Infrastructure
and Projects
Authority

Analysis of the National Infrastructure and Construction Pipeline

26 November 2018

Reporting to Cabinet Office
and HM Treasury

Produced by the Infrastructure and Projects Authority

Alternative format versions of this report are available on request from ipa@ipa.gov.uk

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View of the experimental hall at Diamond, the UK's national synchrotron light source. Phase III of the Diamond Light Source at the Harwell Science and Innovation Campus in Oxfordshire became fully operational this year.

Ministerial Foreword

Our latest edition of the National Infrastructure and Construction Pipeline reaffirms the scale of our infrastructure investment ambitions. This year's pipeline shows that the public and private sector will together invest over £400 billion into UK infrastructure. Last year, for the first time, we also included estimated levels of investment over the coming decade. These have been refreshed for 2018 with a projection of over £600 billion of investment.

Around half of planned investment is from the private sector. Whilst we are no longer considering PF2 as a tool for achieving delivery of our plans, we remain committed to ensuring that levels of private investment remain high, including through established tools such as Contracts for Difference, the Regulated Asset Base Model, and the UK Guarantees Scheme.

Government action includes targeted investment in full fibre broadband, which is helping to catalyse the growth of the next generation of internet connectivity in the UK. Our approach to supporting private investment has led to government delivering the most successful offshore wind programme in the world, where costs have halved in recent years. The recently completed Walney Extension off the coast of Cumbria is the largest operational offshore wind farm ever built.

With the publication of its first National Infrastructure Assessment (NIA) in July, the National Infrastructure Commission revealed its vision and strategic recommendations for the scale and type of infrastructure the UK needs over the next 30 years. The government will set out its full response with a new National Infrastructure Strategy, to be published next year. We intend for this document to set out a bold vision for the UK's economic infrastructure, driving our economy and our country forward.

Our interim response, published at Budget 2018, sets out some of the ambitious plans that are already in place. Just one of those plans is to invest the largest ever amount in our strategic roads, making journeys more efficient and easier for people across the country. This, combined with the latest edition of the pipeline, helps to provide industry with the confidence that we are continuing to invest in the future of our infrastructure.

Government is serious about working with our partners and across sectors to improve delivery of projects, and to use its purchasing power to increase productivity and drive innovation in infrastructure. The IPA is taking this a step further by launching a call for evidence on a proposed new approach to building infrastructure, inviting the public to help shape a new manufacturing approach for construction projects.

Delivering smarter projects is not just a vision for the future. This year, at Christie Hospital in Manchester we have completed the UK's first Proton Beam Therapy centre, leading the way in curative radiotherapy for specific types of cancer with the first patient to be treated in December 2018. This is just one of over 400 infrastructure investments including major projects delivered across the country this year.

All this helps to create the environment the UK needs to raise productivity, keep pace with technological change and support long-term economic growth. We look forward to working with the sector to realise our ambitions in the years ahead.

Robert Jenrick MP
Exchequer Secretary to the Treasury

Chief Executive Foreword

The National Infrastructure and Construction Pipeline is the single source of the UK's planned infrastructure investment to 2021 and beyond. This year the pipeline includes nearly 700 projects, programmes and other investments, and a projection of infrastructure investment over the next 10 years of over £600 billion.

By publishing the pipeline we are able to provide visibility, knowledge and understanding of where infrastructure investment is being made and by whom. By publishing projections of longer term investment we aim to boost market confidence and help the sector with business planning.

Public capital investment is set to reach levels not consistently sustained in 40 years, with annual investment in infrastructure set to be £9 billion higher in 2021 than in 2015. This year's update to the pipeline comes ahead of the 2019 Spending Review at which government will confirm its priorities and capital spending plans for the years ahead.

Last year, we launched our Transforming Infrastructure Performance programme, to ensure we are making the most out of this increased investment by addressing some of the key challenges to improving the productivity of our infrastructure. A year on and the programme has been working with industry across multiple sectors and organisations on its objectives of benchmarking for better performance, alignment and integration, procurement for growth, and smarter infrastructure. For example, our newly established benchmarking team in the IPA is bringing together some of the largest infrastructure clients from across government and industry to pilot an approach to benchmarking that will help us to better estimate the costs of new projects and measure their outcomes.

We continue to support projects from their earliest stages – where any major risks, complexities and challenges to successful delivery can be identified and mitigated most effectively. The Project Initiation Routemap remains a key tool to achieve this. Since its development in 2012, nearly 40 projects have benefited from using the Routemap methodology across the public and private sectors including transport, energy and regeneration projects in 2017/18.

Last year the government committed to increasing the use of offsite construction methods. We are now launching a call for evidence on a new approach to building, using the latest digital technology. This will ensure that our ambitious infrastructure investment plans are matched by the effectiveness of their delivery, by helping to increase productivity, promote innovation, support the transition to a low carbon economy and create high quality manufacturing jobs in the construction sector.

Tony Meggs

Chief Executive, Infrastructure and Projects Authority

Over £600 billion

of projected public and private investment over the next 10 years

Over £400 billion

of planned projects, programmes and other investments in the pipeline, including around £190 billion to be invested by 2020/21

Nearly 700

projects, programmes and other investments in the pipeline

Over 4,900

public and private infrastructure projects successfully delivered since 2010

98%

of the long-term national priority infrastructure projects since 2010 have been completed or are on track to deliver

Summary

1.1 The UK's ambitious infrastructure plans continue to progress. Public capital investment is at levels not consistently sustained in 40 years, while major projects including in transport, energy and flood defence are being delivered in all parts of the country. Updated for 2018, the National Infrastructure and Construction Pipeline brings together details of planned public and private investments across all sectors, providing clarity and confidence on the wide range of infrastructure the UK is committed to delivering over the coming years. This analysis document, published alongside the pipeline data, provides insight into investment trends and delivery progress over the last year. The pipeline workbook contains details for the nearly 700 individual projects, programmes and other investments, and can be found at the link below.[1]

1.2 This report also provides an update on the progress made towards delivering projects, including the national priority projects that were identified in the National Infrastructure Delivery Plan 2016-21, demonstrating the depth and breadth of infrastructure improvements that continue to be delivered across the country.

Future investment

1.3 The pipeline is made up of announced projects, programmes and other spending commitments. The **2018 pipeline sets out over £400 billion of planned investment, of which around £190 billion will occur by 2020/21.**[2]

1.4 This gives the best available indication of planned investment however the pipeline alone does not give the full picture over the long-term, including beyond 2020/21. Future price control periods for the regulated utilities have not yet been set for the period beyond 2020/21. The 2019 Spending Review will set out capital budgets and the government's priorities for the coming years.[3]

1.5 To help indicate longer-term investment, we also provide a **10 year projection of over £600 billion of public and private investment**, covering the period to 2027/28. A 10-year projection (to 2026/27) was first included in the Analysis of the National Infrastructure and Construction Pipeline published in December 2017, and this has been updated for 2018 and extended by one year to 2027/28. The full methodology for this projection is included in Annex A.

1.6 Data is sourced from a range of providers including government departments, regulators and industry. IPA collates and publishes this information on planned and projected investment to provide clarity to industry and support their short and medium term planning.

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1 https://www.gov.uk/government/publications/national-infrastructure-and-construction-pipeline-2018

2 All pipeline figures and analyses have been completed in 2017/18 prices.

3 The government will conduct a zero-based review of capital spending at the Spending Review. Ahead of that, the government has rebased the path of capital spending to reflect the latest expected spending plans over the Spending Review 2015 period to 2020-21.

Delivery record

1.7 Over the past 12 months over 400 infrastructure projects have been completed and moved into operation.[4] These include major investments like the redevelopment of London Bridge station and the £63 million Rossall coastal defence scheme, one of the single biggest investments in a single coastal flood scheme to date. This report provides an update on the progress of delivering projects in each sector, including across transport, energy and digital infrastructure.

1.8 This report also provides an update on the delivery progress of over 150 nationally significant projects, as set out in previous pipelines. Of the 158 projects and programmes designated as national priorities for the government since 2010, nearly 40% are now complete, 40% are under construction or part of a programme[5] in ongoing delivery and the rest are in earlier stages of development. As reported in last year's pipeline, only three projects have been stopped following reassessment. The full list of projects and their delivery status is set out in Annex D.

[4] This is not an exhaustive list of all infrastructure projects delivered in the UK, across all sectors.

[5] This refers to programmes which are a series of linked projects in different stages of delivery, typically with some in planning, some under construction, and some nearing completion or complete. Earlier stages of development include scoping, planning, and seeking the necessary legal and stakeholder consents.

Recently delivered projects and programmes

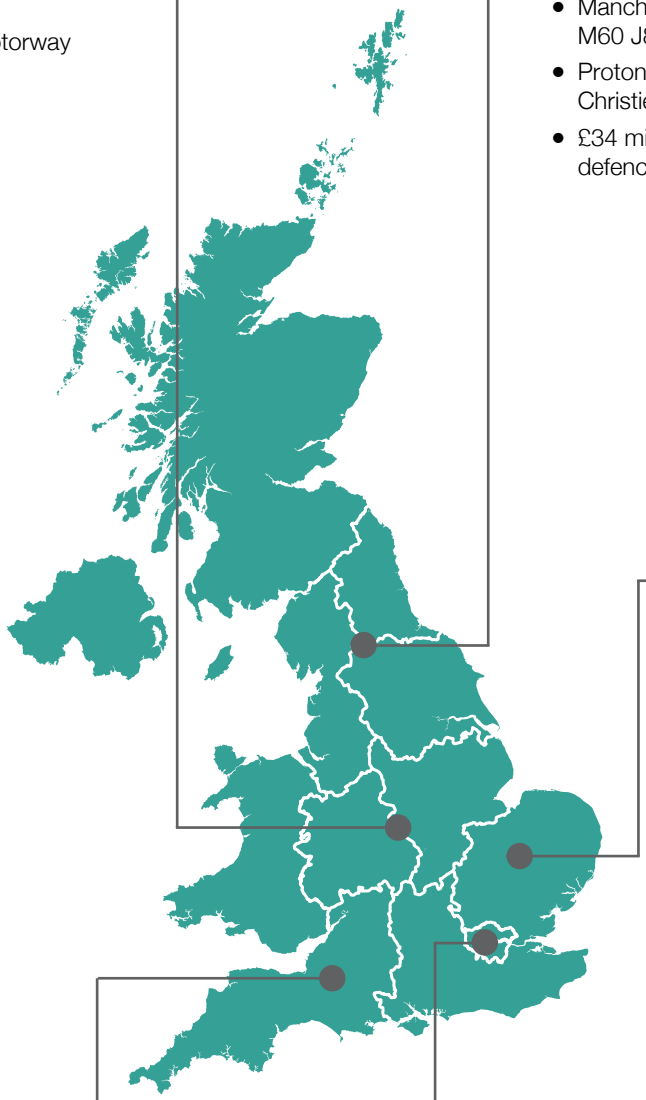
This map sets out a selection of projects and programmes recently completed across English regions. This includes a number of priority projects.

MIDLANDS ENGINE:

- Nottingham Ring Road
- M5 J4a to J6 Smart Motorway
- Selly Park South flood alleviation scheme

NORTHERN POWERHOUSE:

- Manchester Smart Motorways M60 J8 to M62 J20
- Proton Beam Therapy centre at Christie Hospital Manchester
- £34 million Warrington flood defence scheme



EAST OF ENGLAND:

- Broadland Northway (Norwich Northern Distributor Road)
- Cell and Gene Therapy Catapult manufacturing centre in Stevenage
- Dudgeon offshore wind farm

SOUTH WEST:

- Bath Transportation package
- A30 Temple to Carblake improvement
- Cannington flood alleviation scheme

SOUTH EAST AND LONDON:

- London Power Tunnels phase 1
- Sibson Building: new home for the School of Mathematics and the School of Business at the University of Kent
- Portsmouth International Port's new £9m linkspan, speeding up disembarkation

SCOTLAND, WALES AND NORTHERN IRELAND:

- The majority of infrastructure investment is devolved to each administration, but the pipeline includes a range of investments in non-devolved sectors (see Annex C for further information).

Analysis of the 2018 pipeline

2.1 The total value of planned public and private investment in the pipeline, across economic and social infrastructure, is over £400 billion.[6] This covers 278 individual projects, 398 programmes, and 8 other investments which have been committed to but not yet allocated to specific projects or programmes.

Investment in the pipeline from 2018/19 to 2020/21

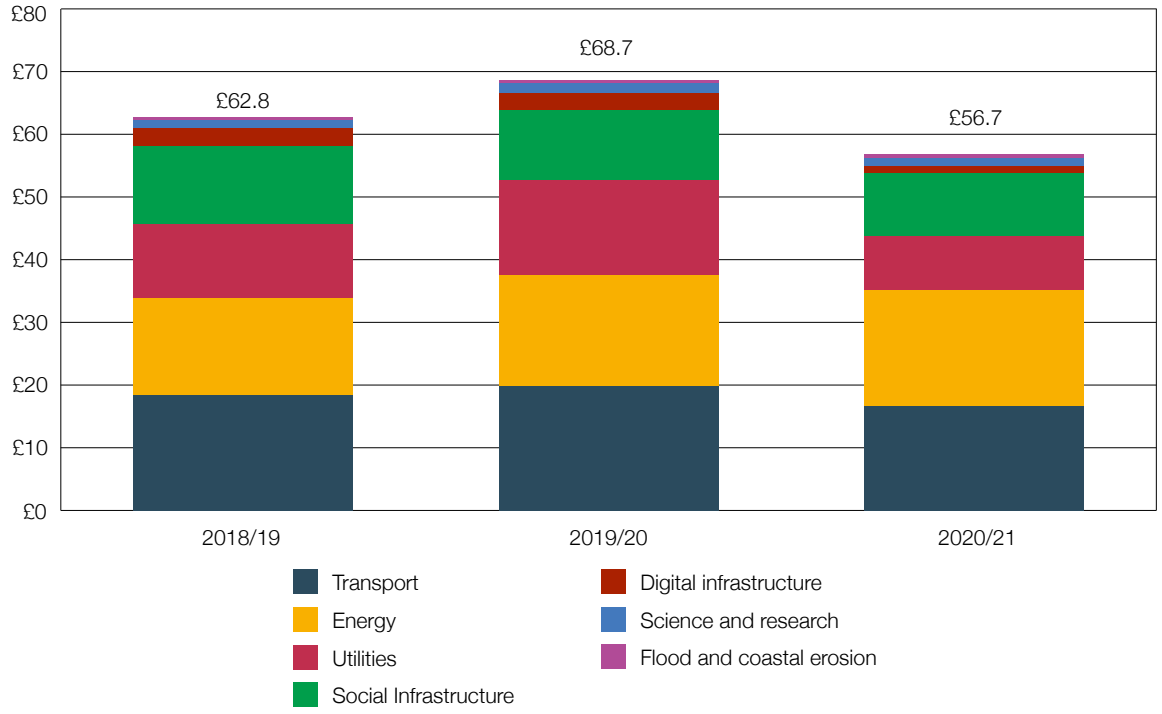
2.2 Around £190 billion of planned investment in the pipeline will be delivered by 2020/21. We provide specific investment figures to this date, as 2021 marks the end of the current 2015 Spending Review period and the end of certain regulatory periods for private investment. Future control periods are in development and have not yet been announced, so are not reflected in the pipeline. The next Spending Review, due to take place in 2019, will set government's priorities for the coming years, including setting capital budgets. Therefore the pipeline will underestimate actual investment over the coming years in some sectors. This is particularly the case for the year 2020/21, when, for example, the regulatory control period for water will have come to an end in the preceding year.

