Annual Report and Accounts 2019/20

Bring Energy to Life

nationalgrid

Bring Energy to Life

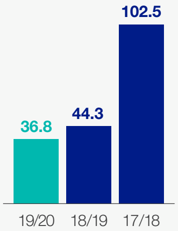
National Grid operates at the heart of the energy system, connecting millions of people safely, reliably and efficiently to the energy they use every day.

Highlights

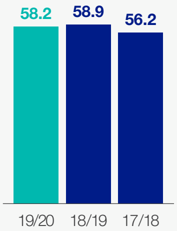
We have continued to make strategic and operational progress while maintaining excellent safety levels across all our networks. We have retained a focus on our environmental sustainability record and employee engagement.

Group financial highlights

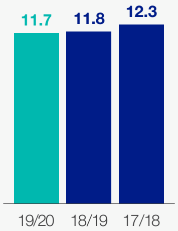
Statutory EPS (p)*



Underlying EPS (p)* Ⓐ



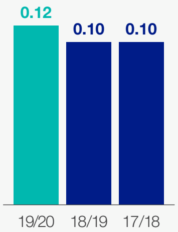
Group Return on Equity (RoE) % Ⓐ



* From continuing operations

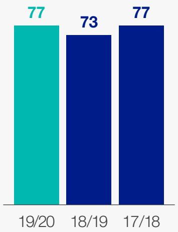
Group operational highlights

Group safety performance (lost time injuries per 100,000 hours worked in 12-month period)



Scope 1 and 2 greenhouse gas emissions (CO_2 equivalent, m tonnes)

Employee engagement (%)



Scan here to view the story

The job that can't wait

We believe that people are the key to unlocking a clean energy future, and we ran a recruitment campaign in the UK to attract talent to 'the job that can't wait'. We were delighted with the response to the campaign, which saw a sevenfold increase in applications to our Advanced Apprenticeship scheme and started a national conversation about the importance of STEM at all stages of education.

Further reading

Online report

The PDF of our Annual Report and Accounts 2019/20 includes a full search facility. You can find the document by visiting the 'About us' section at www.nationalgrid.com/about-us/annual-report-and-accounts.

QR codes

Throughout the report there are QR codes that you can scan to easily view content online. Simply open your camera app on your smartphone device to scan the code.

More detail

Throughout this report you can find links to further detail within this document.

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 2019/20 was $1.29 to £1 (2018/19: $1.31 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 240 – 249. These measures are highlighted with the symbol above.

Business model
What we do

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.

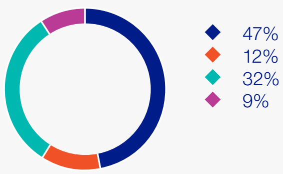
Our core regulated businesses
National Grid owns a range of high-quality, long-term assets. All our assets share low commercial risk profiles and are typically supported by long-term contracts or stable regulatory arrangements. Our core regulated businesses in the UK and US generated over 90% of our operating profits this year.

Our other energy businesses
Supporting the core regulated businesses, we also own a diverse and growing portfolio of commercial energy businesses also operating 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.

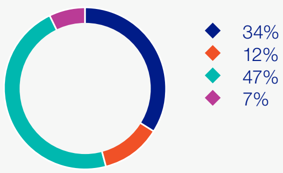
Our business is organised into segments, based upon activity and location

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

Statutory operating profit (%)



Underlying operating profit (%) Ⓐ



RAV, rate base and other assets (%) Ⓐ

Core regulated

◆ UK Electricity

Electricity
Our UK electricity business comprises both the electricity transmission network (ET) and a separate Electricity System Operator (ESO).

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. We also facilitate the connection of assets to the transmission system.

4,481
miles (7,212 kilometres) of overhead lines (2018/19: 4,481 miles; 7,212 kilometres)

1,391
miles (2,239 kilometres) of underground cable (2018/19: 1,437 miles; 2,312 kilometres)

Our role as 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 (GB). While we operate as the ESO across GB, we do not own the transmission assets in Scotland.

Although the ESO is legally separate from ET, its results are still presented to the Board as part of the UK segment, and therefore no change has been made to our reportable operating segments.

◆ UK Gas Transmission
Our UK Gas Transmission (GT) business comprises both the gas transmission assets and an integrated gas system operator.

We also own and operate the high-pressure gas transmission network in Great Britain. We are responsible for making sure GB'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.

4,740
miles (7,630 kilometres) of high-pressure pipe (2018/19: 4,760 miles; 7,660 kilometres)

◆ US Regulated

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

Our electric locations by state:
- New York;
- Massachusetts; and
- Rhode Island.

9,109
miles (14,659 kilometres) of overhead lines (2018/19: 8,881 miles; 14,293 kilometres)

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.

35,682
miles (57,425 kilometres) of gas pipelines (2018/19: 35,560 miles; 57,228 kilometres)

◆ National Grid Ventures and other activities

National Grid Ventures (NGV) manages our diverse portfolio of energy businesses that are similar to our core regulated operations. This operating segment represents our main strategic growth area outside our regulated core business, in competitive markets across the US and the UK. The business comprises commercial operations in energy metering, electricity interconnectors, renewables development and the storage of liquefied natural gas (LNG) in the UK.

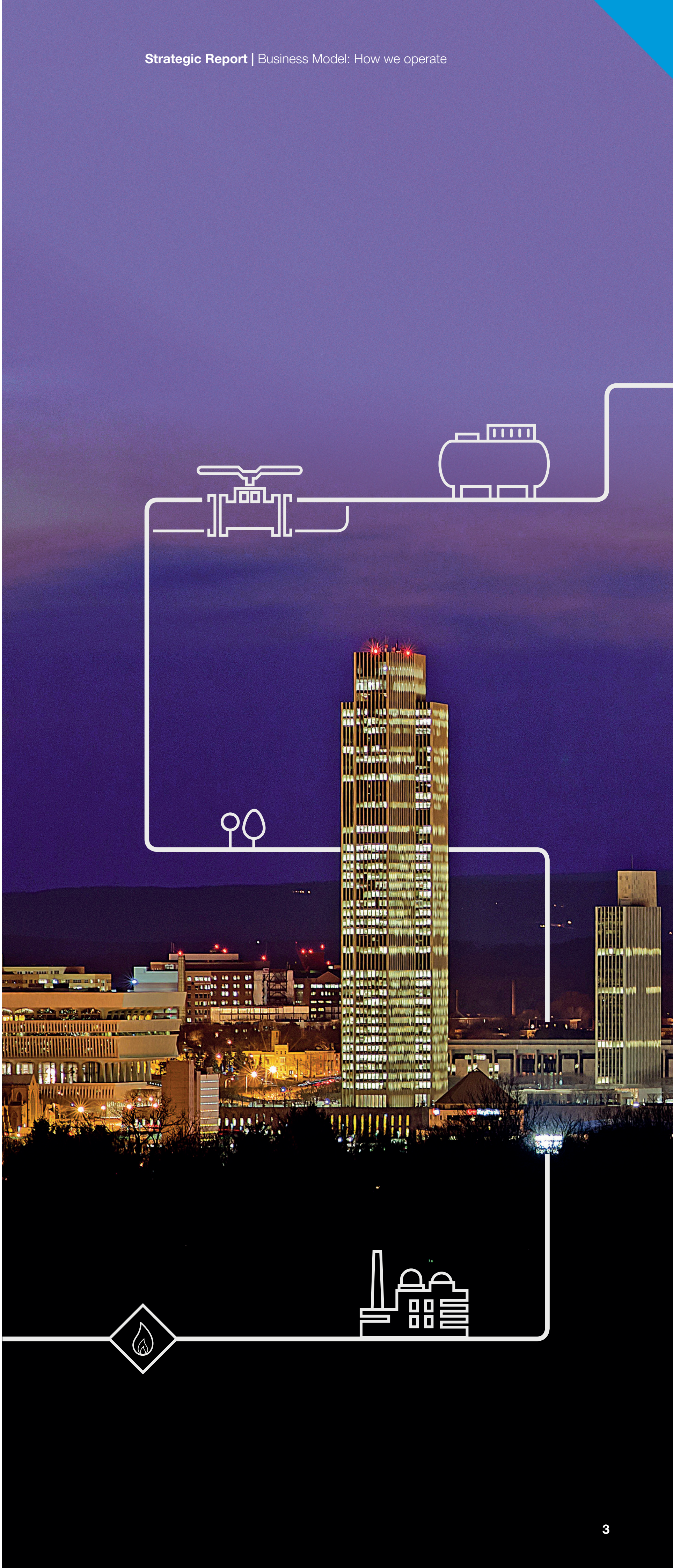
In July 2019, we completed the acquisition of Geronimo, a leading wind and solar developer in North America. In December, we announced the start of commercial operations at the 200 MW Crocker Wind Farm in Clark County, South Dakota.

Our other activities that do not form part of any of the segments over the page or NGV, primarily relate to our UK property business together with insurance and corporate activities in the UK and US, and the Group's investments in technology and innovation companies through National Grid Partners (NGP).

8.8 million
metering: gas meters (2018/19: 9.9 million)

1,000,000 m³
liquefied natural gas tank space (2018/19: 1,000,000 m³)

7.8 GW
GW capacity of interconnectors in operation or under construction (2018/19: 7.8 GW)



Business model
How we operate

Our operating model creates a stable, reliable and sustainable business that benefits our

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 workforce and assets; and
- our talented workforce that ensures energy is moved efficiently and reliably.

We also rely on maintaining **strong relationships** with a number of key external stakeholder groups to ensure we best meet their needs and maintain our licence to operate (see pages 44 – 47).

