Annual Report and Accounts 2018/19

Bring Energy to Life

nationalgrid

Bring Energy to Life

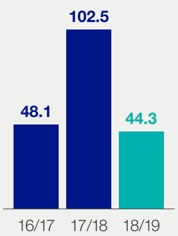
National Grid plc is one of the world's largest investor-owned energy utilities, committed to delivering electricity and gas safely, reliably and efficiently to the customers and communities we serve.

Highlights

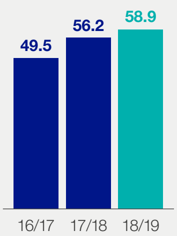
We have continued to make strong strategic and operational progress whilst maintaining excellent safety levels and reliability across all our networks. We have retained a focus on our environmental sustainability record and employee engagement.

Group financial highlights

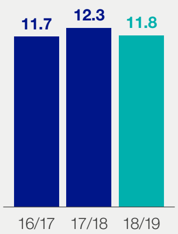
Statutory EPS (p)*



Underlying EPS (p)* Ⓐ



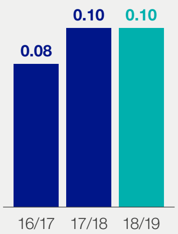
Group Return on Equity (RoE) % Ⓐ



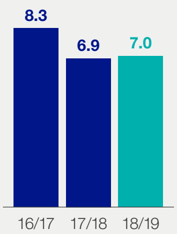
* From continuing operations

Group operational highlights

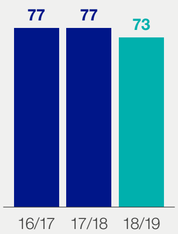
Group safety performance (injury frequency rate per 100,000 hours worked)



Greenhouse gas emissions (CO_2 equivalent, m tonnes)



Employee engagement (%)



Contents

Reporting currency

Our financial results are reported in sterling. We convert our US business results at the weighted average exchange rate during the year, which for 2018/19 was $1.31 to £1 (2017/18: $1.36 to £1).

Alternative performance measures Ⓐ

In addition to IFRS figures, management also use a number of 'alternative measures' to assess performance. Definitions and reconciliations to statutory financial information can be found on pages 225 – 234. These measures are highlighted with the symbol above.

Online report

The PDF of our Annual Report and Accounts 2018/19 includes a full search facility. You can find the document by visiting the 'About us' section at www.nationalgrid.com.

Further reading

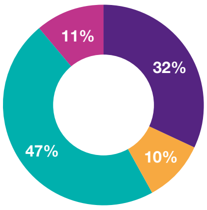
Throughout this report you can find links to further detail within this document or online. Please look out for the following icon:

Business model: what we do

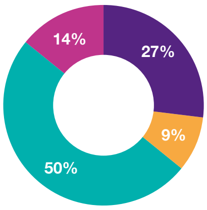
National Grid operates at the heart of the energy system, connecting millions of people safely, reliably and efficiently to the energy they use every day.

Our business is organised into segments, based upon activity and location

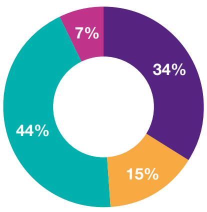
Underlying operating profit (%) Ⓐ



Statutory operating profit (%)



RAV, rate base and other assets (%) Ⓐ



Key:
- UK Electricity Transmission
- UK Gas Transmission
- US Regulated
- National Grid Ventures and Other activities

Principal operations – UK

UK Electricity Transmission

We own the high-voltage transmission network in England and Wales. We are responsible for ensuring electricity is transported safely and efficiently from where it is produced; reaching homes and businesses safely, reliably and efficiently. In addition, we facilitate the connection of assets to the transmission system.

Our role as Electricity System Operator (ESO)

The ESO now operates as a separate company within National Grid effective from 1 April 2019. We are responsible for making sure supply and demand of electricity is balanced in real time across Great Britain. We are also the ESO for the Scottish networks, but do not own them. During 2018/19 we worked to separate the ESO from the electricity transmission system.

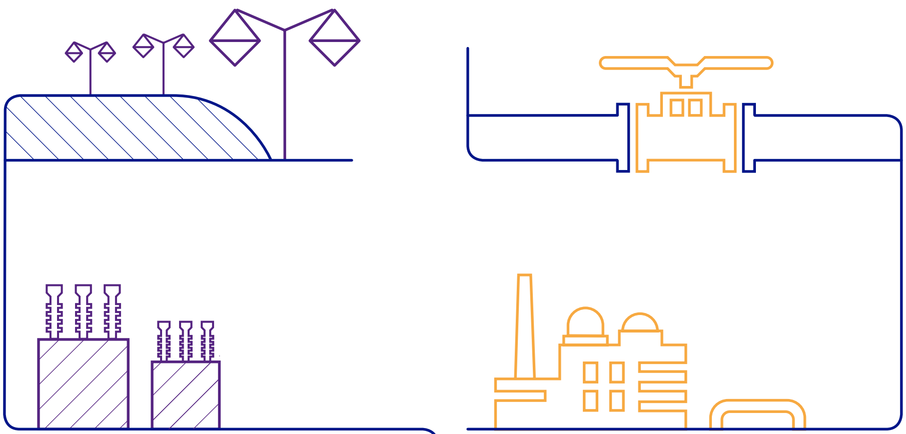
UK Gas Transmission

We also own and operate the high-pressure gas transmission network in Great Britain. We are responsible for making sure Great Britain's gas is transported safely and efficiently from where it is produced to where it is consumed.

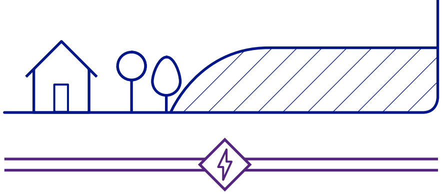
As the Gas System Operator we are responsible for ensuring that supply and demand are balanced in real time on a day-to-day basis.

4,481
miles (7,212 kilometres) of overhead lines (2017/18: 4,474 miles; 7,200 kilometres)

4,760
miles (7,660 kilometres) of high-pressure pipe (2017/18: 4,760 miles; 7,660 kilometres)



1,417
miles (2,280 kilometres) of underground cable (2017/18: 969 miles; 1,560 kilometres)



Principal operations – US

US Regulated:

Electricity

We own and operate transmission facilities across upstate New York, Massachusetts, New Hampshire, Rhode Island and Vermont.

We also own and operate electricity distribution networks in upstate New York, Massachusetts and Rhode Island.

Our electricity locations by state:

- New York;
- Massachusetts;
- New Hampshire;
- Rhode Island; and
- Vermont.

Gas

We own and operate gas distribution networks across the northeastern US and are responsible for connecting millions of customers to the energy they use.

Our gas locations by state:

- New York;
- Massachusetts; and
- Rhode Island.

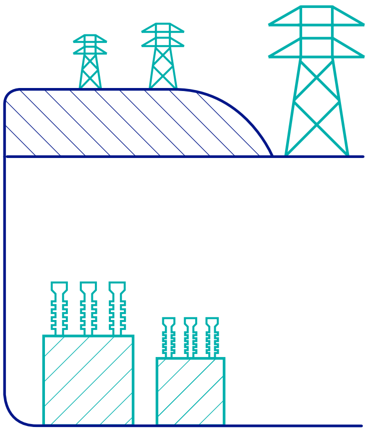
National Grid Ventures and Other activities

National Grid Ventures (NGV) manages our diverse portfolio of energy businesses that are adjacent to our core regulated operations. This operating segment represents our main strategic growth area outside our regulated core in competitive markets across the US and the UK. The business comprises all commercial operations in energy metering, transporting primarily renewable energy long distances through our electricity interconnectors and storing liquefied natural gas (LNG) in the UK.

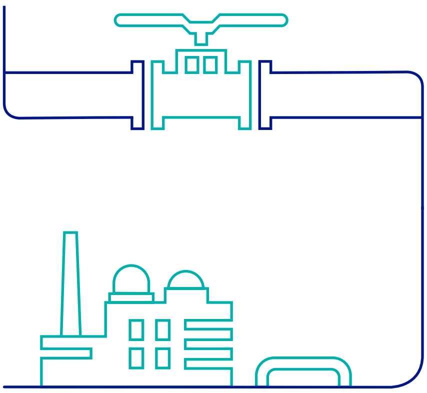
In November 2018, we established National Grid Partners with a focus on investment and future activities in emerging growth areas.

Our other activities mainly relate to UK property activities, together with corporate activities in the UK and US.

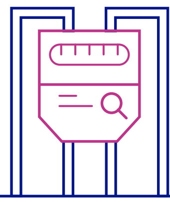
8,881
miles (14,293 kilometres) of overhead lines
(2017/18: 8,881 miles; 14,293 kilometres)



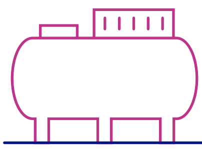
35,560
miles (57,228 kilometres) of gas pipelines
(2017/18: 35,419 miles; 57,001 kilometres)



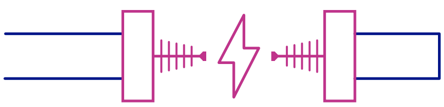
9.9 million
metering: gas meters
(2017/18: 11.1m)



1,000,000m^3
Liquefied natural gas tank space
(2017/18: 1,000,000m^3)



7.8 GW
GW capacity of interconnectors in operation or under construction
(2017/18: 6.4 GW)



You can find more information about what we do on our website: www.nationalgrid.com

Business model: how we operate

At National Grid we bring energy to life. In its simplest form this means getting the heat, light and power that customers rely on to their homes and businesses.

What we rely on

The key internal resources that we rely on to do business are:

- our physical assets that move the energy;
- appropriate funding that allows us to invest in our people and assets; and
- our talented workforce that ensures energy is moved efficiently and reliably.

We also rely on maintaining relationships with a number of key external stakeholder groups, to ensure we best meet their needs and maintain our licence to operate (see pages 40 – 45).

How we do business

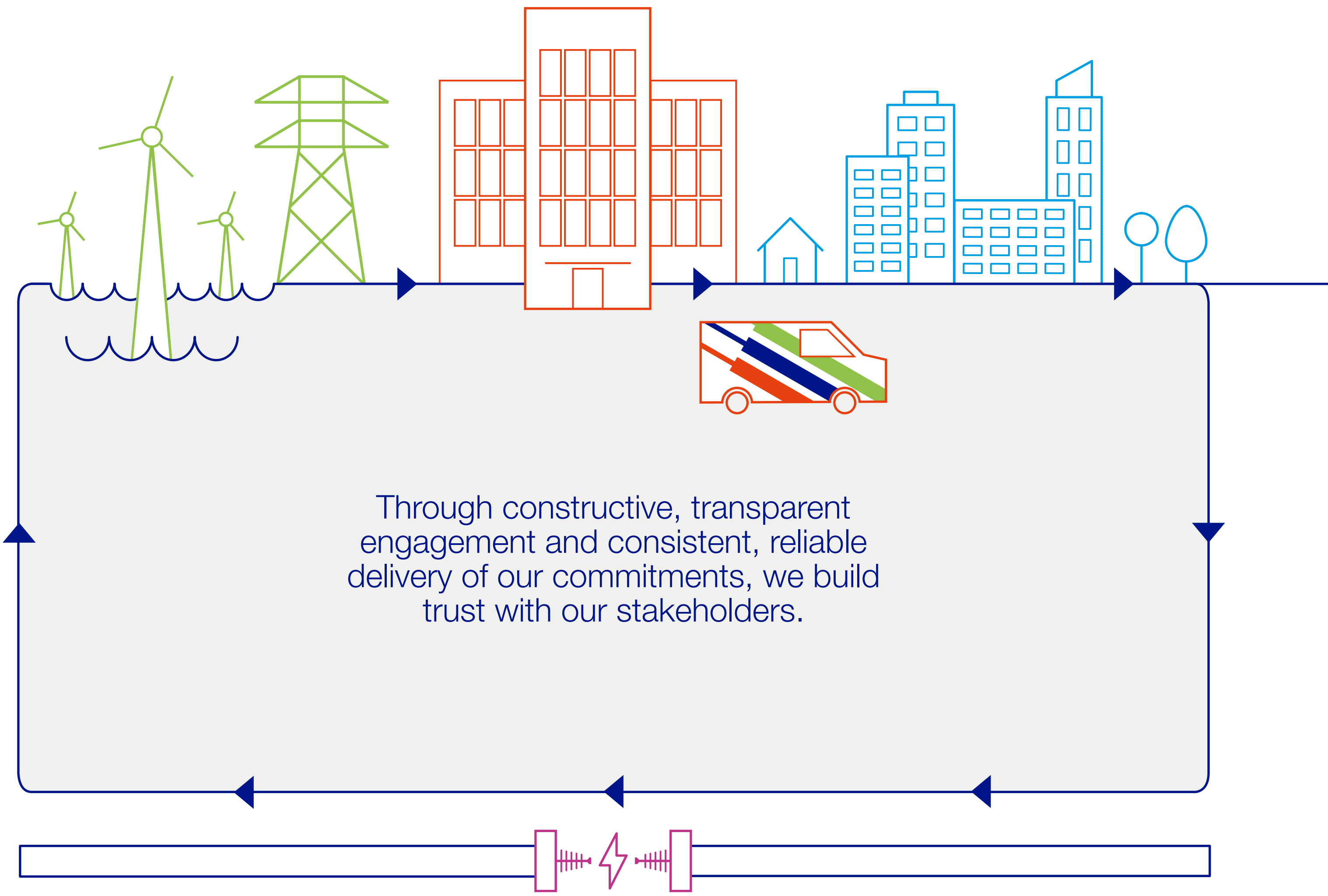
We combine these input factors along with our technical expertise to achieve our purpose and our vision.

We do all of this in accordance with our values, which guide everything that we do.

Our strategy is designed to maintain and develop our business model, and is supported by robust governance and risk management processes.

The value we create

Our operating model creates a stable, reliable and sustainable business that benefits both our stakeholders and the wider society.



What we rely on

Internal resources

Physical assets
We own electricity and gas networks that transmit energy over long distances from where it is produced and distribute it locally to where it is consumed. These networks are built to last for many decades and it would be impractical for duplicate infrastructure to exist. Such networks account for the vast majority of our asset base. In addition, we own various subsea electricity interconnectors and LNG importation facilities which, while scarce, are subject to competition.

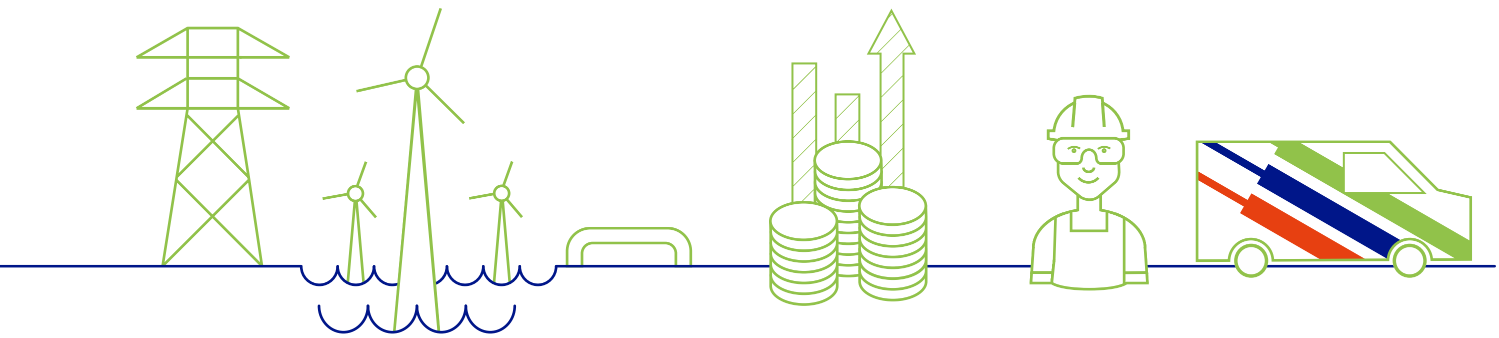
c.**£5** billion p.a.
Investment in our assets over the next three years

Funding
We fund our business through a combination of shareholder equity and long-term debt. We maintain an appropriate mix of the two and manage financial risks prudently.

66%
Regulatory gearing (net debt as a proportion of the value of regulatory assets and other invested capital)

Employees
Our highly skilled, dedicated employees have a strong public service ethos. They manage and maintain the physical energy infrastructure, and develop and sustain the many stakeholder relationships that are crucial to the Company's success.

22,576
Employees worldwide



External relationships

Customers
In the UK we do not own the energy that flows through our electricity cables and gas pipes. This energy is owned by our customers, such as electricity generators and gas shippers. These industrial customers, together with domestic consumers, pay to use our networks. In the US we deliver electricity and natural gas serving more than 20 million people through our networks.

Contractors and suppliers
We work in partnership with our supply chain that has complementary experience, skillsets and resources. We agree mutually beneficial contractual arrangements and, wherever possible, leverage economies of scale and use sustainable and global sourcing opportunities.

Communities and governments
The fundamental societal impact of our activities means that a range of stakeholders have a legitimate interest in and influence on the work we do. These include national and regional governments, local communities, our supply chain, and business and domestic consumers of the energy we transport.

Economic, health, safety and environmental regulators
We are subject to economic regulation by bodies that are entirely independent of National Grid. These economic regulators set the prices we can charge for providing an economic, efficient and non-discriminatory service. Our regulated revenue therefore covers day-to-day running costs, financing capital expenditures to renew and extend our networks, and incentives or penalties relative to performance targets. It also affords our shareholders a fair return on their investment.

The energy we transport is intrinsically hazardous; our operations therefore have to comply with laws and regulations set by government agencies responsible for health, safety and environmental standards.

Business model: how we operate
continued

How we do business

Our know-how

Over the many decades in which we have played a vital role connecting people to the energy they use, National Grid has built safe and reliable networks. We have also developed a well-respected and trusted reputation for engineering excellence.

We couple our extensive skills, knowledge and capabilities with innovation to ensure our core competencies continuously create value for shareholders and wider stakeholders alike.

We are recognised for our excellence in:

Asset management

We invest in and maintain our assets across their life as cost-effectively as possible.

Our focus ensures efficient management of our assets across their lifetime.

7.2%
Asset growth 2018/19

Engineering

The skills of our engineers are vital to delivering safe, efficient, reliable and sustainable performance for all our businesses. Our people:

- find practical and innovative solutions to complex problems;
- employ risk-based decision-making; and
- adopt common approaches and continuous improvements.

Our engineering expertise supports the delivery of a reliable network.

Capital delivery

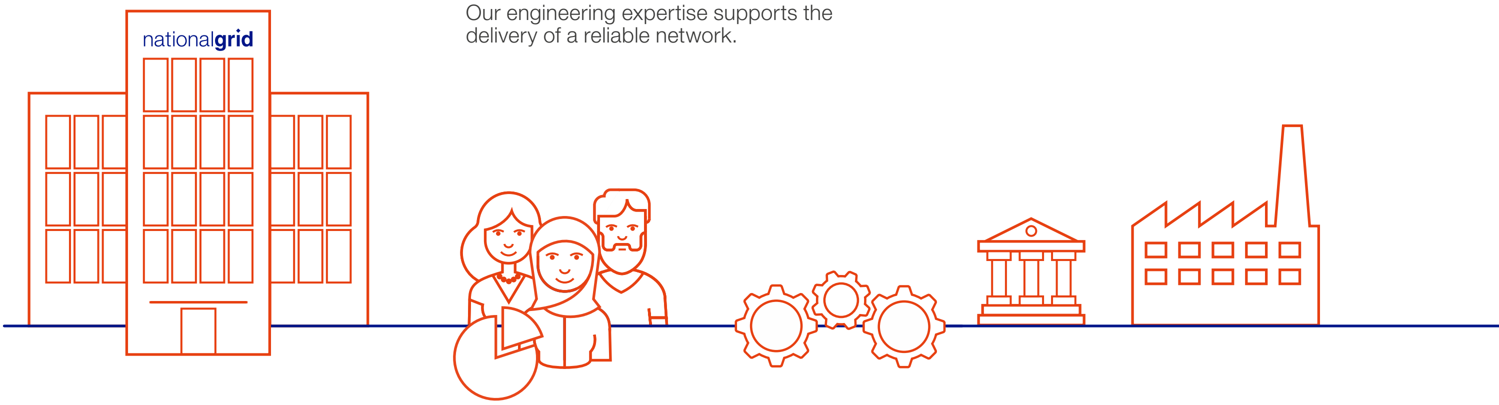
We add value to our stakeholders by ensuring safe and effective delivery of large and complex infrastructure projects, ranging from large portfolios of smaller works to stand-alone mega projects.

£4.5 billion
Capital investment in 2018/19

Innovation

We focus our innovation activities to future proof the business for our customers as the energy landscape changes. Collaboration is crucial as we search for new technologies and techniques that will support the transformation.

£19 million
Research and development (R&D) 2018/19



Purpose, vision and values

Our purpose is to
Bring Energy to Life

We believe it is crucial to have a clear sense of what we stand for as a Company.

Our vision is to exceed the expectations of our customers, shareholders and communities today and make possible the energy systems of tomorrow.

We have to play an active role in helping to shape the changing energy landscape.

Our values are unambiguous: every day we do the right thing and find a better way.

Our values define the mindset and behaviours important for our business. They also guide us to achieve the right outcomes and our desired culture.

Our culture

National Grid's culture is the values, beliefs and behaviours that characterise our Company and guide our practices.

We are working hard to continue progress as an inclusive employer that values diversity. The knowledge and expertise of our employees is fundamental to our business success. Enabling our employees to reach their potential requires investing in building the skills and capabilities of all our people.

Strategy and risk management

Our strategy places the **customer at the heart of our decision-making** and consists of three long-term priorities:

- optimising our operational performance;
- growing our core business; and
- evolving for the future.

We have well-established **governance** structures that include comprehensive **risk management, strong controls and financial discipline.**

Further reading
Our strategy on pages 14 – 15
Principal operations on pages 34 – 39
Internal control and risk management on pages 20 – 22
Corporate governance from page 46

The value we create

Society
We provide the energy systems that help economies grow in a sustainable, affordable and reliable way.

£54 million
Contribution to communities 2018/19

Investors
We aim to be a low-risk business, focused on generating shareholder value through dividends supported by asset growth from investing in essential assets under primarily regulated market conditions, to service long-term sustainable consumer-led demands.

11.8%
Group Return on Equity 2018/19

Employees
We create an environment in which our people can make a positive contribution, develop their careers and reach their full potential.

73%
Employee engagement score 2018/19

Customers
By delivering the energy they need and dealing with them in a transparent and responsive manner, our customers trust us to deliver services to them.

Our customer satisfaction measures are listed in our KPIs on page 16

Economic, health, safety and environmental regulators
Through constructive, transparent engagement and consistent, reliable delivery of our commitments, we build trust with our regulators.

0.1 LTI
Group safety performance 2018/19

Contractors and suppliers
We maintain sustainable, responsible and efficient supply chains in which our interests and those of our suppliers are aligned with the interests of customers.