2.3 The previous National Infrastructure and Construction Pipeline, published in December 2017, included investment from 2017/18 to 2020/21 inclusive. One year on, the 2018 pipeline data to 2020/21 covers investment from 2018/19. Compared to last year the investment figure is therefore lower as it includes one less year of investment (2017/18, which has been spent). This should not be taken as an indication of a decreasing trajectory of infrastructure investment.

2.4 The profile of investment in all sectors, up to 2020/21, is set out in Chart 1 and the change from 2019/20 to 2020/21 includes the likely underestimate. Detailed investment profiles are set out in the sector pages.

[6] In this report economic infrastructure includes Transport, Energy, Utilities, Digital Infrastructure, Science and Research, and Floods and Coastal Erosion. This is different to the definition of economic infrastructure in the National Infrastructure Commission's fiscal remit, which only includes public investment in Transport, Flood and Coastal Erosion, Digital Communications, and Waste. The definition used in the NIC's fiscal remit is followed in this report in the 10 year projection of investment, as set out in Annex A. In this report, social infrastructure includes Defence, Justice and Security, Education, Healthcare, and Housing and Regeneration.

Chart 1: Investment in the pipeline 2018/19 – 2020/21 by sector (£bn)



2.5 The following table shows the value of investment in each sector in the pipeline between 2018/19 and 2020/21. The full breakdown can be found in the pipeline workbook.[7]

Table 1: Annual profile of pipeline investment by sector (£bn)

Sector (£bn)	2018/19	2019/20	2020/21	Total 2017/18 to 2020/21
Transport	£18.4	£19.8	£16.7	£54.9
Energy	£15.5	£17.8	£18.4	£51.7
Utilities[8]	£11.7	£15.0	£8.7	£35.4
Digital infrastructure	£2.9	£2.8	£1.2	£6.8
Science and research	£1.2	£1.5	£1.2	£3.9
Flood and coastal erosion	£0.6	£0.6	£0.7	£1.9
Social infrastructure	£12.4	£11.2	£9.9	£33.5
Total	**£62.8**	**£68.7**	**£56.7**	**£188.2**

Investment in the pipeline beyond 2020/21

2.6 Around £225 billion of currently planned investment in the pipeline will be delivered after 2020/21. This includes major projects and ongoing investments that will be delivered over a number of years, such as Thames Tideway Tunnel, Hinkley Point C and the A14 Cambridge to Huntingdon improvement scheme as well as investment programmes including in electricity generation and rail infrastructure. This does not include projected investment across regulated utilities, social infrastructure, economic infrastructure and other private investment, which can be found in Chart 5.

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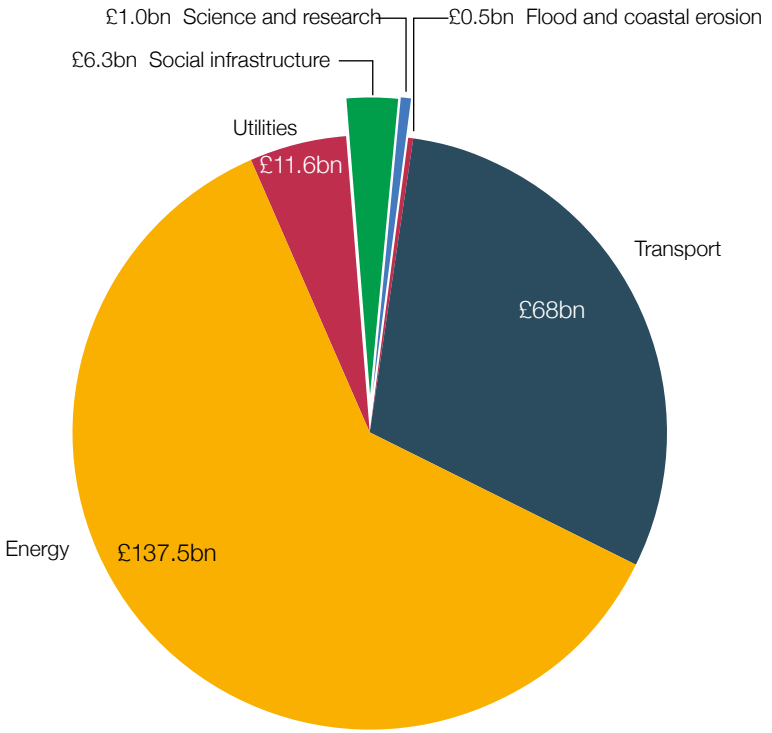
[7] https://www.gov.uk/government/publications/national-infrastructure-and-construction-pipeline-2018. For all tables in the document, figures for individual columns may not add up to figures in total column due to rounding.

[8] The control period for water investment, AMP 6, ends in 2019/20 after which AMP 7 will be set.

Chart 2: Around £225bn investment in the pipeline beyond 2020/21 by sector



Changes in the pipeline since December 2017

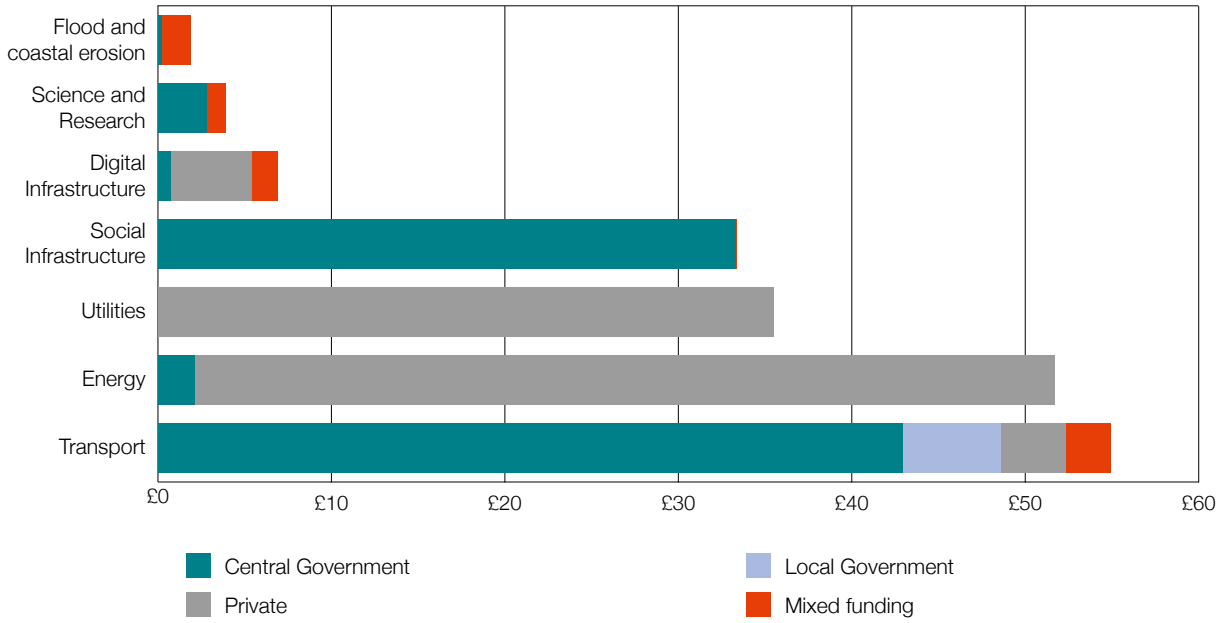
2.7 In this update, investment from 2017/18 of £58.8 billion in projects has been completed and has exited the pipeline. Examples of projects that have been delivered this year are included in the sector pages later in this document. New investment, including new projects and programmes, has been added.

Funding mix of the pipeline from 2018/19 to 2020/21

2.8 The UK uses a mixed model to fund and finance its infrastructure, using both public and private investment.[9] This includes public investment including in roads, rail infrastructure and social infrastructure such as schools and hospitals. The government also supports private investment through established tools such as the UK Guarantees Scheme, Contracts for Difference and the Regulated Asset Base model. At Budget 2018 the government announced that it will no longer use Private Finance 2 (PF2), the current model of Private Finance Initiative (PFI), however the government will continue to support private investment through other means.

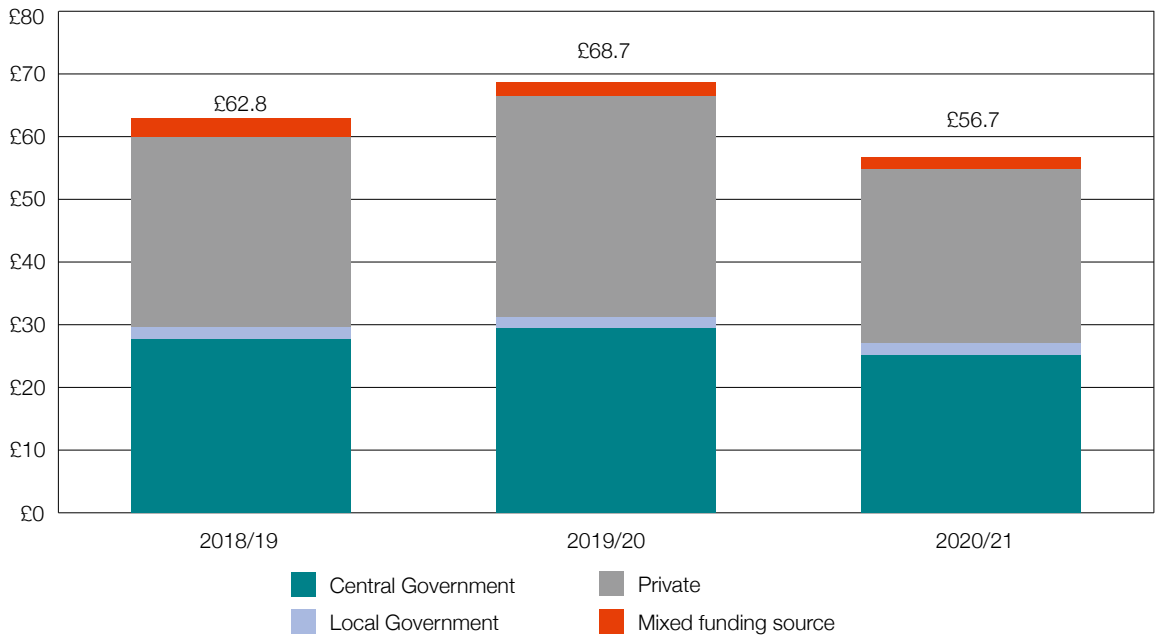
[9] 'National Infrastructure Delivery Plan Funding and Finance Supplement', Infrastructure and Projects Authority, 2016

Chart 3: Funding mix of the pipeline 2018/19 to 2020/21 by sector (£bn)



2.9 Chart 3 sets out the funding split of each sector of the pipeline to 2020/21. Chart 4 shows the funding split by year. Around 50% of the pipeline to 2020/21 is funded and delivered by the private sector, of which just over 35% is in the regulated sectors. Around half the pipeline to 2020/21 is made up of public funding, of which over 80% is funded by central government.[10]

Chart 4: Funding mix of the pipeline 2018/19 to 2020/21 by year (£bn)



[10] Public funding includes an element of mixed funding. Mixed funding is classified as any combination of funding sources. Private and Local Government, Private and Central Government, Local and Central Government, or Private, Local and Central Government funding.

Projects and programmes in the pipeline

The map below sets out some of the infrastructure investments in the pipeline.

MIDLANDS ENGINE:

- Transforming Cities Fund £71.5m for transport projects in West Midlands Combined Authority.
- Smart Motorway upgrades for the M6.
- Boston Barrier tidal flood alieviation scheme.

NORTHERN POWERHOUSE:

- Up to £37m additional development funding for Northern Powerhouse Rail.
- Transforming Cities Fund additional funding including £16.5m for Tees Valley transport projects, £38.5m for Liverpool, and £69.5m for Greater Manchester.
- A5036 Princess Way – Access to Port of Liverpool (part of Liverpool Local Growth Deal).

SOUTH WEST:

- Transforming Cities Fund £23m for transport projects in West of England Combined Authority.
- A358 Taunton to Southfields.
- Bristol Deep Sea Container Terminal.

EAST OF ENGLAND:

- £20m development funding for East-West rail.
- Transforming Cities Fund £21m for transport projects in Cambridgeshire/ Peterborough Combined Authority.
- A14 Cambridge to Huntingdon improvement scheme.

SOUTH EAST AND LONDON:

- Southampton/Portsmouth shortlisted for share of £440m competitive Transforming Cities Fund.
- London Power Tunnels phase 2.
- Oxford flood alleviation scheme.

SCOTLAND, WALES AND NORTHERN IRELAND:

- The majority of infrastructure investment is devolved to each administration, but the pipeline includes a range of investments in non-devolved sectors (see Annex C for further information).

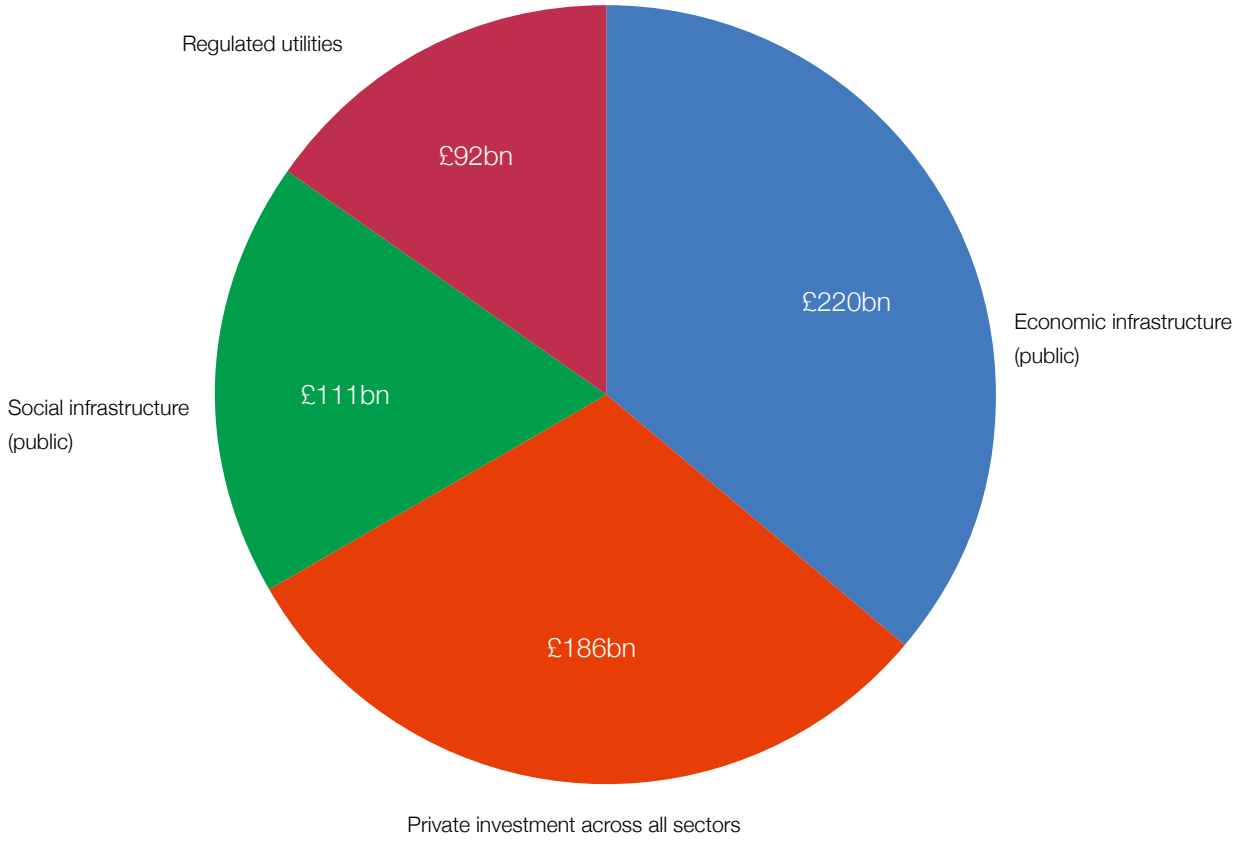
Projected investment over the next 10 years

3.1 The previous National Infrastructure and Construction Pipeline published in December 2017 set out, for the first time, a projection of public and private infrastructure investment levels over a 10 year period. This report provides an update to the projection, to the year 2027/28. According to these projections, the IPA estimates that total infrastructure investment over the next 10 years will be over £600 billion.