How we do business

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

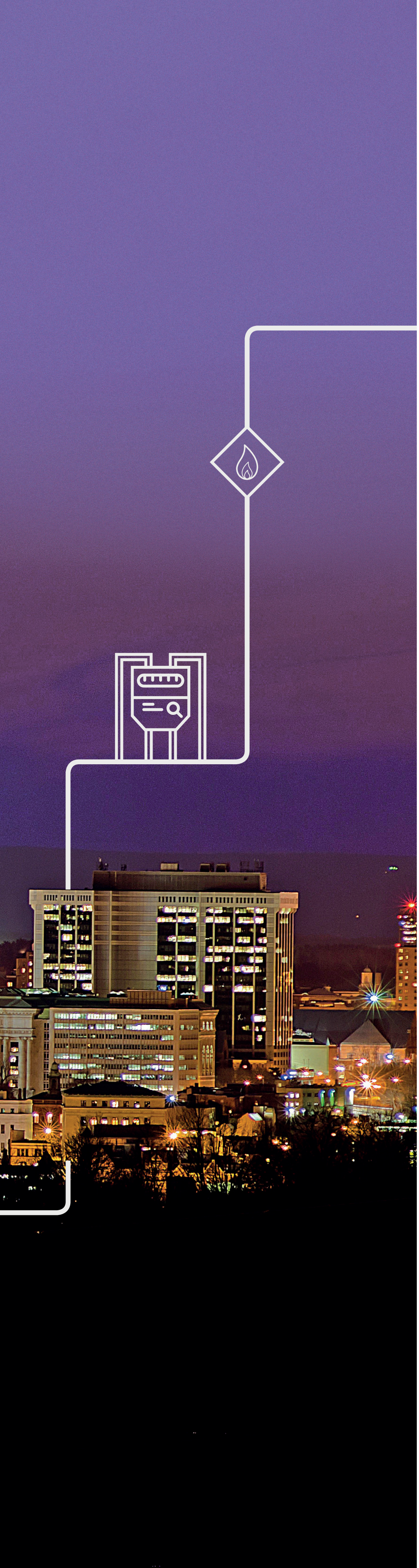
We do all of this in accordance with **our culture** and values, which guide everything that we do.

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

We deliver value for our **stakeholders**, which include our customers, as well as **financial value** for shareholders, by:

- operating within our regulatory frameworks thereby being efficient and compliant;
- performing well against our regulatory incentives, 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.



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. In the US, we also distribute it locally to where it is consumed. These networks are built to last for many decades. Such networks account for the vast majority of our asset base. We also own three subsea electricity interconnectors, with three further subsea cables under construction as well as LNG importation facilities.

c.£4.8bn p.a. Ⓐ

average investment in our assets over the past three years (on a constant currency basis)

Funding

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

63% Ⓐ

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 assist and develop the many stakeholder relationships that are crucial to the Company's success.

As we support the changes needed to build a net zero energy system, we are providing employment opportunities and supporting our workforce to build the skills necessary to support these changes. By attracting and retaining the people capable of supporting the journey to net zero in the energy sector we can help the places we operate reach their emissions targets.

23,069

employees worldwide

Strong 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 through a small portion of their energy bills, pay to use our networks. In the US, we have nearly seven million residential and commercial accounts.

Contractors and suppliers

We work in partnership with our supply chain, which 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 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 the Company. 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 and the activities we undertake are intrinsically hazardous; therefore our operations 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 technical expertise

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 continue in our efforts to develop a well-respected and trusted reputation for engineering excellence.

We combine 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.

9.0% Ⓐ

Asset growth 2019/20

Engineering

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

- 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 for 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.

£5.4bn Ⓐ

Capital investment in 2019/20

Innovation

Our innovation activities are focused on future-proofing the business for our customers as the energy landscape changes. Collaboration is crucial as we search for new technologies and techniques that will support this transformation. We are therefore investing in technologies through our venture capital and innovation arm, NGP, while continuing to partner with industry, academia, and policymakers.

£134m

Fair value of NGP portfolio at 31 March 2020

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 progress as an inclusive employer that values diversity. The knowledge and expertise of our employees is fundamental to our business success. To enable our employees to reach their full potential, we are investing in building the skills and capabilities of our workforce.

We maintain high standards of ethical business. We also promote the right behaviours that are aligned with our values and culture by recognising our employees through a company-wide reward system that supports both what they achieve and how they have delivered their achievements.

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.

As the energy industry continues its transition to a cleaner future, we have evolved our strategy so that it clearly articulates our priorities, while positioning our business to continue to deliver long-term economic benefits in the regions in which we operate.

The evolved strategy is founded on four strategic pillars which are to:

- enable the energy transition for all;
- deliver for our customers efficiently;
- grow our organisational capability; and
- empower our people for great performance.

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

Further reading

About our strategy on pages 16 – 17 and how it is evolving on page 12.

Internal control and risk management on pages 22 – 25.

Our commitment to being a responsible business on pages 48 – 56.

The value we create

For stakeholders and wider society

Society
We provide the energy systems that help economies grow in a sustainable, affordable and reliable way. We continue to work with partners and customers on the technologies required to make net zero a reality.

70%
Current reduction in greenhouse emissions

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

11.7% Ⓐ
Group Return on Equity 2019/20

Our employees
We seek to create an environment in which our workforce can make a positive contribution, develop their careers and reach their full potential.

77%
Employee engagement score 2019/20

Customers
By delivering the energy they need and dealing with them in a transparent and responsive manner, we seek to build trusted relationships with our customers as we deliver services to them.

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

0.12 LTIs
(per 100,000 hours worked in a 12-month period)
Group safety performance 2019/20

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

£6.0bn
Group supply chain spend 2019/20

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 an important role to play in sustainability, enabling the transition to a low-carbon future.

£47m
Contribution to communities 2019/20

Further reading
Our Key Performance Indicators (KPIs) on pages 18 – 20
Our stakeholders on pages 44-47
Our commitment to being a responsible business on pages 48 – 56

Financial value
The chart below describes how our businesses create financial value. Further detail can be found in our financial review on pages 28 – 37.

1 Revenue and profits
The vast majority of our revenues are set in accordance with our regulatory agreements (see pages 28 – 37), 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.

2 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 generate substantial cash flows. Coupled with long term debt financing, as well as additional capital generated through the take up of the shareholder scrip dividend option during periods of higher investment, we are able to invest in growing our asset base and finance returns through dividends.

3 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.

Capital allocation
Our capital allocation is determined by the need to fund our businesses to deliver the investment and outputs required under our regulatory frameworks in the UK and US. The investments we make in our business seek a balance between growth and cash flow.

Chairman's Statement

Sir Peter Gershon
Chairman

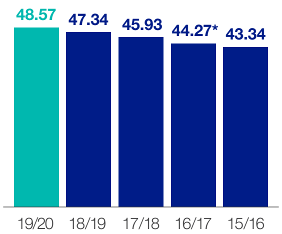
"National Grid evolved its vision to reflect our belief that a responsible business needs to stand for something beyond profit."

Final dividend of

32.00

p per share proposed to be paid on 19 August 2020

Full year dividend (pence per share)



*excludes a special dividend of 84.375p.

The Annual General Meeting will be held on 27 July 2020. This year, it will be held behind closed doors as a result of the COVID-19 pandemic. More details on how to watch a presentation following the AGM can be found on our website: www.nationalgrid.com.

As we all continue to face the unprecedented challenge of COVID-19 around the world, National Grid remains committed to doing the right thing for our employees, our customers, our communities and our suppliers.

Our priority throughout this period continues to be keeping our key workers safe. We have well-developed procedures in place to manage the effect of a pandemic, and we swiftly and successfully implemented our business continuity plans which allowed us to maintain safe working environments for our workforce. That ensured they could play their part in this time of global crisis by keeping our networks running and the energy flowing to hospitals, care homes, businesses and homes. I would like to thank them for their dedication and resilience.

In mid-April, after our financial year end, the extraordinary resilience of our US employees also enabled power to be quickly restored to over 200,000 customers across New York, Rhode Island and Massachusetts following extensive storm damage, despite the additional constraints arising from COVID-19.

Some short-term delay to our capital programmes was inevitable given the lockdown measures put in place by governments to control the spread of COVID-19. However, work on our capital programmes has now resumed. In the US, the suspension of debt collection and customer termination activities across our jurisdictions resulted in lower customer collections and additional provisioning for bad and doubtful debts.

We are now working diligently to prepare for the future, in which the safety of our employees and customers will remain of paramount importance.

The Board's ongoing priorities are our societal responsibilities, the balance sheet and liquidity. In support of these and in recognition of the uncertainty surrounding the evolution of the pandemic, we are keeping a number of scenarios under regular review. Our current base case assumes a scenario of continued gradual easing of restrictions in all our operating territories, to keep the spread of the pandemic under control.

Against that backdrop, I am pleased that we are able to use our extensive resources to help support the communities we serve to get through and recover from the pandemic. Although the Company has implemented a number of measures to limit discretionary external spending, it has not implemented pay reductions, furlough or compulsory redundancy schemes.

Nationalisation

The Board spent a lot of time in 2019 considering our response to the Labour Party's proposal to nationalise nearly all of National Grid's UK assets. We implemented some measures which would have strengthened our ability to secure a fair price for these assets, should the Labour Party have won the General Election. Although the Conservative Party secured a majority at this election, we note that the new Labour leader pledged his support for common ownership in a range of sectors, including energy, in his leadership campaign.

The path to net zero

Our focus for the future is to lead the way in the delivery of a clean energy transition. During the year, National Grid committed to reduce its own emissions to net zero by 2050, and we also saw significant legislative action towards a net zero ambition.

The UK and States of New York and Massachusetts each established legally-binding targets to achieve net zero emissions by 2050, while Rhode Island maintained its legally-binding target of 80% emission reductions by 2050. We welcome this progress as it is clear that decarbonisation and the pathway to reach net zero will remain one of the major long-term issues facing our economies.

While the pathway to decarbonisation of electricity has been identified, there is no obvious solution for the decarbonisation of heat. We continue to work with governments and others in the industry to identify solutions, but it is clear that the right regulatory and policy frameworks will be critical to enable a fair and affordable transition to a clean energy future.

Reviews

Although the power outage in Great Britain on 9 August 2019 caused significant disruption, the Board is pleased that the subsequent internal and external reviews confirmed our systems operated correctly and identified the failure of certain generators and railway assets as the cause. The external reviews highlighted a number of recommendations which we hope are implemented to improve the resilience of the overall GB infrastructure in future. The Board believes it is important that the current external review of the structure of the ESO results in a stable outcome which best enables the UK to meet its 2050 net zero commitment.

The Board was deeply concerned that the actions taken to implement a moratorium on new gas connections in downstate New York resulted in strong public criticism of the Company by Governor Cuomo, significant reputational damage, difficulties for customers, and a settlement with the New York Public Services Commission. The Board commissioned two external reviews which have provided valuable insights into how our US business got into this situation and a number of recommendations, which are being implemented at pace by our new President of the US business. As we continue working with the Public Services Commission to find a long-term solution, we will ensure our approach to meeting increasing demand for energy in New York State takes account of all key stakeholders.