£5.1 billion
Group supply chain spend 2018/19

Communities and governments
We help national and regional governments formulate and deliver their energy policies and commitments. The taxes we pay help fund essential public services. We have a role to play in sustainability, enabling the transition to a low-carbon future.

100%
IT equipment re-used or recycled 2018/19

Further reading
Our Key Performance Indicators on pages 16 – 19
Our commitment to being a Responsible Business on pages 40 – 45
Stakeholder Engagement on pages 54 – 55

Chairman's Statement

Sir Peter Gershon
Chairman

"Our vision is of an energy future where bills are kept low for consumers, energy is decarbonised, and innovation is encouraged and where together these efforts support the growth and prosperity of the economies we work in."

National Grid has continued to make strong operational progress in 2018/19, while maintaining excellent levels of safety and reliability. This has been in the context of a year of wide regulatory and political uncertainty for our stakeholders and the energy industry. In the US, federal politics remain partisan including the debate around the climate change agenda. In contrast, at state level, we have strong alignment with policymakers and regulators who, like us, are committed to cleaner energy.

During the year we have worked to manage the risk arising from continuing uncertainty over Brexit in the UK. There has been strong engagement with government and regulators. We have conducted a number of Brexit scenario-planning exercises and worked to maintain access for customers to European energy markets.

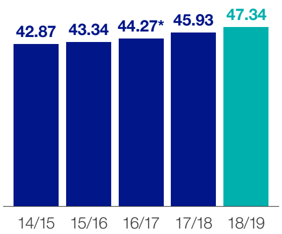
Our Group safety performance remains first class. It is a key focus this year. We will be introducing increased reporting on safety, including 'near miss' incidents that will support continued learning. We also recognise the heightened concerns among our US customers, regulators and communities about gas safety following the tragic explosions in the natural gas system owned by Columbia Gas.

In November 2018, we announced our decision to exercise our options for the sale of our remaining 39% share in the Cadent Gas distribution business that should complete in June 2019.

The International Financial Reporting Standard (IFRS) technical requirements make reporting some of the performance measures that we use as a regulated business challenging. We provide additional information, on page 30, about both our significant assets and liabilities that do not form part of our audited accounts, to help our investors gain a fair, balanced and understandable view of our business. Where practicable we reconcile these with our statutory measures in 'Other unaudited financial information' on pages 225 – 234.

Our share price, meanwhile, continues to be affected by external factors, particularly the uncertainty over the UK political and regulatory environment. The Labour Party's support of a state ownership agenda for utilities and public services adds further to this uncertainty. The Board does not believe that state ownership is in the best interests of consumers or wider stakeholders and the disruption and bureaucracy that would be involved would inevitably slow down the UK's transition to being a low-carbon economy.

Full year dividend (pence per share)



* excludes a special dividend of 84.375p.

Final dividend of

31.26p/share

proposed to be paid on 14 August 2019

Annual General Meeting 2019

The 2019 AGM will be held at 11.30am on 29 July 2019 at the ICC, Birmingham.

Directors' duties

In our effort to balance the relationship between National Grid and our key stakeholder groups, the Board has taken into consideration Financial Reporting Council guidance. We continue to be mindful of the need to create value. By considering our purpose, vision and values together with our strategic priorities, we balance outcomes for our suppliers, communities, employees, regulators and customers alongside long-term sustainable growth for our investors.

The Board, advised by the Group General Counsel & Company Secretary of our duty under section 172, determines the impact of our decisions on all stakeholders.

Further reading
Board engagement with stakeholders – pages 54 – 55

Further reading
Responsible business
www.nationalgrid.com/group/responsibility-and-sustainability

National Grid has delivered first class safety performance, excellent network reliability and invested £10 billion in UK energy critical national infrastructure during the first six years of RIIO. This allows us to continue to play a central role in enabling the decarbonisation of the UK economy. Indeed, in April, the ESO announced that it will be able to fully operate the electricity system with zero carbon by 2025. Through innovative arrangements in RIIO we have also generated £640 million savings to date for UK consumers.

At a time when there is an increased urgency to meet the challenge of climate change the last thing that is needed is the enormous distraction, cost and complication that state ownership would bring. It is pleasing that the majority of our investors agree with this sentiment through their long-term view of our financial and operational performance.

Ongoing dialogue with our regulators remains an area of major focus. In the US, the completion of a full refresh of our distribution business rates supports one of our key strategic pillars in the continued growth of our business. We also considered our focus on costs and efficiency. The resulting cost efficiency and restructuring programmes in both the UK and US will continue to drive performance for both customers and shareholders.

The Board also reviewed the resolution of the lengthy labour dispute with two of the Massachusetts gas worker unions over employment terms and conditions. I am conscious that this has been a difficult period for key stakeholders including our employees and the communities we serve in the Massachusetts gas business. We are now focused on addressing the backlog of work, re-integrating our workforce and rebuilding the reputation of this business.

The Board and I note the progress we are making on our strategic priorities. Against the background of delivering on our priority of optimising operational performance, we continued discussions with Ofgem on the RIIO-T2 price control. The overall framework proposals in the sector-specific consultation are a step in the right direction but we are concerned that the proposals, as currently set out, will not bring about the change consumers need.

Similarly, the decision to apply a new and untested regulatory model to the Hinkley-Seabank Connection Project was disappointing. This model seeks to impose on us the results of simulated competition without giving us the freedom of choice to decide to participate and allocate scarce capital to the project. We continue to review our option to challenge the decision when it becomes possible to do so.

Innovation

We continue to support stakeholders, including governments, communities and our regulators, to review policy within a rapidly evolving energy market. To prepare for the future, the Board supports opportunities to adopt and embrace technology and innovation. Two examples of our ongoing adoption of digital come to mind: the UK ESO now uses artificial intelligence to improve wind and solar output forecasting; and our US gas businesses now provide innovative data to our field force and use technology to improve work scheduling.

Dividend policy

Our dividend policy aims to grow the ordinary dividend per share at least in line with the rate of UK RPI each year for the foreseeable future. Accordingly, the Board has recommended an increase in the final dividend to 31.26 per ordinary share ($2.0256 per American Depository Share). If approved, this will bring the full year dividend to 47.34p per share ($3.0872 per American Depository Share), an increase of 3.07% over the 45.93p per share for the financial year ended 31 March 2018.

Sustainability

Our environmental sustainability performance was strong in 2018/19. By embedding sustainability in our business strategy and ensuring it is integral to the way we do business, we deliver positive outcomes for society. We also drive more efficient performance while identifying opportunities and managing risk in a changing environmental and social landscape.

Our approach to environmental sustainability focuses on those areas where we can have the most impact and that are important to our stakeholders. These themes are reducing our greenhouse gases, managing waste and natural resources efficiently and caring for the natural environment. We will be reviewing our strategy, targets and ambition in 2019/20.

Additional projects and awards

The Board was delighted to see recognition and positive movement in a range of indexes, such as The Times Top 50 Employers for Women and Top 70 Best Employers for Race. These awards recognise the important work we are doing to support workplace equality and inclusion.

People changes

We announced the appointment of Andy Agg as Chief Financial Officer (CFO) and Executive Director with effect from 1 January 2019. We also announced a further strengthening of the Board with the appointment of three additional Non-executive Directors: Amanda Mesler, Jonathan Silver and Earl Shipp. Andrew Bonfield, Pierre Dufour and Nora Mead Brownell have left the Board. You can read more details of all our Board members' experience and the Committees they support in my Corporate Governance review on pages 48 – 49.

I would like to extend my deepest appreciation to all our employees and our wider workforce for their hard work, dedication and commitment, without which the Company's achievements this year would not have been possible.

Sir Peter Gershon
Chairman

Chief Executive's review

"I truly believe that a purpose-led company delivers superior performance for all of its stakeholders."

John Pettigrew
Chief Executive

This has been another extremely busy year for National Grid, one in which we have made significant progress, not without its challenges, in pursuing our operational and strategic priorities and delivering our investor proposition.

Keeping our workforce and the public safe

Let me start with safety – this is always our top priority. This year we maintained our lost time injury frequency rate at equivalent to one lost time injury per million hours worked. This is consistent with the best-performing organisations worldwide, but this also means striving relentlessly to do better – our ambition is to ensure that all of our employees and contractors are able to go home safely at the end of each and every day. We have continued our campaign of making safe working second nature to all our employees and contractors, and as instinctive as putting on your seat belt before driving. That is the safety culture I am proud to say we continue to promote throughout National Grid.

Maintaining network reliability and putting our customers first

We have also continued to maintain excellent reliability across our networks, despite significant winter storms in the US. In fact, looking across our US electric businesses, we have seen a 35% increase in the number of adverse weather days across our service territories since 2015. Despite this, the efforts that we have made to significantly improve our speed of restoration means that we are now able to reconnect the majority of customers in less than 24 hours.

Customer performance is also a major priority. I am really pleased that our customer satisfaction scores for our UK businesses have increased by 3%. And in the US, customer satisfaction scores increased by 5 and 12 points for electric and gas residential customers respectively. The scores are helped by the continued improvements we are making to our customer portal and the digitalisation of our customer touchpoints.

Delivering for investors

Our financial performance shows the strength of our portfolio and of our strategy. We have delivered another year of strong organic growth in renewing and extending our energy networks, investing a record £4.5 billion and delivering asset growth of 7.2%, at the upper end of our target range. The full year dividend, subject to shareholder approval of the final dividend, is up 3.1% to 47.34p, in line with our policy, and is covered 1.2 times by underlying earnings per share, up 5% to 58.9p. Statutory earnings were somewhat lower because of certain exceptional charges which I will refer to below.

Optimising performance

Our core regulated businesses have commenced efficiency and restructuring programmes to create leaner, more agile organisations that are more responsive to customers' needs whilst delivering sustainable cost savings. We have made good progress with our cost efficiency programme in the UK as well as starting a similar exercise in the US, recognised as exceptional charges. These are taking action to remove costs from across the business, simplify our supply chain, rationalise our property portfolio and minimise future increases to customer bills.

The UK delivered another year of good returns, with a Return on Equity of 12.4%, within the range of 200 to 300 basis points of out-performance that we have committed to under RIIO-T1. The efficiency and restructuring programme means we are on track to maintain this strong performance by saving operating costs of £50 million in 2019/20 and £100 million from 2020/21 onwards.

In the US we achieved a Return on Equity of 8.8%, representing 93% of allowed return. This was slightly down on last year due to additional safety compliance spend in New York, the increased volume of minor storms, and additional costs of restoring service to our gas business in Rhode Island, following a low supply issue into our distribution network.

After protracted union negotiations, during which we brought in contractors and additional supervision to ensure we completed our work to the highest standard, we reached a satisfactory agreement with members of our Massachusetts gas workforce. These actions led to an exceptional charge which, whilst significant, reflects our commitment to safety and implementing the right contracts for the future.

We made good regulatory progress, reaching a significant milestone, with all our distribution businesses operating under new rates. We agreed new rates for Rhode Island gas and electric and Massachusetts gas during the year and this has given us the right regulatory platform to invest appropriately to best serve our customers.

Pursuing disciplined, quality growth

During the year we announced the exercise of our option to sell our remaining stake in Cadent, and are expecting £2 billion of cash proceeds in June 2019.

Our transmission networks in the UK have delivered £1.2 billion of capital investment, including two projects I am particularly proud of. Firstly, we completed the first new electricity overhead line route in England and Wales in the last 16 years. The Canterbury to Richborough connection is a 13-mile (21-kilometre) route that was built in only 15 months enabling the connection of the Nemo interconnector to the grid. Secondly, our Feeder 9 tunnel project under the Humber is now 75% complete and is the largest single investment in our gas infrastructure in a decade. Efficient delivery of projects such as these is key to maintaining our strong financial performance.

Our dialogue around RIIO-T2 also continues. We remain committed to the importance of a regulatory framework that fairly reflects the risk return balance for both consumers and shareholders. This supports the delivery of energy innovatively and efficiently.

During the year both the NuGen and Horizon nuclear projects cancelled their proposed connection agreements. The regulatory arrangements we have in place have mitigated the economic impact of these cancellations, though we have recognised an exceptional charge for development costs incurred on these projects over the last decade.

Our US business invested $3.5 billion in the year, resulting in asset growth of 9.2%, up 180 basis points on last year. The focus of our investment has been in modernising ageing networks, whilst also providing better safety, reliability and resilience.

We have also continued to make significant progress on our interconnector portfolio. The Nemo Link with Belgium was commissioned early and under budget. This was a complex build, with 1,200 unexploded bombs and a loaded 17th century cannon all needing to be negotiated as we laid the cables across the English Channel. With over 2.6 million working hours on the project, I am pleased to say we only had one minor safety incident. Progress on IFA2 and North Sea Link, our new interconnectors to France and Norway, have continued on track, with the converter stations' construction on IFA2 going well and NSL having now laid over 168 miles (271 kilometres) of cable. On Viking Link, the interconnector to Denmark, on which we took the final investment decision during the year, we have all planning approvals and land rights and plan to start construction in spring of 2020.

Evolving for the future

We are making major investments in improving security of supply and connecting low-carbon sources of energy to our networks. In addition to the substantial interconnectors programme, we recently announced our proposed acquisition of Geronimo Energy and a joint venture with the Washington State Investment Board (WSIB). This is our first meaningful step into renewable generation in the US, providing us with a potential pipeline of over 6 GW of solar and onshore wind projects at different stages of development.

We are also helping to further New York's clean energy goals, with a filing in November, for smart meter infrastructure that would result in over 2.3 million gas and electric meters being installed between 2021 and 2024.

We reached another milestone this year, with the legal separation of the Electricity System Operator from 1 April 2019, representing another step forward in the evolution of the energy industry in the UK.

Further, our National Grid Partners business, which invests in innovative emerging technology start-ups, has made great progress, investing in over a dozen new companies which will provide benefits across our businesses in future.

Becoming a purpose-led organisation and inspiring future generations

Expectations on big businesses have changed. Our purpose and how we conduct ourselves is increasingly important. Given the role we play at the heart of society, we are acutely aware of this and it guides what we do. I truly believe that a purpose-led company delivers superior performance for all its stakeholders. During 2018/19, we commenced a holistic review of the impact our business has on our society and on a sustainable future. The work will support us to build on our purpose to Bring Energy to Life.

We are working hard to continue to inspire the talent of the future with the promotion of careers with science, technology, engineering and maths (STEM) components. It is a privilege to be able to support young people from a wide range of backgrounds to follow rewarding careers in these areas.

We continue to nurture the talent and capability of our employees and our commitment to inclusion and diversity. Women now make up 32.1% of our management population and 10.6% come from ethnic minorities, but we still need to do more. Connecting better with our customers is enabled by diversity of thought and that can only come from diversity of our people.

Enabling the energy transition

National Grid has a critical role to play in enabling the energy transition. Power and heat networks are key to the energy system. It is our responsibility to create value for our customers and society more broadly by delivering affordable energy efficiently and sustainably, whilst being agile and anticipating and responding to the changing needs of our customers.

We continue to help shape the debate on creating cleaner, smarter energy networks that future generations can rely on. Our engineering excellence and the work we do on a daily basis keeps the lights on and the energy flowing, but we need to find more sustainable and less carbon-intensive options.

Our key focus is to keep customers at the forefront of everything we do. With that in mind, we are continuing improvements in customer service to deliver information to our customers more quickly. We are also digitising our customer-facing processes. This will make us more efficient and make it easier for customers to communicate with us.

Giving back to the communities in which we operate is always important to us. We need to maintain our absolute focus on keeping our people and the public safe. Therefore safety will always be the priority on our agenda.

Finally, I want to thank everybody who has worked so hard to deliver these results for National Grid in 2018/19.

J. Pettigrew

John Pettigrew
Chief Executive

Our business environment

The energy industry is experiencing unprecedented change, shaped by four key themes: affordability, decarbonisation, decentralisation and digitisation.

Affordability

As the energy industry transitions to a decarbonised, decentralised, and digital future, new investment will be required to maintain the reliability customers expect. National Grid has a role to play in helping customers reduce their carbon footprint and total energy costs.

3%

UK transmission network costs per average household dual fuel bill – representation of the total bill

£107m

allocated to address UK fuel poverty since 2017

2018/19 developments

UK

In the UK, affordability of energy continues to be a critical topic as highlighted in the Government's response to the 'Cost of Energy' review.

US

The cost of energy remains a priority for consumers and regulators who expect affordable, reliable and cleaner energy. New outcome-based performance incentives are aligning shareholder value with customer value and societal benefits. Such incentives are in place in upstate New York, called Earnings Adjustment Mechanisms (EAMs), and Rhode Island, called Performance Incentive Mechanisms (PIMs), and are proposed in Massachusetts and downstate New York.

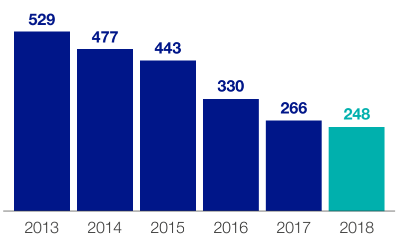
Our response

- We are focused on managing our networks over the long term, maintaining highly reliable systems at cost efficiency.
- Our US and UK regulated businesses are pushing for greater affordability and innovative ways to minimise the total cost of energy to consumers.
- In the UK, we have generated £640 million of savings for consumers in the first six years of the RIIO arrangements.
- In the US, we delivered an estimated $217 million in net societal benefits in our first year of EAM performance incentives in upstate New York. Such benefits increase the affordability of energy and were achieved through a range of activities. These include reducing the electric system peak to mitigate supply costs, enabling Distributed Energy Resource adoption and increased adoption of energy efficiency.
- We are helping customers to lower their 'total energy wallet' by enabling electric vehicle infrastructure and encouraging adoption of electric vehicles, as well as enabling customers to switch from oil heating to heat pumps, helping customers realise the benefits of lower costs.
- Our £107 million voluntary investment in Affordable Warmth Solutions across 2017-2019, supports addressing fuel poverty in the UK.

Decarbonisation

Climate events during 2018 were widespread and some, such as the wildfires in California, impacted energy networks significantly. Understanding the social, environmental and economic impact to business and measuring its value is likely to become more important as a result of these events.

Carbon intensity of British electricity, 2013-2018 (gCO_2/kWh)



Source: nationalgridESO

2018/19 developments

UK

During 2018, European carbon prices rose above €20/tonne; three times the level seen in 2017. This increase was likely due to fossil fuels burnt during abnormal weather conditions, as well as the reduction in carbon permits from 2019. Almost a third of electricity was generated by renewables in 2018 Q3 (source: Gov.uk); however, gas remains the primary fuel source for generation and heating (source: Gov.uk).

US

State regulators continue to support renewable energy. For example, a new Massachusetts energy bill approved by the Senate in June 2018 doubles the state's offshore wind ambition to 3.2 GW by 2035, up from 1.6 GW by 2027. In New York, Governor Cuomo announced a commitment to 100% carbon-free electricity by 2040, doubling a distributed solar goal and more than tripling the state's offshore wind target.

Our response

- Reducing greenhouse gas emissions forms part of the Company's KPIs (see page 18). We have also committed to meeting Task Force on Climate-related Financial Disclosure recommendations in full (see pages 210 – 211).
- 'Our Contribution' environmental strategy focuses on the areas where we can make a difference. You can read more about our approach and work on page 41.
- In November 2018, NGV confirmed £850 million of investment in the Viking Link interconnector with Denmark.
- In both the UK and US, we are supporting the adoption of electric vehicles through charge point infrastructure, to support decarbonising transport and improving air quality.
- In March 2019, NGV signed an agreement to acquire Geronimo Energy, a leading developer of wind and solar generation assets based in Minneapolis, Minnesota. This provides National Grid with a solid foundation on which to develop and grow a large-scale renewable business in the US.
- Massachusetts, Rhode Island, and Connecticut recently announced winners of their offshore wind tenders totalling 1.4 GW, with Ørsted, supported by National Grid, winning in Rhode Island and Connecticut. Pricing on the Massachusetts contract demonstrates the potential for US costs to reflect the downward trend in technology costs, spurred on by the European market.
- In June 2018, we published our Northeast US 80x50 Pathway: an integrated blueprint for New York and New England to reduce greenhouse gas emissions deeply below 1990 levels, while supporting economic growth and maintaining affordability and customer choice.
- Our recently launched energy efficiency and solar marketplaces allow our customers to shop online and receive instant rebates for energy-efficient products such as LED light bulbs and smart thermostats, receive free quotes for solar and compare financing options.

Decentralisation

The energy system is in transition from high to low carbon. This change coincides with a shift to more decentralised generation, from renewables to emerging battery storage. As the volume of this intermittent and distributed generation increases, a more resilient and flexible system will be required; one that makes best use of available energy resources to meet consumers' needs in a balanced, efficient and economical way.

65%

The Community Renewables scenario in FES 2018 suggests that 65% of all generation could be produced locally by 2050

Source: Future Energy Scenarios July 2018, ESO

2018/19 developments

UK

In July 2018 the Future Energy Scenarios (FES) document, published by the System Operator, suggested that by 2050 up to 65% of all generation could be locally produced. In July 2018, the first London streets received Ultra Low Emission Zone status. This has since expanded to the congestion zone. With increasing local electricity demand from cars, and potential for vehicles to both charge and discharge electricity onto the network, balancing demand, supply and power flows will become increasingly complex. Electricity storage and smart demand management will play a key role in easing this complexity.

US

In the US, distributed and decentralised energy resources growth and investment, including small-scale residential and commercial solar and storage, continue to accelerate. Seeing this growing trend, utilities across the US are exploring how they can best be compensated for effectively integrating Distributed Energy Resources (DER) into the grid. As the trend continues, our key priority will be creating innovative and productive ways to ensure utilisation is effective, safe and reliable.

Our response

- During 2018, the UK's transmission network made connection offers to 47 transmission-connected batteries, each approximately 50 MW. These batteries represent a new type of connection for the transmission grid. They also reflect the emergence of new business models for grid balancing.
- National Grid Partners has invested in DER companies. These include Leap, a marketplace to effectively monetise distributed energy grid services, and Omnidian, which provides comprehensive protection plans for solar energy systems investments.
- In the US, we expanded our partnership with Sunrun, providing $8 million for a share in revenues from new grid services contracts.
- The ESO has introduced new reforms to increase market transparency and lower barriers to entry for new providers of ancillary services, enabling greater participation from non-traditional providers including DER.

Digitisation

Businesses and lives are being transformed by innovations such as artificial intelligence and virtual reality. The energy landscape has seen several changes as companies look to create new business models and reduce energy prices through digital technologies. Technology commercialisation, consumer demand and regulatory stimulus will continue to drive these trends.

5%

The year-on-year reduction in unplanned outages attributable to use of enhanced sensors, smart meters and advanced automation on electricity grids in Europe and the US

Source: Bloomberg New Energy Finance

2018/19 developments

In 2018, the application of digital technologies to drive sustained profitable growth by optimising the way we work was a key global trend. It is expected to continue exponentially in the coming years.

The energy landscape is already being transformed by technologies such as smart meters and demand aggregators. These devices employ the latest advances in artificial intelligence to create new business models and reduce energy prices.

Utility networks are beginning to identify significant potential for their businesses through digital transformations. Advances in technologies to operate systems, manage assets and engage with customers will be a key facet of our business going forward.