3.2 This projection is designed to provide a more comprehensive view of the trajectory of infrastructure investment over the medium-term, given that the planned pipeline does not provide a complete picture of investment post 2020/21. The projection includes planned investment to 2027/28, as well as a mix of other data including forecasts from economic regulators and projections within the National Infrastructure Commission's fiscal remit of economic investment in infrastructure. A full explanation of the methodology used to calculate the 10 year projection is in Annex A.

3.3 Chart 5 provides a breakdown of investment, in line with the methodology for calculating the projection set out in Annex A.

Chart 5: Over £600bn projected public and private infrastructure investment from 2018/19 to 2027/28 by sector



Regional analysis of investment in the pipeline from 2018/19 to 2020/21

4.1 This report provides an analysis of the distribution of infrastructure investment in the pipeline from 2018/19 to 2020/21 in each region of England. This builds on the regional analysis first provided in the National Infrastructure and Construction Pipeline 2017. The analysis is as complete as possible based on the information available, but it is not exhaustive and so should be taken as an indication of investment in each region only. A more detailed explanation of the methodology is in Annex B and an explanation of devolved responsibilities for infrastructure in Scotland, Wales and Northern Ireland is in Annex C.

Infrastructure investment across regions

4.2 Table 2 and Chart 6 below show average annual investment in infrastructure per person in each region in England between 2018/19 and 2020/21, based on the investment in the pipeline that was possible to allocate to regions.

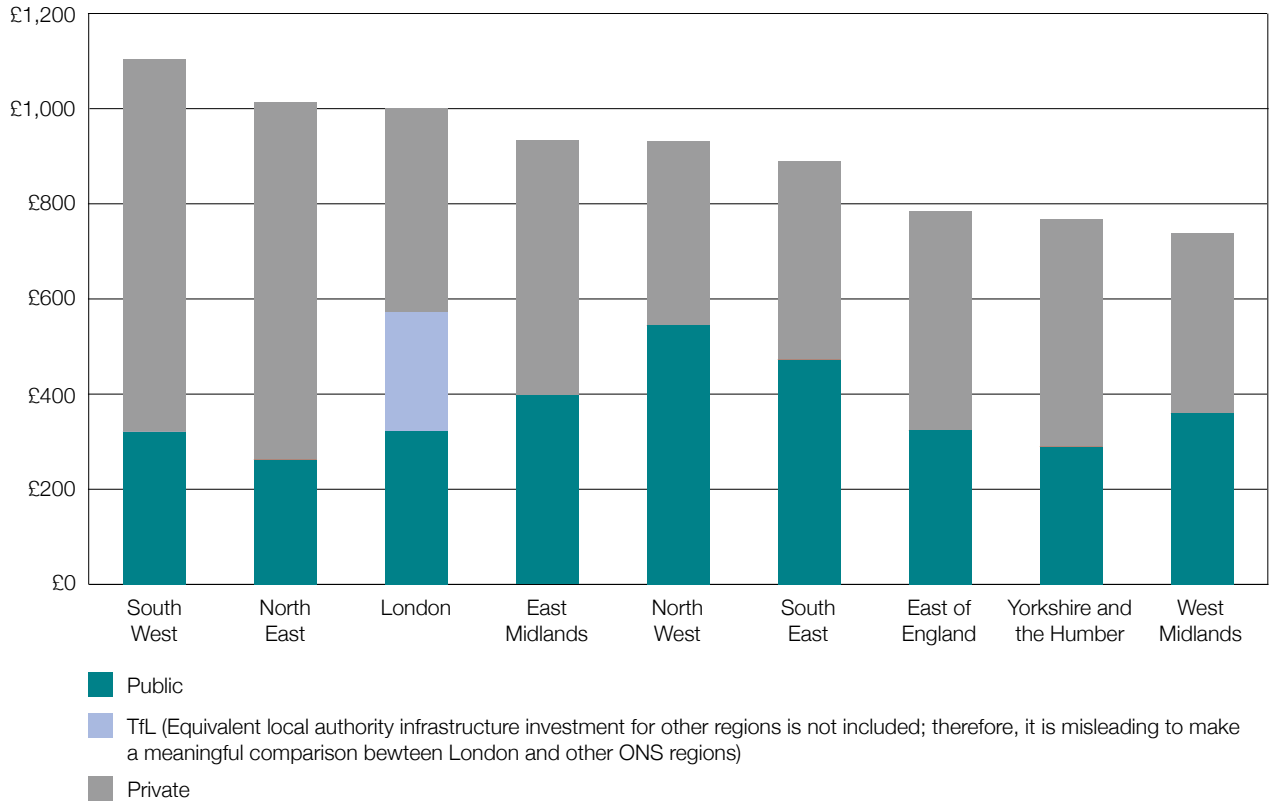
4.3 In the National Infrastructure and Construction Pipeline published in December 2017, regional analysis was presented as cumulative per capita investment per region, as a total for the four years 2017/18 to 2020/21. This year, we are providing an annual average across the three years from 2018/19 to 2020/21, rather than providing an update to last year's figure with one year removed. This will enable easier comparisons to future editions of the pipeline. It is the average investment per person per year that is shown below, however the three year cumulative total is also included in Annex B.

Table 2: Regional analysis – average annual investment per capita by funding source (2018/19 to 2020/21)[11]

	Funding source		
Region	Central and local government	Private	Total
East Midlands	£397	£536	£932
East of England	£324	£460	£783
London	£573	£428	£1,000
North East	£262	£751	£1,013
North West	£545	£387	£932
South East	£472	£417	£890
South West	£321	£784	£1,105
West Midlands	£360	£377	£737
Yorkshire and The Humber	£289	£478	£767

[11] Local authority investment, outside of London, on transport is only included in the pipeline where funding came from Central Government grants. Total investment in London includes investment by Transport for London, which, from 2017/18 onwards, received no direct central government funding.

Chart 6: Regional analysis – average annual investment per capita by funding source (2018/19 to 2020/21)



Limitations of the methodology

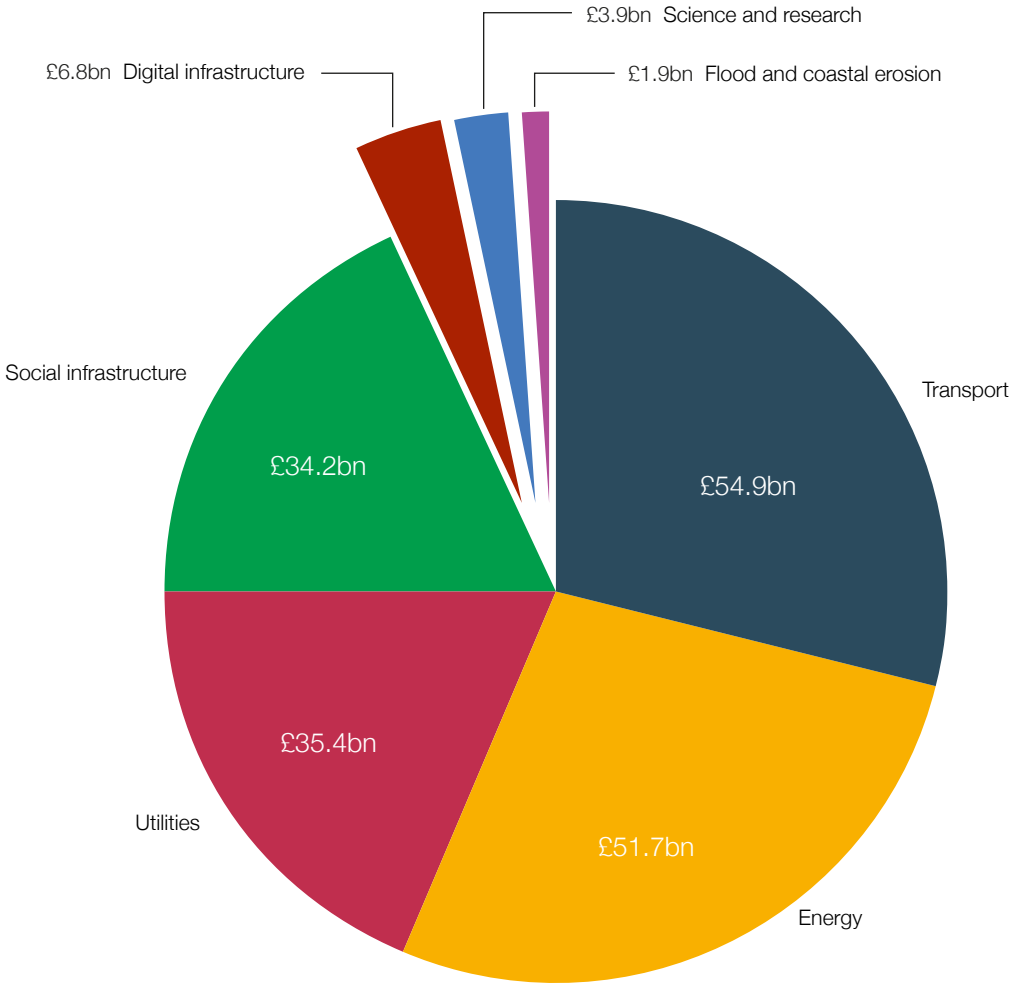
4.4 This analysis provides a more complete picture of regional infrastructure investment than in previous pipelines. However it does not provide an exhaustive view. It only includes investment that is currently captured in the pipeline; for example, the pipeline does not currently include all local authority infrastructure investment outside of London or investment in rolling stock by train operating companies. For less than 20% of the pipeline we have either not developed a regional allocation methodology yet, or the investment is in the devolved administrations or overseas and so this investment has not been included in the regional analysis.

4.5 Measuring investment in each region based on the location of the asset does not always show where the benefits of infrastructure are felt across the whole country, for example investment in electricity generation that will benefit all regions. This regional analysis also does not show where the wider socio-economic benefits of investment are felt across the country.

Sector overview

5.1 The pipeline brings together investments across social and economic infrastructure sectors including transport, energy and digital infrastructure. Social infrastructure includes five sub-sectors including education and health. The chart below shows around £190 billion of investment in planned projects to 2020/21, split by sector.

Chart 7: Around £190bn investment in the Pipeline from 2018/19 to 2020/21 by sector



5.2 The following pages provide an update on each of these sectors, including further data on pipeline investments. The delivery update for each sector shows the wide range of projects and programmes that have been delivered over the past year, and the major projects that are in progress.

Transport

Over **£120** billion

of investment in transport infrastructure in the pipeline

256

ongoing or planned transport projects and programmes in the pipeline

Major road projects completed this year, including A1 (M) Leeming to Barton and smart motorways in Manchester

work on the £1.5 billion A14 Cambridge to Huntingdon improvement scheme is well underway

£400 million

'Road to Zero' strategy launched, including £400 million Charging Infrastructure Investment Fund to support uptake of electric vehicles

Transport overview

5.3 Transport includes investment in transformative projects like High Speed 2 (HS2), along with hundreds of investments to maintain and upgrade key infrastructure like local roads, stations, air traffic control systems and intra-city transport, as well as infrastructure to support emerging technologies like electric vehicles. At Budget 2018, the Chancellor announced that the National Roads Fund will be £28.8 billion from 2020-2025. £25.3 billion of this is expected to fund the draft Roads Investment Strategy 2, which is the largest ever investment in England's strategic roads. The Budget also announced up to £37 million in further funding to support the development of Northern Powerhouse Rail.

Investment in the pipeline

5.4 The pipeline contains 256 transport projects, programmes and other investments with a total value of £122.9 billion, including £54.9 billion by 2021.

Table 3: Transport pipeline investment

Sub-Sector	Number of Projects	Programmes and Other Investments	18/19 to 20/21 (£bn)	Beyond 20/21 (£bn)	Total Pipeline (£bn)
High Speed Rail	1	0	£11.7	£38.7	£50.3
Rail	11	19	£17.5	£21.3	£38.8
Local Authority Transport	26	72	£8.3	£2.1	£10.4
Transport for London	2	20	£5.7	£4.1	£9.8
Roads	61	10	£8.0	£0.2	£8.2
Airports	0	13	£3.6	£0.7	£4.4
Ports	8	13	£0.0	£0.9	£0.9
Total	**109**	**147**	**£54.9**	**£68.0**	**£122.9**

Chart 8: Transport investment from 2018/19 to 2020/21 split by sub-sector (£bn)

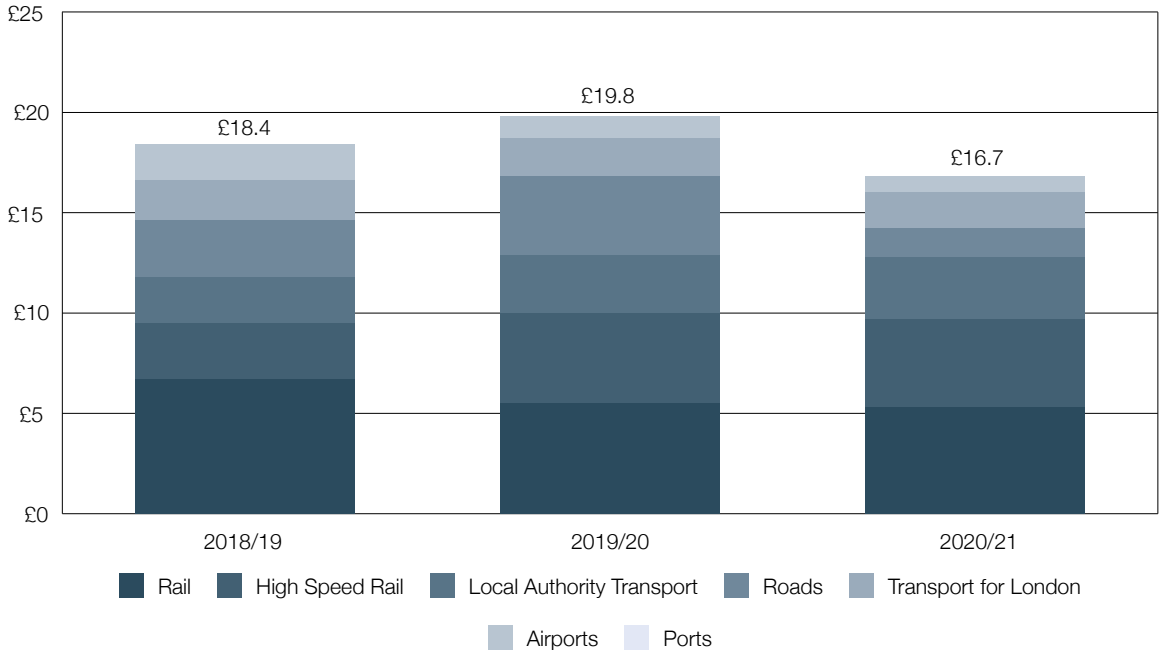


Table 4: Transport investment split by funding source (£bn)

Funding Source	2018/19	2019/20	2020/21
Central Government	£13.0	£16.1	£13.7
Local Government	£2.0	£1.9	£1.8
Private	£1.8	£1.1	£0.8
Mixed Funding	£1.5	£0.7	£0.4
Total	**£18.4**	**£19.8**	**£16.7**

Delivery progress

5.5 More major road projects have been completed this year including the North West's first smart motorway upgrade in Manchester, which became fully operational in July. This project, between junction 8 of the M60 at Sale and junction 20 of the M62 at Rochdale, is helping to reduce congestion and improve journey time reliability for the 180,000 vehicles that use it every day.