Financial reporting

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 32, 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 240 – 249.

How we generate and preserve value

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. As is usual practice, the Board reviews this policy regularly, taking into account a range of factors including expected business performance and regulatory developments. Following stress testing of the finances of the Company against a number of potential COVID-19 scenarios, the Board has decided to recommend a final dividend in line with this policy. Accordingly, the Board has recommended an increase in the final dividend to 32.00p per ordinary share ($2.0126 per American Depository Share). If approved, this will be paid on 19 August 2020 bringing the full year dividend to 48.57p per share ($3.0799 per American Depository Share), an increase of 2.60% over the 47.34p per share for the financial year ended 31 March 2019.

We completed the sale of our remaining stake in Cadent in June 2019 for £1,965 million, and the proceeds were reinvested in the business to support the significant capital investment programme and asset growth across the Group over the medium term.

Regulatory issues

We continue an open dialogue with our regulators. In the UK, we submitted our final business plans for RIIO-2 in December 2019.

We are resuming settlement negotiations in the KEDNY/KEDLI rate cases in the interest of agreeing on a multi-year rate plan that mitigates bill impacts for our customers while allowing us to maintain safe and reliable service, advance our clean energy goals, and earn a reasonable return. If we are unable to reach a negotiated settlement, the rate cases will continue to a litigated outcome at which time we would then plan to file a new multi-year rate case proposal.

In light of the financial hardships that our customers have experienced from the COVID-19 pandemic, Niagara Mohawk Power Corporation (NMPC) delayed the implementation of certain previously approved rate increases. NMPC also delayed the filing of a rate case this spring and are exploring options including an extension of the current rate plan or a rate case filing later this summer.

Appointments and Board changes

US Executive Director Dean Seavers stood down from the Board for personal reasons in November 2019. The Board appointed Badar Khan, who was already a member of the Executive Committee, as interim President of the US business. Following a thorough process to identify a permanent successor, which included both internal and external candidates, I'm pleased that Badar was confirmed as President of the US business in April 2020.

The Board was pleased to welcome two new Non-executive Directors during the year – Jonathan Silver, who has a strong background in finance and US government policy, and Liz Hewitt, who brings extensive business, financial and investment experience from international companies across a range of sectors.

You can read more details of all our Board members' experience and the Committees they support in the Corporate Governance review on pages 63 – 107.

Culture and Responsible Business

The recent tragic death of George Floyd and the subsequent widespread expressions of public support for the Black Lives Matter movement have reinforced the right of everyone to equal opportunities, to have their voice heard, and to feel safe as they go about their daily life. These recent events highlight that companies have a vital role to play in addressing inequality and injustice wherever we see it, encouraging our employees to speak up, challenge and act where something does not feel right. We will not condone intolerance of any kind at National Grid.

The Board hosted several meetings throughout the year with a cross-section of employees to ensure the voice of the employee was heard by the Board, and was pleased with the effectiveness of these sessions.

During the year, National Grid evolved its vision to reflect our belief that a responsible business needs to stand for something beyond profit. We have a responsibility to demonstrate our commitment to society more broadly, and that's why our vision is to be at the heart of a clean, fair and affordable energy future.

Our purpose and values are key to our Company's DNA. In particular, they have enabled all our employees to respond with huge commitment, agility and flexibility to the challenges of COVID-19. I am immensely grateful to them.

Peter Gershon

Sir Peter Gershon
Chairman

Chief Executive's review

John Pettigrew
Chief Executive

We've made strong progress against our strategic priorities despite a challenging year.

"National Grid has a leading role to play in ensuring a cleaner energy future in all our regions."

The far-reaching and devastating global consequences of COVID-19 cannot be underestimated and we all owe a debt of gratitude to those who have been on the frontline fighting this virus across the world.

At National Grid, our role throughout this crisis has been to play our part in keeping the lights on and the gas flowing. Keeping the networks running, keeping our customers connected to the power they rely on and expect, and protecting the communities where we live and serve has never been more important.

I'm immensely proud of the way all our workforce have responded to this pandemic, and particularly those who go out to work every day in the field and in our control rooms to ensure we continue to power hospitals, homes and society during such a challenging period.

We took immediate action to lessen any financial hardship our customers may have faced, suspending debt collection and customer termination activities across our US jurisdictions, and delaying planned bill increases in New York State. We have also strengthened customer support activities to help lower-income customers manage their energy bills during the crisis and beyond.

We donated a total of £600,000 to the National Emergencies Trust, the Trussell Trust and University Hospitals Birmingham Charity in the UK, and $1 million to community-based charities across our US jurisdictions to provide help and support to the people that needed it most. We also introduced a programme of practical help, encouraging our thousands of UK employees to volunteer for half a day per week with charities working on the COVID-19 response.

We are planning additional support activities for the communities we serve for the post COVID-19 environment, including employability skills support and helping small and local businesses in our supply chain. We recognise that the impact of COVID-19 will be felt over the long term, and we are committed to applying our Responsible Business principles for our workforce, our communities and the economy in our response.

While the end of the financial year was dominated by responding to the COVID-19 pandemic, 2019 saw uncertainties particularly in the UK where the external environment was dominated by Brexit and a General Election.

Leading the clean energy transition

It's been a year of significant progress in the clean energy transition with climate change rising up the agenda for the public and politicians alike. We've seen climate change protests across the world, and an increased commitment from governments to take action, including in the geographies in which we operate. The UK legislated for net zero emissions by 2050, and New York and Massachusetts each set an economy-wide limit of net zero carbon emissions by 2050, with New York additionally legislating the target of 100% carbon-free electricity by 2040. Rhode Island maintained a legally binding target to reduce carbon emissions by 80% by 2050 and the Governor signed an executive order targeting 100% renewable electricity by 2030.

At National Grid, we have evolved our strategy and vision to reflect our belief that we have a responsibility to ensure that the energy future we help to shape is one where everyone shares the benefits and where we enable the communities we serve to deliver a clean transition. That's why our vision is **to be at the heart of a clean, fair and affordable energy future**. You can read more about our new strategy on page 12. Throughout this report, we have reported our performance against the strategy that was effective until 31 March 2020, and which is set out on pages 16 – 17.

During the year, we committed to reducing our own emissions to net zero by 2050 and to continue to facilitate the industry-wide transition to a low-carbon future.

We worked with the UK government to accelerate the transition to electric vehicles to cut carbon emissions and improve air quality for communities the length and breadth of the country. We were pleased to see a £500 million commitment in the 2020 Budget to support the rollout of new rapid-charging hubs so drivers are never more than 30 miles from a charging point.

We are developing the world's first zero-carbon industrial cluster in the UK's Humber region in partnership with Drax and Equinor. The Zero Carbon Humber consortium will use carbon capture and storage to create a zero-carbon region by 2040.

We are developing hydrogen trials and investing to understand the impact of hydrogen on our existing gas assets to address the decarbonisation of heat. While gas clearly has a role to play for many years to come, we understand the urgency of finding a solution to decarbonise heat in a way that is fair, affordable and not overly disruptive to consumers.

We've started construction work on our Viking Link interconnector, connecting Great Britain and Denmark, and continue construction on IFA2 and North Sea Link. Our interconnectors have a key role to play in a decarbonised energy sector, enabling the most efficient use of renewable energy across Europe.

Delivering for investors

During the year, we spent more than £5 billion growing and enhancing our US and UK energy networks, through a combination of organic growth, reinvesting the proceeds from the Cadent sale and innovative financing methods such as our green bond. We achieved this strong performance while also delivering a high level of asset growth of 9%. The proposed final dividend of 32.00p, which is still subject to shareholder approval, brings our full year dividend to 48.57p, an increase of 2.60% and in line with our policy. This is covered 1.2 times by our underlying earnings per share of 58.2p.

Safety

In the UK and NGV businesses, we've seen a strong safety performance this year. We continue to focus our efforts on developing a generative safety culture, and in the UK we've seen our lowest ever number of lost time injuries.

In the US, we're focused on improving safety and ensuring it is front of mind for all our workforce after seeing a deterioration in performance over the last 12 months. Tragically, we also had a fatality in the US where one of our colleagues was struck by a vehicle which had driven into a clearly marked out area where he was working.

Delivering for our customers

Customer performance remains a key metric and I'm pleased we've seen a steady increase in our customer satisfaction scores for GT and ET. However, our scores were below target in the US, our metering business and the ESO. We have identified areas of improvement and action has already started to address some of these.

Optimising performance

We set out our ambition last year to increase efficiency in our UK and US regulated businesses, becoming more responsive to customers' needs, while also delivering sustainable cost savings. This year we reduced our costs in both regions by significantly more than our £50 million UK target and the $30 million US target through a variety of measures including careful contract management and negotiation and improving workforce productivity. Removing these costs from our business will help to minimise future increases to customer bills.

In the UK Transmission businesses, the weighted average Return on Equity of 12.4% was maintained and within the 200 to 300 basis points outperformance that we committed to under RIIO-T1. In the US, Return on Equity of 9.3% represented 99% of our allowed return, benefiting from revenues from rate case increases in addition to control of our costs and was up 50 basis points on last year. Our Group Return on Equity was marginally lower at 11.7%, down 10 basis points from last year, partly due to lower income from our other businesses.

National Grid has continued to deliver world-class reliability and responded well to storms in the US. We were recognised with the EEI's Emergency Assistance Award and the Emergency Recovery Award for our fast and effective response to storms in 2019. In the UK, we regret the disruption caused by the power outage on 9 August 2019 but welcomed the Ofgem and government reports into the incident which confirmed that the outage was not caused by National Grid infrastructure. We were pleased that they agreed with our view that, given an increasingly complex and challenging energy network, it is appropriate to carry out a review of the Security and Quality of Supply Standards.

We were pleased with the stakeholder group support we received for the RIIO-2 business plans we submitted in December 2019. The Open Hearings expected in April 2020 were delayed due to COVID-19, but we continue to work with Ofgem and all our stakeholders to find the most appropriate framework to balance the needs of our customers and investors. You can read more about the composition of the stakeholder group on pages 45 – 47.