Our response

- We are taking advantage of innovations in digital technology and innovation to improve our business performance. For example, we are using the latest advances in artificial intelligence in our UK energy forecasting to lower balancing costs and improve energy security.
- Using state-of-the-art machine learning, the ESO team, building on initial research by the Alan Turing Institute, enabled improvement in forecasting for the Solar Power Forecast. This improvement in forecasting enables the decarbonisation and decentralisation of the power grid and delivers efficiency savings to consumers. The team are building on this success to deliver the next generation of Demand Forecasting Capabilities.
- 2018 also saw the launch of National Grid Partners, our new venture capital and innovation group. The group has already made several investments in companies that are at the forefront of developing potentially pivotal technologies.

Regulatory, political landscape

Brexit

National Grid is supportive of the EU and UK agreeing on a deal and a transition period to minimise any disruption and keep costs down for consumers. We are working with the Government, regulators and others to ensure that the efficient flow of gas and electricity can continue whatever the outcome of Brexit, with minimal impact to consumers. The interconnectors will continue to operate in any scenario and do not anticipate any major disruption.

It is essential that energy is prioritised in the upcoming discussions on the EU-UK future relationship to the mutual benefit of both the EU and the UK. We also support the UK's continued participation in the EU's Internal Energy Market as the most effective way to preserve the consumer benefits and maintain certainty for investors.

State Ownership

The Labour Party has set out its aim to bring the energy networks under state ownership as part of its plans to deliver a decentralised renewable energy future. This forms part of a wider state ownership agenda across key public utilities and services.

National Grid does not believe that this is in the best interests of consumers or stakeholders and is focused on enabling the transition to a low-carbon energy system while maintaining a reliable and cost-effective service for consumers.

Our strategy

We ensure that customers are at the heart of our decision-making and this guides everything we do. We are focused on three strategic priorities for our business, which will set the foundations of our future success.

Customer first

We have a vital role to play in enabling customers to benefit from the changes in our industry. The energy transition and associated technological advancements mean we can provide our customers with a more cost-effective service.
We measure customer satisfaction as a KPI within each of our business segments.

1. Optimise performance

Our customers want us to be more efficient, so we must find ways to improve how we run our business.

We need to enhance the customer experience and our productivity through more efficient and customer-focused processes. Given the scale of our core business in the UK and US, even small improvements will have a huge impact on our overall performance. Finding new ways of optimising operations will be an important factor in our ability to compete and grow.

Performance in 2018/19

- Identified savings and began the transition to leaner and more efficient operating models in the UK and US core businesses;
- Completed union negotiations in Massachusetts and integrated employees back to work;
- Agreed rate case settlements for gas in Massachusetts and gas and electric in Rhode Island;
- Commenced embedding our Business Management System (BMS) across the Group;
- Gave the notice to exercise the options for the sale of the remaining 39% of the Cadent gas distribution business; and
- Agreed RIIO-T1 reopeners during autumn 2018, including investment in cyber and physical security.

Further reading
See more on these in the Additional Information section on pages 199 – 209

2. Grow core business

Delivering strong operational performance provides a foundation from which we can invest in our core business and pursue other opportunities.

We continue to look for business development opportunities that are close to our core business. In the US, we will build on our successful efforts to pursue opportunities in electricity and gas transmission as well as large-scale renewable options.

Interconnectors will continue to be our focus over the next decade.

Performance in 2018/19

- Grew our UK and US regulated businesses capex to £3.9 billion;
- Approved investment in the Viking Link interconnector in September 2018;
- Delivered our first new overhead line this century in England: Richborough to Canterbury, connecting the Nemo Link interconnector;
- Launched the Nemo Link interconnector, which became operational on 31 January 2019;
- Interconnectors IFA2 and North Sea Link are under construction and are on track to be delivered to plan; and
- Delivered new infrastructure to replace the century-old substation that powers Rhode Island's capital city.

Further reading
See more on these in the Additional Information section on pages 199 – 209

3. Evolve for the future

We need to future-proof our business against the effects of a changing energy landscape. Our networks are already managing changes to the generation mix, while the needs and expectations of our customers are evolving.

Our preparations for the future have already begun with the creation of NGV. This collaboration brings together our non-network businesses to focus on targeted investment in the energy sector outside of our core business.

We are also looking to develop new capabilities that are essential for long-term success. For example, the creation of National Grid Partners allows us to increase our capability in new and disruptive energy technologies to meet the changing needs of our customers and communities.

Performance in 2018/19

- Achieved separation of the Electric System Operator from the UK electricity transmission company;
- Continued to participate in the debate on decarbonisation, contributed to the 80x50 Pathway and supported electric vehicle charging networks;
- Launched National Grid Partners with £58 million invested to date; and
- Announced in March 2019 the proposed acquisition of Geronimo Energy, a developer of wind and solar generation.

Further reading
See more on these in the Additional Information section on pages 199 – 209 and pages 223 – 224

Progress against our strategy

The Board uses a range of metrics, reported periodically, against which we measure Group performance. These metrics are aligned to our strategic priorities and were refreshed during the year.

This year we revised our Key Performance Indicators to ensure we measure performance against our strategy that was updated in 2017. This revamp has resulted in 5 new KPIs, as identified below.

We report our performance measures as follows:

KPIs

- Principal measures that track individual progress against each of our three strategic priorities. See below.
- Non-financial measures that underpin delivery of all three strategic priorities. See below.

Other performance indicators

- Financial measures that result from the delivery of our strategic priorities. These are set out within our financial review, from page 25.
- Business-unit-level measures that are specific to our three strategic priorities. These are set out within our Principal Operations review, on pages 34 – 39.

Key

New KPI for 2018/19

Link to strategy

Optimise performance

Grow core business

Evolve for the future

A Indicates an alternative performance measure

Link to remuneration

Remuneration of our Executive Directors, and our employees, is aligned to successful delivery of our strategy. We use a number of our KPIs as specific measures in determining the Annual Performance Plan (APP) and Long Term Performance Plan (LTPP) outcomes for Executive Directors. While not explicitly linked to APP and LTPP performance outcomes, the remaining KPIs and wider business performance are considered. For further detail, please see our remuneration report, on pages 69 – 90.

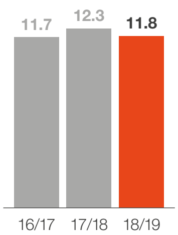
Principal measures

Strategy link	KPI and performance	Progress in 2018/19

Group Return on Equity (RoE, %) A

We measure our performance in generating value for shareholders by dividing our annual return by our equity base. This calculation provides a measure of whole Group performance compared with the amounts invested in assets attributable to equity shareholders.

Target: 11–12.5% p.a.



Group RoE fell slightly during the year. The UK regulated businesses delivered an improved operational return of 12.4% in aggregate (2017/18: 12.1%). This was offset by slightly reduced RoE in the US of 8.8% (2017/18: 8.9%) where lower operating profits were not fully mitigated by the benefit of a lower tax charge following US tax reform. In addition, Group RoE benefited from the Fulham property sale and US legal settlements, partially offset by the removal of the share of Cadent earnings, following its classification as a discontinued operation.

Customer satisfaction

We measure customer and stakeholder satisfaction, while also maintaining engagement with these groups and improving service levels.

£m	2018/19	2017/18	2016/17	Target
UK Electricity Transmission (/10)	7.9	7.7	7.4	6.9
UK Gas Transmission (/10)	7.8	7.6	8.0	6.9
US Residential – Customer Trust Advice survey (%)	58.7	56.6	60.7	57.4
Domestic and Industrial and Commercial Metering NPS score (index)	+44	+39	–	–

The US metric measures customers' sentiment with National Grid by asking customers their level of trust in our advice to make good energy decisions. The metric, which is tied to the value customers feel they receive from National Grid, increased and was above target in 2018/19. The Trust Advice metric recovered half of its decline from the prior year (two percentage points) due to improved communications and customer experiences.

Our customer satisfaction KPI comprises Ofgem's UK electricity and gas transmission customer satisfaction scores. Figures represent our baseline targets set by Ofgem for reward or penalty under RIIO (maximum score is 10).

Following a review, our Interconnector and LNG businesses will no longer use NPS to measure customer satisfaction. Both units will continue to monitor customers through an annual survey designed to gauge the quality of services provided to wholesale energy market participants. NPS scores reported represent the Domestic and Industrial and Commercial Metering business.

Principal measures continued

Strategy link	KPI and performance	Progress in 2018/19

Network reliability

We aim to deliver reliability by planning our capital investments to meet challenging demand and supply patterns, designing and building robust networks, having risk-based maintenance and replacement programmes, and detailed and tested incident response plans. We measure network reliability separately for each of our business areas. The table below represents our performance across all our networks in terms of availability. For both our UK and US networks we continued to maintain excellent reliability.

£m	2018/19	2017/18	2016/17
UK Electricity Transmission (%)	99.999984	99.999984	99.999964
UK Gas Transmission (%)	99.9896317	99.996151	99.975
US Electricity Transmission	99.952	99.953	99.97
US Electricity Distribution	99.995	99.995	99.994
IFA interconnector	93.9	92.6	77.5
BritNed interconnector	98.2	97.8	98.2

For UK Gas Transmission, there was one incident at Didcot Power station which meant that flows were restricted over three gas days.

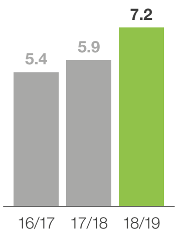
For UK Electricity Transmission, there were three Loss of Supply incidents in 2018/19, of which one was incentivised, one non-incentivised and the third not-reportable under the Energy Not Supplied (ENS) incentive scheme. The ENS incentive scheme returned a profit of £3.7 million in 2018/19.

In the US, we continued to maintain high levels of reliability.

Total regulated asset growth (%) Ⓐ

Maintaining efficient growth in our regulated assets ensures we are well positioned to provide consistently high levels of service to our customers and increases our future revenue allowances.

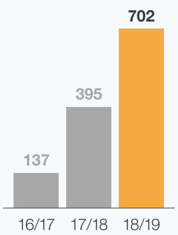
Target: 5–7% growth each year



Asset growth during the year was 7.2% (2017/18: 5.9%). This was primarily driven by the accelerated US rate base growth of 9.2% (2017/18: 7.4%) and higher levels of investment in other assets, such as in NG Partners. This is partially offset by lower UK RAV growth of 3.6% (2017/18: 4.5%).

Cumulative investment in delivering new low-carbon energy sources (£m)

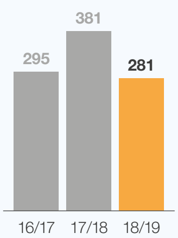
We invest in new low-carbon energy sources primarily through our interconnector businesses (Nemo, North Sea Link, IFA 2 and Viking), investments in companies delivering low-carbon energy sources (for example our investment in Sunrun) and investments into large-scale renewables.



Cumulative investment in delivering new low-carbon energy sources was £702 million, up from £395 million in 2017/18. This is principally from ongoing investment in our interconnector projects, with Nemo Link successfully completed during the year and significant progress made in the construction of IFA2 and North Sea Link.

Connections of renewable schemes to US electric distribution network (MW)

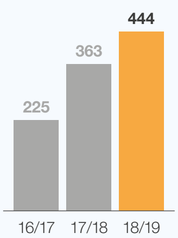
The table represents the amount of customer-owned renewable energy capacity installed on our distribution network across our US footprint. Given the variability and unpredictability of customer driven projects, the Company does not presently have an MW target. Current targets primarily focus on regulatory compliance and customer need date attainment.



Though the installed capacity shows a year-on-year decline, Rhode Island actually installed a record amount of capacity (76 MW) while the installed capacity in New York was on par with 2017/18. The installed capacity in New York enabled the Company to earn incentives through the state's Peak Reduction and DER Utilisation Earning Adjustment Mechanisms. Though Massachusetts experienced a decline in customer-ready projects to interconnect, attributed to a delay in the launch of the state's new incentive programme (SMART), it received a record amount of capacity (1.15 GW). While non-residential systems have represented less than 5% of connected applications, they have accounted for 75% of the installed capacity over the last three years.

NGV capital investment (£m) Ⓐ

NGV is focused on investment in a broad range of energy businesses across the UK and US, including our interconnector business, large-scale renewable generation, LNG storage and regasification, and energy metering.



NGV capital investment has increased in the year by £81 million (22%). This was principally due to increased investment in our interconnector projects under construction, with further progress made in the construction of IFA2 and North Sea Link. In addition, further investment has been made to upgrade and expand the Millennium gas pipeline with our joint venture partners.

Progress against our strategy
continued

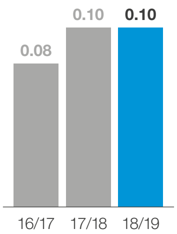
Non-financial measures

KPI | **Performance** | **Progress in 2018/19**

Group lost time injury frequency rate (LTIs per 100,000 hours worked)

This is the number of worker lost time injuries per 100,000 hours worked in a 12-month period (including fatalities) and includes our employee and contractor population.

Target: < 0.1 LTIs

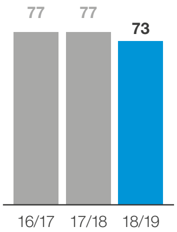


As at March 2019, our Group lost time injury frequency rate was 0.10. We have moved to reporting on combined employee and contractor LTI rates to reflect our continued focus on encouraging good safety behaviours across our entire worker community. The results for 16/17 and 17/18 have been restated with Group LTI rates.

The majority of lost time injuries are as a result of individual issues such as slips, trips and falls, soft tissue injuries from inappropriate lifting and carrying and non-fault road traffic collisions – we are treating these incidents with appropriate focus whilst acknowledging that they do not generally have the potential for more serious harm. Our analysis shows that in 2018/19 the number of incidents with higher potential for harm has been lower than expected.

Employee engagement index (%)

This is a measure of how engaged our employees feel, based on the percentage of favourable responses to questions repeated annually in our employee engagement survey. Our target is to increase engagement compared with the previous year.

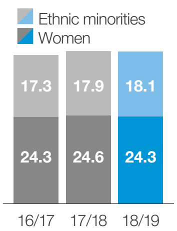


We measure employee engagement through our employee engagement survey. The results of our 2018/19 survey, which was completed by 76% of our employees, have helped us identify specific areas where we are performing well and those areas we need to improve.

Our engagement score was 73% favourable. While the score has dropped by four points from our 2017/18 results, we remain in the range of other high-performing companies for employee engagement. We have a range of action plans underway to support addressing the change in our scoring during 2019/20.

Workforce diversity

We measure the percentage of women and ethnic minorities in our workforce. We aim to develop and operate a business that has an inclusive and diverse culture (see page 43).

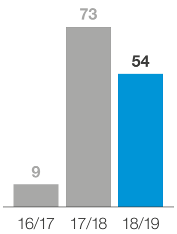


During 2018/19, we have seen a reduction in the size of the UK, US and NGV populations. Within this though, our female representation has decreased by a greater proportion than male representation; leading to a slight decrease overall of 0.3%, from 24.6% to 24.3%.

On the other hand, our ethnic minority representation has grown across the UK, US and NGV populations; leading to an overall increase of 0.2%, from 17.9% to 18.1%.

Contribution of our corporate responsibility work (£m)

Working with communities is important for creating shared value. The significant increase in donations in 2017/18 and 2018/19 is due to our contributions through the Warm Homes Fund.



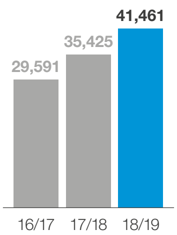
We use the London Benchmarking Group measurement framework to provide an overall community investment figure which includes education (but excludes investment in university research projects). Whilst we have no specific target, our overall aim is to ensure we add value to society to enable communities to thrive.

In the UK, the overall contribution of our activities was valued at nearly £46 million. The significant increase between 2016/17 and 2017/18 is due to our continued investment through the Warm Homes Fund. In the US, our contribution was just over £7 million.

This gives us a combined Group-wide contribution of nearly £54 million.

Education, skills and capabilities

We support the development of young people's skills and capabilities through skills-sharing employee volunteering. In particular, we focus on STEM subjects as these support our future talent recruitment and our desire to see young people gain meaningful employment.

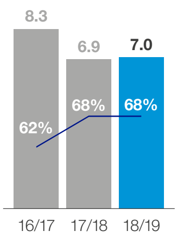


We measure quality (>1 hour) interactions with young people on STEM subjects. In the UK, in 2018/19, we have had 2,285 quality interactions with young people on STEM subjects. We had 39,176 interactions in the US. Overall we have seen a total of 41,461 interactions with young people on STEM, an increase of 6,036. The 2018/19 and 2017/18 data excludes UK Gas Distribution. All figures prior to 2017/18 include UK Gas Distribution.

Climate change

This is a measure of our reduction of Scope 1 and Scope 2 emissions of the six primary Kyoto greenhouse gases. Our target is to reduce our greenhouse gas emissions by 45% by 2020, 70% by 2030, and 80% by 2050, compared with our 1990 emissions of 21.6 million tonnes.

Further reading
You can read more about TCFD on pages 210 – 211



Our Scope 1 greenhouse gas emissions for 2018/19 equate to 4.5 million tonnes of carbon dioxide equivalent (2017/18: 4.0 million tonnes) and our Scope 2 emissions (including electricity line losses) equate to 2.5 million tonnes (2017/18: 2.9 million tonnes); combined this is a 68% reduction against our 1990 baseline. These figures include line losses and updated lower emissions factors for US Gas Distribution.

These are equivalent to an intensity of around 469 tonnes per £1 million of revenue (2017/18: 505).

Our Scope 3 emissions for 2018/19 were 32.3 million tonnes (2017/18: 31.9 million tonnes).

We measure and report in accordance with the World Resources Institute and World Business Council on Sustainable Development Greenhouse Gas Protocol. 100% of our Scope 1 and 2 emissions and 100% of our Scope 3 emissions are independently assured against ISO 14064-3 Greenhouse Gas assurance protocol. This statement, along with more information about our wider sustainability activities and performance can be found in the 'responsible business' section of our website www.nationalgrid.com

Financial measures that result from the delivery of our strategic priorities

In addition to the above measures, the Board also monitors a range of financial output indicators that measure the successful delivery of our strategy. These measures are listed below. Further detail can be found in our financial review:

- Dividend growth, page 33;
- Asset growth, page 30;
- Accounting profitability:
  - Underlying EPS, page 26;
  - Statutory EPS, page 26;
- Value creation: Value added per share, page 31; and
- Balance sheet strength: Regulatory gearing, page 31 (new in 2018/19).

Research and Development

The Group's investment in research and development (R&D) during the year was £19 million (2017/18: £13 million; 2016/17: £14 million).

However, our work is wider than just R&D. Across our organisation we have dedicated innovation functions in several of our core businesses. Additionally, due to the large number of partners we work with to advance new ideas, our disclosed R&D expenditure is lower than the overall contribution we make to the industry. We only disclose directly incurred expenditure and not those amounts our partners contribute to projects.

Innovation in our UK and US principal operations

Collaborating across the industry is crucial to developing new ideas and delivering value to our stakeholders. We search for new technologies and techniques to challenge the way we work. Partnerships are critical. One focus area is the impact of the changing energy landscape, which we explore through workshops and bilateral engagements. We are also developing innovation projects to drive the decarbonisation of transport, heat and industry.

We work in collaboration with technical organisations, academia and suppliers in the energy sector that align with our goals and objectives. This collaboration also helps inform our strategic direction in response to US jurisdictional requests for modernisation.

The UK electricity transmission network is continuing with innovation investments. We started 23 new projects to support delivery of secure, reliable and sustainable energy systems. We are also continuing our contribution to academic research, supporting 24 grants to the value of £64.4 million, working with the Engineering and Physical Sciences Research Council (EPSRC) to support allocation. We are also committed to finding sustainable solutions to our operational challenges. A good example of this is the use of bamboo as sound insulation to reduce the impact on local communities from transformer noise.

The System Operator has been innovating to ensure we continue to provide secure, affordable and sustainable supplies of energy in a fast-changing world. The year ahead will see even more projects generated by the Electricity System Operator, including the world's first Black Start from Distributed Energy Resources (DERs). This is a £10 million Network Innovation Competition (NIC) project with SP Energy Networks. It will develop and demonstrate coordination of DERs to provide a safe and effective Black Start service and lower cost to consumers. The ESO also uses innovation to accelerate market development.

In the US, we focus innovation and R&D on the advancement of products, systems and work methods that may be new to National Grid. This is accomplished by working with internal departments to identify where strategic investment is needed and will prove beneficial to our business and stakeholders. In Massachusetts, under our Solar Phase II programme, we have built 15.27 MW of photovoltaics (PV). These PV sites have been developed with advanced grid interactive controls. The aim of the project is to test and analyse the impact of future high levels of DERs on distribution systems.

In our US gas businesses, our main R&D priority is increasing public safety, protecting our workforce and reducing the cost of the work we perform. An example is the successful deployment of new equipment to stop the flow of gas in our distribution mains when maintenance or repair is required. We are now expanding the applicability to mains sized 750mm and above. Such innovative technology allows our workforce to operate more quickly and safely in smaller excavations with less customer impact.

National Grid Partners

In 2018 we launched National Grid Partners, our dedicated corporate innovation investment function. We completed our first direct venture investments during summer 2018 and we continue to pursue strategically aligned and financially attractive global opportunities for National Grid. National Grid Partners has brought in professional venture capital, incubation and business development experience to invest in start-up ventures directly. The function also provides visibility to emerging technologies globally.

We have established offices in Silicon Valley, an incubation facility in San Francisco, and have participated in funds based in the US, Europe and Israel to further our outreach and visibility in key innovation regions. We have made a strong start, having directly invested in 12 start-up ventures and the additional venture capital funds in 2018/19, with a cumulative investment of £58 million to date.

Our investment strategy largely targets digital enabling technologies covering five competitively attractive themes:

- Smart enterprise;
- Smart assets;
- Intelligent operations;
- Smart home, cities and mobility; and
- Energy efficiency.

More details can be found at www.ngpartners.com including details of each of our portfolio investments.

The value we look to create through innovation is often associated with introducing new methods to better manage our assets and finding ways to more efficiently build new infrastructure. We also aim to identify opportunities to enhance our customer service delivery, and continually strive to make our businesses safer and more sustainable over the long term.

Further reading
Further details about our R&D and innovation activities can be found in Additional Information on pages 223 – 224

Internal control and risk management

The Board is committed to protecting and enhancing our reputation and assets, while safeguarding the interests of our shareholders.

Top-down, bottom-up assessment

Risk management activities take place through all levels of our organisation. Through a 'top-down, bottom-up' approach, all business areas identify the main risks to our business model and to achieving their business objectives. Each risk is assessed by considering the financial, operational and reputational impacts, and how likely the risk is to materialise. The business area identifies and implements actions to manage and monitor the risks. The risks and actions identified are collated in risk registers and reported at functional and regional levels of the Company quarterly. The most significant risks for the UK and US businesses are highlighted in regional risk profiles and reported to the Executive Committee and the Board twice a year. In addition to these reports, the Executive Committee and the Board may also identify and assess principal risks. These risks and any associated management actions are cascaded through the organisation as appropriate.