5.6 In support of the UK's ambition to be at the forefront of the design and manufacturing of zero emission vehicles, and for all new cars and vans to be effectively zero emission by 2040, in July 2018 the government launched the Road to Zero Strategy setting out plans to support this transition. In the same month the Automated and Electric Vehicles Bill, which includes powers to support the rollout of charging infrastructure, received Royal Assent and a Request for Proposals for a fund manager to deliver the Charging Infrastructure Investment Fund was published. The £400 million fund, with up to £200 million of government investment matched by the private sector, will catalyse the rollout of electric charging infrastructure needed to support the uptake of electric vehicles.

5.7 The Transforming Cities Fund (TCF) was launched at Autumn Budget 2017 to improve transport links and promote local growth within city regions. The metro mayors (who received a per capita allocation) are developing plans for the funding and 10 city regions have been shortlisted to receive a share of the competitive fund. The fund was extended to £2.5 billion at Budget 2018. This means that there is now over £1 billion available for the metro mayors to invest in their local transport priorities and almost £1.3 billion available to improve public transport, boost connectivity and reduce congestion in other cities across England. This also includes £90 million to create three TCF Future Mobility Zones to demonstrate future transport options such as shared and on demand travel, autonomous shuttle services, and integrated ticketing and digital payments, putting us at the forefront of the global future mobility market. The West Midlands has already been announced as the first Future Mobility Zone with £20 million funding.

5.8 HS2 continues to make progress. In February this year, the appointment of Lendlease was announced to lead the planning and development of Euston station for HS2. The detailed design for the construction of HS2 Phase 1 from London to Birmingham is well underway. The hybrid Bill for Phase 2b is on course for deposit in June 2020. The Crossrail programme is now 95% complete. It is the biggest construction project in Europe and will add 10% to central London's rail capacity.

5.9 A significant milestone for increasing airport capacity in the south east was reached in June this year, as MPs decisively backed plans for a new Northwest Runway at Heathrow in the Airports National Policy Statement. Expansion at Heathrow will bring up to £74 billion worth of benefits to passengers and the wider UK economy, providing better connections to growing world markets. It is now up to Heathrow Airport Limited to develop its application for planning consent.

Case Study – A1 (M) Leeming to Barton

The A1 Leeming to Barton improvement

The £400 million upgrade of the A1 is the biggest road building project in the North of England. The scheme was opened in March 2018 with final works completed in May, The upgrade, including adding a new lane in each direction between Leeming and Barton in Yorkshire, means that there is now a motorway-grade link between London and Newcastle.

The scheme will improve safety, journey times and reliability, delivering benefits for the 70,000 vehicles that use this 12 mile stretch of road every day. The scheme is expected to reduce journey times by 20%, provide a £1 billion boost to the economy, and prevent around 450 accidents and save 20 lives over the next 60 years.

Energy

Around £190 billion of investment in energy infrastructure in the pipeline

Nearly 100 ongoing or planned energy projects and programmes in the pipeline

completed in September, the Walney Extension is the world's largest operational offshore wind farm, capable of generating enough electricity to power around 600,000 homes

renewable energy capacity was 42.2 GW at the end of 2018 Q2 – 10% higher than the previous year, including a 38% increase in offshore wind capacity

Around 130 electricity generation projects completed over the past year

Energy overview

5.10 The UK is investing heavily in the energy sector. Major projects like Hinkley Point C will help secure our future energy supply, while investments in renewables like offshore wind support the move to low carbon electricity generation. Earlier this year, the UK generated electricity without burning coal for over three days, a new record.

Investment in the pipeline

5.11 The pipeline contains 96 energy projects, programmes and other investments with a total value of £51.7 billion to 2020/21.

Table 5: Energy pipeline investment[12]

Sub-Sector	Number of Projects	Programmes and Other Investments	18/19 to 20/21 (£bn)	Beyond 20/21 (£bn)	Total Pipeline (£bn)
Electricity Generation	39	2	£33.4	£107.3	£140.6
Oil & Gas	0	1	£16.2	£10.8	£27.0
Nuclear Decommissioning	31	9	£2.1	£19.3	£21.4
Waste to Energy Projects	0	14	£0.1	£0.2	£0.3
Total	**70**	**26**	**£51.7**	**£137.5**	**£189.2**

Chart 9: Energy investment from 2018/19 to 2020/21 split by sub-sector (£bn)

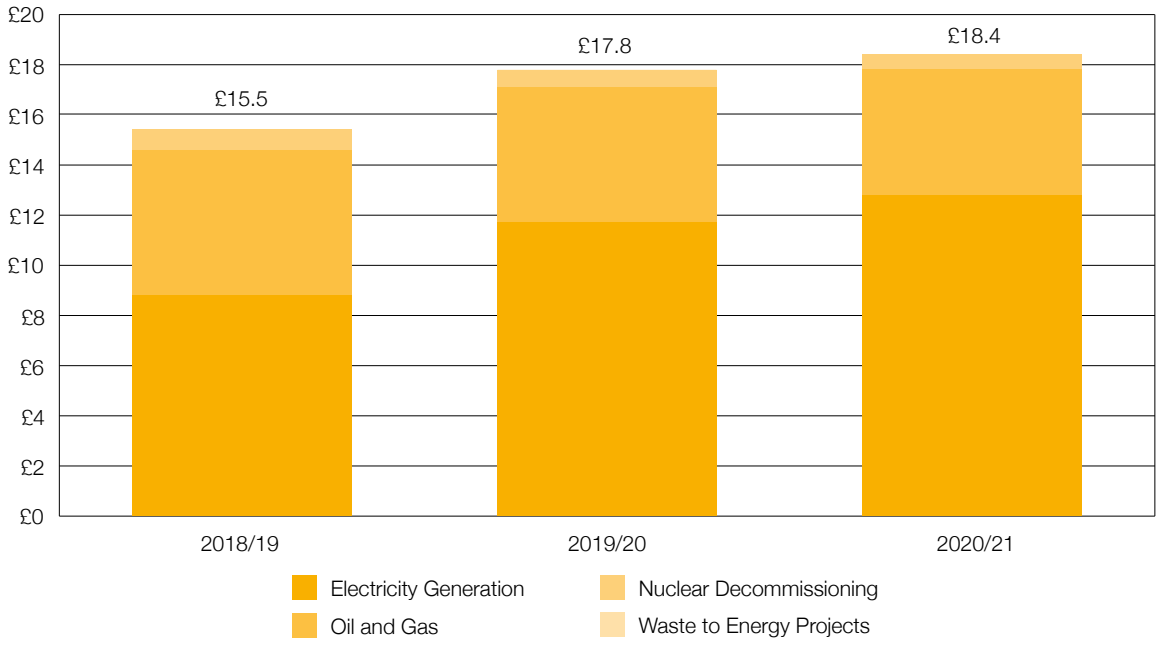


Table 6: Energy investment split by funding source (£bn)

Funding Source	2018/19	2019/20	2020/21
Central Government	£0.8	£0.7	£0.6
Private	£14.6	£17.1	£17.8
Total	**£15.5**	**£17.8**	**£18.4**

[12] Energy figures include waste to energy projects.

Delivery progress

5.12 Several renewable energy projects have been completed in the last 12 months. Construction has also started on Phase 1 of the Hornsea Wind Farm in the North Sea, which once completed will generate enough electricity to power over one million homes. Further support for low carbon generation, including offshore wind, is provided through the next round of allocations for Contracts for Difference, scheduled for May 2019, and then every two years thereafter. Up to £557 million of government support is available for these auctions, which will help the private sector to deliver 1-2 GW of new offshore wind capacity every year in the 2020s.

5.13 The Nuclear Sector Deal (NSD), part of the Industrial Strategy, was published in June 2018, in recognition of the importance of nuclear energy in supporting the UK's energy mix. The NSD includes a target for industry to reduce the cost of new build projects by 30% by 2030. Also in June 2018, the Secretary of State for Business, Energy and Industrial Strategy announced that government has entered formal negotiations with Hitachi on the proposed Wylfa Newydd project, as well as reviewing the viability of a Regulated Asset Base model for financing future new nuclear projects. Construction of the Hinkley Point C project is underway, with significant progress on the earthworks at the site following the formal decision to proceed at the end of September 2016.

Case Study – Walney Extension Offshore Wind Farm

Walney Extension Offshore Wind Farm

The Walney Extension is a 659 megawatt (MW) offshore wind farm situated next to the existing 367 MW Walney project in the Irish Sea off the coast off Cumbria, owned by Ørsted, PKA and PFA. The project was built in two phases, with turbine blades manufactured at facilities in the Isle of Wight for phase one and in Hull for phase two.

The government has supported this investment through a Contract for Difference, which was awarded in 2014. Contracts for Difference have been successfully used to promote investment in offshore wind in the UK by providing price certainty and stability to electricity generating companies. The project became operational in September 2018, and is currently the largest operational offshore wind farm in the world, capable of generating enough electricity to power around 600,000 homes.

Utilities

Nearly £50 billion of investment in utilities infrastructure in the pipeline

95 ongoing or planned utilities projects and programmes in the pipeline

tunnelling work on the Thames Tideway Tunnel started in November 2018

Around 30 projects to upgrade utilities networks have been completed this year

phase one of the London Power Tunnels was completed this year, the most significant upgrade to the city's electricity networks since the 1960s

Utilities overview

5.14 Investment in private utilities is key to improving the efficiency of our electricity, gas and water networks, ensuring value for money for consumers and alignment with other infrastructure networks. The government has established tools for supporting this investment, including through the Regulated Asset Base model.

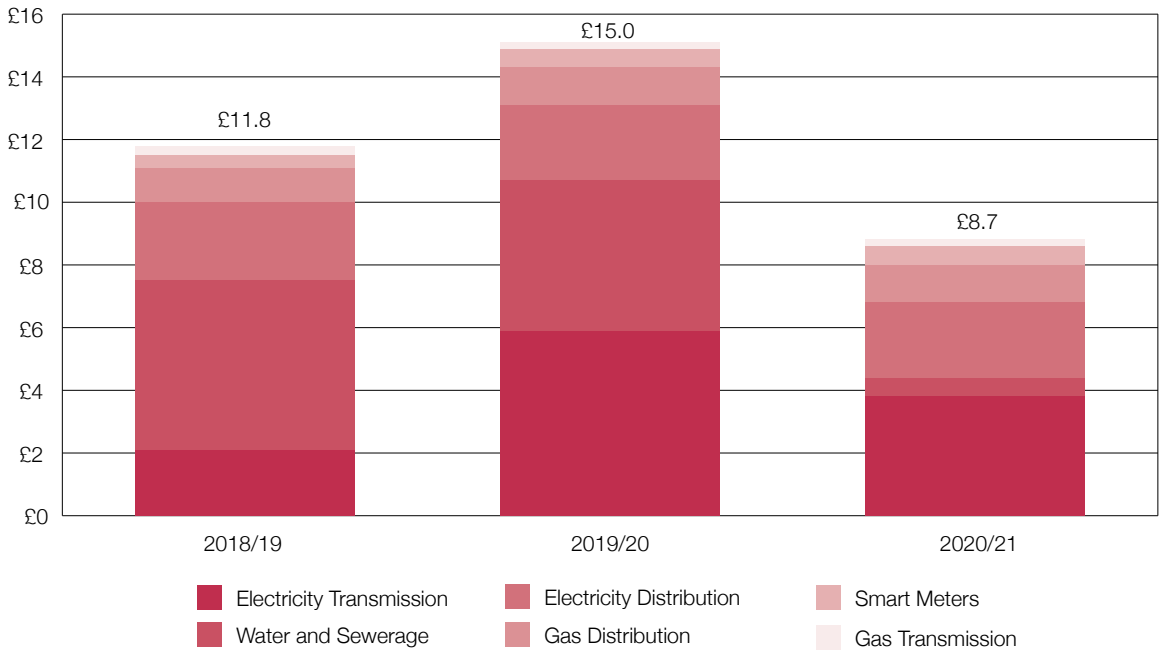
Investment in the pipeline

5.15 The pipeline contains 95 projects, programmes and other investments in the utilities sector with a total value of £35.4 billion to 2020/21.

Table 7: Utilities pipeline investment

Sub-Sector	Number of Projects	Programmes and Other Investments	18/19 to 20/21 (£bn)	Beyond 20/21 (£bn)	Total Pipeline (£bn)
Electricity Transmission	19	19	£11.8	£0.2	£12.0
Electricity Distribution	0	14	£7.2	£4.6	£11.9
Water and Sewerage[13]	1	27	£10.7	£0.2	£10.8
Smart Meters[14]	0	1	£1.6	£4.5	£6.1
Gas Distribution	0	8	£3.5	–	£3.5
Gas Transmission	0	6	£0.7	£2.1	£2.7
Total	**20**	**75**	**£35.4**	**£11.6**	**£47.0**

Chart 10: Utilities investment from 2018/19 to 2020/21 split by sub-sector (£bn)



[13] The control period for water investment, AMP 6, ends in 2019/20, after which AMP 7 will be set.

[14] All smart meter activity is classed under the Smart Meter roll-out programme.

Table 8: Utilities investment split by funding source (£bn)

Funding Source	2018/19	2019/20	2020/21
Private	£11.8	£15.0	£8.7
Total	**£11.8**	**£15.0**	**£8.7**

Delivery progress

5.16 Thames Tideway Tunnel is one of the biggest engineering projects in Europe and will provide the biggest upgrade to London's sewer system since Victorian times. It is an example of innovative support from government for the development of critical new infrastructure in the UK. The project is now well underway and this year has seen the start of tunnelling works. By next year all four main tunnelling drives will be underway.

Case study: London Power Tunnels

London Power Tunnels phase 1

The London Power Tunnels 'electricity superhighway' is the most significant addition to London's electricity network since the 1960s. The seven-year £1 billion Phase 1 of the project was completed in February 2018, with 200 km of high voltage cables within over 32 km of tunnels deep beneath London. This project was needed to replace electricity circuits near the end of their useful life, and to make future maintenance of the network more efficient and less disruptive to road users. The project also included a state-of-the-art substation at Highbury, and worked to promote engineering to over 30,000 pupils across London.

Work will begin on London Power Tunnels 2 in summer 2019, adding a further 32.5 km network of new tunnels between Wimbledon and Crayford, as part of National Grid's £750 million investment in London's electricity networks.