We welcomed Ofgem's decision to apply the Strategic Wider Works model as part of the RIIO-T1 framework to the Hinkley Seabank Connection Project, which we believe is in the best interests of consumers.

In the US, we secured our Massachusetts Electric rate order with a five-year performance-based mechanism and an allowed Return on Equity of 9.6%.

In New York, we enforced a temporary gas moratorium in May 2019, which led to a very challenging period for all our stakeholders. We found operational solutions to resolve the issue for the short term and have now submitted our report into long-term solutions to the State of New York Public Services Commission (NYPSC). We are listening to our stakeholders' concerns and will continue to work with the NYPSC as we try to resolve the issue in the coming months.

Growing our assets

We completed the sale of our remaining stake in Cadent for £1,965 million and reinvested the proceeds in our capital investment programme.

In the US, we invested £3.2 billion in the year on projects including the completion of the Gardenville substation upgrade in West Seneca, New York, which will supply an affordable and reliable source of renewable power for decades to come. We delivered asset growth in the US of 12.2%, up 300 basis points on the prior year.

In the UK, we awarded the £400 million tunnelling contract for our London Power Tunnels 2 project in December 2019. This 20.85-mile (33.5-kilometre), £1 billion link will provide resilience across South London from Wimbledon to Crayford and is due to complete in 2028. Another highlight has been the completion of the tunnelling for our Feeder 9 project under the Humber, which has been a critical investment in our gas infrastructure. These are just two of the projects which contributed to capital investment during the year of £1.3 billion and asset growth of 4%.

Our interconnector portfolio continues to grow with new subsea power links to France, Norway and Denmark planned over the next four years. IFA2, the 149-mile (240-kilometre) subsea cable between Great Britain and France is on track to become operational later this year, and work also continues on our North Sea Link to Norway which is expected to be operational in 2021/22. Construction is now underway on Viking Link, the 472-mile (760-kilometre) subsea cable between Great Britain and Denmark.

Evolving to a low-carbon future

In our role at the heart of the clean energy transition, we have continued to take action to enable decarbonisation across our business.

We completed our acquisition of Geronimo, a leading wind and solar developer in North America, in July 2019. Since the acquisition, Geronimo has announced the commercial operation of its 200 MW Crocker Wind Farm in South Dakota, along with the signing of a power purchase agreement with Basin Electric Power Cooperative for its 128 MW Wild Springs solar project, also in South Dakota.

The ESO is also preparing to enable a green energy future and by 2025, aims to have transformed the operation of Great Britain's electricity system so it can operate with zero carbon.

I was pleased to note that 2019 was the cleanest year on record for the UK as, for the first time, the amount of zero carbon electricity used by the UK's homes and businesses outstripped that from fossil fuels for a full 12 months.

As the UK energy industry continues to evolve, we are working closely with the government and regulator to review the most appropriate structure for the ESO following legal separation last year.

Unlocking future potential

I was pleased that our focus on diversity was recognised with Forbes naming us one of the Best Employers for Diversity 2020, and the US Human Rights Company Foundation awarding us Best Place to Work LGBTQ Equality. Our environmental commitments were also recognised with a place for the fourth consecutive year on the CDP A list, which names the world's most pioneering companies leading on environmental transparency and performance.

National Grid continues to focus on being a responsible business and increasing our positive impact on society. The unprecedented global challenge of COVID-19 demonstrated more than ever the importance of being a responsible business, and we concentrated our efforts on how best to support our workforce and our communities through this difficult time.

In addition to the immediate volunteering programme we set up to support those who needed it most during the COVID-19 pandemic, we partner with charity organisations to encourage and enable our employees to volunteer with them. In early 2020, we launched a community investment strategy which will provide access to skills development for 45,000 people across the US and the UK, as we help to equip future generations to be part of the clean energy transition.

We invest millions every year in training to ensure our workforce have the skills to meet the changing needs of a net zero economy, as well as supporting STEM-related activities for tens of thousands of schoolchildren around our key infrastructure projects.

Looking ahead

I'd like to end by expressing my gratitude to all our workforce who have worked tirelessly to achieve the performance we have delivered this year, and to ensure the networks keep running as efficiently and safely as ever through unprecedented times.

John Pettigrew
Chief Executive

Scan here to view our video

Evolving our strategy for the future

We have evolved our strategy in order to better reflect our purpose and in response to our business environment.

The evolved strategy reflects a belief that we have a responsibility to ensure that the energy future we help to shape is one where everyone shares its benefits. We will continue to connect people to the energy they need for the lives they lead, safely, reliably and securely.

Our purpose

Our purpose remains to **Bring Energy to Life**, providing the heat, light and power people and businesses rely on and supporting local communities to prosper.

Bring Energy to Life

Vision

To be at the heart of a clean, fair and affordable energy future

Values

Every day we…do the right thing, find a better way and make it happen

Strategy

National Grid builds, owns and operates large-scale, long-life energy assets primarily in networks and renewables that deliver fair returns and high societal value. The Company's portfolio of largely regulated assets in stable geographies is underpinned by a strong and efficient balance sheet.

Priorities

Enable the energy transition for all

Deliver for customers efficiently

Grow organisational capability

Empower colleagues for great performance

Our vision

National Grid stands for more than profit. The Company is committed to making a positive contribution to society, whether that's helping the young people of today to become the energy problem-solvers of tomorrow, supporting customers to use energy more efficiently, or tackling climate change.

That's why the Company's vision is to be at the heart of a **clean, fair and affordable** energy future, ensuring everyone benefits from the energy transition, that bills are not a burden for individuals or families, and that no one gets left behind.

Our strategy

National Grid's strategy is to build, own and operate large-scale, long-life energy assets primarily in networks and renewables that deliver fair returns and high societal value. The Company's portfolio of high-quality, low-risk assets in stable geographies is underpinned by a strong and efficient balance sheet.

This strategy sets the bounds of National Grid's business and will ensure it is set up to play a leading role in the energy future. It will be delivered through four priorities.

Our priorities

We have four strategic priorities to make our purpose possible and achieve our vision.

Enable the energy transition for all
Fully decarbonising the electricity grid through modernisation, increased flexibility and by connecting renewables quickly and efficiently. Leading the way in the decarbonisation of gas, investing in a range of solutions like renewable natural gas, blending hydrogen in networks and carbon offsetting. Decarbonising transport by building electricity network flexibility and supporting charging infrastructure.

Deliver for customers efficiently
Providing safe, reliable and affordable energy for customers around the clock, ensuring operational excellence and fiscal discipline in everything National Grid does, building productive partnerships with regulators and policymakers, and unlocking real value for customers and the communities they live and work in.

Grow organisational capability
Anticipating and adapting to changes in the energy sector in faster and smarter ways, remaining at the cutting edge of engineering and asset management, and innovating more sustainable energy solutions.

Empower colleagues for great performance
Building diverse and inclusive teams that reflect the communities the Company serves, attracting the best talent, prioritising learning and developing the skills needed now and in the future to accelerate the energy transition.

Our values

As a purpose-led, responsible business, how National Grid delivers for its customers and communities is as important as what is delivered. Colleagues right across the Company, in the United Kingdom and the United States, are committed to:

Doing the right thing, keeping customers, communities and the wider public safe.

Finding a better way, delivering excellent performance at best value and innovating new energy solutions.

Making it happen, with a strong focus on excellence, efficiency and results.

Our business environment

As well as managing through the COVID-19 pandemic, our societal ambition remains to achieve net zero, with emphasis on fairness and affordability, digitalisation and decentralisation during the transition.

Net zero

2019 was a turning point for climate action, from protests on the street to legislative action. Governments around the globe are considering and acting on ambitious carbon reduction targets.

70%

National Grid's reduction in carbon emissions since 1990.

Net zero

by 2050

Our net zero commitment is to reduce our own greenhouse gas emissions to net zero by 2050.

The future of heat

In the absence of both clear technology roadmaps and public policy frameworks that underpin the decarbonisation of heat by 2050, we currently continue to believe that our gas assets will have useful purposes beyond 2050. In common with the Committee on Climate Change's Net Zero report in May 2019, we believe that the future of heat is one reliant on multiple technologies and fuels, with an enduring role for natural gas. However, the scale and purpose for which the networks will be used is dependent on technological developments and, crucially, policy choices of governments and regulators.

The future of heat is uncertain, and its decarbonisation is reliant on relatively nascent technologies, such as hydrogen and carbon capture usage and storage, as well as biogas and heat pumps. These new and evolving technologies will need to be used in new contexts and on a scale that has not yet been demonstrated. We do not believe that any of these technologies can, in the next 30 years, reach sufficient scale to represent an existential threat to our gas businesses.

2019/20 developments

Climate risk continues to rise up the corporate agenda, against the rapidly evolving societal attitudes to climate change and the role of energy companies in leading and meeting net zero commitments.

At least 9 countries have legislated or are in the process of legislating, and at least 112 countries are discussing legislating, net zero targets by 2050 or sooner.

UK

The UK became the first major economy to commit to a legally binding target of net zero emissions by 2050.

2019 was the cleanest year on record for the UK as, for the first time, the amount of zero carbon electricity used by the UK's homes and businesses outstripped that from fossil fuels for a full 12 months.

US

The states of New York and Massachusetts each set an economy-wide limit of net zero carbon emissions by 2050, with at least 85% of reductions from their states' own energy and industrial emissions (and the remainder possible via carbon offsets). New York additionally legislated the target of 100% carbon-free electricity by 2040.

Rhode Island maintained a legally binding target to reduce carbon emissions by 80% below 1990 levels by 2050, and Governor Raimondo signed an executive order targeting 100% renewable electricity by 2030.

Across the wider US, one in three Americans – more than 110 million people – live in a community which has committed to or achieved a 100% clean electricity target.