Our internal control process

We have a number of processes to support our internal control environment. These processes are managed by dedicated specialist teams, including: risk management; ethics and compliance management; corporate audit and internal controls; and safety, environment and health. Oversight of these activities is provided through regular review and reporting to the appropriate Board committees, as described in the Corporate Governance section on page 61.

Internal control over financial reporting

The periodic Sarbanes-Oxley (SOX) Act 2002 reports, which contain management's opinion on the effectiveness of internal control over financial reporting, are received by the Board in advance of the full year results. They concern the Group-wide programme to comply with the requirements of section 404 of the SOX Act 2002 and are received directly from the Group Controls Team, and through the Executive and Audit Committees. For more information, including reporting, see the report of the Audit Committee on pages 58 – 62.

Managing our risks

National Grid is exposed to a variety of uncertainties that could have a material adverse effect on the Group's financial condition, our operational results, our reputation and the value of our shares.

The Board oversees the Company's risk management and internal control systems. As part of this role, the Board sets and monitors the amount of risk the Company is prepared to seek or accept in pursuing our strategic objectives (our risk appetite). The Board assesses the Company's principal risks and monitors the risk management process through risk review and challenge sessions twice a year.

Risk management process

Overall risk strategy, policy and process are set at Group-level with implementation owned by the business. Our enterprise risk management process provides a framework through which we can consistently identify, assess, prioritise, manage, monitor and report risks. The process is designed to support the delivery of our vision and strategy, described on pages 14 – 15.

Our corporate risk profile contains the principal risks that the Board considers to be the main uncertainties currently facing the Group as we endeavour to achieve our strategic objectives. These top risks are agreed through discussions about the Group's risk profile with the Executive Committee and the Board. The risks are reported and debated with the Executive Committee and the Board every six months.

When determining what our principal risks should be, a broad range of factors are considered. In 2018/19, external events played a large part in the assessment of threats and opportunities. Brexit is not currently one of our principal risks but the implications continue to be kept under review, especially in relation to our access to energy markets and the impacts on interconnector revenues and costs. During the year, our Brexit working group assessed these issues and devised scenarios to cover the possible outcomes. Based on the worst case scenario ('no deal'), we determined that the risk of increased costs of tariffs and any possibility that our partners might be compelled to 'switch off' the interconnectors is low. Throughout the year, we engaged with our customers, stakeholders and especially our regulators, as we seek to inform them of the Brexit outcome we believe would be in the best interests of consumers.

In the US, gas industry events on third-party networks not only influenced companies to incorporate lessons learnt, but also changed significantly the regulatory environment for the industry. These events included the Columbia Gas Company explosion/fires incident caused by the over pressurisation of a natural gas pipeline system that led to one fatality, 25 people injured and extensive property losses in three Massachusetts towns. We incorporated considerations from a safety and regulatory perspective into our principal risk analysis and viability testing scenarios.

The fires in California that caused numerous deaths and widespread destruction led us to review our focus on climate change within our principal risk scenario testing. The review considered our insurance coverage, cash flow and reputation following the subsequent findings concerning the liability of California's utility company, Pacific Gas and Electric (PG&E).

In addition to the issues above, senior leaders and the Board also considered certain aspects of the principal risks in more detail, including cyber security, emerging technology, asset safety and Ofgem's sector specific RIIO-T2 consultation.

We test principal risks annually to establish their impact on the Group's ability to continue operating and to meet its liabilities over the assessment period. We test the impact of these risks on a reasonable worst-case basis, alone and in clusters, over a five-year assessment period. This work informs our viability statement (see pages 23 – 24). The Board, Executive Committee and other leadership teams discuss the results of the annual principal risk testing at the end of the year.

Changes during the year

During the previous financial year, the Executive Committee and the Board undertook a re-assessment of the Company's principal risks and approach to risk appetite. The output from these workshops resulted in two new principal risks:

- 'failure to predict and respond to a significant disruption of energy that adversely impacts our customers and/or the public'; and
- 'failure to deliver any one of our customer, investor and wider stakeholder propositions due to increased political and economic uncertainty'.

The Board also considered the potential for state ownership of energy supply networks by the UK Labour Party. Should the UK Labour Party come to power, the timing and routes for energy supply network to move to state ownership are currently uncertain. The impact upon National Grid remains unclear. The Government would have to pay fair compensation for the Company's property which would be determined at the time, and could be calculated in a number of ways. We have canvassed a wide range of stakeholders to understand their views of state ownership.

Our Group Technology and Innovation function re-launched in January 2018 and adopted the National Grid Partners (NGP) brand externally. NGP continues our mission to identify disruptive technology and new business models. NGP also supports us connecting disruptive innovation more tightly with our growth strategy. Incorporated within NGP are our corporate venture capital and incubation functions that make and manage investments in financially attractive and complementary start-up organisations. Our disruptive innovation and business development functions foster greater collaboration and accelerate new ideas for growth.

During this year, we worked to embed the risk appetite framework in the business. As part of this process, we developed Key Risk Indicators (KRIs) for our principal risks at the Group level and for the risks at the US and UK regional level. KRIs are useful tools to enhance the monitoring and mitigation of risks and have multiple purposes:

- help signal a change in the level of risk exposure associated with specific activities;
- indicate the effectiveness of controls; and
- help assess if we are operating within our risk appetite framework.

Generally, the KRIs have been taken from our existing business performance metrics and utilised in a way that helps provide visibility to specific risk issues. The KRIs may be modified as we fully assess their effectiveness in this coming year.

Our principal risks and uncertainties

Accepting that it is not possible to identify, anticipate or eliminate every risk that may arise, and that risk is an inherent part of doing business, our risk management process aims to provide reasonable assurance that we understand, monitor and manage the main uncertainties that we face in delivering our objectives. This aim includes considering inherent risks, which in turn, exist because of the nature of day-to-day operations in our industry, and financial risks, which exist because of our financing activities. Our principal risks, and a summary of actions taken by management, are provided in the table below. We have provided an overview of the key inherent risks we face on pages 212 – 215, as well as our key financial risks, which are incorporated within note 32 to our consolidated financial statements on pages 162 – 172. Risk trends* reported below take into account implemented mitigation actions and may be influenced by internal or external developments.

Operational risks

Operational risks relate to the losses resulting from inadequate or failed internal processes, people and systems, or due to external events. These risks normally fall within our low-risk appetite level as there is no strategic benefit from accepting the risk and accepting that it is not in line with our vision and values.

Our operational principal risks have a low likelihood of occurring. However, should an event occur without effective prevention or mitigation controls it would have a high level of impact. The risk owners, executive leaders, and their teams develop and monitor actions to control the risks. Operational risks are managed through policy, standards, procedure-based controls, active prevention and monitoring. The operational risks link to our strategic priority to 'Optimise Performance'. Principal risk assessment includes reasonable worst case scenario testing i.e. gas transmission pipeline failure, loss of licence to operate, cyber security attack – and the financial and reputational impact should a single risk or multiple risks materialise. External events over this past year – the extreme weather events, the fires in California and the Columbia Gas Company incident – were considered in the assessment and testing, as well as in the development of mitigation actions.

Please also refer to pages 210 – 211 for the discussion of climate-related influences on risk management.

Risks

Catastrophic asset failure results in a significant safety and/or environmental event.

***Risk trend:** **(17/18 Neutral)**

Major cyber security breach of business, operational technology and/or critical national infrastructure (CNI) systems/data.

Risk trend: **due to the dynamic nature of the cyber security threat (17/18 Increasing Risk)**

Failure to predict and respond to a significant disruption of energy that adversely affects our customers and/or the public.

Risk trend: **(17/18 Increasing Risk)**

Failure to adequately identify, collect, use and keep private the physical and digital data required to support Company operations and future growth.

Risk trend: **(17/18 Neutral)**

* Risk trends are assessed to include any external factors outside our control as well as the strength and effectiveness of mitigations as reviewed by management.

Actions taken by management

We continue to commit significant resources and financial investment to maintain the integrity and security of our assets and data. This year, we continued to focus on risk mitigation actions designed to reduce the risk and help meet our business objectives. We incorporated monitoring action status into various business processes and senior leadership including:

- Putting our Group-wide process safety management system in place to make sure a robust and consistent framework of risk management exists across our higher hazard asset portfolio;
- Implementing asset management and data management standards with supporting guidelines to provide clarity around what is expected, with a strong focus on what we need in place to keep us safe, secure and legally compliant. In support of this, we developed a capability framework to make sure our people have the appropriate skills and expertise to meet the performance requirements in these standards;
- Continually investing in strategies that are commensurate with the changing nature of the security landscape. This includes collaborative working with the Department for Business, Energy and Industrial Strategy (BEIS) and the Centre for Protection of National Infrastructure (CPNI) on key cyber risks, as well as development of an enhanced CNI security strategy; and our involvement in the US with developing the National Institute of Standards and Technology Cyberspace Security Framework;
- Exceptional network reliability is maintained through a holistic approach encompassing preventative and mitigating actions. Implementation of asset health programmes which include inspection, maintenance, refurbishment and replacement minimises network interruptions due to asset failure. Our UK Gas Transmission's Winter Preparedness Plan and diversity in our US gas procurement are additional examples of pre-emptive measures undertaken to maintain network reliability. Should energy flow disruptions occur, business continuity and emergency plans are in place and practiced, including black start testing. Critical spares are maintained to ensure we can quickly and effectively respond to a variety of incidents – storms, physical and cyber-related attacks, environmental incidents and asset failures; and
- We have a mature insurance strategy that uses a mix of self-insurance, captives and direct (re)insurance placements. This provides some financial protection against property damage, business interruption and liability risks.

Internal control and risk management continued

Strategic and regulatory risks

Strategic risk is the risk of failing to achieve the Company's overall strategic business plans and objectives, as well as failing to have the 'right' strategic plan. We voluntarily accept some risk so we can generate the desired returns from our strategy.

Management of strategic risks focuses on reducing the probability that the assumed risk would materialise, while improving the Company's ability to effectively respond to the risk should it occur. The risk owners, executive leaders, and their teams develop and monitor actions to control the risks. These risks link to our strategic priorities of 'Grow our core business' and 'Evolve for the future'. The political climate and policy decisions of our regulators in 2018/19 were key considerations in assessing our risks.

Risks

Failure to influence future energy policy and secure satisfactory regulatory agreements.

Risk trend: due to energy regulatory environment (17/18 Increasing Risk)

Failure to deliver our customer, stakeholder and investor proposition due to increased political and economic uncertainty.

Risk trend: due to current political environment (17/18 Increasing Risk)

Failure to adequately anticipate and minimise the adverse impact from disruptive forces such as technology and innovation on our business model.

Risk trend: (17/18 Neutral)

Actions taken by management

In both the UK and the US, we strive to maintain a good understanding of the regulatory agenda and emerging issues, so that robust, public interest aligned responses can be selected and developed in good time. Our reputation as a competent operator of important national infrastructure is critical to our ability to do this. We have plans and governance structures in place to address specific issues such as RIIO-T2 and US rate case filings. We also continuously work to foster open and effective relationships with our regulators and other stakeholders.

Processes and resources are in place to review, undertake due diligence and progress new investment opportunities, dispose of existing businesses, and identify and execute on opportunities that provide organic growth. These processes, along with twice-yearly National Grid Board strategy offsite discussions, are reviewed regularly to ensure they continue to support our short and long-term strategy. We regularly monitor and analyse market conditions, competitors and their potential strategies, the advancement and proliferation of new energy technologies, and the performance of our Group portfolio.

We created the Group Technology and Innovation team to develop our strategy with regards to new technology, to monitor disruptive technology and business model trends, and to act as a bridge for emerging technology into the core regulated businesses and business development teams. In addition, we established the partnership with Energy Impact Partners in 2015 to gain exposure to emerging start-up companies.

The new National Grid Ventures function will further the focus on new strategies, business development and technology and innovation.

People risks

It is through the high-quality work of our employees that we will achieve our vision, respond to the changing needs of our stakeholders and create a competitive advantage. Building and fostering an engaged and talented team that has the knowledge, training, skills and experience to deliver our strategic objectives is vital to our success. We must attract, integrate and retain the talent we need at all levels of the business.

Risks

Failure to build sufficient capability and leadership capacity (including effective succession planning) required to deliver our vision and strategy.

Risk trend: (17/18 Neutral)

Actions taken by management

We have embedded strategic workforce planning in our US and UK organisations. This process helps to effectively inform financial and business planning, as well as human resourcing needs.

Our entry-level talent development schemes (graduate training and apprenticeships) are a potential source of competitive advantage in the market place. We are involved in a number of initiatives to help secure the future engineering talent we require, including the UK annual residential work experience week and the US Pipeline and Graduate Development Programmes.

During the year, we also improved the rigour of our succession planning and development planning process, particularly at senior levels. It is now being applied deeper into the organisation. Our Strategic Talent Acquisition team now includes internal executive search capability and market mapping of critical roles. Ongoing attention is required in relation to the ethnic diversity of our management population. There are multiple activities under way to drive this agenda, including 'blind' talent and selection processes, development interventions and a global review of our inclusion and diversity strategy and resources.

Financial risks

While all risks have a financial liability, financial risks are those which relate to financial controls and performance. Financial risk management is a critical process used to make investment decisions and aims to maximise investment returns and earnings for a given level of risk.

Our key financial risks, which are incorporated within the notes to our consolidated financial statements, are described in note 32 in our financial statements on pages 162 – 172.

Viability statement

The Board's consideration of the longer-term viability of the Company is an extension of our business planning process. This process includes financial forecasting, a robust risk management assessment, regular budget reviews and scenario planning incorporating industry trends and economic conditions. Our business strategy aims to enhance our long-term prospects by making sure our operations and finances are sustainable.

Utilising our established top-down/bottom-up risk management process, we identify, monitor and challenge the principal risks facing the Company as described on pages 21 – 22. Throughout the year, the Board considered the principal risks shown in the table below and reviewed preventative and mitigating controls and risk management actions. The Board also discussed the potential financial and reputational impact of the principal risks against our ability to deliver the Company's business plan.

By assessing the potential impact of our principal risks on the longer-term viability of the Company, we can test the solvency and liquidity risks involved in delivering our business objectives and priorities. Although it has considered adopting a longer period, the Board believes that five years is the most appropriate timeframe over which we should assess the long-term viability of the Company. The following factors have been considered in making this decision:

- we have reasonable clarity over a five-year period, allowing us to make an appropriate assessment of our principal risks;
- to test this timeframe, the Board considered whether there are specific, foreseeable risk events that are likely to materialise within a five- to ten-year period, which might affect the Company's viability and should therefore be taken into account when setting the assessment period. No risks of this sort were identified; and
- it matches our business planning cycle.

We considered each principal risk for inclusion in the testing. Where appropriate, we identified and assessed a reasonable worst case scenario for impacts on operations and/or financial performance over the five-year assessment time period, as detailed below:

Operational impacts

Scenario 1 – A significant cyber attack in the UK.
Scenario 2 – A wide spread electrical network interruption in the UK.
Scenario 3 – A catastrophic gas transmission pipeline failure in the US.
Scenario 4 – Emerging technology leading to significant numbers of people going 'off grid'.

Performance impacts

Scenario 5 – A breach of personal data information.
Scenario 6 – The state ownership of the energy sector in the UK.
Scenario 7 – A poor outcome to RIIO-T2 negotiations.

In addition to testing individual principal risks, we also considered the impact of a cluster of principal risks materialising over the assessment period. Recent external developments such as incidents that affected other utilities were considered, such as the significant financial and reputational impacts of the Columbia Gas Company explosion/fires incident in Woburn. We also considered climate change-related weather scenarios, as well as incidents such as our gas outage on Aquidneck Island in Rhode Island. We chose a combination of risks which, in the opinion of the Board, represented worst-case scenarios.

Scenario 8 – A cyber attack resulting in a data breach and widespread electrical outage leading to the state ownership of UK gas and electric networks.
Scenario 9 – Catastrophic asset failure of a gas pipeline in New York, resulting in the loss of ability to operate local gas networks.

The Board considered the reputational and financial impacts for each scenario (to the nearest £500 million). The risk relating to leadership capacity was not tested, as the Board did not feel this would threaten the viability of the Company within the five-year assessment period.

The Board assessed our reputational and financial headroom and reviewed results against that headroom. The testing of risk clusters also included an assessment of the potential impact on the business plan. The Board considered key financial metrics, specifically Group gearing, RCF/Net Debt, FFO/Net Debt and FFO/Gross Debt credit rating metrics to ascertain the viability of the Company. In keeping with our worst case scenario analysis, it is assumed that management does not take any remedial actions over the five-year assessment period.

No single principal risk, cluster or combination of principal risks was found to have an impact on the viability of the Company over the five-year assessment period. In addition, our assurance system contains preventative and mitigating controls to minimise the likelihood of occurrence and/or financial and reputational impact.

In assessing the impact of the principal risks on the Company, the Board considered the stability of the markets in which we operate, the robust financial position of the Group and our ability to sell assets, raise capital and suspend or reduce dividends. It also took into account Ofgem's legal duty to consider funding requirements for the licensed activities of National Grid Gas plc, National Grid Electricity Transmission plc and National Grid Electricity System Operator Limited.

Each Director was satisfied that they had sufficient information to judge the viability of the Company. Based on the assessment described above and on page 20, the Directors have a reasonable expectation that the Company will continue operating and meet its liabilities over the period to May 2024.

Viability statement continued

Principal risk	Viability scenario	Matters considered by the Board
Major cyber security breach of business, operational technology and/or CNI systems/data.	**Scenario 1** – A significant cyber attack.	The Board received updates on cyber security in: • March 2018; • June 2018; • July 2018; • September 2018; • December 2018; and • March 2019.
Failure to predict and respond to a significant disruption of energy that adversely affects our customers and/or the public.	**Scenario 2** – An extended electrical outage in the UK.	• Two Board Strategy sessions held during the year; • Bi-annual NGV overviews; and • Considered technology and innovation.
Catastrophic asset failure resulting in a significant safety and/or environmental event.	**Scenario 3** – A gas transmission pipeline failure in the US.	• The Board reviews the current safety performance of the Company at each meeting. Additionally, safety is a fundamental priority and is looked at in detail by the Safety, Environment and Health Committee ('SEH Committee') who have delegated authority from the Board; and • Our Electricity and Gas Engineering Reports to the SEH Committee also provide progress updates on our asset management improvement.
Failure to adequately identify, collect, use and keep private the physical and IT data required to support Company operations and future growth.	**Scenario 5** – The breach of personal data information.	• Annual updates on the Company's information systems.
Failure to build sufficient leadership capacity (including succession planning) required to deliver our vision and strategy.	N/A	• Bi-annual updates on people matters; • Considered capabilities to support the delivery of strategic priorities; and • Nominations Committee: considers the structure, size and composition of the Board and committees and succession planning. It identifies and proposes individuals to be Directors and establishes the criteria for any new position.
Failure to deliver any customer, investor and wider stakeholder propositions due to increased political and economic uncertainty.	**Scenario 6** – The state ownership of the energy sector in the UK.	The Board received updates and reviews of: • the impact of Brexit and access to the Internal Energy Market; • the potential threat of state ownership; • US tax reform; • UK regulatory strategy; • US regulatory strategy; • bi-annual UK/US/NGV customer key issues for 2018/19; and • US customer proposition strategy (March 2019).
Failure to influence future energy policy and secure satisfactory regulatory agreements.	**Scenario 7** – A poor outcome of RIIO-T2 negotiations.	The Board received updates and reviews of: • US regulatory strategy; • UK regulatory strategy; • UK System Operator; • Key regulatory policy issues for 2018/19; and • RIIO-T2.
Failure to adequately anticipate and minimise the adverse impact from disruptive forces such as technology and innovation on our business model.	**Scenario 4** – Emerging technology leading to significant numbers of people going 'off grid'.	• Bi-annual updates from National Grid Partners; and • During the year, Board strategy sessions considered digital strategy as well as technology and innovation items such as electric vehicles.

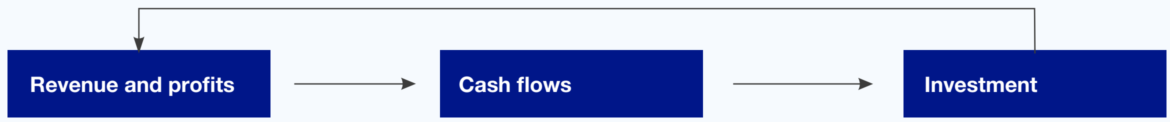
Financial review

Here we explain how we create value for our shareholders and provide commentary on our key financial performance metrics.

Our investment proposition

We aim to be a low-risk business, focused on generating shareholder value through dividends supported by asset growth from investing in infrastructure assets under primarily regulated market conditions, to service long-term sustainable consumer-led demands.

The Group comprises a portfolio of high-quality, long-term assets at the heart of the energy system. These assets share certain key characteristics – low commercial risk profile and stable cash flows, underpinned by long-term contracts or regulatory arrangements. Our core regulated businesses in the UK and US generate nearly 90% of our operating profits. They benefit from independent and/or stable regulation and macro-economic protection, and the chart below describes how these businesses create financial value.



Revenue and profits

The vast majority of our revenues are set in accordance with our regulatory agreements (see pages 199 – 209), and are calculated based on a number of factors including investment in network assets; performance against incentives; allowed returns on equity and cost of debt; and customer satisfaction.

Cash flows

Our ability to convert revenue to profit and cash is important. By managing our operations efficiently, safely and for the long term, we are able to generate strong sustainable cash flows to finance returns through dividends, and also to provide funds for growth.

Investment

We invest efficiently in our networks to deliver strong and sustainable growth in our regulated asset base over the long term.

We continually assess, monitor and challenge investment decisions so we can continue to deliver safe, reliable, and cost-effective networks.

We also own a diverse and growing portfolio of commercial energy businesses operating in markets across the UK and US. These include our Grain LNG terminal and electricity interconnectors between the UK and continental Europe, which generate revenue by selling capacity to store or transmit energy. Our UK metering business generates revenue primarily through meter rentals. We also own a commercial property business which develops and sells surplus land.

We deliver value for shareholders and stakeholders alike by:

- operating within our regulatory frameworks as efficiently and compliantly as possible;
- performing well against our regulatory incentives, thus delivering customer benefits and good returns;
- managing our cash flow requirements and securing low-cost funding; and
- maintaining a disciplined approach to investment in our networks.

Summary of Group financial performance

Performance management framework

In managing the business we focus on various non-IFRS measures which provide meaningful comparisons of performance between years, monitor the strength of the Group's balance sheet as well as profitability and reflect the Group's regulatory economic arrangements. Such alternative and regulatory performance measures are supplementary to, and should not be regarded as a substitute for, IFRS measures, which we refer to as statutory results. We explain the basis of these measures and, where practicable, reconcile these to statutory results in 'Other unaudited financial information' on pages 225 – 234.