Digital infrastructure

5.17 Digital infrastructure supports the future of our economy. Investments in broadband and mobile communications networks, including full fibre broadband and new technologies like 5G, will support the government's connectivity ambitions – including nationwide full fibre coverage by 2033 and 5G deployment to the majority of the country by 2027. The Future Telecoms Infrastructure Review, published in July 2018, sets out the government's plans and policies to upgrade the UK's digital infrastructure, and at Budget 2018 further funding from the National Productivity Investment Fund was committed to support full fibre broadband connections in rural locations.

Investment in the pipeline

5.18 The pipeline contains 11 digital infrastructure projects, programmes and other investments with a total value of £6.8 billion to 2020/21.

Table 9: Digital infrastructure pipeline investment

Sub-Sector	Number of Projects	Programmes and Other Investments	18/19 to 20/21 (£bn)	Beyond 20/21 (£bn)	Total Pipeline (£bn)
Digital Infrastructure	1	10	£6.8	£0.02	£6.8
Total	**1**	**10**	**£6.8**	**£0.02**	**£6.8**

Chart 11: Digital infrastructure investment from 2018/19 to 2020/21 (£bn)

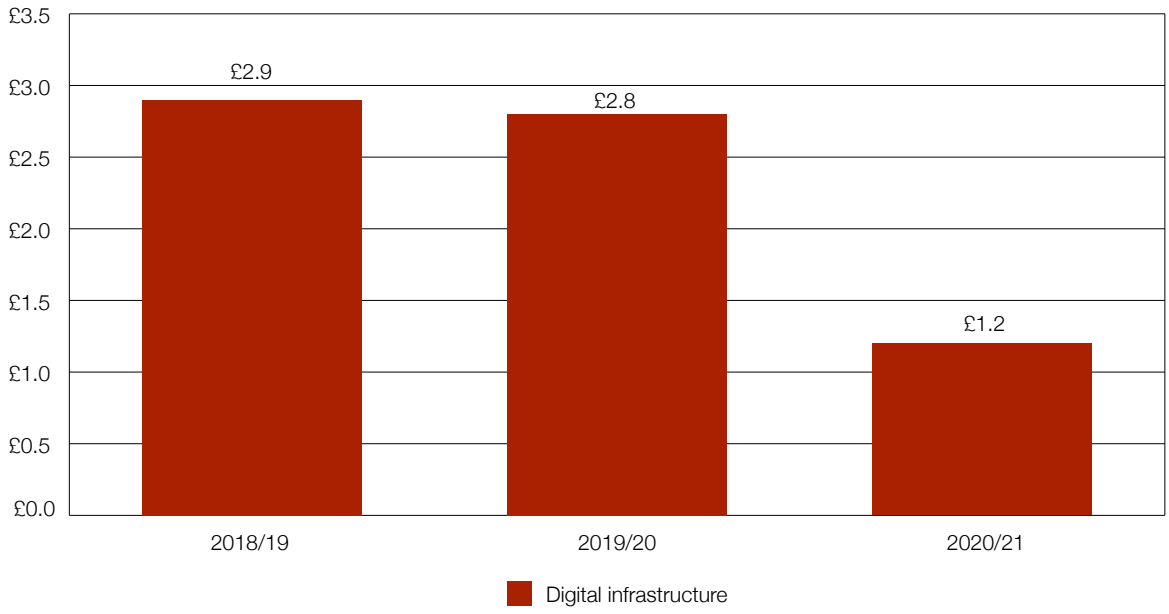


Table 10: Digital Infrastructure split by funding source (£bn)

Funding Source	2018/19	2019/20	2020/21
Central Government	£0.3	£0.3	£0.1
Private	£2.1	£2.0	£0.6
Mixed	£0.5	£0.5	£0.5
Total	**£2.9**	**£2.8**	**£1.2**

Delivery progress

5.19 In January 2018, the government announced that it had delivered on its commitment to extend superfast broadband coverage to 95% of premises by the end of 2017 – meaning that 19 out of 20 UK homes and businesses now have the option to upgrade to internet connections that are more than twice as fast as Ofcom's recommended speed for a typical family home. Mobile data coverage has also increased substantially – with 89% of the UK now covered by a 4G signal from at least one operator (up from 79% in 2017).

5.20 Government is investing in the next generation of digital technology, including full fibre connectivity and 5G, which will transform the UK's digital connectivity. Through the 5G Testbeds and Trials Programme, government is coordinating pilots and trial activities to identify potential deployment and technical challenges for 5G, reduce commercial risks associated with investment in 5G by stimulating demand for new services, and help to inform future policy.

5.21 The government's steps to catalyse investments in full fibre broadband are seeing results. The innovative Digital Infrastructure Investment Fund was launched in 2017. HM Treasury acted as a cornerstone investor by providing £400 million across three funds, to be matched by the private sector. Key investments are already being made, including £18 million into Community Fibre, which will connect 100,000 social houses in London to ultrafast broadband, and £16 million into Airband, which will help expand their network to an additional 50,000 homes and businesses in rural areas across England and Wales.

Case Study – Local Full-Fibre Networks

The government's £267 million Local Full Fibre Networks programme is stimulating commercial investment in full fibre networks across the whole of the UK. In July 2018 Cheselbourne School in Dorset became the first school in the programme to be connected to a full fibre network, with orders in the pipeline to connect up to 100 schools by April 2019. Other Wave 1 projects where fibre build is physically underway include West Sussex, Tameside (Greater Manchester) and the Trans-Pennine rail route between Manchester and York.

At Spring Statement 2018, the Chancellor announced that 13 areas will share a total of £95 million funding from Wave-2 of the programme, and at Budget 2018, Suffolk were announced as the first local area to be awarded funding from a share of the £95 million Wave-3. The £67 million Gigabit Broadband Voucher Scheme, which can be used by small businesses and the local communities surrounding them to contribute to the installation cost of a gigabit-capable connection, was launched in March 2018 and to date 7,280 vouchers have been issued, of which 2,493 have already resulted in full fibre connections being delivered.

Furthermore, at Budget 2018 the Chancellor announced an additional £200 million of funding to run a series of pilots to provide full fibre connectivity in the hardest to reach 10% of the country. These pilots will commence in the first phase in Devon, Cornwall, the Welsh Valleys and the borderlands of Scotland and England.

Flood and coastal erosion

5.22 The government is delivering significant investment into projects that will protect homes and businesses against the risk of flooding, including schemes that specifically address the risks of climate change. At Budget 2018, the government announced an additional £13 million to enable coverage of the flood warning service to 100% of those at high-risk and improve mapping, forecasting and management of surface water risk, as well as funding regional pilots to drive take-up of property level resilience.

Investment in the pipeline

5.23 The pipeline contains 28 flood and coastal erosion protection projects, programmes and other investments with a total value of £1.9 billion to 2020/21.

Table 11: Flood and coastal erosion pipeline investment

Sub-Sector	Number of Projects	Programmes and Other Investments	18/19 to 20/21 (£bn)	Beyond 20/21 (£bn)	Total Pipeline (£bn)
Flood	7	21	£1.9	£0.5	£2.4
Total	**7**	**21**	**£1.9**	**£0.5**	**£2.4**

Chart 12: Flood and coastal erosion investment from 2018/19 to 2020/21 (£bn)

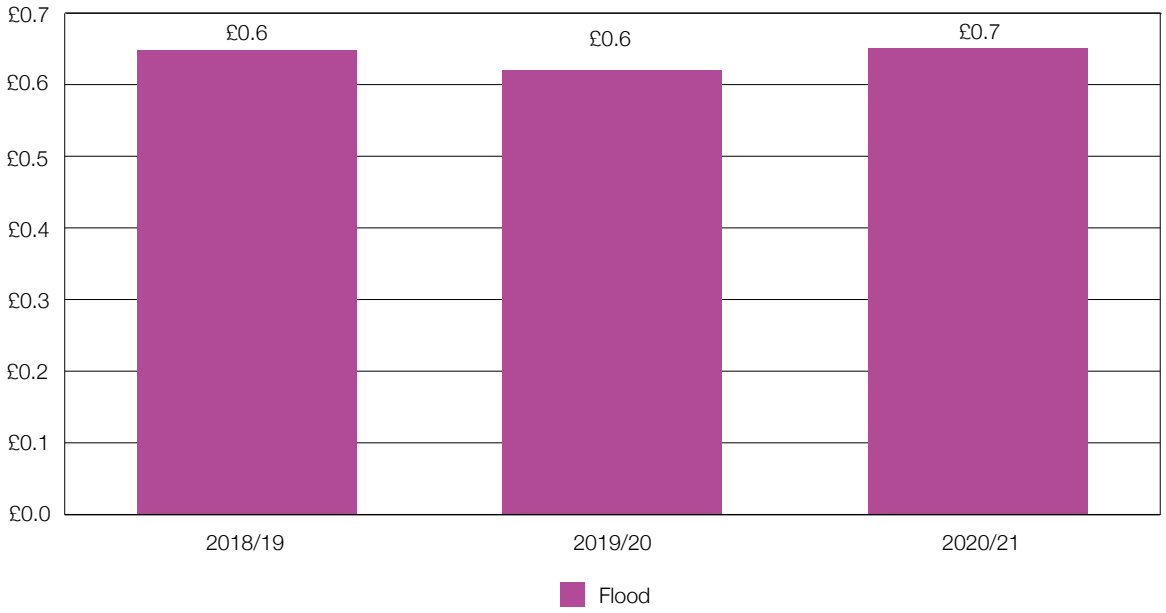


Table 12: Flood and coastal erosion investment split by funding source (£bn)

Funding Source	2018/19	2019/20	2020/21
Central Government	£0.1	£0.1	£0.0
Mixed	£0.6	£0.5	£0.6
Total	**£0.6**	**£0.6**	**£0.7**

Delivery progress

5.24 £2.6 billion of government investment between April 2015 and March 2021 will better protect over 300,000 homes. This includes projects like the £32 million flood defence project for Perry Barr and Witton, near Birmingham, which will reduce flood risk for 1,400 properties along the River Tame including 950 homes. The main construction of the second phase of this scheme began in July 2018. Projects delivered this year include the £600,000 flood scheme to protect homes and businesses in the Northumberland coastal town Blyth, which was completed in November 2018.

Case Study – Rossall Coastal Defence Improvement Scheme

Rossall Coastal Defence Improvement Scheme

The £63 million Rossall flood defence scheme opened in Summer 2018 – one of the single biggest investments in a coastal flood defence scheme to date, delivered in partnership by Wyre Council, the Environment Agency and main contractor Balfour Beatty. The 2km of new sea defences in Rossall, Lancashire will help to protect 7,500 homes for the next 100 years, taking into account the impacts of climate change and projections of sea levels and weather patterns.

As well as reducing flood risk, the project has also improved the local environment. A new ecology park, Larkholme Grasslands, has already been designated as a Biological Heritage Site, providing a new environment for rare species of flora and fauna as well as green space for local residents and tourists.

Science and Research

5.25 The government is committed to raising levels of investment in research and development, which will help to transform our economy and boost living standards. The Industrial Strategy set out the government's ambitions to raise total R&D investment to 2.4% of GDP by 2027, and in October the Budget included significant new support for cutting-edge science and technologies including an additional £1.1 billion for the Industrial Strategy Challenge Fund. The additional £7 billion investment since 2016 is the largest increase for R&D in 40 years. This year, the government has also committed £1.2 billion of funding over the next five years to the Catapults – a network of world-leading centres that are designed to transform the UK's capability for innovation in specific areas. Working with industry and academia, they are helping to drive future prosperity by transforming high-potential ideas into new products and services that generate economic growth for the UK.

Investment in the pipeline

5.26 The pipeline contains 21 science and research projects, programmes and other investments with a total value of £3.9 billion to 2020/21.

Table 13: Science and research pipeline investment

Sub-Sector	Number of Projects	Programmes and Other Investments	18/19 to 20/21 (£bn)	Beyond 20/21 (£bn)	Total Pipeline (£bn)
Research	13	8	£3.9	£1.0	£4.9
Total	**13**	**8**	**£3.9**	**£1.0**	**£4.9**

Chart 13: Science and research investment from 2018/19 to 2020/21 split by sub-sector (£bn)

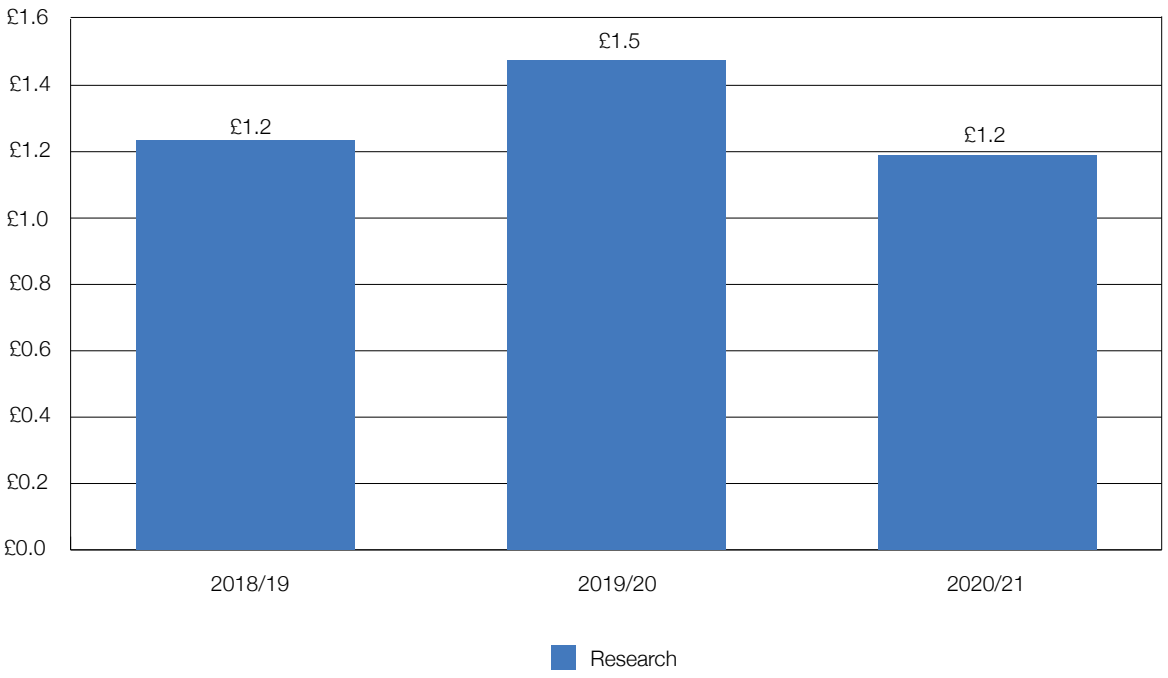


Table 14: Science and research investment split by funding source (£bn)

Funding Source	2018/19	2019/20	2020/21
Central Government	£0.9	£1.0	£0.8
Mixed	£0.3	£0.4	£0.4
Total	**£1.2**	**£1.5**	**£1.2**

Delivery progress

5.27 Diamond Light Source, the UK's national synchrotron, is one of the world's most advanced scientific facilities. The machine harnesses the power of electrons, accelerating them to near light speeds so that they give off light 10 billion times brighter than the sun. These are then directed off into laboratories known as 'beamlines', where scientists can use the light to study anything from fossils, jet engines and new medicines to cutting-edge technology and innovative engineering. The final beamline of the third phase of the Diamond Light Source project is now operational.