Our response

- In both the UK and US, we are taking important steps to address the future of heat, engaging across the industry and with government and regulatory bodies. In the US, we collaborated with industry partners to develop interconnection guidelines for renewable natural gas (RNG) in New York State that seek to facilitate growth of this clean energy resource. In the UK, we have conducted three feasibility studies on the potential role of hydrogen and how our networks could facilitate its uptake.
- For our UK regulated business, the single biggest contributor towards our net zero target to reduce is Sulphur Hexaflouoride (SF_6), and we will be leaders here. In the US, through our gas pipeline replacement programme, we replaced 460 miles (740 kilometres) of pipe in 2019/20, reducing greenhouse gas emissions from the unintended release of natural gas.
- The ESO has agreed contracts with five parties, worth £328 million over a six-year period, in a world-first approach to managing the stability of the electricity system. This aids our ambition to be able to operate GB's electricity system carbon free by 2025.
- The world's largest offshore wind farm, the 1.2 GW Hornsea Project One wind farm, is connected to our electricity transmission network and first generated power in 2019.
- In January 2020, we announced the launch of our first ever green bond. Raising approximately €500 million, the bond's proceeds will finance or refinance UK electricity transmission projects with environmental benefits.
- We have partnered with Drax Group and Equinor to explore how large-scale carbon capture usage and storage and hydrogen could convert the UK's Humber region into the world's first net zero carbon industrial cluster.
- New York Transco, a joint venture in which NGV is a partner, was selected to develop the New York Energy Solution transmission project, unlocking renewable energy upstate for customers downstate.
- NGV completed its acquisition of Geronimo, a leading US onshore wind and solar developer, to establish a foundation on which to grow a large-scale renewables business, such as the 200 MW Crocker Wind Farm in South Dakota. The £209 million deal also secured a controlling share of a 379 MW solar and wind generation joint venture, Emerald Energy Venture LLC ('Emerald'), with Washington State Investment Board.
- Interconnectors played an important role in helping the UK use more zero carbon electricity than that from fossil fuels, and we are currently constructing three additional interconnectors: IFA2 to France, North Sea Link to Norway and Viking Link to Denmark.
- We believe our gas businesses can facilitate the transition to a decarbonised gas system and are investing in solutions such as renewable natural gas and blending hydrogen in our network.
- We have committed to meeting the Task Force on Climate-related Financial Disclosures (TCFD) recommendations in full (see pages 57 – 62).

Our business environment
continued

Fairness and Affordability

National Grid delivers energy safely, reliably and affordably to the communities we serve. As well as affordability, we will play our role in ensuring that no one is left behind in the short term during the COVID-19 crisis, or in the longer-term transition to clean energy.

#1

The US national ranking of our Massachusetts Electric utility energy efficiency programme by the American Council for an Energy-Efficient Economy (ACEEE).

3%

UK transmission network costs per average household dual fuel bill.

2019/20 developments

UK

Cost of energy remains a key priority, evidenced by 2019's implementation of the energy price cap, and two of Ofgem's key priorities: to 'drive down prices' and 'decarbonise to deliver a net zero economy at the lowest cost to consumers'.

With the government's recent commitment to net zero, industry participants and advisors, such as the Committee on Climate Change, have stressed the importance that net zero is delivered in a fair way as a 'just transition' across society, with vulnerable consumers protected.

US

Energy costs remain a priority for consumers and regulators, and fairness is high on the agenda in the discussion about decarbonisation pathways and their associated costs.

State regulators continue to explore innovative regulatory frameworks that reward utilities for managing customer bill impacts, while delivering desired regulatory and policy outcomes. This includes adjustments to the cost-of-service model that are more forward-looking, and which establish new shareholder incentives for cost efficiency.

Our response

- 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 £603 million of savings for consumers in the first seven years of the RIIO arrangements, excluding any share from Cadent.
- Our £150 million Warm Homes Fund has helped over 42,000 households suffering from fuel poverty access heating systems and become more energy efficient. This is the largest private sector investment in energy efficiency ever made in the UK.
- Our utility energy efficiency programmes continued to deliver excellent results for US customers, achieving annual electricity savings equal to 3.7% of sales in Massachusetts and 1.1% in New York. All three states that we serve rank in the top five in energy efficiency performance nationally according to the ACEEE.
- In response to the COVID-19 crisis, we have expanded customer support, paused late payment collections activities, and placed a freeze on related service cutoffs.
- In our Massachusetts Electric Company rate order, we gained approval for our proposed five-year forward-looking ratemaking mechanism that includes a consumer dividend and earnings sharing mechanism that rewards efficient company performance.
- In upstate New York, we delivered an estimated $200 million in net societal benefits in our second year of performance incentives. Such benefits increase the affordability of energy and were achieved by reducing electric system peak to mitigate supply costs, increasing adoption of energy efficiency and facilitating uptake of heat pumps for beneficial electrification, among other initiatives.
- In Albany, New York, we worked with the public transit authority to launch four electric buses to test customer experience with the technology and enable expansion to other fleets across our territory. This is an example of our efforts to make electric transport options more widely accessible to all.

Decentralisation

The energy system continues its transition from high to low carbon. This change coincides with a shift to more decentralised generation, including renewables and 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.

6 MW
48 MWh

The largest battery storage facility in northeastern US was installed by National Grid on the island of Nantucket in 2019 as a flexible and reliable alternative to undersea cables.

2019/20 developments

UK

Last year 29% of generation was connected at the distribution network level or behind-the-meter. The July 2019 Future Energy Scenarios (FES) document suggested that by 2050 this could rise to 58%. This is driven by new technology and business models enabling solutions such as solar panels, electric vehicles and battery storage to be more accessible to all consumers.

US

Distributed energy resource investments and installations continue to grow across the US. This includes not only small-scale solar photovoltaics, but also electric vehicles, distributed storage and demand-side resources. Utilities across the country are exploring how to integrate these resources into the grid, ensuring their utilisation is effective, safe and reliable.

Our response

- We are supporting growth in distributed energy resources (DERs) in our US service territories, where our US regulated business connected 314 MW of generation in calendar year 2019. We also made investments in the grid to enable future growth, including to increase distribution system capacity and to deploy advanced communications, monitoring and controls technologies essential to enhanced DER integration.
- We continued our partnership with leading home solar panel and battery storage company, Sunrun, securing new contracts for grid services from rooftop solar and storage across the US, with nearly 40 MW capacity and ancillary services in calendar year 2019.
- Our 'bring-your-own' device demand response programme expanded in Massachusetts and Rhode Island and received the Energy Storage North America (ESNA) Innovation Award and the Peak Load Management Alliance (PLMA) Program Pacesetter Award. It enables residential customers to receive a financial incentive for enrolling their devices to be managed by us to create grid flexibility.
- Since the start of financial year 2019/20, ET continues to process or has processed 207 connection applications, of which 20% have been made for transmission connected batteries, and a further 14% have been made up of a new customer type, where the customer mixes their generation make-up, for example solar with batteries.
- The ESO is working on a £10.3 million innovation project to explore how DERs can be used to restore power in the highly unlikely event of a total or partial blackout of the UK electricity transmission network.

Digitalisation

Businesses and lives are being transformed by innovations such as artificial intelligence and virtual reality. The energy landscape has seen many 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.

>80%

The reduction in the US call centre volume during major storms, after implementing proactive two-way outage texting to improve communications with customers about service outages and restoration.

2019/20 developments

In 2019, the application of digital technologies across the energy industry continued at pace globally. Bloomberg New Energy Finance tracked 379 applications, projects, partnerships and product developments for industrial digitalisation. This is 78% more than in 2018, and they expect a further increase in activity in 2020, as positive results of digitalisation drive its increased use.

Utility networks in all geographies are identifying 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

- For our digital transformation, we are adopting a Group-wide centralised hub model supported by regional delivery. Strategy for the transformation is formed centrally with regional autonomy.
- We expanded a personalisation platform to serve more than two million customers in Massachusetts and Rhode Island. Advanced data and analytics proactively identify eligible customers and present the next best offer to individuals, increasing offer enrolment and reducing bad debt.
- ConnectNow, our ET network connections project, will improve the customer experience of connecting to the network. Focusing on small scale connections such as solar, storage, electric vehicle charging and data centres, this digital platform assists customers through the application process, providing transparency and facilitating communication.
- We are harnessing advances in digital technology and innovation to improve business performance. For example, the ESO in collaboration with the Alan Turing Institute has used data science and machine learning to deliver a 33% improvement in solar forecasting. This will help the ESO run the system more efficiently, and enable more solar capacity to be connected and utilised.
- In 2020, the ESO launched a free Carbon Intensity application, aimed at empowering people to make conscious decisions about how they consume energy by showing them the greenest times of day to use electricity.
- NGP invested in Dragos, a leading cybersecurity provider of industrial control systems and operational technology. Our cybersecurity team conducted a pilot of Dragos' asset identification, threat detection and response software platform to help secure National Grid's critical infrastructure in the UK and US.
- Dragos was among eight new investments and six follow-on investments made by NGP, whose portfolio at the close of the fiscal year comprised 21 investments at a fair value of £134 million ($167 million).

Our response to COVID-19

COVID-19 is affecting countries, communities, supply chains and markets, including the UK and our service territory in the US. Since the World Health Organisation declared the outbreak as a pandemic on 11 March 2020, National Grid has applied UK and US Federal and State government advice and guidance on dealing with the potential and actual spread and impact on our business and our customers.

The Company has successfully activated its crisis management framework which includes identifying the areas that are deemed critical and the corresponding level of reliability and service continuity needed to deliver normal services during the pandemic. Our plans include continued safe and reliable service during large numbers of workforce absence due to illness. Under government guidelines in both the UK and the US, utility workers are identified as key/essential workers and have been subject to specific guidance and permissions on family arrangements and movements. We have moved to working from home arrangements, where possible, and have also identified critical areas including control rooms, call centres, dispatch and key sites including generation and LNG facilities, terminals, substations and compressor stations. For all these activities plans are in place to maintain critical safety and maintenance activities, which includes sequestering some employees.

Some of our work, especially in the US, requires contact with members of the public. To safeguard our employees and the public we are following government requirements and recommendations for social distancing. This includes our collections, meter installations and shut-off arrangements while continuing to provide a safe and reliable network. We have also made arrangements to ensure that those customers with financial difficulties who cannot make payments do not have services cut off.

Finally, we are also working with our supply chains so that our systems and networks have the necessary materials and parts. Our regular engagement with government agencies and our regulators, as well as following all advisory services regarding management of the spread of COVID-19, is expected to continue for the foreseeable future.

Case study – NGV
Our response to COVID-19 in our communities

NGV has helped the University Hospitals Birmingham (UHB) Charity to launch a special appeal, to raise £1 million to support patients and staff through the COVID-19 pandemic.