Specifically, we measure the financial performance of the Group from different perspectives:

- **Capital investment and asset growth:** Currently we expect to invest c.£5 billion per year and annual growth in our asset base is expected to be at the top end of the 5 – 7% range.
- **Accounting profit:** In addition to statutory IFRS measures we distinguish between adjusted results, which exclude exceptional items and remeasurements, and underlying results, which further take account of: (i) volumetric and other revenue timing differences arising from our regulatory contracts, and (ii) major storm costs which are recoverable in future periods, neither of which give rise to economic gains or losses. In so doing we intend to make the impact of such items clear to users of the financial statements.
- **Economic profit:** Measures such as Return on Equity and Value Added take account of the regulated value of our assets and of our regulatory economic arrangements to illustrate the returns generated on shareholder equity.
- **Balance sheet strength:** Maintaining a strong investment grade credit rating allows us to finance our growth ambitions at a competitive rate. Hence, we monitor credit metrics used by the major rating agencies to ensure we are generating sufficient cash flow to service our debts.

This balanced range of measures of financial well-being informs our dividend policy, which is to grow the dividend per share at least in line with UK Retail Price Index inflation for the foreseeable future.

Financial review continued

Summary of Group financial performance for the year ended 31 March 2019

Financial summary for continuing operations

£m	2018/19	2017/18	Change
Statutory results			
Operating profit	**2,870**	3,493	(18)%
Profit after tax	**1,502**	3,549	(58)%
Earnings per share (pence)	**44.3p**	102.5p	(57)%
Dividend per share (pence), including proposed final dividend	**47.34p**	45.93p	3%
Capital expenditure	**4,321**	4,074	6%
Alternative performance measures:			
Underlying operating profit	**3,427**	3,495	(2)%
Underlying profit after tax	**1,998**	1,945	3%
Adjusted earnings per share (pence)	**59.0p**	55.3p	7%
Underlying earnings per share (pence)	**58.9p**	56.2p	5%
Underlying dividend cover	**1.2**	1.2	–
Capital investment	**4,506**	4,251	6%
Retained cash flow/adjusted net debt	**9.4%**	9.7%	(30)bps
Regulatory performance measures:			
Asset growth	**7.2%**	5.9%	130bps
Group Return on Equity	**11.8%**	12.3%	(50)bps
Value added	**2,071**	2,004	3%
Regulatory gearing	**66%**	64%	200bps

We explain the basis of these alternative performance measures and regulatory performance measures and, where practicable, reconcile them to statutory results on pages 225 – 234.

The Group's statutory results for the year were impacted by exceptional charges incurred in respect of the Massachusetts Gas labour dispute (-6.2p EPS), our UK and US cost efficiency and restructuring programme (-4.7p) and impairment of development costs in respect of the termination of the NuGen and Horizon nuclear connection projects (-3.3p). Last year's statutory results benefited (by 43.8p EPS) from the reduction in deferred tax provisions as a result of The Tax Cuts and Jobs Act (tax reform) in the US.

Underlying operating profit was down 2% as the return of certain UK Gas Transmission revenue allowances and the impact of tax reform on US regulated revenues were partly mitigated by favourable legal settlements and sales to the St William property joint venture. With net financing costs steady at around £1 billion, the lower US federal tax rate and lower share count contributed to a 5% increase in underlying EPS to 58.9p. Capital investment of £4.5 billion helped deliver asset growth above our targeted 5 – 7% annual range. Value added (our measure of economic profit) increased year-on-year although Group RoE was lower, reflecting the removal of the Cadent contribution from underlying results. RCF/net debt was consistent with the Company's strong investment grade credit rating. The recommended full-year dividend per share of 47.34p is in line with policy and is covered 1.2 times by underlying EPS.

Profitability and earnings

The table below reconciles our statutory profit measures for continuing operations, at actual exchange rates, to adjusted and underlying versions.

Reconciliation of profit and earnings from continuing operations

	Operating profit			Profit after tax			Earnings per share		
£m	2018/19	2017/18	Change	2018/19	2017/18	Change	2018/19	2017/18	Change
Statutory results	**2,870**	3,493	(18)%	**1,502**	3,549	(58)%	**44.3p**	102.5p	(57)%
Exceptional items	**624**	(26)		**480**	(1,532)		**14.2p**	(44.3)p	
Remeasurements	**(52)**	(10)		**19**	(101)		**0.5p**	(2.9)p	
Adjusted results	**3,442**	3,457	n/c	**2,001**	1,916	4%	**59.0p**	55.3p	7%
Timing	**(108)**	(104)		**(72)**	(62)		**(2.1)p**	(1.7)p	
Major storm costs	**93**	142		**69**	91		**2.0p**	2.6p	
Underlying results	**3,427**	3,495	(2)%	**1,998**	1,945	3%	**58.9p**	56.2p	5%

In calculating adjusted profit measures, where we consider it is in the interests of users of the financial statements to do so, we exclude certain discrete items of income or expense that we consider to be exceptional in nature. The table below summarises such items; full details are contained in note 5 to the financial statements together with an explanation of the process used to make this determination.

Exceptional income/(expense) from continuing operations

£m	Impact on operating profit 2018/19	Impact on operating profit 2017/18	Impact on profit after tax 2018/19	Impact on profit after tax 2017/18	Impact on EPS 2018/19	Impact on EPS 2017/18
Massachusetts Gas labour dispute	**(283)**	–	**(209)**	–	**(6.2)p**	–
UK and US cost efficiency and restructuring programme	**(204)**	–	**(160)**	–	**(4.7)p**	–
Impairment of nuclear connections development costs	**(137)**	–	**(111)**	–	**(3.3)p**	–
LIPA MSA settlement	**–**	26	**–**	17	**–**	0.5p
US tax reform	**–**	–	**–**	1,515	**–**	43.8p
Total	**(624)**	26	**(480)**	1,532	**(14.2)p**	44.3p

This year we have classified the following items as exceptional:

- **Massachusetts Gas labour dispute:** As described in the Chief Executive's review on page 11, in the period between the expiration of contracts for the union workforce in June 2018 and their return to work in January and February 2019, we implemented a workforce contingency plan. The £283 million of incremental costs (pre-tax) incurred principally relate to the employment of fully qualified external contractors, alongside supervisors and workers from other areas of our business to ensure work continued safely;
- **Efficiency and restructuring:** A total of £204 million has been provided to reorganise our core regulated businesses in the UK (£136 million) and US (£68 million); and
- **Impairment of nuclear connections development costs:** £137 million of charges relating to the write-off of costs incurred in connection with the Horizon and NuGen nuclear connection projects that UK Electricity Transmission had been working on for the last decade, which were cancelled during the period, net of £13 million termination income. From an economic perspective, we expect to recover the bulk of these charges in future years through established regulatory arrangements.

In the prior year we classified the £1.5 billion gain arising as a result of US tax reform as exceptional, along with a £26 million gain on the final settlement of contractual matters relating to the cessation of the Management Services Agreement with LIPA in 2013.

We also exclude certain unrealised gains and losses on mark-to-market financial instruments from adjusted profit; see notes 5 and 6 to the financial statements for further information. Net remeasurement gains of £52 million on commodity contract derivatives were more than offset by net remeasurement losses of £76 million on financing-related instruments.

Timing over/(under-recoveries)

In calculating underlying profit we exclude regulatory revenue timing over- and under-recoveries and major storm costs. Under the Group's regulatory frameworks, most of the revenues it is allowed to collect each year are governed by regulatory price controls in the UK and rate plans in the US. If more than this allowed level of revenue is collected, the balance must be returned to customers in subsequent years; likewise, if less than this level of revenue is collected, the balance will be recovered from customers in subsequent years. These variances between allowed and collected revenues give rise to over- and under-recoveries.

The following table summarises management's estimates of such amounts for the two years ended 31 March 2019. All amounts are shown on a pre-tax basis and, where appropriate, opening balances are restated for exchange adjustments and to correspond with subsequent regulatory filings and calculations.

£m	2018/19	2017/18
Balance at start of year (restated)	**299**	175
In-year over-recovery	**108**	104
Balance at end of year	**407**	279

Timing under-recoveries of £77 million in UK Electricity Transmission and £38 million in UK Gas Transmission were more than offset by timing over-recoveries of £223 million in US Regulated in 2018/19. In calculating the post-tax effect of these timing recoveries, we impute a tax rate, based on the regional marginal tax rates, consistent with the relative mix of UK and US balances. For the year ended 31 March 2019 this tax rate was 34%.

Major storm costs

We also take account of the impact of major storm costs in the US where the aggregate amount is sufficiently material in any given year. Such costs (net of certain deductibles) are recoverable under our rate plans but are expensed as incurred under IFRS. Accordingly, where the total incurred cost (after deductibles) exceeds $100 million in any given year, we exclude the net amount from underlying earnings. In 2017/18 we faced a challenging winter with the October wind storm and three northeasters storms. During 2018/19 we experienced bad weather events across the year, with storms, unusually, in April and May as well as during the winter months.

Financial review continued

Segmental operating profit

The following tables set out operating profit on adjusted and underlying bases.

Adjusted operating profit

£m	2018/19	2017/18	Change
UK Electricity Transmission	**1,015**	1,041	(2)%
UK Gas Transmission	**303**	487	(38)%
US Regulated	**1,724**	1,698	2%
NGV and Other activities	**400**	231	73%
Total	**3,442**	3,457	–

Underlying operating profit

£m	2018/19	2017/18	Change
UK Electricity Transmission	**1,092**	1,055	4%
UK Gas Transmission	**341**	505	(32)%
US Regulated	**1,594**	1,704	(6)%
NGV and Other activities	**400**	231	73%
Total	**3,427**	3,495	(2)%

The statutory operating profit for all three reportable segments fell in the year primarily as a result of the £624 million exceptional charges referred to earlier. The reasons for the movements in underlying operating profit are described in the segmental commentaries below. Unless otherwise stated, the discussion of performance in the remainder of this financial review focuses on underlying results.

UK Electricity Transmission

£m	2018/19	2017/18	Change
Revenue	**3,351**	4,154	(19)%
Operating costs	**(2,573)**	(3,113)	(17)%
Statutory operating profit	**778**	1,041	(25)%
Exceptional items	**237**	–	n/a
Adjusted operating profit	**1,015**	1,041	(2)%
Timing	**77**	14	
Underlying operating profit	**1,092**	1,055	4%
Analysed as follows:			
Net revenue	**1,954**	1,911	2%
Regulated controllable costs	**(332)**	(321)	3%
Post-retirement benefits	**(49)**	(50)	(2)%
Other operating costs	**(65)**	(24)	171%
Depreciation and amortisation	**(493)**	(475)	4%
Adjusted operating profit	**1,015**	1,041	(2)%
Timing under-recovery	**77**	14	
Underlying operating profit	**1,092**	1,055	4%

UK Electricity Transmission statutory revenue and costs decreased by £1.0 billion following adoption of IFRS 15, which we applied with effect from 1 April 2018. Revenues we collect from customers but pass onto the Scottish and Offshore transmission operators at nil margin are now excluded from both revenue and operating costs (in 2017/18, £1,027 million is reported in relation to these revenues on a gross basis). There were £137 million of exceptional costs related to the cancellation of nuclear connections (net of termination income) and £100 million in relation to our cost-efficiency and restructuring programme.

Underlying operating profit increased by 4%. Net revenues were higher, reflecting the annual RPI uplift and increased incentive income. Regulated controllable costs were slightly higher, with efficiency savings partly offsetting the costs of separating the Electricity System Operator, higher IT run-the-business costs and inflation. Post-retirement benefit costs were little changed year-on-year. Other costs were higher, principally relating to provisions against income recognised on early termination of connections.

The increase in depreciation and amortisation charges reflects the ongoing investment driven growth in the asset base.

UK Gas Transmission

£m	2018/19	2017/18	Change
Revenue	**896**	1,091	(18)%
Operating costs	**(629)**	(604)	4%
Statutory operating profit	**267**	487	(45)%
Exceptional items	**36**	–	n/a
Adjusted operating profit	**303**	487	(38)%
Timing	**38**	18	
Underlying operating profit	**341**	505	(32)%
Analysed as follows:			
Net revenue	**669**	834	(20)%
Regulated controllable costs	**(144)**	(146)	(1)%
Post-retirement benefits	**(27)**	(18)	50%
Other operating costs	**(14)**	11	n/a
Depreciation and amortisation	**(181)**	(194)	(7)%
Adjusted operating profit	**303**	487	(38)%
Timing under-recovery	**38**	18	
Underlying operating profit	**341**	505	(32)%

UK Gas Transmission revenue decreased, reflecting the refund of revenues previously received in respect of the proposed Avonmouth pipeline project that is no longer required. The exceptional charge relates to cost efficiency and restructuring.

Underlying operating profit fell by 32%. Net revenues were lower, reflecting the Avonmouth refund. Regulated controllable costs were flat, with efficiency savings offsetting higher IT run-the-business costs and inflation. Post-retirement costs were higher year-on-year, mainly related to the Guaranteed Minimum Pension (GMP) equalisation ruling in October 2018. Other costs were higher due to prior year provision releases.

The depreciation charge was lower following a detailed review of asset lives in the period.

US Regulated

£m	2018/19	2017/18	Change
Revenue	9,846	9,272	6%
Operating costs	(8,421)	(7,538)	12%
Statutory operating profit	**1,425**	1,734	(18)%
Exceptional items	351	(26)	
Remeasurements	(52)	(10)	
Adjusted operating profit	**1,724**	1,698	2%
Timing	(223)	(136)	
Major storm costs	93	142	35%
Underlying operating profit	**1,594**	1,704	(6)%
Analysed as follows:			
Net revenue	5,868	5,468	7%
Regulated controllable costs	(1,895)	(1,720)	10%
Post-retirement benefits	(94)	(96)	2%
Bad debt expense	(146)	(100)	46%
Other operating costs	(1,309)	(1,219)	8%
Depreciation and amortisation	(700)	(635)	10%
Adjusted operating profit	**1,724**	1,698	2%
Timing over-recovery	(223)	(136)	
Major storm costs	93	142	
Underlying operating profit	**1,594**	1,704	(6)%

US Regulated statutory operating profit fell and statutory costs increased principally as a result of the Massachusetts Gas labour dispute costs of £283 million and £68 million of restructuring costs.

Underlying operating profit fell by 6%. Net revenues increased as the benefits of rate case increments came into effect, partly offset by the impact of US tax reform (as the billing tariffs now reflect lower tax requirements) and the adoption of IFRS 15, under which customer connections revenues are now recognised over the life of the asset, rather than on completion of works. A stronger US dollar increased underlying operating profit by £69 million in the year.

US Regulated controllable costs increased as a result of workload increases agreed with regulators and inflation. Bad debt expense increased as a result of higher receivables, including commodity charges. Other costs were higher due to more expenditure on 'minor' storms (non-deferrable) and increased cost of removal.

Depreciation and amortisation charges increased in line with the strong growth in asset base driven by the high level of capital investment.

US timing over-recoveries mainly related to collection of the 2017/18 build-up of commodity deferrals offset by lower NYSERDA over-recoveries. There were lower major storm costs incurred in 2018/19 than in the prior year.

National Grid Ventures and Other activities

£m	2018/19	2017/18	Change
Statutory operating profit	**400**	231	73%
Exceptional items	–	–	–
Adjusted operating profit	**400**	231	73%
Timing	–	–	–
Underlying operating profit	**400**	231	73%
Analysed as follows:			
NGV	263	234	12%
Property	181	84	115%
Corporate and Other activities	(44)	(87)	(49)%
Underlying operating profit	**400**	231	73%

National Grid Ventures' operating profits were 12% higher year-on-year reflecting lower costs incurred setting up our new business compared to 2017/18. Last year also included an impairment of land value.

The Property business delivered a strong performance aided by the sale of the Fulham site to the St William joint venture, which recognised half the profit on the sale of this site.

Corporate activities include a benefit of £95 million this year of legal settlements to recover costs associated with a US systems implementation, partly offset by costs related to the GMP equalisation ruling in the UK High Court in October 2018 and higher IT-related costs.

Financing costs and taxation

Net finance costs

Underlying net finance costs for the year were similar to last year at £1 billion, the cost of higher average net debt being offset by lower RPI rates and the efficient use of low-cost commercial paper. The effective interest rate on treasury managed debt was 4.3%.

Joint ventures and associates

The Group's share of net profits from joint ventures and associates fell marginally.

Tax

The underlying effective tax rate of 19.6% was 4.2% lower than last year mainly because of the full-year effect of the reduction in the US federal corporate tax rate as a result of tax reform which took effect from 1 January 2018. The tax charge for the year benefited from the release of reserves following settlement of tax audits relating to earlier years and gains on chargeable disposals which are offset by previously unrecognised capital losses. The Group's tax strategy is detailed later in this review.

Discontinued operations

In November 2018 we announced our decision to exercise our put options over our entire 39% interest in Cadent, and the sale is expected to complete in June 2019 for approximately £2 billion. As described further in note 10 to the financial statements, we have treated all items of income and expense relating to Cadent within discontinued operations, and re-presented the prior year accordingly. The statutory income for the year of £12 million principally reflects £23 million of interest on shareholder loans net of £5 million tax and £5 million share of post-tax loss of Quadgas.

Financial review continued

Capital investment, asset growth and value added

Value added is a measure that reflects the value to shareholders of our dividend and the growth in National Grid's regulated and non-regulated assets (as measured in our regulated asset base, for regulated entities), net of the growth in overall debt. It is a key metric used to measure our performance and underpins our approach to sustainable decision-making and long-term management incentive arrangements.

A key part of our investor proposition is growth in our regulated asset base. The regulated asset base is a regulatory construct, representing the invested capital on which we are authorised to earn a cash return. By investing efficiently in our networks, we add to our regulatory asset base over the long-term and this in turn contributes to delivering shareholder value. Our regulated asset base comprises our regulatory asset value in the UK, plus our rate base in the US. We also invest in related activities that are not subject to network regulation and this further contributes to asset growth.

Capital investment

Capital investment comprises capital expenditure in critical energy infrastructure, equity investments, funding contributions and loans to joint ventures and associates, and, in the case of National Grid Partners, investments in financial assets.

	At actual exchange rates			At constant currency		
£m	**2018/19**	2017/18	Change	**2018/19**	2017/18	Change
UK Electricity Transmission	**925**	999	(7)%	**925**	999	(7)%
UK Gas Transmission	**308**	310	(1)%	**308**	310	(1)%
US Regulated	**2,650**	2,424	9%	**2,650**	2,521	5%
NGV and Other activities	**623**	518	20%	**623**	527	18%
Total	**4,506**	4,251	6%	**4,506**	4,357	3%

Investment in UK Electricity Transmission fell primarily due to lower load related spend. The investment in the Feeder 9 gas pipeline replacement project under the Humber Estuary was offset by lower asset health spend, contributing to broadly similar investment in UK Gas Transmission. In the US, investment was up 5% on a constant currency basis, reflecting capital expenditure in New York and Rhode Island, partly offset by reduced capital expenditure in Massachusetts during the labour dispute. Investment in National Grid Ventures stepped up with the ongoing construction of two new subsea interconnectors, IFA 2 (France) and North Sea Link (Norway). A total of £52 million (excluding JVs) was invested by National Grid Partners in the year in 14 portfolio companies.

Asset growth and value added

To help readers' assessment of the financial position of the Group, the table below shows an aggregated position for the Group, as viewed through a regulatory perspective. The measures included in the table below are calculated in part from financial information used to derive measures sent to and used by our regulators in the UK and US, and accordingly inform certain of the Group's regulatory performance measures, but are not derived from, and cannot be reconciled to, IFRS.

There are certain significant assets and liabilities included in our IFRS balance sheet, which are treated differently in the analysis below, and to which we draw readers' attention. These include the £1.5 billion reduction in IFRS deferred tax liabilities we recognised in relation to US tax reform last year, which, from a regulatory perspective, remains as a future obligation. The UK RAV is higher than the IFRS value of property, plant and equipment and intangibles, principally because of the annual indexation (inflationary uplift) adjustment applied to RAV, compared to the IFRS value of these assets (held at amortised cost). In addition, under IFRS we recognise liabilities in respect of US environmental remediation costs, and pension and OPEB costs. For regulatory purposes, these are not shown as obligations because we are entitled to full recovery of costs through our existing rate plans. Regulatory IOUs which reflect refunds due to customers in future periods are treated within this table as obligations but do not qualify for recognition as liabilities under IFRS.

	2018/19			2017/18		
£m	**31 March 2019**	31 March 2018	Change	31 March 2018	31 March 2017	Change
UK RAV	**19,692**	19,005	4%	19,059	18,234	5%
US rate base	**17,565**	16,087	9%	14,762	13,751	7%
Total RAV and rate base	**37,257**	35,092	6%	33,821	31,985	6%
NGV and Other	**2,815**	2,300	22%	2,167	1,984	9%
Total assets	**40,072**	37,392	7%	35,988	33,969	6%
UK other regulated balances	**(278)**	(474)		(519)	(479)	
US other regulated balances	**1,898**	1,920		1,921	1,487	
Other balances	**(158)**	(343)		(343)	(260)	
Total assets and other balances	**41,534**	38,495	3,039	37,047	34,717	2,330
Dividends and share buyback costs			1,160			1,494
Increase in net debt			(2,128)			(1,820)
Value added			2,071			2,004

Figures relating to prior periods have, where appropriate, been re-presented at constant currency, for opening balance adjustments following the completion of the UK regulatory reporting pack process in 2018, and finalisation of US balances.

During 2018/19, our combined regulated asset base and NGV and Other businesses grew by £2.7 billion or 7.2% on a constant currency basis compared to an increase of 5.9% in the prior year. UK RAV growth was 3.6% including RPI indexation of 2.4% while US rate base grew strongly by 9.2%.

Value added, which reflects the key components of value delivery to shareholders (i.e. dividend and growth in the economic value of the Group's assets, net of growth in net debt) was £2.1 billion in 2018/19. This was slightly higher than last year's £2.0 billion, with improved returns, the impact of asset growth and strong performance from NGV and Other, partially offset by cash spent on exceptional items. Of the £2.1 billion value added, £1.2 billion was paid to shareholders as cash dividends and £0.9 billion was retained in the business. Value added per share was 61.2p compared with 57.9p in 2017/18.

Cash flow, net debt and funding

Net debt is the aggregate of cash and cash equivalents, borrowings, current financial and other investments and derivatives (excluding commodity contract derivatives and the fair value of the put options in relation to Cadent) as disclosed in note 29 to the financial statements. Adjusted net debt is principally adjusted for pension deficits and hybrid debt instruments. For a full reconciliation see page 230.

The following table summarises the Group's cash flow for the year, reconciling this to the change in net debt.