5.28 Supported by £99 million of government funding from the Industrial Strategy Challenge Fund, the National Satellite Test Facility (NSTF) on the Harwell Campus in Oxfordshire will strengthen the UK's world-leading position in space technologies and accelerate growth of the UK's space economy. The NSTF will feature a range of co-located facilities to enable the assembly, integration and environmental testing of satellites and payloads of up to 7 tonnes, helping the UK to capitalise on the estimated 3,500 – 10,000 satellites that are due to be launched by 2025. The project is currently in its design stage with construction starting next year.

Case Study – *RRS Sir David Attenborough*

Artist's impression of the RRS Sir David Attenborough

The RRS *Sir David Attenborough* will be a new state-of-the-art vessel that will help to transform multidisciplinary research capabilities in the polar regions and maintain the UK's place as a world leader in polar science. The ship, whose hull is designed to break through ice up to 1m thick, boasts a wide range of specialist laboratories, facilities and instruments to support cutting-edge research. This includes the first moon pool on a British polar research ship, which allows for scientific equipment to be deployed through a vertical shaft running through the vessel.

The ship, which is being built by Cammell Laird in Birkenhead, reached a major milestone in July 2018 with the launch of the 10,000 tonne hull into the River Mersey. The ship is being constructed in blocks. The hull and superstructure were built separately and joined together after the launch. Sea trials are planned for the summer of 2019, with the ship coming into operation in 2020.

Social Infrastructure

5.29 In addition to economic infrastructure, the pipeline continues to capture investments in schools, healthcare facilities, houses, and the defence and justice sectors, helping to provide a more comprehensive view of cross-sector investment in infrastructure and construction. Investments in these sectors will not only improve public services, but also make use of the government's buying power to support innovation to improve the delivery of social infrastructure projects while modernising the construction sector and increasing productivity. Budget 2017 announced the adoption of a presumption in favour of offsite construction by five central government departments. Government is taking a step further by launching a call for evidence on our proposed approach to offsite construction, a Platform approach to Design for Manufacture and Assembly (P-DfMA). This new approach, where parts for infrastructure projects are made offsite in factories using the latest digital technology, will help projects finish on time and on budget.

Investment in the pipeline

5.30 The pipeline contains 172 social infrastructure projects, programmes and other investment with a total value of £33.5 billion to 2020/21.

Table 15: Social infrastructure pipeline investment

Sub-Sector	Number of Projects	Programmes and Other Investments	18/19 to 20/21 (£bn)	Beyond 20/21 (£bn)	Total Pipeline (£bn)
Housing and regeneration	3	10	£11.4	£3.1	£14.5
Education[15]	1	20	£14.0	–	£14.0
Health	11	11	£3.4	£1.5	£4.9
Defence	20	19	£2.3	£1.6	£3.9
Justice and security	18	59	£2.4	£0.1	£2.5
Total	**53**	**119**	**£33.5**	**£6.3**	**£39.8**

Chart 14: Social infrastructure investment from 2018/19 to 2020/21 split by sub-sector (£bn)

[15] Data returns from the Department for Education covered investments from 2018/19 to 2020/21.

Table 16: Social Infrastructure investment split by funding source (£bn)

Funding Source	2018/19	2019/20	2020/21
Central Government	£12.4	£11.1	£9.9
Private	£0.0	£0.0	£0.0
Mixed	£0.0	£0.1	£0.0
Total	**£12.4**	**£11.2**	**£9.9**

Delivery progress

Education

5.31 The Priority Schools Building Programme (PSBP), delivered in two phases, is rebuilding or refurbishing 537 schools across the country. The first phase of the programme, PSBP 1, is now complete having delivered over 260 projects on time and to budget, at one third of the cost and 30% faster than the previous Building Schools for the Future programme.

Housing

5.32 The government continues to maintain momentum on housing delivery through a broad range of proactive measures to unlock sites, support the market and reform the planning system. Permission for 351,700 new homes was granted by the planning system in the year to June 2018, up 6% from the previous year. Building on this, the National Planning Policy Framework has been overhauled, with a focus on increasing the supply of land, maintaining protections for the green belt and a greater emphasis on converting planning permissions into homes. Government has also announced several packages of funding support in the last year, including backing the West Midlands with £100m of infrastructure and regeneration funding to deliver 215,000 homes by 2031, and £291 million from the Housing Infrastructure Fund to unlock 18,000 new homes in East London. Budget 2018 also confirmed the abolition of the cap on local authorities' ability to borrow for house building, which it is anticipated will enable councils to increase building by around 10,000 homes per year.

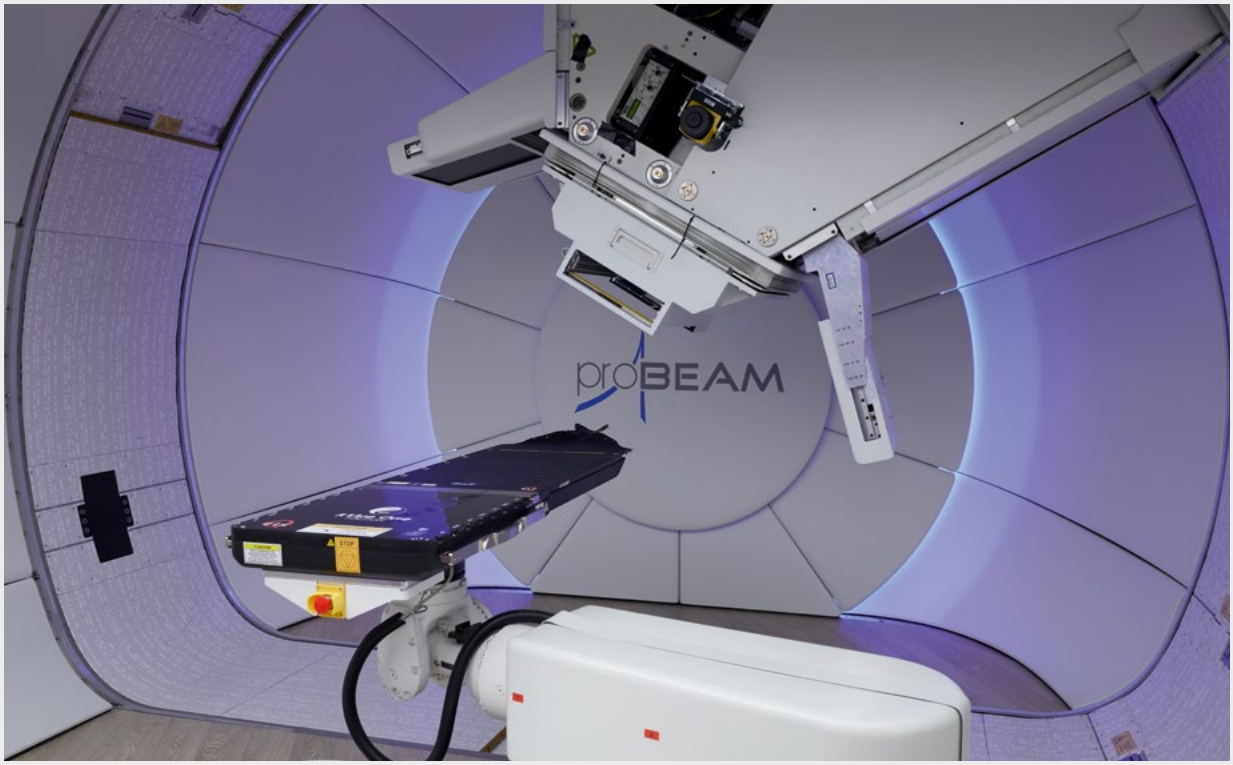
Justice

5.33 In the justice sector, further steps have been taken this year towards delivering the government's commitment to building up to 10,000 decent new prison places. Following planning approval a contract to build has been awarded for a new prison at Wellingborough in Northamptonshire, and at Budget 2018 the government announced funding for the new 1,680 prisoner capacity Glen Parva prison in Leicestershire.

Defence

5.34 The Defence Estate Optimisation (DEO) Programme intends to deliver a more modern and capability-focused Defence estate. During the first full year of programme delivery, six of the sites identified in the November 2016 Better Defence Estate announcement were released and feasibility and assessment studies had been completed or were underway for a substantial number of additional sites.

Case Study – National Proton Beam Therapy Service Development Programme – Christie Hospital, Manchester



Proton Beam Therapy Centre treatment room, Christie Hospital Manchester

NHS England in partnership with The Christie NHS Foundation Trust (TCH), University College London Hospitals (UCLH) Foundation NHS Trust and Department of Health and Social Care is developing two NHS high energy Proton Beam Therapy (PBT) Centres, which will form the national NHS PBT service. High energy PBT is a form of curative radiotherapy which is suitable for specific types of cancer, and is particularly well suited to those with tumours near vital organs, and for children.

Each purpose built PBT centre requires complex construction and technical development. Each has a 95 tonne cyclotron housed in a bunker with concrete walls over 6m thick and three treatment rooms equipped with gantries with full 360 degree rotation, which require three stories of space to function. Construction at The Christie was completed in Spring 2018 and the first patient will be treated in December 2018. The PBT Centre won the Greater Manchester Chamber of Commerce Building of the Year Award 2018.

Annex A: Methodology and assumptions used for 10 year projection of investment

The 10 year projection is based on three approaches.

First, it projects public investment in economic infrastructure, assuming investment growth will continue along the current pipeline growth rate trend (from 2016/17 to 2020/21). Under this assumption, during this period investment is in line with the National Infrastructure Commission's (NIC) fiscal remit of 1.0% – 1.2% of GDP.[16] (HM Treasury's remit letter to the NIC instructs them to make recommendations on the country's long term infrastructure needs on the basis that the government invests between 1.0 – 1.2% of GDP in economic infrastructure. Final decisions regarding levels of government investment within the 1.0 – 1.2% fiscal remit will be made by the government when it responds in full to the NIC's National Infrastructure Assessment next year.)

Second, the calculation projects public investment in social infrastructure, including social housing and defence infrastructure. This projection is based on the average level of investment in the pipeline, between 2016/17 and 2020/21, which has been projected to 2027/28 in real terms (allowing for inflation).

Finally, the calculation projects private investment in regulated utilities and other sectors (digital communications, transport, and water and waste). This projection is based on the following methodologies:

- Projected investment in regulated utilities is modelled on the average level of annual investment based on current control periods, assuming government efficiency targets of 10%. This projection does not represent the level of future price control periods, which are not yet determined. Planned investment in the non-regulated utilities identified in the pipeline post 2020/21, such as Thames Tideway Tunnel, has been included in the ten year projection, but no further future forecast has been made.
- Investment in electricity generation is based on projected energy demand scenarios and IPA modelling.
- Projected investment in the oil and gas sector has been forecast to 2023/24 by the industry regulator, the Oil and Gas Authority (OGA). The OGA projection extends the forecasted investment in 2024/25 to 2027/28 in real terms.
- Projected investment in all other sectors is based on the average level of investment in the pipeline, between 2016/17 and 2020/21, which has been projected to 2027/28 in real terms.

[16] https://www.gov.uk/government/publications/remit-letter-to-the-national-infrastructure-commission

Annex B: Methodology used for regional analysis of investment to 2020/21

Regional allocation where the asset location is known

Projects in the National Infrastructure and Construction pipeline are allocated to individual regions (as defined by the ONS), based on the location of the built asset, when the asset is located within one region.

The allocation of assets to a region, where possible, helps users to filter the data by region to find specific local schemes, or to search for national programmes. It also helps inform maps such as the ones included in this document.

Using this basic methodology, around 40% of the pipeline is allocated to a specific region. Many projects cannot be allocated in this way, because they are national, cross region or are broader investment programmes.

This basic allocation of projects and programmes to specific regions is not based on analysis of the benefits that assets will deliver. For example, the pipeline does not currently reflect benefits to the supply chain of the construction and maintenance of an asset. More than 60% of suppliers for Crossrail are based outside London, whereas the entirety of investment in Crossrail in the pipeline is allocated to London.

This allocation also does not address benefits to users of infrastructure assets once in use. In some, but not all cases, the location of the asset will be the same as where benefits are felt. For example, investment in public services infrastructure, such as schools and hospitals, largely benefit the communities in which the constructed asset is based.

Additional regional allocation

The IPA has worked with other government departments and regulators to allocate a greater proportion of the pipeline to individual regions, where this cannot be done based simply on the location of an asset. The IPA has applied a methodology that allows investment in national and multi-regional programmes to be allocated appropriately between regions. Using this approach, this report provides analysis that altogether allocates over 80% of the value of the pipeline between 2018/19 and 2020/21 to specific regions. A detailed explanation of how this is done is provided below.

Average annual per capita investment

In the National Infrastructure and Construction Pipeline published in December 2017, regional analysis was presented as cumulative per capita investment per region, as a total for the four years 2017/18 to 2020/21. This year in the ‘Regional analysis of investment in the pipeline from 2018/19 to 2020/21’ section of this report, we have provided average annual investment in infrastructure per person in each region of England across the three years from 2018/19 to 2020/21. This will enable easier comparisons to future editions of the pipeline. However, the three year cumulative total is also provided in Table 17 below to show how the figure has changed.

Table 17: Cumulative per capita regional investment by funding source (2018/19 – 2020/21)

	Funding Source		
Region	Central and Local Government	Private	Total
East Midlands	£1,190	£1,607	£2,797
East of England	£971	£1,379	£2,350
London	£1,718	£1,283	£3,001
North East	£786	£2,252	£3,038
North West	£1,636	£1,160	£2,796
South East	£1,416	£1,252	£2,669
South West	£964	£2,352	£3,316
West Midlands	£1,079	£1,132	£2,211
Yorkshire and The Humber	£866	£1,435	£2,301

Methodology applied for the IPA's regional analysis for sectors other than transport

Where possible, the total investment for the asset continues to be allocated to the region in which an asset is located. For example, investment in the Henry Royce Institute is allocated to the North West and Hinkley Point C is allocated to the South West. Apart from transport, nationwide investment in multi-regional programmes (e.g. the rollout of superfast broadband) is shared out according to the population or number of households in each region. The methodology is broken down by sector in the table below. In addition, for specific utilities sub-sectors, investment has been regionally allocated based on household consumption. The methodology is broken down by sector in the table below

Allocated per household	• Communications (Broadband) • Energy (Electricity generation, oil and gas) • Utilities (Electricity transmission, Gas distribution, smart meters)
Allocated per person	• Communications (Digital economy, mobile connectivity) • Education (Balance of spend identified in investing in Britain's Future, Grammar Schools expansion, Multi-academy Trust (MAT) allocations, College Capital Investment Fund (CCIF), National Colleges Capital Investment Fund and further education • Energy (Nuclear Decommissioning Authority) • Science and Research

Methodology applied to the transport sector

Transport investment supports the movement of people and goods, with journeys routinely crossing regional (and national) boundaries. Many of our biggest transport projects cross regional boundaries, particularly on the strategic rail and road networks. The regional allocation of spending and the task of apportioning benefits of projects is therefore not straightforward. Issues include:

- Investments physically located in one geographic region often benefit those who live in other regions. For example, investments in London's transport network will benefit not only London residents but also the almost 1 million people who work in London but live elsewhere, as well business and leisure visitors to the city.
- Key parts of our transport network serve as international travel 'hubs' for the whole of the country. For various geographic reasons, many of these are concentrated in London, the South East and the East of England. Transport spending that supports travel to and from these 'hubs' benefits the whole country through the international travel and trade that it helps facilitate.