The donation has been used to purchase almost 400 tablet computers that will be used by patients to help them speak to their loved ones while they are in isolation. The tablets will be distributed across the UHB Charity's five hospitals, including the Nightingale Hospital, which has recently been established at the National Exhibition Centre in Birmingham, UK.

Scan here for the full story.

Delivering against our strategy

Our strategy in 2019/20 focused on three strategic priorities for our business, delivering for customers safely and efficiently today while setting a growth pathway for the future.

Customer first

We have a vital role to play in enabling customers to benefit from the changes in our industry. The clean energy transition and associated technological advancements mean we can provide our customers with a more cost-effective service, while leaving no-one behind. We measure customer satisfaction as a KPI within each of our business segments.

Our three strategic priorities

1. Optimise performance

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

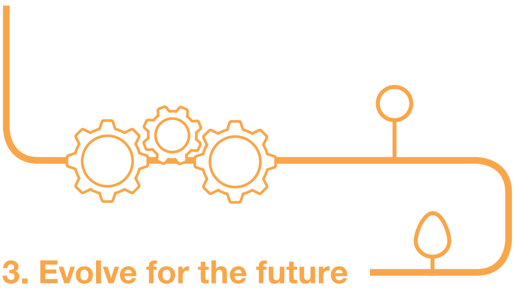
We need to enhance the customer experience and our productivity through more efficient and customer-focused processes. Given the scale of our core business in the UK and US, even small improvements will have a huge impact on our overall performance. Finding new ways of optimising operations will be an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

2. Grow core business

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

In the US and UK, we continue to look for business development opportunities that are close to our core business.

In NGV, we will build on our successful efforts to pursue opportunities in interconnectors and large-scale renewables.



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 are underway. For example, at 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, NGP is increasing our capability in new and disruptive energy technologies to meet the changing needs of our customers and communities.

Examples of progress in 2019/20

- Continued the transition begun through our UK and US programmes to leaner and more efficient operating models in the UK and US core businesses;
- Submitted price controls for the UK electricity, gas and system operator business as part of RIIO-2;
- Received authorisation of a new five-year rate plan for our electric distribution companies in Massachusetts; and
- Continued embedding our Business Management System (BMS) across the Group by publishing BMS standards through the employee handbook, the National Grid Book, in order to increase standardisation across business activities.

- Grew our UK and US regulated businesses capex to £5.4 billion A;
- In January 2020 we celebrated the completion of the new, three-mile (five-kilometre) Humber Tunnel that will house a key gas pipeline between Yorkshire and North Lincolnshire;
- Interconnectors IFA2, Viking Link and North Sea Link are under construction and are on track to be delivered to plan; and
- Delivered the largest battery storage facility in the northeastern US on Nantucket as a flexible alternative to undersea cables.

- Following legal separation on 1 April 2019, this is the first year the ESO operated as a separate entity from the UK electricity transmission company, evolving for its customers and stakeholders;
- We are expanding a software platform using advanced data and analytics to proactively identify and present offers to customers in Massachusetts and Rhode Island;
- NGP, launched in 2018, growing with a portfolio fair value of £134m at 31 March 2020; and
- NGV completed the acquisition of Geronimo, a developer of wind and solar generation.

Further reading
See more on these in the Principal Operations sections on pages 38 – 43

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.

Performance reported in this section is based on the strategy that is outlined on pages 16 – 17. 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 are set out in our financial review, on pages 28 – 37.
- Business-unit-level measures that are specific to our three strategic priorities. These are set out within our Principal Operations review, on pages 38 – 43.

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 Directors' Remuneration Report, on pages 88 – 107.

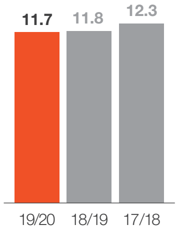
Principal measures

Strategy link	KPI and performance	Progress in 2019/20

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% each year



The UK regulated businesses delivered a weighted average RoE of 12.4%, consistent with the return achieved in the prior year. US RoE increased to 9.3% (2018/19: 8.8%), with increased revenues from new rates driving improved US regulatory performance. Group RoE of 11.7% was marginally lower than 2018/19 (11.8%), with benefits arising in the prior year from the Fulham property sale and US legal settlements.

Customer satisfaction

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

	2019/20	2018/19	2017/18	Target
UK Electricity Transmission (/10)	8.2	7.9	7.7	6.9
UK Electricity System Operator (/10)	7.6	–	–	8.1
UK Gas Transmission (/10)	8.0	7.8	7.6	6.9
US Residential – Customer Trust Advice survey (%)	59.8	58.7	56.6	61.6
Metering NPS score (index)	+40	+44	+39	–

Our UK customer satisfaction (CSAT) KPI comprises Ofgem's 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). We have seen a steady increase in CSAT for GT, through our efforts to understand the impact that our actions have with a particular focus on responding to their queries. In the first year post separation from ESO, we have also focused on building direct relationships with our ET customers, to understand the experience they need us to deliver and redesigning our service accordingly. Due to legal separation in April 2019, the scores also reflect the independent ESO result. The ESO CSAT score was below target for the year 2019/20 and we have identified query response times and tailoring communications as improvement areas for the next 12 months. Action has already begun to take place within the value streams to address these areas and they will form part of new insight plans for the ESO in 2020/21.

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, has improved over the past few years yet was below target in 2019/20.

NPS scores reported represent the Metering business. Although the score has dropped since 2018/19, we have identified areas of improvement, for example, making sure metering queries raised by our customers are progressed more efficiently.

Principal measures continued

Strategy link	KPI and performance	Progress in 2019/20

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.

%	2019/20	2018/19	2017/18
UK Electricity Transmission	99.999974	99.999984	99.999984
UK Gas Transmission	99.999589	99.989632	99.996151
US Electricity Transmission	99.955	99.952	99.953
US Electricity Distribution	99.994	99.995	99.995
IFA interconnector	91.4	93.9	92.6
BritNed interconnector	98.6	98.2	97.8
NEMO Link interconnector	96.1	–	–

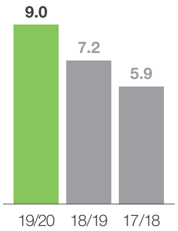
In both the UK and US, we continued to maintain high levels of reliability on all our networks.

IFA interconnector availability was lower in 2019/20 as this was the first year of a major refurbishment project at IFA, where we are rebuilding the site to remain operational for the next 30 years.

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.

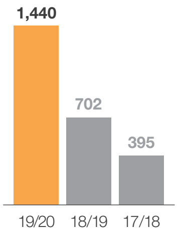
Target: 5–7% growth each year



Asset growth during the year was 9.0% (2018/19: 7.2%). This was primarily driven by the accelerated US rate base growth of 12.2% (2018/19: 9.2%) and higher levels of investment in other assets, such as in NGP. This is combined with increased UK RAV growth of 3.8% (2018/19: 3.6%).

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

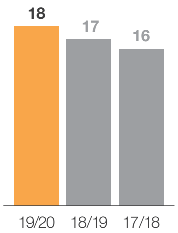
We invest in new low-carbon energy sources primarily through our interconnector businesses (North Sea Link, IFA2 and Viking Link), investments in companies delivering low-carbon energy sources (for example, our investment in Sunrun) and investments into large-scale renewables (for example, our new investment in Geronimo).



Investment in delivering new low-carbon energy sources increased in the year by £738 million (105%). Principally from increased investment in our interconnector projects under construction, with IFA2 nearing completion, further progress made on North Sea Link and the commencement of construction on Viking Link. In addition, the acquisition of Geronimo was made in July 2019, a leading wind and solar developer in North America.

Cumulative low-carbon generation connected to our UK network (GW)

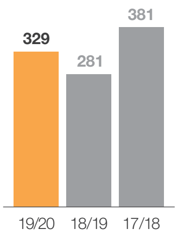
Low-carbon generation supported by our network to date.



A total of 18.3 GW of low-carbon generation is currently connected to our network, following additional offshore wind capacity connecting at Hornsea 1 (+800 MW) and East Anglia 1 (+680 MW). The government's offshore wind sector deal and continued cost reductions observed in the latest Contracts for Difference (CfD) allocation round, indicates further increases in capacity over the coming years.

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

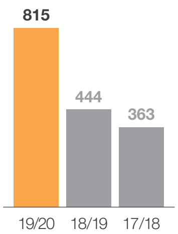
The table represents the amount of customer-owned renewable energy capacity installed on our distribution network across our US footprint. Given the variability and unpredictability of customer-driven projects, the Company does not presently have a MW target. Current targets primarily focus on regulatory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



There has been a 17% increase in the installed capacity compared to the previous year. Rhode Island installed a record amount of capacity (100 MW) while the installed capacity in Massachusetts was on par with 2018/19. Although New York experienced a decline in customer-ready projects to interconnect, it received a record amount of capacity (3,000 MW). The Company continues to make progress in Massachusetts and Rhode Island to enable greater renewable energy integration by completing area-wide transmission and distribution studies. While non-residential systems have represented less than 7% of connected applications, they have accounted for 78% 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.



Excluding NGP, NGV capital investment has increased in the year by £371 million (84%). There has been increased investment in our interconnector projects under construction, with IFA2 nearing completion, further progress made on North Sea Link and the commencement of construction on Viking Link. In addition, an acquisition of Geronimo was made in July 2019, a leading wind and solar developer in North America.

Progress against our strategy
continued

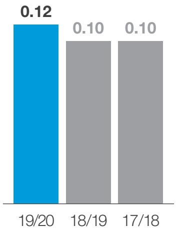
Non-financial measures

KPI | **Performance** | **Progress in 2019/20**

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

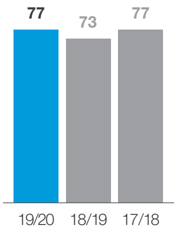


As at 31 March 2020, our Group lost time injury frequency rate (LTIFR) was 0.12, which is higher than the Group target of 0.10. This is a combined employee and contractor LTI rate, which reflects our continued focus on encouraging good safety behaviours across the entire workforce.

The majority of lost time injuries are a result of individual issues such as slips, trips and falls, and soft tissue injuries from inappropriate tooling, lifting and carrying. We continue to address these and other incidents by implementing best practice injury prevention techniques that mitigate potential for harm factors. Although this fiscal year saw injury challenges in our US business, where, tragically, we lost a colleague in a road traffic accident, we will continue to focus on improving our generative safety culture.