Summary cash flow statement

£m	2018/19	2017/18	Change
Cash generated from:			
Continuing operations	**4,464**	4,702	(5)%
Discontinued operations	**85**	(56)	n/a
Total cash generated	**4,549**	4,646	(2)%
Net capital investment	**(4,135)**	(4,098)	1%
Dividends from JVs and associates	**68**	69	(1)%
Business net cash flow	**482**	617	(22)%
Net interest paid	**(846)**	(823)	3%
Net tax (paid)/received	**(75)**	8	n/a
Ordinary dividends and scrip share buyback costs	**(1,160)**	(1,494)	(22)%
Return of capital	**–**	(4,010)	n/a
Other cash movements	**2**	162	(99)%
Net cash flow	**(1,597)**	(5,540)	(71)%
Non-cash movements	**(1,930)**	1,812	n/a
(Increase)/decrease in net debt	**(3,527)**	(3,728)	(5)%
Net debt at start of year	**(23,002)**	(19,274)	19%
Net debt at end of year	**(26,529)**	(23,002)	15%

Cash flow generated from continuing operations was £4.5 billion, £0.2 billion lower than last year as a result of cash expended on exceptional items, partly offset by lower pension contributions and provision related outflows. Cash expended on investment activities increased for the reasons described above. Net interest paid increased mainly due to the growth in net debt, partly offset by beneficial interest income received in the year. The Group moved into a tax-paying position. A 26% scrip take-up reduced the cash dividend and, considering the high asset growth rate, we did not buy back any shares this year. Last year's return of capital related to the special dividend and share buybacks following the sale of the majority interest in UK Gas Distribution. Non-cash movements primarily reflect changes in the sterling-dollar exchange rate, accretions on index-linked debt and other derivative fair value movements.

Overall, the increase in net debt was driven by continuing high levels of capital investment and the impact of a stronger US dollar on the translation of US dollar-denominated debt. As at 31 March 2019 the Group maintained approximately $21 billion of its total financial liabilities denominated in US dollars as a substantial hedge of foreign exchange movements in the value of its US businesses.

During the year we raised over £2.9 billion of new long-term debt including fourteen bond issues. The Group remains well funded as it enters 2019/20. The three major credit rating agencies – Moody's, Standard & Poor's (S&P) and Fitch – have all maintained their strong investment grade ratings of National Grid plc on stable outlook.

Financial position

The following table sets out a condensed version of the Group's IFRS balance sheet.

Summary balance sheet

£m	31 March 2019	31 March 2018	Change
Goodwill and intangibles	**6,953**	6,343	10%
Property, plant and equipment	**43,913**	39,853	10%
Assets held for sale	**1,956**	–	n/a
Other (liabilities)/assets	**(507)**	1,614	n/a
Tax balances	**(4,000)**	(3,645)	10%
Pension liabilities	**(218)**	(263)	(17)%
Provisions	**(2,199)**	(2,052)	7%
Net debt	**(26,529)**	(23,002)	15%
Net assets	**19,369**	18,848	3%

Property, plant and equipment increased as a result of the continuing capital investment programme. Assets held for sale comprise our residual 39% interest in Quadgas, which will be sold in June 2019. Provisions include environmental provisions of £1.6 billion, unchanged from last year and restructuring provisions of £83 million. Other movements are largely explained by changes in the sterling-dollar exchange rate.

Regulatory gearing, measured as net debt as a proportion of total regulatory asset value and other business invested capital, was 66% as at 31 March 2019. This was up slightly from 64% at the previous year-end at constant currency but remains appropriate for the current credit rating of A-/A3 (S&P/Moody's).

Retained cash flow as a proportion of net debt was 9.4% (10.8% excluding expenditure on exceptional items), which is above the long-term average 9% level currently indicated by Moody's as important to maintain the A3 rating.

Off balance sheet items

There were no significant off balance sheet items other than the commitments and contingencies detailed in note 30 of the financial statements.

Economic returns

In addition to value added, one of the principal ways in which we measure our performance in generating value for shareholders is to divide regulated financial performance by regulatory equity, to produce Return on Equity (RoE).

As explained on page 230, regulated financial performance adjusts reported operating profit to reflect the impact of the Group's various regulatory economic arrangements in the UK and US. In order to show underlying performance, we calculate RoE measures excluding exceptional items of income or expenditure.

Group RoE is used to measure our performance in generating value for our shareholders by dividing regulated and non-regulated financial performance, after interest and tax, by our measure of equity investment in all our businesses, including the regulated businesses, NGV and Other activities and joint ventures.

Financial review continued

Regulated RoEs are measures of how the businesses are performing compared to the assumptions and allowances set by our regulators. US and UK regulated returns are calculated using the capital structure assumed within their respective regulatory arrangements and, in the case of the UK, assuming 3% RPI inflation. As these assumptions differ between the UK and the US, RoE measures are not directly comparable between the two geographies. In our performance measures, we compare achieved RoEs to the level assumed when setting base rate and revenue allowances in each jurisdiction.

Return on Equity

£m	2018/19	2017/18	Change
UK Electricity Transmission	**13.7%**	13.1%	+60bps
UK Gas Transmission	**9.5%**	10.0%	-50bps
UK weighted average	**12.4%**	12.1%	+30bps
US Regulated	**8.8%**	8.9%	-10bps
Group Return on Equity	**11.8%**	12.3%	-50bps

Overall RoE for the two UK transmission businesses was 12.4%, representing 230 basis points outperformance of the base allowed return. Electricity Transmission performance improved in the year due to improved totex incentive performance, whilst Gas Transmission return fell due to totex underperformance as a result of an adverse emissions re-opener outcome. The exceptional charges in relation to the UK nuclear connection terminations do not impact RoE.

RoE for the US Regulated business was 10 basis points lower in the year and represents 93% of the weighted average allowed return across all jurisdictions. US returns exclude the impact of the Massachusetts Gas labour dispute.

Overall Group RoE, which incorporates Property, Corporate and Other, and financing performance, remained around the 12% level.

Tax strategy

National Grid is a responsible tax payer. Our approach to tax is consistent with the Group's broader commitments to doing business responsibly and upholding the highest ethical standards. This includes managing our tax affairs, as we recognise that our tax contribution supports public services and the wider economy. We endeavour to manage our tax affairs so that we pay and collect the right amount of tax, at the right time, in accordance with the tax laws in all the territories in which we operate. We will claim valid tax reliefs and incentives where these are applicable to our business operations, but only where they are widely accepted through the relevant tax legislation such as those established by government to promote investment, employment and economic growth.

We have a strong governance framework and our internal control and risk management framework helps us manage risks, including tax risk, appropriately. We take a conservative approach to tax risk. However, there is no prescriptive level or pre-defined limit to the amount of acceptable tax risk.

We act with openness and honesty when engaging with relevant tax authorities and seek to work with tax authorities on a real-time basis. We engage proactively in developments on external tax policy and engage with relevant bodies where appropriate. Ultimate responsibility and oversight of our tax strategy and governance rests with the Finance Committee, with executive management delegated to our CFO. For more detailed information, please refer to our published global tax strategy on our website.

Total UK tax contribution (continuing and discontinued operations combined)

This year we have again disclosed additional information in respect of our total UK tax contribution for consistency and to aid transparency in an area in which there remains significant public interest. As was the case in prior years, the total amount of taxes we pay and collect in the UK year-on-year is significantly more than just the corporation tax which we pay on our UK profits. Within the total, we again include other taxes paid such as business rates and taxes on employment together with employee taxes and other indirect taxes.

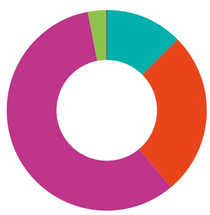
For 2018/19 our total tax contribution to the UK Exchequer was £1.0 billion (2017/18: £0.9 billion), taxes borne in 2018/19 were £0.4 billion (2017/18: £0.3 billion) and taxes collected were £0.6 billion (2017/18: £0.6 billion). The increase in our total tax contribution against prior year is primarily due to higher corporation tax payments.

Our 2017/18 total tax contribution of £0.9 billion meant that National Grid was the 25th highest contributor of UK taxes (2016/17: 15th) based on the results of the 100 Group's 2018 Total Tax Contribution Survey (being the most recent available), a position commensurate with the size of our business and capitalisation during that year relative to other contributors to the survey. In 2017/18 we ranked 23rd in respect of taxes borne (2016/17: 9th). As expected, our ranking fell as a result of the sale of the UK Gas Distribution business on 31 March 2017 which reduced the overall size of the UK business.

National Grid's contribution to the UK economy is again broader than just the taxes it pays over to and collects on behalf of HMRC. The 100 Group's 2018 Total Tax Contribution Survey ranks National Grid in 4th place in respect of UK capital expenditure on fixed assets, falling slightly from 3rd place in 2017. National Grid's economic contribution also supports a significant number of UK jobs in our supply chain.

UK total tax contribution 2018/19 (taxes paid/collected)

Taxes borne



Key:	£m
VAT	1
PAYE and NIC	48
UK corporation tax	102
Business rates	225
Other	11
Total	**387**

Taxes collected

Key:	£m
VAT	533
PAYE and NIC	122
Total	**655**

Tax transparency

The UK tax charge for the year disclosed in the financial statements in accordance with accounting standards and the UK corporation tax paid during the year will differ. To aid transparency we have included a reconciliation below of the tax charge per the income statement to the UK corporation tax paid in 2018/19.

The tax charge for the Group from continuing operations as reported in the income statement is £0.3 billion (2017/18: £0.9 billion credit). The UK tax charge is £0.1 billion (2017/18: £0.3 billion) and UK corporation tax paid was £102 million (2017/18: £35 million), with the principal differences between these two measures as follows:

Reconciliation of UK total tax charge to tax paid

£m	2018/19	2017/18[1]
Total UK tax charge	**149**	245
Adjustment for non-cash deferred tax	**(29)**	(63)
Adjustments for current tax credit in respect of prior years	**12**	18
UK current tax charge	**132**	200
UK corporation tax instalment payments not payable until the following year	**(69)**	(98)
UK corporation tax instalment payments (net of refunds) in respect of prior years	**39**	(67)
UK corporation tax paid	**102**	35

1. Comparatives have been re-presented to reflect the classification of our retained interest in Quadgas HoldCo Limited as a discontinued operation in the current period.

Tax losses

We have total unrecognised deferred tax assets in respect of losses of £1.5 billion (2017/18: £0.5 billion) which are predominantly capital losses in the UK as set out on page 125. These losses arose as a result of the disposal of certain businesses or assets, some of which were agreed with HMRC in the current period. They may be available to offset against future capital gains in the UK.

Development of future tax policy

We believe that the continued development of a coherent and transparent tax policy in the UK is critical to help drive growth in the economy. We continue to contribute to research into the structure of business tax and its economic impact by contributing to the funding of the Oxford University Centre for Business Tax at the Saïd Business School.

We are a member of a number of industry groups which participate in the development of future tax policy, including the 100 Group, which represents the views of Finance Directors of FTSE 100 companies and several other large UK companies. This helps to ensure that we are engaged at the earliest opportunity on tax issues which affect our business. In the current year we have reviewed and responded to a number of HMRC consultations, the subject matter of which directly impacts taxes borne or collected by our business, with the aim of openly contributing to the debate and development of UK tax legislation. We undertake similar activities in the US, where the Company is an active member in the Edison Electric Institute, the American Gas Association and the Organization for International Investment.

Pensions

In 2018/19, the pensions and other post-retirement benefits operating costs increased by £76 million to £294 million, principally as a result of our UK restructuring programme and the GMP equalisation ruling. Employer contributions during the year were £419 million (2017/18: £475 million), including £84 million (2017/18: £81 million) of deficit contributions.

As at 31 March 2019, the total UK and US assets and liabilities and the overall net IAS 19 (revised) accounting deficit is shown below. Further information can be found in note 25 to the financial statements.

Net pension and other post-retirement obligations

	UK	US	Total
Plan assets	15,507	9,286	24,793
Plan liabilities	(14,276)	(10,735)	(25,011)
Net surplus/(deficit)	1,231	(1,449)	(218)

As at 31 March 2019, pension assets of £1,307 million in the UK pension schemes and £260 million in the US Niagara Mohawk Plan were recognised on the basis that these plans were in a surplus position.

Dividend

The Board has recommended an increase in the final dividend to 31.26p per ordinary share (£1.56 per American Depository Share) which will be paid to shareholders on the register as at 31 May 2019. If approved, this will bring the full year dividend to 47.34p per ordinary share, an increase of 3.1% over the 45.93p per ordinary share in respect of the financial year ended 31 March 2018. This is in line with the increase in average UK RPI inflation for the year ended 31 March 2019 as set out in the announcement of 28 March 2013, in which we stated that our dividend policy aims to grow the ordinary dividend per share at least in line with the rate of RPI inflation each year for the foreseeable future.

At 31 March 2019, National Grid plc had £3.5 billion of distributable reserves, which is sufficient to cover more than two years of forecast Group dividends. If approved, the final dividend will absorb approximately £1.0 billion of shareholders' funds. This year's dividend is covered approximately 1.2x underlying earnings. Although this exceeds the statutory EPS of 44.6p result for the period, in proposing the final dividend, the Directors note that total cumulative statutory earnings per share over the last three years were some 354p, compared to dividend payout of 222p.

The Directors consider the Group's capital structure and dividend policy at least twice a year when proposing an interim and final dividend and aim to maintain distributable reserves that provide adequate cover for dividend payments.

Brexit

As described elsewhere in the Strategic report, our Brexit working group considered the issues and consequences of the UK's decision to leave the EU. In the last month of the year, and in anticipation of the original 29 March 2019 deadline for the UK to exit the EU, we executed our plan to bring forward the procurement of key items for capital delivery and operations in case of delays at ports. In the context of the Group financial statements, however, these actions did not have a material effect.

New accounting standards

As of 1 April 2018 we adopted two new accounting standards, IFRS 9 'Financial Instruments' and IFRS 15 'Revenue from Contracts with Customers'. These did not have a material impact on the Group's reported profits or earnings.

As of 1 April 2019 we will adopt IFRS 16 'Leases'; again, we do not expect this will have a material impact on the Group's results or financial position, although as described in note 1 to the financial statements, on transition our property, plant and equipment and net debt will each increase by £0.4 billion to take account of lease obligations. We note that the rating agencies already make adjustments to impute this and accordingly we do not expect adoption to impact our credit ratings.

Post balance sheet events

On 1 April 2019, the UK Electricity System Operator became a legally separate company, with its own board of directors, within the National Grid Group. This change will have no impact on the consolidated financial results of the Group.

Principal operations – UK

Customer satisfaction: Electricity
(out of 10)

7.9

(2017/18: 7.7)

Customer satisfaction: Gas
(out of 10)

7.8

(2017/18: 7.6)

Our UK performance

Link to strategy	Measure	2018/19	2017/18	2016/17
Optimise performance	Return on Equity (£m)	**12.4**	12.1	12.7
	Statutory operating profit (£m)	**1,045**	1,528	1,868
	Underlying operating profit (£m)	**1,433**	1,560	1,684
	RIIO-T1 customer savings (£m)	**101**	78	126*
Grow core business	Capital expenditure (£m)	**1,233**	1,309	1,241
	Asset growth (%)	**3.6**	4.5	4.3

* Includes UK Gas Distribution

Highlights

Our UK business performed well in 2018/19. We maintained our focus on safe, reliable, customer-led, innovative and efficient operations. We continued to optimise our operational performance. We are proud to have been named in the Times Top 50 Employers for Women, which demonstrates our commitment to creating a workplace which is inclusive, fair and equal for everyone. During the year, we also agreed new terms and conditions for our Electricity Transmission Operations field force. The new arrangements, effective from 1 April 2019, will give us more flexibility to deliver for our customers and give our employees the opportunity to do a greater variety of interesting and challenging work.

Optimise performance

We are developing a generative safety culture within our business. Our occupational safety strategy is to build a platform of proactive safety management by implementing a standard, simplified and risk-based approach. This strategy will enable us to transition to the highest level of safety culture maturity through leadership and workforce engagement.

As at 31 March 2019, our Lost Time Injury Frequency Rate (LTIFR) in the UK business was 0.07, which exceeds our target of <0.10, and is our best ever LTIFR performance. 55% of our lost time injuries (LTIs) are as a result of individual issues such as slips, trips and falls and soft tissue injuries from inappropriate lifting and carrying and non-fault road traffic collisions – we are treating these incidents with appropriate focus whilst acknowledging that they do not generally have the potential for more serious harm. Our analysis shows that in 2018/19 the number of incidents with higher potential for harm has been less than expected.

We delivered a year of good returns, with a Return on Equity of 12.4%. Statutory operating profit was lower because of exceptional charges. The decisions by Horizon and NuGen to cancel their customer connection requests on suspended nuclear projects resulted in a £137m exceptional cost. We have minimised costs by stopping work as soon as we became aware of the projects being suspended. Underlying operating profit was also lower reflecting reduced revenues, driven by allowance adjustments associated with the Avonmouth project. The regulatory arrangements we have in place will mitigate the economic impact of these cancellations.

We also measure our performance with non-financial KPIs. We were pleased to see continued improvement in our customer satisfaction scores in our Electricity Transmission and Gas Transmission businesses, achieving scores of 7.9 and 7.8 respectively against a target of 6.9.

Customer first

We work with our customers to meet their needs and deliver successful outcomes for all parties. This customer-first approach was exemplified within our Gas Business, with HS2 holding up our project as an exemplar following the successful diversion delivery. The project came in under budget with an excellent safety record and no LTIs. We have also successfully delivered a gas off-take for Centrica as part of its construction of new fast-response generating facilities at Peterborough and Brigg. The existing single gas supply was converted into a dual supply and was completed ahead of schedule through collaborative effort.

Electricity Transmission launched a new customer website designed to make it easier for people who want to connect to the network. The website provides tools and information to help our customers understand more about establishing connections with us. It generated a number of enquiries from new customers and received positive feedback from our customers and stakeholders.

Construction of the Hinkley-Seabank Connection Project got underway in summer 2018. We expect to connect our customer, EDF, to our network in 2024. Between now and then, we will add T-pylons to our network for the first time, as well as two new substations and a sealing-end compound. Keen to leave a positive legacy for the communities affected by the project, we are investing in STEM equipment in hundreds of schools, providing construction skills training among the local workforce and awarding contracts to businesses across the region.

In July 2018, Ofgem confirmed its decision to apply a new Competition Proxy Model (CPM) to the delivery of Hinkley-Seabank. This model seeks to impose on us the results of simulated competition without giving us the freedom to choose to decide to participate and allocate scarce capital to the project. We are committed to delivering EDF's connection in line with time and quality obligations. Nothing in Ofgem's decision to implement CPM, or our decision to appeal, will affect this commitment.

Grow core business

In 2018/19, we constructed a new 12.4 mile (20 kilometre) overhead line, made up of 60 new pylons, between an existing substation at Canterbury and a new substation at Richborough. This is the first new overhead line in England and Wales since 2003, and the first we have completed under Development Consent Order legislation, to enable the connection of the new Nemo Link interconnector between the UK and Belgium.

There is an increasing need to invest in our gas compressors to support the changing face of gas supply in the UK and ensure environmental sustainability. The evolution of the network has resulted in changes to compressor utilisation. Furthermore, we are committed to meeting the emission standards all European countries must comply with by 2023 under the Industrial Emissions Directive. We were disappointed not to receive full funding for the compressor works as part of the RIIO-T1 reopeners. Having reviewed our approach to meeting the required environmental obligations, we have developed an integrated plan to invest in our compressor fleet to deliver the most cost-effective network solution. This solution is designed to meet the current and future needs of our customers and support environmental sustainability.

Evolve for the future

The Humber Pipeline Replacement project is part of our programme of work to care for our National Transmission System and keep gas flowing for our customers, now and in the future. Our aim is to ensure gas runs safely, efficiently and reliably. The Feeder 9 pipeline typically carries around 20% of the country's gas supplies. In April 2018, a 160-metre-long, 510-tonne tunnel-boring machine started to excavate a 3.3-mile (5.4-kilometre) tunnel under the River Humber to house the Feeder 9 replacement pipeline; a project which will help to make us fit for the future. The Feeder 9 reopener was published in May 2018, in response to our request for funding. We issued this request after gaining planning consent for the project and after Ofgem changed its initial decision on the needs case, awarding us £111 million to continue this project.

We secured funding of £116 million for a Visual Impact Provision (VIP) scheme in Dorset; a project to underground 5.4 miles (8.8 kilometres) of overhead line and remove 22 pylons in the Dorset Area of Outstanding Natural Beauty. We also continued to progress our other VIP projects in Peak East National Park and Snowdonia National Park.

We commenced a multi-year programme covering a range of initiatives to drive further efficiency and lower costs for customers. These initiatives will continue our aim of becoming a more agile organisation that is positioned to be more responsive to customers. The range of initiatives includes a flatter, leaner organisation; further economies of scale; simplifying our processes and ways of workings; and making more efficient use of IT and back-office activities. To achieve the long-term benefits of these initiatives, we have provided for costs of £136 million for 2018/19. We expect these costs to help us generate opex savings of £50 million in 2019/20 and around £100 million annually from 2020/21.

We have focused on diversity and mental health and rolled out diversity leadership training to our employees. Employee enablement is important to us and we are focused on ensuring our people are adequately equipped to fulfil their roles and responsibilities. We have several enablement programmes and have implemented a modern, digital and future-proof HR solution.

Looking ahead

The UK political environment continues to present a number of challenges. Our dialogue around RIIO-T2 will be a priority leading up to the new price control commencing in April 2021. We remain committed to the importance of a regulatory framework that fairly reflects the risk return balance for both consumers and shareholders. We submitted our response to Ofgem on the sector-specific methodology consultation for RIIO-T2 in March 2019. The overall framework proposals set out by Ofgem are a step in the right direction but we are concerned that as currently set out, the proposals will not bring about the change consumers need. Our vision is of an energy future where bills are kept low for consumers, energy is decarbonised, innovation is encouraged and which together support the growth and prosperity of the UK economy. Our stakeholders' opinions are important to us and it is important that they are able to shape our future plans. We have created RIIO-T2 stakeholder groups to support the formulation of our business plans for the next price control period within Gas Transmission, Electricity Transmission and the System Operator.

As part of a joint venture with Scottish Power Transmission, we have constructed the Western Link – a HVDC cable which will play an important role in bringing renewable energy from Scotland to homes and businesses in England and Wales, helping the UK to meet its renewable energy targets. The Western Link had initially been available to operate in October 2018. However, testing continues following the detection of cable faults and trips during the commissioning phase and the Link is anticipated to be available to operate later in 2019, delivering up to 2.2 GW power transfer capability.

Next year, achieving greater, customer-led efficiency in our business will continue to be a key priority.

Electricity System Operator

In January 2017, alongside Ofgem and the Government, National Grid agreed to the creation of a legally separate Electricity System Operator (ESO), within the National Grid Group. In 2018/19 we successfully implemented the separation arrangements, establishing a new subsidiary company that holds the ESO licence. To ensure appropriate ring-fencing between itself and the rest of the National Grid Group, the company is governed by its own Board of Directors, including three independent Directors.

As the ESO, we continue to help facilitate the move to a lower-carbon economy, while simultaneously delivering safe, reliable and affordable energy to the end consumer. In April 2018, new records were set with the system operating without coal for 76 hours and with wind output peaking at over 15 GW. The underlying changes to the generation portfolio meant that on 27 August 2018, the carbon intensity of the system reached a new low of 71 gCO_2/kWh.

In October 2018, we published a thought piece to explore how the ESO could be funded in RIIO-T2, forming part of our wider stakeholder engagement programme on the new price control. This will inform both our own thinking and Ofgem's process for developing and deciding upon a funding model.