- As large transport investments often involve substantial spending over a long construction period and long-term impacts, the regional distribution of spending at a particular point in time will not necessarily match the regional distribution of benefits in that period or the benefits over the lifetime of the investment.

Where possible, transport investment has been allocated to the region where the asset is located. For cross-regional and unallocated investment, it has been allocated using the methods set out in the table below.

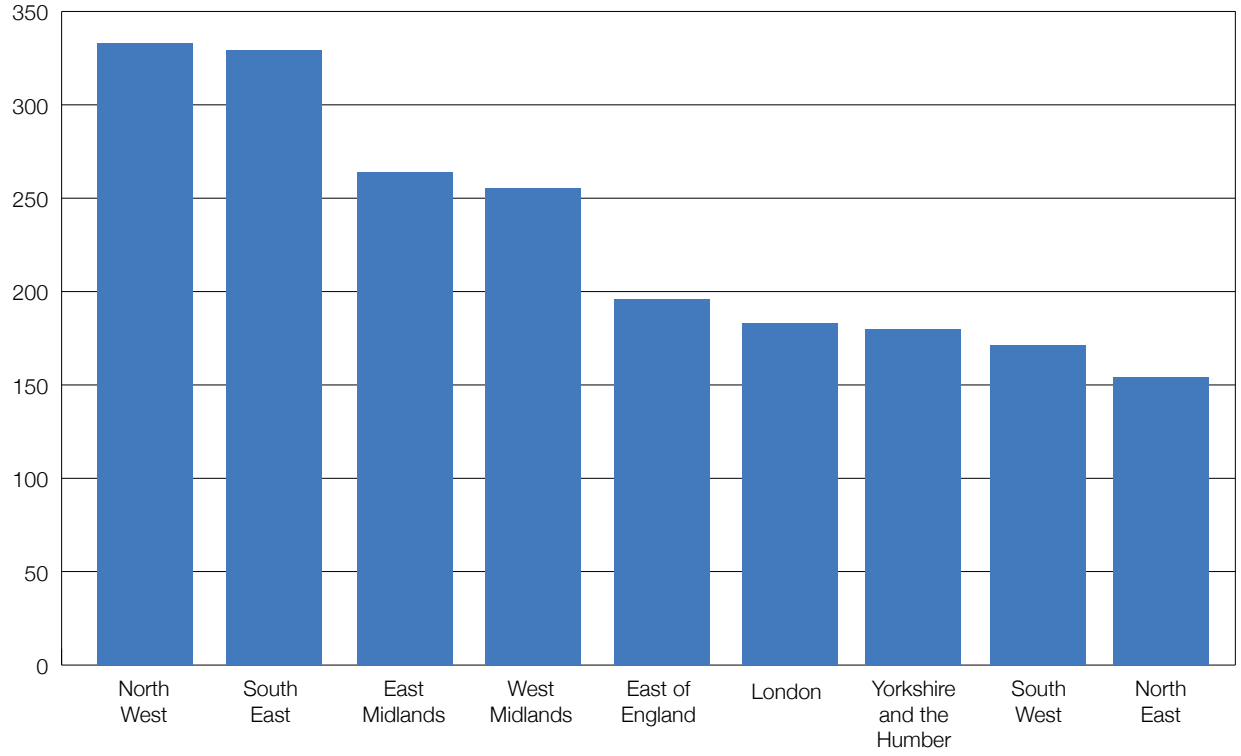
Rail	The analysis uses Network Rail capital investment in renewals and enhancements as proportions. Investment is allocated to the region in which an asset is located. For projects that are cross-regional, investment is apportioned according to track length (kilometres) within the appropriate regions.
HS2	The 2017 National Infrastructure and Construction Pipeline allocated spending to regions based on analysis of where the benefits of HS2 were expected to fall, as outlined in past HS2 economic cases. This year, the analysis takes a cost approach, apportioning spending according to the full length of route included in each region, and using industry benchmarks to weight the sections of route involving tunnels to reflect the increased cost of tunnelling. This new approach better reflects the distribution of central government spending, and aligns with methodologies used in other modes by allocating investment to the region where the asset is located.
Strategic Roads	The analysis includes capital investment in the Roads Investment Strategy. Where possible, investment is allocated to the region in which an asset is located. For investment in maintenance and other unallocated spend, investment is apportioned according to the distribution of road traffic journeys across regions on the Strategic Road Network.
Local Transport	For the integrated transport block, local authority majors, local spend on buses, and walking and cycling, where funding has been allocated to a region, the analysis assumes the benefits of spend are where the local authority or local economic partnerships are based. Where later years are unallocated and future funding is still expected IPA has assumed a flat profile of spend and has allocated spending across regions on a per capita basis. This does not necessarily reflect future regional investment allocations.

Based on this methodology, Table 18 sets out the allocation of central government transport capital spending in the pipeline between 2018/19 and 2020/21, per capita and across regions.

Table 18: Central Government transport capital spending per capita across regions (2018/19 – 2020/21)

Region	Average Per Capita Investment
East Midlands	£264
East of England	£196
London	£183
North East	£154
North West	£333
South East	£329
South West	£171
West Midlands	£255
Yorkshire and The Humber	£180

Chart 15: Central government transport capital spending annual average per capita across regions (2018/19 – 2020/21)



Analysis of Super Regions was carried out for transport as this is often used when discussing regional transport expenditure. This uses the same data as Chart 15. The North includes the North West, Yorkshire and the Humber, and the North East. The Midlands and East of England includes the West Midlands, East Midlands and East of England. The South includes the South West and South East and London. This shows that average annual central government transport investment per capita is highest in the North.

Table 19: Central government transport capital spending annual average per capita across Super Regions (2018/19 – 2020/21)

Super Region	Average Annual Per Capita Investment
The North	£248
The Midlands and East of England	£236
The South	£236

Context and historic transport spending

HM Treasury releases outturn transport spending data in its Country and Regional Analysis (CRA) publication. It is not currently possible to compare the CRA with central government transport investment over the next four years in the pipeline because the CRA and pipeline use different methodologies and data sources. The CRA includes all spending by central government, local bodies, and public corporations. The pipeline analysis does not include all local authority transport investment.

Data from the CRA shows that, in real terms, transport capital investment per person was higher in every region in England over the last four years than between 2006/7 and 2009/10.

Investment in Yorkshire and the Humber was nearly 50% higher between 2014 and 2018 than between 2006 and 2010. In the North West it was nearly 40% higher; in the West Midlands and North East it was more than 20% higher. The table below shows public transport investment in each region.

Table 20: Public transport investment per region based on HM Treasury Country and Regional Analysis (2017/18 prices)

Region	Total Investment per person 2006/07 - 2009/10	Total Investment per person 2014/15 - 2017/18
East of England	£748	£982
East Midlands	£584	£645
London	£1,721	£2,605
North East	£556	£762
North West	£648	£1,129
South East	£864	£892
South West	£606	£764
West Midlands	£638	£975
Yorkshire and The Humber	£565	£867

Annex C: Devolved infrastructure investment

The pipeline contains projects and programmes distributed across the UK but the majority of the value of the pipeline relates to spending in England. This is because most infrastructure spending in Scotland, Wales and Northern Ireland is the responsibility of each devolved administration, and therefore is not included in this pipeline.

The split between the responsibility of the UK government and each of the devolved administrations for infrastructure policy and funding varies according to the distinct devolution settlement in place, as set out below. Each devolved administration produces its own infrastructure plan setting out spending in economic infrastructure:

- The Northern Ireland Executive's Investment Strategy for Northern Ireland 2011-2021 sets out the forward programme for investment in public infrastructure. Details of government funded infrastructure contracts that have not yet entered procurement are also updated quarterly in the Infrastructure Investment Pipeline.[17]
- The Scottish government published an Infrastructure Investment Plan with a Project Pipeline in 2015. A Major Capital Projects Progress Update and Updated Programme Pipeline was published in March 2018.[18]
- The Welsh government published an Infrastructure Investment Plan in 2012 with review and updated Project Pipeline published in May 2018.[19]

Sector	Devolved administration		
	Scotland	Northern Ireland	Wales
Road	Devolved responsibility	Devolved responsibility	Devolved responsibility
Rail	The Scottish government is responsible for internal services. The UK government is responsible for cross-border daytime services	Devolved responsibility	Not devolved
Airports	Devolved responsibility. The regulation of air services is a reserved matter	Devolved responsibility	Devolved responsibility
Ports	Devolved responsibility, with some minor exceptions	Devolved responsibility	Devolved responsibility, with some minor exceptions
Energy	Not devolved	Not devolved	Not devolved
Communications	Not devolved	Not devolved	Not devolved
Water	Devolved responsibility	Devolved responsibility	Devolved responsibility
Flood Defence	Devolved responsibility	Devolved responsibility	Devolved responsibility
Waste	Devolved responsibility	Devolved responsibility	Devolved responsibility
Housing	Devolved responsibility	Devolved responsibility	Devolved responsibility

[17] http://isni.gov.uk/PDFs/Investment%20Strategy.pdf

[18] https://www.gov.scot/publications/infrastructure-investment-plan-2015/

[19] https://beta.gov.wales/sites/default/files/publications/2018-07/wales-infrastructure-investment-plan-for-growth-and-jobs-2012.pdf

Annex D: Priority projects progress report

The government published a vision for its major economic infrastructure investment in the National Infrastructure Plan 2010 and has updated it at regular intervals since then. The 2011 update to the National Infrastructure Plan identified a group of priority infrastructure projects and programmes for the first time. These priorities were based on three main criteria: they are nationally significant, they have the potential to drive economic growth, and/or they make a significant contribution to the government's strategic objectives, including through unlocking significant private investment.

The government's priority projects were updated in the National Infrastructure Delivery Plan 2016-2021 (NIDP 2016-2021). The majority of the priorities remained consistent. Past priority projects were removed if they had been successfully completed, were no longer priorities but still continuing, did not have significant delivery milestones within the coming five years, or no longer reflected government policy. Additional projects were added to the list to reflect new priorities. The NIDP 2016-2021 also brought economic and social infrastructure together for the first time.

The IPA tracks and supports the government's priority projects and programmes and the tables on the following pages provide an update on their current status.

Table A provides an update on progress of the 90 priority projects and programmes published in the NIDP 2016-2021. Of these, 18 have already been completed and 49 are under construction or part of programmes being delivered now. All the remaining projects are on track to deliver except one project that has been stopped following reassessment as reported in the Analysis of the National Infrastructure and Construction Pipeline 2017.[20]

Table B provides an update on 10 major projects in development highlighted in the NIDP 2016-2021. Work on these projects continues, ahead of final decisions. Where projects have been sufficiently progressed, they have been added to the pipeline.

Table C provides an update on progress of the 68 projects and programmes that appeared in previous priority lists but were not carried forward in the NIDP 2016-2021. Of these, 45 have been delivered 9 are under construction or part of complex programmes being delivered now, and 12 are in earlier stages of development. Two have been stopped following reassessment as reported in the Analysis of the National Infrastructure and Construction Pipeline 2017.

[20] Leeds New Generation Transport

Table A – Current priority investments in the National Infrastructure Delivery Plan 2016 – 2021

Priority Investment	Scheme Name	Delivery Body	Current Status (2018/19)	By End of 2020-21
Roads				
Smart Motorways	M1 Junctions 13 – 19	Highways England	In construction	In construction
	M27 Junctions 4 – 11	Highways England	In construction	Complete (2020-21)
	M4 Junctions 3 – 12	Highways England	In construction	In construction
	M6 Junctions 13 – 15	Highways England	In construction	In construction
	Manchester Smart Motorways	Highways England	Complete	Complete (2017-18)
	M3 Junctions 2 – 4A	Highways England	Complete	Complete (2017-18)
Road Period 1 Major Schemes	A2 Bean and Ebbsfleet	Highways England	Planning and consents	In construction
	A5-M1 Link Road	Highways England	Complete	Complete (2017-18)
	A556 Knutsford to Bowdon	Highways England	Complete	Complete (2016-17)
	M1/M6 Junction 19 Improvement	Highways England	Complete	Complete (2016-17)
A14	A14 Cambridge to Huntingdon	Highways England	In construction	Complete (2020-21)
A1 (North)	A1 Morpeth to Ellingham	Highways England	Planning and consents	In construction
	A1 North of Ellingham	Highways England	Planning and consents	In construction
	A1 Leeming to Barton	Highways England	Complete	Complete (2017-18)
	A1 Birtley to Coal House widening	Highways England	Planning and consents	In construction
	A1 Scotswood to North Brunton	Highways England	Planning and consents	In construction
A303/A30/A358 Corridor	A303 Amesbury to Berwick Down Dualling	Highways England	Planning and consents	In construction
	A303 Sparkford to Ilchester dualling	Highways England	Planning and consents	In construction
	A358 Taunton to Southfields dualling	Highways England	Planning and consents	TBC
Rail				
HS2	HS2	High Speed 2 Ltd	Planning and Consents	In construction
Crossrail		Crossrail Ltd	In construction	Complete (2019-20)
Network Rail Enhancement Programme	East Coast Main Line	Network Rail	In construction	In construction[21]
	East West Rail (Phase 1)	Network Rail	Complete	Complete (2016-17)
	East West Rail (Phase 2)	Network Rail	In construction	In construction
	Great Western	Network Rail	In construction	In construction
	Midland Main Line	Network Rail	In construction	In construction
	North of England	Network Rail	In construction	In construction
	South West Capacity	Network Rail	In construction	In construction
	European Rail Traffic Management System (Digital Rail)	Network Rail	Active programme	Active programme
Thameslink		Network Rail/ Siemens/ GTR	In construction	Complete (2018-19)
Intercity Express Programme		Network Rail/ Agility/ Hitachi	Active programme	Active programme

[21] Now forecast to complete two years later than previously reported

Priority Investment	Scheme Name	Delivery Body	Current Status (2018/19)	By End of 2020-21
International Gateways				
Airport Capacity Investment	Gatwick Q6	Global Infrastructure Partners	Active programme	Complete (2020-21)
	Heathrow Q6	Heathrow Airport Holdings Limited	Active programme	Complete (2019-20)
	Manchester	Manchester Airports Group	Active programme	Active programme
Port Capacity Investment		Various private sector developers	Active programme	Active programme
Surface Access Improvements	A5036 to the Port of Liverpool	Highways England	Planning and consents	In construction
	A6 to Manchester Airport Relief Road	Stockport Council	Complete	Complete (2017-18)
	M42 Junction 6	Highways England	Planning and consents	In construction
	A160/A180 Immingham	Highways England	Complete	Complete (2016-17)
	Gatwick Airport Rail Station	Network Rail	Planning and consents	Complete (2020-21)
Smart Motorways	M23 Junctions 8 – 10	Highways England	In construction	Complete (2019-20)
	Lorry Park (Permanent Solution) (previously M20 Lorry Park (Operation Stack))	Highways England	Scoping	TBC
	A63 Castle Street to Port of Hull	Highways England	Planning and consents	In construction
Energy				
Nuclear	Hinkley Point C	EDF Energy / CGN	In Construction	In Construction
Gas		Various private sector developers	Active programme	Active programme
Offshore Wind		Various private sector developers	Active programme	Active programme
Interconnectors – Utilities Regulated		Various	Active programme	Active programme
Smart Meters – Utilities Regulated		Various energy suppliers	Active programme	Active programme
Transmission & Distribution – Utilities Regulated	London Power Tunnels	National Grid	Complete	Complete (2018-19)
Transmission & Distribution	Western HVDC Link	Scottish Power	Complete	Complete (2017-18)
Communications				
Superfast broadband to 95%	Superfast broadband to 95%	Broadband UK	Active programme	Complete (2017-18)
Mobile Networks	4G Rollout	Mobile Network Operators	Active programme	Complete (2017-18)
	90% Voice Coverage	Mobile Network Operators	Active programme	Complete (2017-18)
Spectrum	700MHz Clearance	DCMS/Ofcom	Active programme	Complete (2020-21)
	Release of 750MHz sub 10GHz	Shareholder Executive	Active programme	Active programme

