly in areas with high rates of worklessness.

We have heard from businesses that we currently face a challenge in terms of having enough appropriately skilled people in certain industries. Furthermore, many of the people who do possess the right skills are otherwise engaged in projects like the upgrades to our existing railways. We must avoid a situation where a skills shortage places a constraint upon delivery. We want to learn how we can develop the talent pipeline for jobs related to HS2.

Collectively we need to invest in our existing workforce and open up more pathways into opportunities associated with HS2. Employers must lead the way, working with universities, colleges and schools to attract and support talented people into high-skills construction and engineering roles. The public sector must offer greater clarity on the jobs and skills requirements of the HS2 contract pipeline to support employers. This clarity, in terms of specific skills, quantities of jobs and employment location will be crucial to allowing the private sector to meet the demand.

We also want to understand what the public sector can do to support private sector employers. For example, there may be a role for government in making certain subjects and industries more attractive to young people, in order to ensure that the personnel are available into the future.

We will be interested in learning from local areas about the plans they have in place to work with employers and local businesses to project and meet their future skills and employment needs. We want to spread notable practice and proven successes from experiences like Crossrail and the Olympics.

Again, we should aim high. A project like HS2 could create a platform to become a world leader in rail technology and delivery. If we use HS2 to revolutionise our skills base and to foster homegrown talent then it is entirely realistic that we could not only benefit the next domestic project (with the ability to use UK skills and personnel for UK projects and drive value for money), but export our skills and businesses to the international rail and high speed rail industries. We should remember that the breadth of skills and technological requirements of HS2 are not exclusive to the transport sector, so the project could foster potential in other industries too.









#### A skills legacy

Large projects, such as HS2 or Crossrail present a fantastic legacy opportunity to develop new industries and skills. Together with the Department for Business, Innovation and Skills and the Skills Funding Agency, Crossrail invested up to £12.5 million in the UK Tunnelling and Underground Construction Academy (TUCA), which will train at least 3,500 people to work on Crossrail.



Located in East London, TUCA aims to address the shortage of people with the necessary skills to work on Crossrail and other major tunnelling projects in London and across the UK, as well as providing the potential to assist European projects like the Dublin Metro. We want to explore how TUCA and other organisations such as the National Skills Academy for Railway Engineering could offer potential to help develop a workforce to deliver and maintain HS2.

It is imperative that we learn from other major infrastructure projects as we plan and deliver HS2. We want to explore the opportunities to accelerate the delivery of HS2 and the wider economic benefits it can unlock. The delivery process must be optimised and streamlined in order to manage costs and to ensure quality, and therefore to drive value for money. Encouraging and implementing innovation will be crucial throughout the process of delivering HS2.

### How should we maximise the benefits of the buying power of HS2?

- How can we streamline procurement processes to secure the best outcomes and offer value for money to UK tax payers?
- How should we prepare UK businesses to fully participate in HS2 opportunities?
- How should we prepare the UK workforce to fully participate in HS2 opportunities?
- How should we ensure that we approach all of the engineering and construction practices with techniques reflecting international best practise and innovation?







## Next steps

As we start out on our tour of HS2 locations, we anticipate a challenging but rewarding programme of evidence gathering. We're not making the case for HS2, that is the role of Government and HS2 Ltd, instead we are specifically interested in identifying 'how' to maximise the opportunities for growth through HS2. We will work closely with local government, its partners and businesses to produce and test our recommendations. We will present practical, affordable and workable recommendations to Government in early 2014.

We will focus our work on three themes;

- Connecting Markets, Businesses and People
- Unlocking Regeneration and Development
- Delivering HS2 through our Industries and Workforce

These themes are broad indicators of the direction of our work, but are not exhaustive. It may be that during our discussions with key stakeholders we uncover additional areas of interest. Any additional subject areas could also be included in our recommendations to Government.

Our report will be published on the GOV.UK website (and will have limited availability in hard copy). We do not at this stage intend to carry out any major, independent research during the lifespan of the taskforce. However, where we identify any lack or scarcity of evidence to support our understanding, we may see fit to make a recommendation to Government that further investigations be undertaken.

### How to contact us

We welcome evidence and views relating specifically to the questions posed in this report. Anyone wishing to contact us should do so via our Secretariat.

Email **HS2GrowthTaskforce@dft.gsi.gov.uk** 

By post **HS2 Growth Taskforce** 

Secretariat, Zone 3/13 Great Minster House

33 Horseferry Road

London

SW1P4DR

Website www.gov.uk/hs2growthtaskforce





















#### **Footnotes**

<sup>1</sup> See Rosenthal, S. and W. Strange. 2004. 'Evidence on the nature and sources of agglomeration economies'. In V. Henderson and J-F Thisse (eds.) Handbook of Regional and Urban Economics, volume 4, Amsterdam: North-Holland, 2119–2171. Also studies for the UK including KPMG (2013).

#### **Photography Credits**

Page 3 © Polly Thomas/Alamy

Page 4 © STEVE LINDRIDGE/Alamy

Page 5 © Dick Makin/Alamy

Page 6 © Blend Images/Alamy

Page 7 © Clynt Garnham Transportation/Alamy

Page 9 © Tim Cordell/Alamy

Page 10 © eye35.pix/Alamy

Page 11 © age fotostock/Alamy

Page 12 © Jon Wilson/Alamy

Page 13 © dpa picture alliance archive/Alamy

Page 13 © Justin Kase zsixz/Alamy

Page 13 © ALLSTAR Picture Library/Alamy

Page 14 © David Burton/Alamy

Page 15 © Caro/Alamy



<sup>&</sup>lt;sup>2</sup> Hirota, 1985

<sup>&</sup>lt;sup>3</sup> Deloitte 2013 *Unlocking Potential: Maximising growth through infrastructure delivery*