Following a European Court ruling, the UK's Capacity Market scheme was paused, leading to the ESO, in its capacity as EMR Delivery Body, postponing the T-1 auction originally scheduled to take place in January 2019, and to the Electricity Settlements Company suspending capacity payments to Capacity Market participants. We advised that there was no additional risk to the security of supply in the winter of 2018/19. During this period of uncertainty, we are working with Ofgem, BEIS, customers and stakeholders to deliver security of supply for the next winter period.

Further reading
Find out about our innovations in engineering at www.nationalgrid.com

Principal operations – US

US Residential – Customer Trust Advice

58.7%

(2017/18: 56.6%)

Further reading
Find out about our innovations in engineering at www.nationalgrid.com

Our US performance

Link to strategy	Measure	2018/19	2017/18	2016/17
Optimise performance	Return on Equity (%)	**8.8**	8.9	8.2
	Statutory operating profit (£m)	**1,425**	1,734	1,278
	Underlying operating profit (£m)	**1,594**	1,704	1,514
Grow core business	Capital expenditure (£m)	**2,650**	2,424	2,247
	Asset growth (%)	**9.2**	7.4	5.7
	Rate base* (£m)	**17,565**	14,762	14,571
Evolve for the future	Connections of renewable schemes to US electric distribution network (MW)	**281.45**	380.50	294.57

* US rate base is as previously reported at historical exchange rates

Highlights

In the US we worked hard during 2018/19 to find ways of operating more efficiently and embracing innovative technology. The work we carried out supports National Grid's three strategic priorities.

In June, we released our 'Northeast 80x50 Pathway', a blueprint for reducing greenhouse gas emissions by 80% below 1990 levels by 2050. 'The Pathway' is an integrated approach to taking action across the three main sectoral contributors to combustion-related CO_2 emissions: electricity generation, transportation and heat.

The US business saw a 6% increase in the number of injuries requiring medical attention beyond first aid and a 5% reduction in the number of preventable road traffic collisions during 2018/19. The US introduced new driving programmes including an annual requirement for all drivers to review our safe motor vehicle operations policy. We implemented safety, health and environment (SHE) Business Management Standards (BMS) to apply to all areas across our business, and also implemented SHE plans at local levels to address current risks and injury trends. We also launched our first annual Safety Culture Survey to assess and benchmark our Safety Culture and to establish programs and initiatives to promote safety. We continue to focus on key risk and hazard mitigation strategies in 2019/20.

In the spring, Influence Map, a UK-based non-profit climate change group, named National Grid one of the most influential companies pushing for an ambitious climate change agenda.

Optimise performance

During 2018/19, the US business focused on growth, customer value and the transition to clean energy. Overall, our net revenue increased by 3% and we grew our rate base by 9.2%. Our energy infrastructure spend across our footprint during the year was $3.5 billion. We also added 63,387 new customer accounts across gas, electric, and distributed generation combined.

The Buffalo River Bore project, located in Buffalo, New York is one example of how we are investing in energy infrastructure to accommodate the electric load growth associated with new and growing commercial space. In summer 2018 we used a 14-foot-long, 29-tonne boring machine to dig a 450-foot tunnel beneath the Buffalo River to house new electrical cables. These cables replaced older and outdated equipment, including some that dates to the 1890s.

Another example is solar. In 2018, we inter-connected 9,465 applications and 257 MW across Massachusetts, New York and Rhode Island.

At the end of June 2018, our contracts with two United Steelworkers Unions in Massachusetts, representing around 1,250 employees, expired. Following months of bargaining, union membership elected not to accept National Grid's final offer. Subsequently, the Company declined to extend the existing labour contracts, resulting in a labour dispute, and made the decision to mobilise its replacement workforce.

Our workforce contingency plan remained in place until a new five-year/five-month contract was agreed with the two Unions and ratified in January 2019. During this time, our contingency workforce responded to all potential and actual gas emergencies, ensuring the safety of our employees, customers and the public. While we were able to provide new connections to customers who had a hardship, we were not able to connect all potential customers who requested a new service since we had to prioritise emergency and compliance work. Our goal was to have a long-term agreement that assured benefits consistency across employee groups, addressed the need for cost-sharing in health insurance and provided a modern approach to retirement planning. The newly ratified contract achieves that goal, though it has been a difficult period for all our employees and the communities we serve.

In late January, a supply disruption natural gas incident affected all customers on Aquidneck Island, Rhode Island. Initially, approximately 400 customers in Middletown lost gas service.

Given the local system's low-pressure threat and putting safety first, National Grid made the decision to stop gas service to roughly 7,100 customers in the City of Newport, also on the Island.

We deployed a workforce of approximately 1,000 employees and contractors to restore gas service to impacted customers. We ensured they were kept safe, warm and fed during the days they were without heat, hot water and cooking appliances. Restoration was largely completed within eight days.

Customer first

In December 2018 we launched our US Residential Energy Efficiency Online Marketplace in our New York jurisdictions. This new service provides one-stop shopping for our residential customers, enabling them to save money and energy while making their homes more energy efficient.

The Marketplace offers a variety of energy efficient products and instant rebates on, lighting, Wi-Fi thermostats, advanced power strips and water saving. It is designed for both our gas and electric residential customers in New York.

In downstate New York, we offer instant rebates on Wi-Fi thermostats, water savings and other gas saving products for our residential natural gas customers. The Marketplace also provides numerous resources such as buyer guides, installation videos and customer reviews. These help customers make smart and informed choices when purchasing energy-efficient products for their homes.

In the coming year, our customers in Massachusetts and Rhode Island will have access to the same e-commerce opportunities and energy-efficiency solutions.

Community commitment

Serving our communities is a cornerstone of our business at National Grid — both today and tomorrow. It is why we are concerned that in our New York State service territory, there are about a half a million residences without access to a gas network. So we are taking action through a Reforming the Energy Vision (REV) demonstration project on Long Island. We have built a shared geothermal well system in one community to test the feasibility of using the Earth's own heating and cooling properties to provide a clean alternative energy source to off-the-grid customers.

Grow core business

In August, the Rhode Island Public Utilities Commission (RIPUC) approved our Rhode Island gas and electric rate case settlement. The three-year rate plan went into effect on 1 September 2018 and encourages initiatives for the state's Power Sector Transformation efforts. These include innovative proposals on electric transport, energy storage and the opportunity for advanced metering. It also re-designs our low-income rates to engage with income-eligible customers and increase participation in assistance programmes.

At the end of September, the Massachusetts Department of Public Utilities (MADPU) approved our Massachusetts gas rate settlement. New rates went into effect on 1 November 2018. The settlement includes funding to modernise our Gas Business via our Gas Business Enablement (GBE) programme, as well as IT infrastructure that supports our core gas distribution operating capabilities. In December 2017, MADPU commenced an independent audit to perform an assessment of gas pipeline safety in Massachusetts. We have provided all the information requested and a preliminary oral report is anticipated. We will continue to work with the MADPU when the report is issued.

In November, we filed a rate case with the MADPU to update our electric distribution rates for the first time in three years. This update to distribution rates, if approved, will take effect 1 October 2019. A new rate plan will enable us to continue providing safe and reliable electric service, invest in clean energy technologies, and help the state realise its goal of reducing greenhouse gas emissions.

In April, we filed a proposal for new natural gas delivery rates for our KEDNY and KEDLI operating companies with the New York State Public Service Commission (PSC) effective 1 April 2020. This proposal will allow us to continue investing to make our natural gas networks safer and more reliable, move toward a cleaner energy future, and improve service to our 1.8 million customers in New York City and Long Island.

Evolve for the future

- Aiming for better service and reduced costs for customers, we adjusted our operating model in mid-2018. That meant changing a number of leadership roles, accountabilities and delivery processes. At the same time, we are investing in new opportunities and solutions in order to drive our ongoing objective of leading the transition to a clean energy economy.
- Last spring we introduced 'Accelerate' – a programme aimed at reducing Opex and Capex spend by 20% by 2021. In 2018/19 we incurred $88 million which we have classified as an efficiency and restructuring exceptional charge. Accelerate is also focused on improving customer satisfaction scores and increasing revenue from new sources to reinvest into the future of the business.
- One of the initiatives underway is the eBill project, aimed at increasing adoption of eBills from 20% to 30% by the end of 2019/20. This project is expected to deliver approximately $4 million in operational savings and, more importantly, improve the customer experience. According to JD Power, National Grid customers enrolled in paperless billing scored 21 points higher in satisfaction than overall billing and payment satisfaction.
- We are also helping to speed up the transition to a clean energy future by making meaningful progress through:
- **Large-scale renewables (LSR):** Our new battery energy storage system (BESS) project on Nantucket Island in Massachusetts is a classic example of LSR. When BESS is fully installed in summer 2019, it will be the first large-scale battery installation in New England. When combined with a new upgraded onsite combustion turbine, also expected for completion this summer, the BESS should supply the island with all the electrical power it needs should one of the two existing submarine cables experience an outage, or on peak summer days when air conditioners put extra strain on the infrastructure;
- **Electrifying transportation:** We launched an electric vehicle (EV) adoption programme for employees, facilitating the sale of more than 250 EVs in 2018. We've included more than $200 million in regulatory filings for transport-related initiatives (includes approved and filed plans), such as charging infrastructure, customer outreach/education, and grid integration – all over the next five years in all three states; and
- **Future of gas:** We are committed to becoming a leader in renewable natural gas (RNG) generation and transmission. For example, we are partnering with the City of New York to convert their largest waste-water treatment plant into a clean energy source. We have also started a collaborative effort in New York State to develop revolutionary RNG interconnection guidelines.

Looking ahead

We will stay focused on becoming a great operating company and will work hard to transition to a clean energy company. We will continue to develop our employees in a safe workplace, provide our customers with clean, affordable energy and partner with our communities to enable viable economies.

We will address these goals by improving our capital and operational expenditure efficiency; improving our customer metrics; generating operating profit from new sources; and limiting customer bill increases.

We will also continually improve our performance by finding a better way and investing in our growth.

National Grid Ventures and Other activities

BritNed availability

98.2%

(2017/18: 97.8%)

IFA availability

93.9%

(2017/18: 92.6%)

Highlights

This section relates to NGV, non-regulated businesses and other commercial operations not included within the business segments.

NGV, which operates separately from our core regulated units, is focused on investment in a broad range of energy businesses that operate in competitive markets across the UK and US. Its portfolio includes electricity interconnectors, LNG storage and regasification, energy metering and most recently agreement to acquire large-scale renewable generation.

Our ‘other’ activities comprise National Grid Partners, the venture investment and innovation arm of National Grid plc, as well as UK Property and US non-regulated businesses, which include LNG operations and corporate costs.

In aggregate, the National Grid Ventures and Other segment delivered £400 million of statutory operating profit, £400 million underlying operating profit and accounted for £623 million of continuing investment in 2018/19.

Operational performance

Electricity interconnectors: NGV is the leading developer and operator of electricity interconnectors to and from the UK. NGV’s operational portfolio currently comprises 4 GW of interconnector capacity.

BritNed is an independent joint venture between National Grid and TenneT, the Dutch transmission system operator. It owns and operates a 1 GW HVDC link between Great Britain and the Netherlands. In 2018/19 BritNed’s availability was 98.2%.

The England-France interconnector (IFA) is a 2 GW HVDC link between the French and British transmission systems, with ownership shared between National Grid and Réseau de Transport d’Electricité (RTE). In 2018/19, IFA’s availability was 93.9%.

Nemo Link, which started operating on 31 January 2019, is an independent joint venture between National Grid and Elia, the Belgian transmission system operator. It owns and operates a 1 GW HVDC link between Great Britain and Belgium. Nemo Link’s availability was 99.9% in 2019.

LNG storage and regasification: Grain LNG is one of three LNG importation facilities in the UK. It operates under long-term contracts with customers and provides importation services of ship berthing, temporary storage, ship reloading and regasification into the NTS. Utilisation of terminal capacity was 18.8% in 2018/19, up from 5.2% in 2017/18.

Grain LNG’s road tanker loading also offers the UK’s transport and off-grid industrial sector a more environmentally friendly alternative to diesel or heavy fuel oil. The facility allows tanker operators to load and transport LNG in bulk across the UK via road or rail.

Metering: National Grid Metering (NGM) provides installation and maintenance services to energy suppliers in the UK’s regulated market. It maintains an asset base of around 9.9 million domestic, industrial and commercial meters, down from 11.1 million in 2017/18.

National Grid Smart (NGS) supports energy suppliers in fulfilling their UK smart meter roll-out obligations. In 2019 National Grid made the decision to not invest any further in NGS growth, meaning NGS will not be installing any more smart meters once it has used up its current stock. NGS will continue to own assets already in place and is working with its customers to minimise any impact on household consumers.

Property: National Grid Property deals with the management and regeneration of our brownfield surplus estate in the UK. Our specialist team works with our communities to return these redundant sites back into beneficial use to provide new homes and employment opportunities across the UK.

In 2018/19, we disposed of 33 sites and exchanged contracts on a further three land sales, to facilitate the delivery of thousands of new homes across the UK. St William Homes, our joint venture with Berkeley Group, has entered its fifth year. Around 3,000 homes are already under construction, with planning permission secured for a further 2,000 homes. Our first St William residents moved in at our Rickmansworth development in April 2019.

One of the sites sold into St William this year was the Fulham gas works. This site will provide over 1,843 new homes in London, of which 646 will be affordable, as well as over 100,000 square feet of new commercial space. The development will include a new public park and square where the world’s oldest surviving gasholder will be the centre piece.

Grow core business

Electricity interconnectors: NGV will grow its interconnector portfolio by 3.8 GW in the next five years, with new subsea power links to France, Norway and Denmark.

Interconnector capacity: in operation or under construction

7.8 GW
(2017/18: 6.4 GW)

Statutory operating profit

£400m
(2017/18: £231m)

Underlying operating profit

£400m
(2017/18: £231m)

Capital investment

£623m
(2017/18: £518m)

Construction continues on the 149-mile (240-kilometre) IFA2 interconnector. Developed with RTE, the 1 GW subsea cable will connect Great Britain and France. The link is expected to be operational in 2020.

North Sea Link (NSL) will connect Great Britain and Norway. Developed between National Grid and the Norwegian transmission system operator Statnett, NSL will be 447 miles (720 kilometres). The 1.4 GW link is expected to be operational in 2021/22.

In September 2018, National Grid's Board gave final financial approval to NGV to build the Viking Link interconnector. Developed together with Danish transmission system operator Energinet, Viking Link will be a 1.4 GW 472-mile (760-kilometre) long subsea link connecting Great Britain and Denmark.

NGV will have 7.8 GW of operational interconnector capacity when Viking Link becomes operational in 2023/24.

US competitive transmission: Orsted-owned renewables developer, Deepwater Wind, partnering together with NGV, has won competitive tenders to supply electricity from the Revolution Wind offshore wind farm to distribution utilities in Rhode Island and Connecticut. The proposed 700 MW wind farm will be located over 15 miles south of the Rhode Island and Massachusetts coasts in Deepwater Wind's federal lease area. Deepwater Wind expects Revolution Wind to be operational in late 2023, pending permits and final investment decisions. NGV has the option to acquire the transmission connection between Revolution Wind and the onshore electric transmission network.

Property: St William continues to grow and we now expect the joint venture to deliver over 20,000 new homes across London and the South East over the next 15 years. A further three sites have been sold into the joint venture during 2018/19 with further sites expected to be negotiated into the joint venture in the future. In the next 12 months, we expect our St William Homes JV to complete construction of the first 350 homes, including 75 affordable homes. This development will mark a major milestone for the JV and in our partnership with Berkeley Group.

In addition, Accord Housing Group, a Housing Association, and National Grid Property are to collaborate to develop new affordable housing on land currently owned by National Grid.

Evolve for the future

National Grid Partners: Previously known as the Technology & Innovation unit, National Grid Partners was established in 2018 as the venture investment and innovation group of National Grid plc. National Grid Partners makes and manages strategically and financially attractive investments and leads company-wide innovation efforts. In 2018/19, National Grid Partners made 12 new technology investments. It also manages National Grid's interests in Energy Impact Partners, a strategic energy venture investment fund that has invested in 26 companies to date. In 2018/19 National Grid Partners invested in two additional venture capital funds.

US large-scale renewables: In March 2019, NGV entered into an agreement to acquire Geronimo Energy for $100 million plus potential further payments subject to the development of Geronimo's project pipeline. The transaction is subject to customary closing conditions and regulatory approvals. Geronimo Energy is a Minnesota-based wind and solar developer. In addition, NGV is negotiating and advancing a joint venture arrangement with WSIB. Upon a capital contribution of approximately $125 million, NGV would own indirectly 51% of 378 MW of solar and wind generation projects in operation and construction. The joint venture will have the right of first offer for future projects developed by Geronimo Energy.

This investment is consistent with our long-term strategy of evolving the Group for the future.

Our commitment to being a responsible business

In today's world, business needs to be a positive force for good. This belief is critical to the way we work and why we do what we do.

Our purpose-led approach

Today more than ever, people are putting their faith in companies that stand for something and do the right thing. We believe the way our Company affects the economy, environment and society is just as important as our financial returns. We have made great strides to embed purpose into our organisation. We work hard every day to bring energy to life, to exceed the expectations of our customers, shareholders and communities today, while meeting the energy aspirations of future generations tomorrow.

Our approach to responsible business is focused on three areas: Environmental sustainability, People, and Communities.

Environmental sustainability

We are passionate about operating our business in an environmentally responsible way. It is the right thing to do – for society, the environment and our business.

We make sure sustainability shapes our thinking and decision-making. This focus helps us to optimise our operational performance, provide value for our customers and benefit the environment.

People

We are working hard to overcome some of the biggest energy challenges of the 21st century as generation moves from fossil fuels to renewable sources and transportation shifts to electrification.

We need to ensure we have a culture that enables and supports a highly motivated, diverse and multi-generational workforce, with the right skills to deliver the future needs of our customers.

Communities

For us, being a responsible business means being a good citizen and being involved in social progress, which covers every aspect of our work. What we do helps to underpin the prosperity and wellbeing of communities in the UK and US. For example, our work to develop interconnectors is making energy more secure, affordable and sustainable for consumers across the UK.

Meanwhile, our work on major infrastructure projects involves continually working with local communities, customers and stakeholders to ensure their views are fairly represented in our decisions and actions. Our work on Hinkley-Seabank Connection Project in Somerset, for example, will include 5.3 miles (8.5 kilometres) of underground cables across the Mendip Hills instead of installing overhead pylons. This will protect views in this Area of Outstanding Natural Beauty for the community, visitors and future generations.

You can read more about our approach to supporting communities on page 44.

Our approach to reporting

This section contains information relating to the three focus areas that are considered material to shareholders.

We have rigorous policies in place that support our approach to corporate responsibility and we report on a number of non-financial performance measures relating to these policies. We were recently awarded the 2018 Carbon Disclosure Project (CDP) A list for a third year running for our performance in reporting and mitigating the impact of climate change.

Over the next year, we aim to better understand the holistic impact our business has on society. This will help us identify opportunities to use our operations and capabilities to provide more meaningful value to society.

The EU Non-Financial Reporting Directive – Non-financial information statement

This section (pages 40 – 45) also provides information as required by regulation in relation to:

- environmental matters;
- our employees;
- social matters;
- human rights; and
- anti-corruption and anti-bribery.

In addition, other related information can be found as follows:

- Business model – pages 2 – 7;
- Our business environment – pages 12 – 13;
- Non-financial KPIs – pages 16 – 19;
- Principal risks – pages 20 – 22; and
- Safety, Environment and Health Committee report – page 64.

UN Global Compact and Sustainable Development Goals

In July 2018, we reconfirmed our support of the 10 principles of the United Nations Global Compact on human rights, labour, environment and anti-corruption.

We also continue to build on our support for the United Nations General Assembly 2030 agenda and its Sustainable Development Goals (SDGs). These 17 global goals are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity.

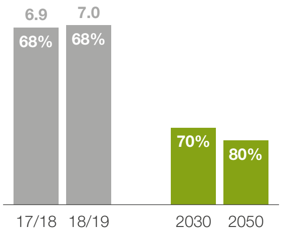
Eight of the SDGs (see following page) are particularly linked to our responsible business focus areas. We have highlighted these where relevant throughout this section.

Further reading
www.nationalgrid.com/group/responsibility-and-sustainability

Our environmental sustainability targets and progress

1. Reduce carbon footprint

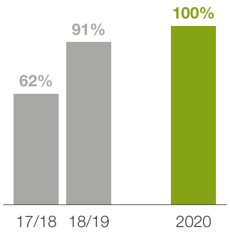
Greenhouse gas emissions (Scope 1 and 2 million tonnes of CO_2 equivalent)



(reduction from a 1990 baseline)

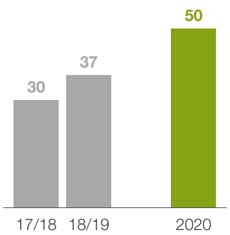
2. Maximise resources

% reduction in the volume of waste that is sent to landfill (UK offices)



3. Responsible land use

Number of sites enhanced



◆ Actual ◆ Target

Alignment to SDGs

- 7 Affordable and clean energy: Ensure access to affordable, reliable, sustainable and modern energy for all
- 12 Responsible consumption and production: Ensure sustainable consumption and production patterns
- 13 Climate action: Take urgent action to combat climate change and its impacts
- 15 Life on land: Sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss

Further reading
KPIs, pages 16 – 19
TCFD, pages 210 – 211
Environmental performance, page 18

Environmental sustainability

The biggest impact we can have on the environment is in our role of enabling the transition to a low-carbon future. We also know we have the potential to affect the environment directly, both positively and negatively, through our operations.

Our approach to environmental sustainability is to manage our risks, whether short-term through our physical operations, such as air quality and pollution, or long-term through our greenhouse gas emissions and resource use. At the same time, we look for opportunities to have a positive impact. For example, we have committed to achieve a net gain in environmental value for all our major construction projects by 2020. We measure this with an evaluation approach based on a methodology set out by the UK Government.

As well as managing normal operating risk, we manage the risk of an environmental event arising from a catastrophic asset failure. You can find out more about this on page 21.

Our strategy and priorities

Our environmental strategy, Our Contribution, was originally developed in 2012 with a wide range of internal and external stakeholders. Over the years we have refined our strategy to reflect changing priorities. It focuses on three main areas: climate change, resources and caring for the natural environment.

Our strategy is delivered through our environmental policies. We focus on:

- reducing our carbon footprint;
- maximising the value of resources through re-use and recycling, so we can reduce our impact on the environment; and
- using our land holdings in ways that benefit our business, the environment and the communities in which we live and work.

These efforts are underpinned by maintaining high environmental management standards. In 2018 we developed an internal Environmental Sustainability Business Management Standard (BMS) that brings together the commitments from Our Contribution and our Environmental Policy, providing clarity to all our employees on the standards we expect. It also brings sustainability fully into our environmental management systems.

The Executive Committee will review and approve changes to the BMS periodically, including any strategies, plans and targets within the BMS, ensuring it fully reflects the risks and opportunities associated with environmental sustainability. The Safety, Environment and Health Committee tracks, challenges and seeks assurance of the delivery of the plans approved by the Executive Committee.