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.

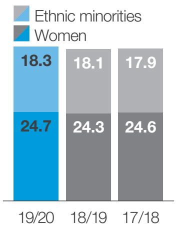


We measure employee engagement through our employee engagement survey (EES). The results of our 2019/20 survey, which was completed by 82% of our employees, have helped us identify specific areas where we are performing well and those areas we need to improve. At Group level, the overall results of the 2019/20 EES showed a positive trend from the 2018/19 survey, with 26 questions significantly improving and just seven questions showing a significant decline.

Our engagement score was 77%, which is four points ahead of the 2018/19 results.

Workforce diversity

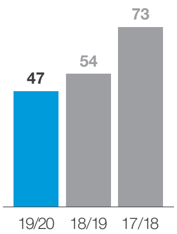
We measure the percentage of women and ethnic minorities in our workforce. We aim to develop and operate a business that has an inclusive and diverse culture (see page 53).



During 2019/20, the representation of our female and ethnic minority groups has increased as we continue to build our diverse talent pipeline.

Contribution of our corporate responsibility work (£m)

Working with communities is important for creating shared value.



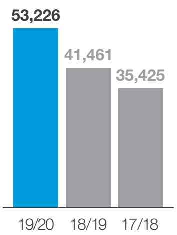
We use the London Benchmarking Group measurement framework to provide an overall community investment figure which includes education (but excludes investment in university research projects). While we have no specific target, our overall aim is to ensure we add value to society to enable communities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

In the UK, the overall contribution of our activities was valued at nearly £39 million. In the US, our contribution was just over £7.5 million.

This gives us a combined Group-wide contribution of nearly £47 million. This was lower than prior years because some events were cancelled due to COVID-19.

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.

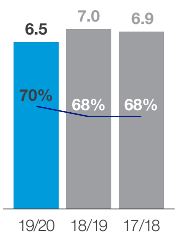


We measure quality (>1 hour) interactions with young people on STEM subjects. In the UK, in 2019/20, we have had 1,707 quality interactions with young people on STEM subjects. We had 51,519 interactions in the US. Overall we have seen a total of 53,226 interactions with young people on STEM, an increase of 11,765.

Climate change - Scope 1 and 2 emissions

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 80% by 2030, 90% by 2040 and net zero by 2050, compared with our 1990 emissions of 21.6 million tonnes. The percentages in the adjacent chart reflect a reduction in our emissions from a 1990 baseline.

We seek to continuously improve our environmental performance, in instances going beyond regulatory requirements, through implementation of our ISO 14001-certified Environmental Management System and Environmental Sustainability Standard.



Our Scope 1 greenhouse gas emissions for 2019/20 equate to 3.9 million tonnes of carbon dioxide equivalent (2018/19: 4.5 million tonnes) and our Scope 2 emissions (including electricity line losses) equate to 2.6 million tonnes (2018/19: 2.5 million tonnes). This is a total of 6.5 million tonnes of carbon dioxide equivalent for Scope 1 and 2 emissions. These figures include line losses and are equivalent to an intensity of around 447 tonnes per £1 million of revenue (2018/19: 469 tonnes).

Our Scope 3 emissions for 2019/20 were 29.8 million tonnes (2018/19: 32.3 million tonnes).

Our global underlying energy use is 28,223 GWh where the UK and US are responsible for 8,112 GWh and 20,111 GWh respectively. This includes gas and electricity network losses and fuel used for US power generation.

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, 2 and 3 emissions, are independently assured against ISO 14065 Greenhouse Gas assurance protocol. This data complies with the UK government's Streamlined Energy and Carbon Reporting (SECR) requirements and is our first disclosure to comply with SECR.

Further reading
You can read more about the Task Force on Climate-related Financial Disclosures and our wider sustainability activities and performance on pages 57 – 62.

Innovation

Our innovation activities are focused on future-proofing the business for our customers as the energy landscape changes. Collaboration is a key part of our approach to innovation.

Innovation in our UK principal operations

Our commitment to net zero continues to shape our innovation strategy. Our innovation portfolio enables us to identify and target carbon savings for our own operations and we are also developing innovation projects to ensure we are prepared and play a pivotal role in the decarbonisation of energy for power and heat, transport and industry. We also search for new technologies and techniques to improve the way we work.

We place a high value on collaboration to inform, generate ideas and solve the challenges we see ahead of us. We work in collaboration with technical organisations, academia and suppliers in the energy sector that align with our goals and objectives.

The ESO has been innovating to ensure we continue to provide secure, affordable and sustainable supplies of energy in a fast-changing world. Our innovation programme is used to learn and then accelerate market development. The year ahead will see even more projects generated by the ESO, 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 UK electricity transmission network is continuing with innovation investments. We are focused on reducing our carbon footprint from our construction activities and seeking ways to reduce the greenhouse gas impact from gas-insulated assets. We have engaged extensively with regional stakeholders in our Zero 2050 South Wales project to better understand the changes in decarbonising society and our role as a transmission business as our energy landscape evolves. We have made progress in the construction of our transmission accelerator at Deeside, recognising the need to test and adopt new technologies faster, and we continue to research technologies to enhance our cyber security and further digitise our grid infrastructure.

Similarly, our UK gas transmission business has led our research to better understand the role of transitioning to a hydrogen future. Our Hydrogen Portfolio of projects aims to identify the opportunities and potential challenges to hydrogen injection into the National Transmission System (NTS). Working in collaboration with industry we aim to fill the gaps in the vision for a national hydrogen deployment. The portfolio includes safety and integrity reviews, demonstrating how existing networks can transition from gas to hydrogen.

Additionally in the UK, NGV has been active in establishing consortia to better integrate offshore renewables, and to commercially deploy hydrogen and Carbon Capture and Storage technologies targeting industrial decarbonisation in the Humber and London regions.

Innovation in our US principal operations

Similar to the UK, our US innovation approach is designed to enable our networks and customer services to adapt to a low-carbon, distributed and digitised future. We focus innovation and Research and Development (R&D) on the advancement of products, systems and work methods that prepare the way for more efficient and safer networks that further proliferate the integration of renewables.

In Massachusetts, we continue to explore how best to integrate solar energy, storage and electric vehicle charging into the distribution network. Our Solar Phase III programme comprises an additional 14 MW of photovoltaics (PV) and 5.8 MW of energy storage. The aim is to analyse the impact of future high levels of distributed renewables on distribution systems and in this stage the programme will also test the economic and technical benefits of localised balancing from energy storage. Several New York Reforming the Energy Vision (REV) pilots are also underway, testing market solutions in support of Distribution System Operation (DSO) developments, smart city opportunities and renewable heating technologies. These projects are providing the knowledge and experience to evolve our systems for the grid of the future.

In our US gas businesses, our innovation continues to prioritise increasing public safety, protecting our workforce, reducing the cost of the work we perform and reducing our impact on the environment. For example, we are testing robotics to enhance existing pipelines and reduce gas emissions and have several programmes exploring the introduction of renewable natural gas and alternative low-carbon heating solutions for our customers.

National Grid Partners

NGP, our dedicated corporate innovation and investment function, has had a strong second year of operation delivering value to the Group. In 2019, we established and built our central disruptive innovation capability while continuing to make strategic investments in our incubation and corporate venture capital portfolios. NGP also expanded its programming to include culture and entrepreneurial programming and founded a global utility council branded as the 'Next Grid Alliance' to encourage collaboration within our peer group on solutions for the industry. This forum of peers allows National Grid to tap into the wealth of innovation and investment learnings from across the industry and share our own best practices.

Our investment portfolio includes direct investments in seventeen start-up companies and four venture funds to date with a fair value of £134m at 31 March 2020. The venture fund investments are focused on expanding access to start-ups in key innovation regions including Israel and the United Kingdom. We also successfully exited our positions in Pixeom and Aporeto during 2019, providing financial returns from those investments.

NGP's investments provide valuable insights, collaborations and deployment opportunities that strengthen and future-proof our core business activities. For example, we have deployed cyber detection and response solutions from Dragos, asset management decision software from Copperleaf, and demand response management services from Autogrid. Several portfolio companies are in pilot on areas such as gas infrastructure risk prevention and manhole explosion prevention.

In April 2019, we created a central innovation team, targeting disruptive innovations and introduced design thinking, agile delivery, and lean start-up methods to our organisation. While in its infancy the team has explored innovation opportunities in collaboration with our core businesses with several projects progressing into prototype stages during 2020. This organisation is also tasked with creating centralised innovation reporting to allow National Grid to track the value created through its sustaining innovation efforts across the Group.

NGP has launched a series of initiatives designed to provide our employees with the types of experiences to further foster an entrepreneurial culture and skill set. These activities include an apprenticeship programme, entrepreneur-led speaker series, employee immersions and sprints in Silicon Valley, and secondments and advisory board positions within NGP's portfolio. These initiatives aim to provide strong training and retention programmes to develop the next generation of entrepreneurial leaders within the Group.

NGP has delivered strategic and financial value to the core businesses and looks forward to delivering on our mandate to invest in valuable start-ups, to tackle innovation and business development projects that can improve our business, and to act as a catalyst for change across the broader Group.

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

Further reading
Further details about our R&D and innovation activities can be found in Additional Information on pages 237 – 239.

Internal control and risk management

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

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, strategy and business model as described on pages 2 – 7.

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. 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 26 – 27). The five-year period was carefully considered in light of the current COVID-19 pandemic. The Board considered, with appropriate assumptions, that this period remained appropriate for our stable regulated business model. The Board, Executive Committee and other leadership teams discuss the results of the annual principal risk testing at the end of the year.

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 our 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. These are collated and reported at functional and regional levels on a regular cadence. The most significant risks for the UK, US and NGV businesses are highlighted in regional risk profiles and reported to the Executive Committee and the Board through a formal process twice a year. Additionally, the Executive Committee and the Board may also identify and assess other principal risks. These risks and any associated management actions are cascaded through the organisation as appropriate.

Emerging risks

We have an established process to identify and monitor emerging risks, which is designed to provide sufficient warning of concerns which may impact the business. The process is designed to ensure adequate steps are taken to prevent the occurrence or manage the impact of surprises.