Priority Investment	Scheme Name	Delivery Body	Current Status (2018/19)	By End of 2020-21
Flood Defence				
Flood and Coastal Erosion Risk Management Programme	Boston Barrier	Environment Agency	In construction	Complete (2019-20)
	Lincshore	Environment Agency	Complete	Complete (2017/18)
	Oxford Flood Alleviation	Environment Agency	Scoping	In construction
	River Thames (Datchet to Teddington)	Environment Agency	Scoping	In construction
	Rossall and Anchorsholme	Environment Agency	Complete	Complete (2018/19)
	Southsea Flood Alleviation (Portsea Island Flood Defence)	Environment Agency	Scoping	In construction
	Thames Estuary Asset Management	Environment Agency	Active programme	Active programme
	Leeds Flood Alleviation Scheme	Environment Agency/ Leeds City Council	Active programme	In construction
Water				
Thames Tideway Tunnel	Thames Tideway Tunnel	Bazalgette Tunnel Ltd (also trading as 'Tideway')	In construction	In construction
Science & Research				
Science Majors	Diamond Light Source Phase III	Science and Technology Facilities Council	Complete	Complete (2018-19)
	Francis Crick Institute	Medical Research Council	Complete	Complete (2016-17)
	Pirbright Development Phase II	Biotechnology and Biological Sciences Research Council	In construction	Complete (2020-21)
	Polar Research Ship (RRS Sir David Attenborough)	NERC / Antarctic Logistics and Infrastructure Partition	Active programme	Complete (2020-21)
	UKCRIC	Engineering and Physical Sciences Research Council	Active programme	Active programme
Historic Priorities	Sir Henry Royce Institute for Advanced Materials	Engineering and Physical Sciences Research Council	In construction	In construction
Catapults		Innovate UK	Active programme	Active programme

Priority Investment	Scheme Name	Delivery Body	Current Status (2018/19)	By End of 2020-21
Housing and Regeneration				
Public Sector Land Release		Various public sector bodies	Active programme	Complete (2020-21)
Major Sites	Ebbsfleet Garden City	Ebbsfleet Development Corporation	In construction	In construction
	Old Oak Common	Old Oak and Park Royal Development Corporation	Planning and consents	In construction
	Northstowe	Homes and Communities Agency and Gallagher Estates	In construction	In construction
	Barking Riverside	Greater London Authority and L&Q and Bellway	In construction	In construction
	Bicester Garden Town	A2Dominion	In construction	In construction
	Brent Cross	Brent Cross Cricklewood Development Partners	Planning and consents	In construction
Local Transport				
Transport for London	4 Lines Modernisation	TfL	In construction	In construction
	New Tube for London	TfL	Planning and consents	In construction
	Metropolitan Line Extension	TfL	Consents approved	In construction
	Northern Line Extension/Upgrade	TfL	In construction	In construction
Northern Powerhouse	Heysham – M6 Link Road	Lancashire County Council	Complete	Complete (2016-17)
	Leeds New Generation Transportation	West Yorkshire Combined Authority and Leeds County Council	Consents Refused	Consents Refused
	Sunderland Strategic Corridor – New Wear Crossing	Sunderland City Council	In construction	Complete (2018-19)
	Mersey Gateway	Mersey Gateway Group	Complete	Complete (2017-18)
Midlands Engine	Midland Metro Extensions	Centro	In construction	In construction
	Lincoln Eastern Bypass	Lincolnshire County Council	In construction	Complete (2020-21)[22]
Other Regions	Norwich NDR	Norfolk County Council	Complete	Complete (2018-19)
	Bristol Temple Meads	Network Rail	Scoping	Complete (2018-19)

[22] Now forecast to complete two years later than previously reported

Table B – Current priorities still in development

Project	Next Steps
Lower Thames Crossing	On 10 October 2018, a 10-week public consultation opened on the preferred route for the Lower Thames Crossing, a 14.5 mile road linking the M2 in Kent with the M25 in Essex, including a 2.4 mile tunnel under the River Thames. Since the preferred route announcement by Transport Secretary Chris Grayling MP in April 2017, changes have been made to reflect stakeholder feedback. The Development Consent Order is planned for submission in 2019.
Roads Strategic Studies	As part of the development of the second Road Investment Strategy, the government is undertaking a robust research phase. As part of this, six strategic studies are being produced which aim to address complex problems on the road network. The findings from both strategic studies and route strategies will help to inform the development of the RIS 2 Investment Plan, supporting decision-makers to identify where problems are most severe, and where the need for action is greatest. The 2018 Budget announced a draft funding envelope for the second Roads Investment Strategy, with the government expecting to spend £25.3bn on the Highways England network of motorways and A roads.
Crossrail 2	On 5 March 2018, Transport for London and the Department for Transport announced the start of an Independent Affordability Review of funding and financing of the project. The government is considering the recommendations of the Review and will consider the case for the project at the Spending Review.
Western Rail Link to Heathrow	A proposed new 6.5km direct rail link between the Great Western Main Line and London Heathrow Airport to improve journeys to Britain's busiest airport and help increase economic productivity in the Thames Valley. The final round of statutory public consultation was completed in June 2018.
New Nuclear	In June 2018, the government announced that it was entering negotiations with Hitachi over the proposed Wylfa Newydd project in Anglesey. Government is also reviewing the viability of a Regulated Asset Base (RAB) model for financing future new nuclear projects.
Small Modular Reactors (SMRs)	Following successful engagement with industry, the SMR competition closed in December 2017. This exercise provided valuable insight into the advanced nuclear technologies market. In September 2017, The government launched the first phase of the Advanced Modular Reactor (AMR) Feasibility and Development project, which will award up to £44m for selected AMR projects to undertake development activities. Eight companies were selected for feasibility assessments in September 2018.
Northern Powerhouse Rail	Northern Powerhouse Rail is a major strategic rail programme, designed to transform connectivity between the key economic centres of the North, providing cities with faster, more frequent services to improve journeys and enhance productivity across the region. The government has previously committed £60m from the Transport Development Fund to develop detailed plans for Northern Powerhouse Rail. Up to a further £37m was provided at the 2018 Budget. This is in addition to £300m to go towards ensuring HS2 infrastructure can accommodate future Northern Powerhouse and Midlands rail services.
Shale Gas Exploration	Industry continue to progress specific shale gas sites, with the focus being on exploration at this stage. In 2017 the Government published more detail on a Shale Wealth Fund and plans to consult further with stakeholders in due course on how to ensure the Fund is designed to enable local communities to benefit directly from developments in their local area.
South East Airport Capacity	On 5 June 2018, the Secretary of State for Transport laid before Parliament the Airports National Policy Statement that was designated a national policy statement on 26 June 2018. It provides the primary basis for decision making on development consent applications for a north-west runway at Heathrow Airport, clarifying what is required to enable the development of much needed additional airport capacity that is essential for trade and economic growth, whilst setting clear requirements to mitigate the impacts on local communities and the environment. The next step is for applicants to develop their plans, and then carry out further public consultation as required under the act.
Tidal Lagoons	The government commissioned an independent review into the role that tidal lagoons could play in the UK's electricity system, including whether they would represent value for money. BEIS responded to the Hendry Review in June 2018, noting that the proposed Swansea Tidal Lagoon and programme of subsequent tidal lagoon projects did not represent good value to consumers or taxpayers. The government remains open to developed tidal lagoon proposals, provided they clearly demonstrate value for money in comparison to other forms of low carbon generation.

Table C – Historic priorities listed in pre-2016 National Infrastructure Plans

Priority Investment	Previous Investment Name	Scheme Name	First Reported	Current Status (2018/19)
Roads				
Historic Priorities	Highways Agency New Capacity	A19/A1058 Coast Road	NIP 2013	In construction
	Highways Agency New Capacity	A21 (Tonbridge to Pembury)	NIP 2013	Complete
	Highways Agency New Capacity	A38 (Derby Junctions)	NIP 2013	Scoping
	Highways Agency New Capacity	A19 (Testos)	NIP 2013	Planning and Consents
	Managed Motorways	M6 Junctions 16 – 19	NIP 2013	In construction
	Managed Motorways	M1 Junctions 23a – 25	NIP 2013	In construction
	Managed Motorways	M60 Junctions 24 – 27 & Junctions 1 – 4	NIP 2013	Complete (2018-19)
	Managed Motorways	M62 Junctions 10 – 12	NIP 2013	In construction
	Managed Motorways	M3 Junctions 9 – 14	NIP 2013	Planning and Consents
	Managed Motorways	M20 Junctions 3 – 5	NIP 2013	In construction
	Managed Motorways	M6 Junctions 13 – 15	NIP 2013	In construction
	Managed Motorways	M6 Junctions 21a – 26	NIP 2013	Planning and Consents
	Managed Motorways	M56 Junctions 6 – 8	NIP 2013	Planning and Consents
	Managed Motorways	M6 Junctions 2 – 4	NIP 2013	In construction
Completed – Historic Priorities	Highways Agency – Autumn Statement 2011 Package	A453 Widening Scheme	NIP 2012	Complete
	Highways Agency – Autumn Statement 2011 Package	M1 Junction 19/M6 Improvement Scheme	NIP 2012	Complete
	Highways Agency – Autumn Statement 2011 Package	A14 Kettering Bypass Widening Scheme	NIP 2012	Complete
	Highways Agency – Autumn Statement 2011 Package	A45/A46 Tollbar End Improvement Scheme	NIP 2012	Complete
	Trunk Road Improvements Programme	A23 Handcross to Warninglid	NIP 2012	Complete
	Trunk Road Improvements Programme	A11 Fiveways to Thetford	NIP 2012	Complete
	Accelerated Roads Construction Pilots	M6 Junctions 10a – 13	NIP 2013	Complete
	Managed Motorways	M5 Junctions 4a – 6	NIP 2013	Complete
	Managed Motorways	M62 Junctions 25 – 30	NIP 2012	Complete
	Managed Motorways	M4 Junctions 19 – 20	NIP 2012	Complete
	Managed Motorways	M5 Junctions 15 – 17	NIP 2012	Complete
	Managed Motorways	M1 Junctions 32 – 35a	NIP 2012	Complete
	Managed Motorways	M1 Junctions 28 – 31	NIP 2012	Complete
	Managed Motorways	M25 Junctions 5 – 6/7	NIP 2012	Complete
	Managed Motorways	M25 Junctions 23 – 27	NIP 2012	Complete
	Managed Motorways	M1 Juctions 39 – 42	NIP 2012	Complete

Priority Investment	Previous Investment Name	Scheme Name	First Reported	Current Status (2018/19)
Rail				
Historic Priorities	Rail Infrastructure and Rolling Stock Enhancement	Northern Rail Connectivity (Liverpool – Newcastle including Northern Hub)	NIP 2011	In construction
Completed – Historic Priorities	N/a	Kings Cross Station Improvements	NIP 2011	Complete
	N/a	Reading Upgrade Programme	NIP 2011	Complete
	Scottish Caledonian Sleeper Service	Scottish Caledonian Sleeper Service	NIP 2012	Complete
International Gateways				
Completed – Historic Priorities	Airport Capacity Investment	Birmingham Airport Runway Extension	NIP 2013	Complete
	Port Capacity Investment	Ports – renewable energy projects	NIP 2011	Complete
Energy				
Historic Priorities	Nuclear	Sizewell	NIP 2012	Scoping
	Nuclear	Oldbury	NIP 2012	Scoping
	Offshore Wind	Offshore Wind	NIP 2013	Active programme
	Solar PV	Solar PV	NIP 2013	Active programme
Completed – Historic Priorities	Gas	Carrington	NIP 2012	Complete
	Transmission & Distribution	Beauly-Denny Line	NIP 2013	Complete
Cancelled – Historic Priorities	Carbon Capture and Storage	Peterhead Project	NIP 2011	Cancelled
	Carbon Capture and Storage	White Rose Project	NIP 2013	Cancelled
Communications				
Completed – Historic Priorities	N/a	Urban Broadband Fund	NIP 2011	Complete
	N/a	Super Connected Cities	NIP 2013	Complete
	N/a	Rural Mobile Coverage	NIP 2011	Complete
Science & Research				
Completed – Historic Priorities	N/a	Skylon Sabre	NIP 2013	Complete
	Research Partnerships Investment Funds	Institute of Immunity and Transplantation (London)	NIP 2013	Complete
	Research Partnerships Investment Funds	Multidisciplinary Characterisation Facility (Manchester)	NIP 2013	Complete
	Research Partnerships Investment Funds	Maxwell Centre (Cambridge)	NIP 2013	Complete
	Research Partnerships Investment Funds	Continuous Manufacturing and Crystallisation Research for Pharmaceutical Products (Strathclyde)	NIP 2013	Complete
	Research Partnerships Investment Funds	AMRC Factory 2050 (Sheffield)	NIP 2013	Complete
	Research Partnerships Investment Funds	Big Data Institute (Oxford)	NIP 2013	Complete
Historic Priorities	N/a	Agri-tech Innovation Centres	NIP 2013	Active programme
	N/a	ELIXIR	NIP 2013	Active programme

Priority Investment	Previous Investment Name	Scheme Name	First Reported	Current Status (2018/19)
Local Transport				
Historic Priorities	Midlands Engine	Birmingham New Street	NIP 2013	Complete
Completed – Historic Priorities	Midlands Engine	Wolverhampton Interchange	NIP 2012	In construction
	Other Regions	Sittingbourne Northern Relief Road	NIP 2012	Complete
	Other Regions	Evasham Abbey Bridge and Viaduct Scheme	NIP 2012	Complete
	Other Regions	A13/A130 Sadlers Farm Junction	NIP 2012	Complete
	Other Regions	Manchester Metrolinks Extensions	NIP 2013	Complete
	Midlands Engine	Nottingham NET2	NIP 2013	Complete
	Other Regions	A380 South Devon Link Road	NIP 2013	Complete
	Other Regions	Croxley Rail Link	NIP 2013	Complete
Local Infrastructure Funding Programmes				
Completed – Historic Priorities	Local Infrastructure Funding Programmes	Growing Places Fund	NIP 2011	Complete
Historic Priorities	Local Infrastructure Funding Programmes	Regional Growth Fund	NIP 2011	Active programme

Image Glossary

View of the experimental hall at Diamand, © Diamond Light Source, 2018, page 4

The A1 Leeming to Barton Improvement, Highways England, page 23

Walney Extension Offshore Wind Farm, Orsted, page 27

London Power Tunnels phase 1, © Thomas Graham/Arup, page 30

Rossall Coastal Flood Defence improvement Scheme, Environment Agency, page 35

Artist's impression of the RRS Sir David Attenborough, Rolls-Royce, page 38

Proton Beam Therapy Centre Treatment Room, NHS England, page 41

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