Sustainability of our offices

In 2018, as our strategy continued to evolve, we took steps to improve the sustainability of our offices. In the UK, we completed many energy and water efficiency projects and achieved energy reductions in our offices of 9%.

We are making progress on better ways of managing our office waste, including working with our supply chain to prevent waste being generated. For example, we have pledged to eliminate single-use plastic from sale in our offices by 2020, and have already taken steps to remove plastic cutlery, straws, stirrers and cups at our UK headquarters in Warwick. We have also developed an engagement campaign called 'Save Evie's Whale', to help us improve our approach to recycling.

Climate change

We support climate change science. Reducing greenhouse gas emissions is an important area of focus for us and is one of our KPIs.

As a result, we also support the Paris Agreement and have made our own commitment to reduce our greenhouse gas emissions by 70% by 2030 and 80% by 2050. This pledge aligns with the trajectory required to limit global warming to a 2˚C temperature rise. We are currently reviewing our targets against limiting this rise to 1.5˚C and will update investors in next year's Annual Report and Accounts.

Task Force on Climate-related Financial Disclosures (TCFD)

The TCFD's voluntary framework for disclosure of climate-related information in financial filings is structured around four themes: governance, strategy, risk management, and metrics and targets.

We have committed to implementing the TCFD's recommendations, demonstrating how climate change risk and opportunities form part of our business, with clear targets to measure progress.

Our disclosure is set out on pages 210 – 211, demonstrating how we are managing our climate impact and how our business is evolving in response to the risks and opportunities we see arising. We aim to publish a full disclosure in 2020 as our understanding and strategy evolves.

CDP A list

CDP is a not-for-profit charity that runs a global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts. We are one of 126 companies globally, and one of only eight UK companies to achieve a position on the climate change A list (out of 7,000 submissions). We were delighted to achieve this accolade for the third consecutive year. It is clear recognition of our efforts to reduce our emissions and mitigate climate change during 2018/19.

Our commitment to being a responsible business continued

UK Social Mobility Employer Index

For the second year running, we took part in the UK Social Mobility Employer Index. We were ranked 31st out of 100 companies that participated during 2018. Following feedback, we have lowered our minimum grade requirements for our graduate programmes, changed the data we capture and the range of schools we target to help us better address social diversity.

Living Wage

In the UK, we are accredited by the Living Wage Foundation. Our commitment to our direct employees extends to our contractors and the work they do on behalf of National Grid. We believe that everyone should be appropriately rewarded for their time and effort. We also go above the Living Wage requirements and voluntarily pay our trainees the Living Wage.

We undertake a Living Wage review each year to ensure continued alignment. We also increase individual salaries as required.

Further reading
For more information about the UK gender pay gap, visit our website: www.nationalgrid.com/group/responsibility-and-sustainability/understanding-our-uk-gender-pay-gap

Alignment to SDGs

- 3 Good health and well-being — Ensure healthy lives and promote well-being for all at all ages
- 4 Quality education — Ensure inclusive and quality education for all and promote lifelong learning
- 5 Gender equality — Achieve gender equality and empower all women and girls
- 8 Decent work and economic growth — Promote inclusive and sustainable economic growth, employment and decent work for all

People

We are working hard to overcome some of the biggest energy challenges of the 21st century as generation moves from fossil fuels to renewable sources and transportation shifts to electrification. We need to make sure we have highly motivated people, with the right skills, working for us and helping to equip us for the future.

Our focus on people covers our current and future employees. We aim to have an engaged and diverse workforce to stimulate innovation, reflect the communities where we work, and deliver great customer service.

The culture we strive for stems from embracing our values: every day we do the right thing and find a better way. You can read more about our values on pages 14 – 15.

We also know that building sufficient capability and leadership capacity (including effective succession planning) is an important factor in delivering our vision and strategy. You can read more about how we are mitigating the risks in this area on page 22.

Engaging our people

By developing our people and providing a wider programme of benefits, we aim to have an engaged and productive workforce. To attract and retain employees we make sure our remuneration package is both fair and competitive. Through a third-party company, we also carry out an annual employee survey to measure engagement levels and to help us address areas employees believe we need to improve. Employee engagement forms one of our KPIs – you can read more about this and our performance on page 18.

Developing employees

Through the hard work of our employees we will achieve our vision, live our values, respond to the needs of our stakeholders and create a competitive advantage. Encouraging engaged and talented teams that are in step with our strategic objectives is vital to our success.

In 2018, we also completed a mid-year pulse survey. The aim was to get a half-yearly update on progress in our focus areas and to encourage a quicker response to the survey results.

Safeguarding the future

We work to raise awareness of the career opportunities in the energy utility industry in both the UK and US. In the UK, there's a growing need for a skilled workforce to develop, deliver and use new technologies within the energy sector, according to the EU Skills Workforce Strategy. STEM skills are crucial within our business, so we promote STEM as an exciting career path for young people through education outreach such as the Big Bang Fair, work experience and hosting school visits to our sites.

In the US, we have fostered relationships with 33 colleges and universities. Leaders from our business have been involved in these initiatives. We have also continued to promote internship opportunities and permanent graduate development programmes with more than 110 schools in the US.

Award recognition

In 2018/19, we were second in the Top 100 Companies and were also regional winners (West Midlands) in the Rate My Apprenticeship Awards, which are assessed by apprentices themselves, rather than external assessors. The awards bring together employers, apprentices and career champions to celebrate success in the apprenticeship market.

We also received recognition for our engagement with the Procurement Skills Accord, which is coordinated by Energy & Utility Skills across the utility industry.

We were finalists in the Gas Industry Awards Apprentice of the Year and Apprentice of the Year for the UK IT awards.

In the US, we were one of five winners of the Age Smart Employer Award in New York. Awarded by Columbia University, the Age Smart Employer Award aims to highlight industries and businesses using strategic practices to hire and retain valuable workers over the age of 50.

We were recognised by MilitaryHire.com as a Top Veteran Employer. This is in recognition of our efforts to create an environment of opportunity for veterans to apply their existing skills and train on the job to develop further. It is primarily due to our work with the Center for Energy Workforce Development and other utilities to help create the Troops to Energy Jobs (T2E) initiative. We use the T2E website to help successfully match veterans' and service members' skillsets to positions within the industry, ranging from field operations, engineers and analysts to the executive boardroom.

Health and wellbeing

We take a proactive, risk-based approach to managing health and wellbeing at National Grid. We continue to focus our efforts on creating sustainable wellbeing behaviour change within our workforce. We do this mainly through education and training and by managing our key wellbeing risks.

Our wellbeing programme focuses on musculoskeletal injury prevention and mitigation, chronic disease prevention, support and mental wellbeing. We provide training to develop the knowledge and confidence to notice and respond to mental health issues. We also work to reduce the stigma and to create a culture in which employees feel able to talk openly about mental health.

Promoting an inclusive and diverse workforce

Our inclusion and diversity policies demonstrate our commitment to providing an inclusive, equal and fair working environment by:

- driving inclusion and promoting equal opportunities for all;
- ensuring our workforce, whether part-time, full-time or temporary, are treated fairly and with respect;
- eliminating discrimination; and
- ensuring that selection for employment, promotion, training, development, benefit and reward is based on merit and in line with relevant legislation.

A total of 18.1% of our total workforce have declared themselves to be of 'minority' racial or ethnic heritage. We recognise the value a diverse workforce and inclusive culture bring to our business. We have many initiatives to encourage and promote diversity and inclusion.

During 2018/19, in the US we attracted 64% female applicants and 42% ethnically and racially diverse applicants to our graduate development roles. We also took 51% female applicants and 49% ethnically and racially diverse applicants into our internship programmes. Our UK Graduate Programme attracted 20% female applicants and 58% ethnically and racially diverse applicants. Our UK Industrial Placement and Student Internship programmes attracted 30% female applicants and 55% ethnically and racially diverse applicants.

Our US business created a record number of opportunities for these students and graduates, with 63 graduate development opportunities and 206 interns starting in the summer of 2019.

Our policy is that people with disabilities should be given fair consideration for all vacancies against the requirements for the role. Where possible, we make reasonable adjustments in job design and provide appropriate training for existing employees who become disabled. We are committed to equal opportunity in recruitment, promotion and career development for all employees, including those with disabilities. Our policy recognises the right for all people to work in an environment that is free from discrimination.

Our leaders support a diverse workforce. For example, Dean Seavers was featured in the 2018 Black History Month Magazine giving his perspective on inclusion and diversity at National Grid. We actively support Black, Asian, and minority ethnic (BAME) initiatives, and Nicola Shaw is actively involved in the BAME/Diverse Leaders Programme. We are also part of the 6th cohort of Business in the Community's BAME Cross Organisational Mentoring Circles Programme. Gurvinder Badesha, our Head of Assurance, is one of the lead mentors on the programme, and our UK HR Director, Sarah Stanton, is the UK Executive Sponsor of the Accessibiility Group that helps disabled people overcome barriers and improve their lives.

The gender demographic table that follows shows the breakdown in numbers of employees by gender at different levels of the organisation. We have included information relating to subsidiary directors, as this is required by the Companies Act 2006 (Strategic Report and Directors' Reports) Regulations 2013.

We define 'senior management' as those managers who are at the same level, or one level below, our Group Executive Committee. Our definition also includes those who are directors of subsidiaries, or who have responsibility for planning, directing or controlling the activities of the Group, or a strategically significant part of the Group, and are employees of the Group.

Gender demographic as at 31 March 2019

	Our Board[1]	Senior management[2]	Whole Company[3]
Male	8	171	17,084
Female	4	81	5,492
Total[6]	**12**	**252**	**22,576**
Male (%)	66.7	67.9	75.7
Female (%)	33.3	32.1	24.3

1. 'Board' refers to members as defined on the Company website.
2. 'Senior management' refers to Band A/B employees as well as subsidiary directors.
3. This measure is also one of our Company KPIs. For more information, see page 18.

Total headcount[4]

The tables below show the breakdown of employees by work pattern and diversity.

Work pattern

	Full-time		Part-time[5]	
	#	%	#	%
UK	5,212	95.4	249	4.6
US	16,414	99.5	85	0.5
NGV	598	97.1	18	2.9
Total[6]	**22,224**	**98.4**	**352**	**1.6**

4. In scope are active, permanent employees. Out of scope are temporary employees.
5. Employees recorded in our system as part time, or have <1 full time equivalent.

Gender

	Male		Female	
	#	%	#	%
UK	4,023	73.7	1,438	26.3
US	12,625	76.5	3,874	23.5
NGV	436	70.8	180	29.2
Total[6]	**17,084**	**75.7**	**5,492**	**24.3**

Ethnicity demographic as at 31 March 2019

'Minority' refers to racial/ethnic heritage declarations as recorded in our system. Those who have not stated their ethnicity are excluded from the baseline.

White	17,634
Minority	3,910
Declined to state	1,032
White (%)	81.9
Minority (%)	18.1

Employee turnover

Turnover is defined as employees who have left in the last 12 months as a percentage of headcount last year. Voluntary turnover relates to employees who have left through either resignation or retirement. Non-voluntary attrition includes any other leave reasons – including dismissal, severance, etc.

	Voluntary	Non-voluntary	Total
	%	%	%
UK	6.4	5.9	12.3
US	6.6	4.5	11.1
NGV	8.3	12.8	21.1
Total[6]	**6.6**	**5.1**	**11.7**

6. Included in 'Total' are Non-executive Directors and Executive Directors.

Training days per employee

From 1 April 2018 to 31 March 2019, the total number of training days delivered per employee (as recorded in our HR systems), across the whole of National Grid is 5.3 days (6.5 in 2017/18). During 2018/19 there was a 1.2 days' reduction in training received by employees, primarily driven by the US workforce contingency plan for seven labour disputes and the introduction of innovative training design and scheduling processes.

Promotion rate

The table below shows the rate of promotion within the business. Promotion rate is defined as number of employees who were promoted to a higher grade as a percentage of headcount last year.

	Promotion rate %
UK	2.7
US	12.8
NGV	4.8
Total	**10.0**

Keeping our Board and Group Executive Committee updated

Our Board and Group Executive Committee receive regular updates on matters relating to our people. For the Board, this includes four key focus areas for our people and organisation: our culture, diversity, the people we need for the future and driving for efficiency. The Board also receives updates on our employee opinion survey results and action plans. Additionally, this year the Board discussed and considered the culture of the Company. You can read more about the Board's culture on page 53.

The Group Executive Committee also receives a bi-annual update on people-related matters. In addition to these reports, the Committee receives regular talent updates and considers the remuneration structure for senior management. It also monitors safety and operational performance and receives reports on matters of business conduct, as well as risk and compliance matters for review. This includes breaches of the 'Code of Ethical Business Conduct' and bi-annual reports from the Group Ethics and Compliance Committee.

Our commitment to being a responsible business continued

Our communities highlights in 2018/19

£54m
est. added value to communities

41k
STEM interactions with young people

£107m
allocated to address UK fuel poverty since 2017

Alignment to SDGs

3 GOOD HEALTH AND WELL-BEING — Ensure healthy lives and promote well-being for all at all ages

4 QUALITY EDUCATION — Ensure inclusive and quality education for all and promote lifelong learning

7 AFFORDABLE AND CLEAN ENERGY — Ensure access to affordable, reliable, sustainable and modern energy for all

Communities

An important part of what we do at National Grid is to exceed the expectations of our communities as we bring energy to life. We do this by providing a safe and reliable service, and by helping our communities to thrive through our responsible business activities. We realise that, from time-to-time, our work can have a negative impact on communities, so we work closely with them to reduce this impact and to help support their social or economic needs.

Safe and reliable energy

We pride ourselves on providing a safe, reliable energy service at an affordable price to our customers, and to work hard in exceeding their expectations.

The safety of all our employees, contractors and the general public is of prime importance to us. We measure the safety of our employees and contractors and this is reflected in our KPIs, shown on page 18. To ensure we maintain our high standards of safety performance, we have effective policies, procedures and training in place so we can continue to perform at the level we and our stakeholders expect.

Delivering energy every second of every day is critical to the functioning of the economies and communities we serve. The reliability of our energy networks is one of the highest priorities after safety. Our networks continue to provide reliability running at more than 99.9% availability in both the UK and US. You can read more about this on page 16, and find out how we manage our operational risks on pages 20 – 22.

We regularly seek feedback from our customers to find out what they think of us and the services we provide, and take the appropriate action to improve and exceed customer satisfaction. You can read more about our customer satisfaction performance on page 16.

Supporting communities to thrive

We believe all companies should act responsibly by playing an active role in the communities where they operate and where employees live. We work hard to help communities by supporting initiatives that are important to them and that will help deliver long-term benefits to society.

In the UK, improving social mobility is a challenge. The country has talent spread evenly across it, yet opportunities are still not readily available to everyone regardless of their background. As a business, we are keen to help improve social mobility so opportunities are available to all.

We continue to play a part in the Government's Inclusive Economy Partnership, whose membership is drawn from the business sector, Government and civil society. We are supporting two of the Partnership's flagship challenges: mental health and equipping people to transition successfully to the world of work. To date, we have helped to develop the Framework for Voluntary Employer Reporting on Disability, Mental Health and Wellbeing and agreed a two-year partnership with UK Youth, and the Careers & Enterprise Company. Through this partnership, we will engage with companies in the South West of the UK to promote our Employability internship model and the value of youth engagement for companies.

In March 2018, our 18-month employee-chosen charity partnership with the Alzheimer's Society ended in the UK. In February 2019, we announced our intention to further support youth and education social action charity City Year UK through a fundraising partnership. The aim is to raise £150,000 for social mobility initiatives that the charity will launch during 2019.

Many employees get involved with their communities through volunteering and fundraising, supporting the needs of charities and community organisations. We also provide grants to community groups to support projects that meet local community needs by delivering a range of social, economic and environmental benefits.

In May 2018, we launched our first Responsible Business Policy to help govern our responsible business activities. The policy sets out our approach to charitable giving, partnerships with civil society and employee volunteering. For each of these areas, we will measure the tangible benefits being delivered to our communities, customers and employees, and report on progress made in future Annual Reports and Accounts.

Also during 2018, our UK employees supported local schools and colleges through various STEM activities. These activities resulted in more than 2,285 quality interactions with young people across 41 schools.

In the UK, we continue to focus on addressing fuel poverty through our voluntary investment with Affordable Warmth Solutions CIC. During 2018/19 we allocated a further £49.3 million to our Warm Homes Fund bringing the total to £107 million since July 2017 and the installation of 32,000 first-time central heating systems to many vulnerable households across England, Scotland and Wales. In the US, we have energy efficiency programmes in place to help residential, commercial and industrial customers reduce their energy consumption, save money and contribute to a more sustainable planet. We have a long-standing relationship with United Way, where we provide financial support to 40 agencies through employee fundraising and corporate donations, averaging $3 million annually over the past three years.

In addition to financial support, members of our leadership team in the US and employees in different regions serve on local United Way boards, and working committees. These include the UW Loaned Executive, Young Leaders and Women United. Employee teams support volunteer events in partnership with their local agencies, bringing much needed time and energy to the communities we serve.

The overall additional value we bring to communities through our Responsible Business activities is estimated to be £54 million.

Grid for Good

In 2018/19, we launched Grid for Good, an initiative that connects people to the services they need by partnering with local charities, companies and volunteers. The aim is to help encourage, inspire and ultimately give hope to people for a better quality of life. During the year, we completed a pilot phase in Birmingham, UK, and in Syracuse, US. We now aim to use the findings to further develop and launch the programme by mid-2019.

Good business conduct

To provide an understanding of the Company's development, performance and position, we describe our approach to human rights and anti-corruption and anti-bribery matters below.

Human rights

Respect for human rights is incorporated into our employment practices and our values, which are integral to our Code of Ethical Business Conduct – the way in which we conduct ourselves allows us to build trust with the people we work with. We earn this trust by doing things in the right way, building our reputation as an ethical company that our stakeholders want to do business with, and that our employees want to work for. Although we do not have specific policies relating to human rights, slavery or human trafficking, our Global Supplier Code of Conduct (GSCoC) integrates human rights into the way we do business throughout our supply chain alongside other areas of sustainability so that we create value, preserve natural resources and respect the interests of the communities we serve and from which we procure goods and services. Through our GSCoC, we expect our suppliers to comply with all legislation relating to their business, as well as adhering to the principles of the United Nations Global Compact, the International Labour Organisation (ILO) minimum standards, the Ethical Trading Initiative (ETI) Base Code, the UK Modern Slavery Act 2015 and for our UK suppliers, the requirements of the Living Wage Foundation.

Anti-bribery and corruption

We have policies and governance in place that set and monitor our approach to preventing bribery and corruption, including our Code of Ethical Business Conduct (covering bribery and corruption). We have a Company-wide framework of controls designed to prevent and detect bribery.

We investigate all allegations of ethical misconduct thoroughly and, where appropriate, we take corrective action and share learnings. We also record trends and metrics relating to such allegations – only a small percentage of these relate to bribery or corrupt practices, so we do not consider them to be material for reporting purposes.

Governance and oversight

We review and update our framework regularly so we can make sure our procedures remain proportionate to the principal risks we have identified.

Our UK and US Ethics and Compliance Committees (ECC) oversee the Code of Ethical Business Conduct and associated awareness programmes. Any cases alleging bribery are required to be referred immediately to the relevant ECC so the members can satisfy themselves that cases are investigated promptly and, where appropriate, acted upon, including ensuring any lessons learnt are communicated across the business.

The Audit Committee receives an annual report on the procedures currently in place to prevent and detect fraud and bribery. You can read more about the Audit Committee's role on pages 58 – 62. None of our investigations over the last 12 months have identified cases of bribery.

Anti-bribery policy

Our Group Policy Statement – Anti-Fraud and Bribery – applies to all permanent employees, temporary agency staff and contractors. It sets out our zero-tolerance approach to bribery and other corrupt business practices.

To ensure compliance with the UK Bribery Act 2010, we carried out a risk assessment across the Company so we could highlight higher risk areas and make sure adequate procedures were in place to address them. In addition, a global methodology was established for conducting fraud and bribery risk assessments annually across the business. As part of our global training strategy, we introduced an e-learning course for all employees so they can adequately understand the Company's zero-tolerance approach to fraud, bribery or corruption of any kind.

Ethical business conduct

Our Code of Ethical Business Conduct sets out the standards and behaviours we expect from all employees to meet our values of Do the Right Thing and Find a Better Way. The document is issued to all employees and is supported by a global communication and training programme to promote a strong ethical culture. Additionally, we provide briefings for high-risk areas of the business, such as Procurement.

Compliance framework

Each of our business areas is required to consider its specific risks and maintain a compliance framework, setting out the controls it has in place to detect and prevent bribery. As part of our compliance procedure, the business is asked to self-assess the effectiveness of its controls and provide evidence that supports its compliance.

Each year, all function heads are asked to certify the compliance in their area, and to provide details of any exceptions. This culminates in presentation of a Certificate of Assurance from the Chief Executive to the Board (following consideration by the Audit Committee).

Working with our supply chain

We have a GSCoC, which is issued to our suppliers and sets out our requirements to have in place a programme with procedures to prevent and detect bribery and corruption and standards around how we expect our suppliers to operate, which should extend into their own supply chains. All our suppliers must comply with all laws relating to their business which includes human rights, business ethics, resilience, supplier diversity, skills development and environmental sustainability, as well as adhere to the principles of the United Nations Global Compact, in accordance with all applicable local, state, federal or national laws or regulations including the UK Bribery Act 2010 and the US Foreign Corrupt Practices Act 1977. Our Global Procurement team carries out regular supplier screening to identify any requirements for prosecutions or sanctions within our supplier base. We provide specific guidance and briefings for high-risk areas, so contractors, agents and others who are acting on behalf of National Grid do not engage in any illegal or improper conduct.

Whistleblowing

We have confidential external whistleblowing helplines available 24/7 in all the regions where we operate. We publicise the contact information to our employees and on our external website so concerns can be reported anonymously. Our policies make it clear that we will support and protect whistleblowers and any form of retaliation will not be tolerated.

Preventing modern slavery

We strive to make sure that modern slavery is not taking place anywhere in our business or in our supply chain.

We expect all our suppliers to be compliant with the Modern Slavery Act and to publish a Modern Slavery Statement if required. Each year, we update our own Modern Slavery Statement and publish this on our Company website in line with the Act's requirements. Our Statement is independently reviewed by the Business & Human Rights Resource Centre alongside other FTSE 100 companies. In 2019, we were positioned 12th and recognised as one of a 'small cluster of leaders standing out' in this space.

We work closely with our suppliers and peers to build on our knowledge and promote best practice in the industry to combat modern slavery. During 2018, this included engaging with suppliers we had identified as being within potentially high-risk categories. Through this engagement, which included a workshop facilitated by the Supply Chain Sustainability School, we have encouraged our suppliers to conduct similar risk assessments with their own supply chain. We have also joined the Construction Protocol to better understand the approach to mitigating and resolving issues.

We are an active member of the United Nations Global Compact Working Group, focusing on Modern Slavery, and are working with Achilles to develop a community approach to address the issue. We are also revising our procurement process, so that modern slavery criteria and identifying risks form part of our sourcing process.