The Enterprise Risk Management (ERM) process monitors management information from a wide variety of sources to take into account consideration of emerging risks. This includes:

- Top-down analysis which is performed through the annual risk management process of broad thinking to consider the biggest impacts for the Company.
- Facilitation of risk discussions across our various businesses. Most importantly, we review various sources of management information, internal and external factors to identify potential emerging risks.
- Monitoring the external market to consider other emerging risks within the regions we operate in. The following diagram shows our approach and inputs used to analyse the emerging risks.

Continuous cycle to identify and manage emerging risks:

Changes during the year

The Company's risk profile has been developed drawing upon the most significant risks across our business profiles. With the addition of principal risks addressing climate change and our response to the COVID-19 pandemic, 10 principal risks are now carried at Executive Committee and Board level as detailed below. All of our principal risks were reviewed at least twice across the year, including Key Risk Indicators (KRIs), developed last year to help embed the risk appetite framework in the business and enhance the monitoring and mitigation of risks.

Principal risks

In 2019/20, we reviewed our assessment of the potential threats, opportunities and impacts from climate change. This included the impact of both our operations on climate change and of climate change on our operations, as well as the transitional risk during the journey to a net zero economy in developing a new climate change principal risk (see case study on page 23).

Since the onset of the COVID-19 pandemic, we have continually assessed its impact on our workforce, finances and all aspects of our operations, including the impact on the Electricity System Operator on managing the rapid decrease in energy demand across all UK networks, with regular reports provided to the Board. The Board has agreed that a new principal risk is included (see page 25). A negative outcome from RIIO-2 and the continuing possibility of a hard Brexit remain our most important emerging threats in the UK business. However, the Board considers, after testing with management, that these events do not need to be classified as principal risks as they are well covered below this level of risk and are regularly reviewed by the Directors.

More recently, political escalations have been considered as a threat against the Company's ability to operate in New York. Following the failure to obtain necessary permits to build a new pipeline, and the Company's associated decision to enact a moratorium, various actions have been taken to address the threat of loss of licence in New York. During November 2019, a settlement was agreed to immediately resume connecting gas services in Brooklyn, Queens and Long Island for applications that had been put on hold. A total of $36 million in customer assistance, gas conservation measures and clean energy investments has been committed by the Company along with the appointment of an external monitor and the requirement to deliver a plan to address service to customers through winter 2020/21. The settlement agreement also provides a framework for identifying longer-term solutions to address the supply constraints in downstate New York. In considering this emerging threat, we have supported the Company's other jurisdictions to take into consideration the possibility of New York governmental decisions influencing other states in the area. Both our Rhode Island and Massachusetts businesses have been working to lay solid foundations regarding clean energy strategies, investments and close monitoring of pipeline operations to help address these issues.

Case study on climate change moving from an emerging risk to a principal risk

Our risk registers typically include risks likely to manifest within the short to medium, rather than longer term. In the case of climate change, weather-related event risks previously featured, as did transition risks associated with the decarbonisation of heat and electricity and these were included as a threat in several of our existing principal risks (e.g. energy interruption, disruptive forces).

Over the last 12 to 18 months, facilitated workshops were held with each of the core businesses to ensure completeness of risk capture specifically relating to climate change and our net zero commitment, considering both physical and transitional risks.

Consideration was given to whether the individual or combined risks arising from increased variability in temperature, and/or greater wear and tear on assets under more extreme weather conditions such as flooding and higher temperatures, should feature more prominently. This was especially pertinent in the light of updates in climate science, observations of the changing weather such as increased intensity and frequency of storms on the US east coast, and wildfire ferocity in locations such as South America, California and Australia. We also understand the growing urgency to find a solution to decarbonise heat and the future of gas in a way that is fair, affordable and not overly disruptive to consumers.

As a result, a recommendation to develop a bespoke climate change risk was considered by the Executive Committee and Board, and discussed with US, UK and NGV executives and subject matter experts. The addition of a bespoke climate change principal risk was finalised in autumn 2019.

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 227 – 230, as well as our key financial risks, which are incorporated within note 32 to our consolidated financial statements on pages 182 – 194. Risk trends reported below take into account controls, any additional mitigation actions and may be influenced by internal or external developments.

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	Actions taken by management
Failure to build sufficient capability and leadership capacity (including effective succession planning) required to deliver our vision and strategy. ***Risk trend: Neutral (18/19 Neutral)** *Risk trends are assessed to include any external factors outside our control as well as the strength and effectiveness of our controls and additional mitigations as reviewed by management up to 31 March 2020.	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. We also continue to develop the rigour of our succession planning and development planning process, particularly at senior levels. It is now being applied deeper into the organisation as well as continued attention in relation to the ethnic diversity of both our management and field force population. There are multiple activities underway to drive this agenda, including 'neutral' talent and selection processes, development interventions and a global review of our inclusion and diversity strategy and resources. During the year, in the UK, a three-year labour agreement was reached with our trade unions, introducing revised terms and conditions.

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 are described in note 32 to our financial statements on pages 182 – 194.

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 2019/20 were key considerations in assessing our risks.

As referred to above, the new climate change related risk is classed as a strategic and regulatory risk but is also an operational risk, in particular as regards weather-related events in the northeastern US (where storm planning and preparation are key to what we do), flood defence in both the UK (where flood resilience works are being developed) and the US (where flood contingency plans are in place) and the investigation of the impact of rising temperatures and widening temperature ranges on the performance and operation of our networks.

Risks	Actions taken by management
Failure to identify and/or deliver upon actions necessary to ensure our business model, strategy, asset management and operations respond to the physical and transitional impacts of climate change and demonstrate our leadership of climate change within the energy sector. ***Risk trend: Increasing (New Principal Risk)** *Risk trends are assessed to include any external factors outside our control as well as the strength and effectiveness of our controls and additional mitigations as reviewed by management up to 31 March 2020.	Putting in place measures to develop: • evolution of our environmental sustainability metrics to better reflect our strategy, measure our impact and track our progress; • organisational design changes appropriate to meet this challenge with a single point of contact for all climate change actions and activities; • approval of a revised environmental sustainability strategy, including our strategy for heating and gas, with granular actions identified to achieve net zero; and • working with regulators and industry parties in the UK and the US on the future of heat and the role of gas in the long term. Note that a number of the above measures also address the physical impacts of climate change on our operations. We have committed to full compliance with the Task Force on Climate-related Financial Disclosures (TCFD) requirements including physical and transitional scenario analysis (see pages 57 – 62). Ongoing work to address transition risks and opportunities includes: • ensuring our electricity network is reliable and able to actively support and contribute to a future where renewables and intermittency of supply are increasing; • supporting the charging infrastructure required for increased use of electric vehicles; • promoting energy efficiency programmes for customers in the US; • facilitating decarbonisation in the US and UK including zero carbon operation of the GB electricity system through ESO in the UK; and • continuing work on programmes to develop skills in our current and future workforce.
Failure to influence future energy policy and secure satisfactory regulatory agreements. **Risk trend: Increasing due to energy regulatory environment (18/19 Increasing Risk)**	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-2 and US rate case filings. Ongoing work to support our regulatory relationships includes: • our internal teams focused on messaging around gas capacity, large-scale renewables, utilities of the future and electric vehicles; • establishment of US and UK Regulatory Steering Committees; and • increased focus on understanding the needs and expectations of all our stakeholders through regulatory relationship surveys, investor surveys and review of media sentiment.
Failure to respond to shifts in societal and political expectations and perceptions leads to threats to the Company's licence to operate and ability to achieve its objectives. **Risk trend: Increasing due to current political environment (18/19 Increasing Risk)**	Processes and resources are in place to review, monitor and influence perceptions of our business and our reputation by: • enhancing and consolidating our digital roadmap and social channels; • developing an internal forum to increase management of stakeholder and media reputational issues; • delivering on our commitment to be a responsible business (see pages 48 – 56); • implementing campaigns to recruit for the future – e.g. 'the job that can't wait', (see page 1); and • promoting partnerships and discussions of decarbonisation across the jurisdictions where we operate. These processes, along with twice-yearly Board strategy 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.
Failure to adequately anticipate and minimise the adverse impact from disruptive forces such as technology and innovation on our business model. **Risk trend: Neutral (18/19 Neutral)**	NGP, our central innovation function, is developing our strategy with regards to new technology and monitoring disruptive technology and business model trends, acting as a bridge for emerging technology into the core regulated businesses and business development teams. In addition, NGP is investing in emerging start-up companies and in venture funds and the NGV function will further the focus on new strategies, business development and technology and innovation.

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, as it will not be 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 be likely to 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.

Risks	Actions taken by management
Failure to prepare and respond to significant disruptive factors caused by the COVID-19 pandemic because of poor development and execution of our response plans resulting in an impact on our ability to maintain our networks, provide service, support our people and meet our liquidity/financial targets, as well as reputational and regulatory obligations. ***Risk trend: Increasing (New Principal Risk)** *Risk trend for COVID-19 was assessed outside our standard assessment period due to the risk being added as a principal risk after 31 March 2020.	The COVID-19 pandemic impacts multiple areas of our business, therefore our response to this risk involves a comprehensive plan, to support the safety of our workforce and customers, that is frequently revised and adjusted due to the dynamic profile of this risk. This includes: • people: monitoring of absence and wellbeing, and monitoring of current working practices; employee 360 degree communications planning; • operations: prioritisation of critical processes, sequestering of essential staff and redeployment of workforce, assessment of our supply chain resilience and analysis of network availability and reliability; • stakeholders: frequent engagement with internal and external stakeholders, including customers, shareholders and regulators; • safety procedures: customer and workforce engagement for essential repairs, monitoring of agreed regulatory deviations; and • finance: monitoring of cash flow levels, review and where necessary suspension of customer collection arrangements; access to short and long-term debt facilities.
Catastrophic cyber security incident caused by the abuse of digital systems leading to the loss of confidentiality, availability and integrity. **Risk trend: Increasing due to the dynamic nature of the cyber security threat (18/19 Increasing Risk)**	We continue to commit significant resources and financial investment to maintain the integrity and security of our systems and our data by continually investing in strategies that are commensurate with the changing nature of the security landscape. This includes: • collaborative working with UK and US government agencies including the Department for Business, Energy and Industrial Strategy (BEIS), the Centre for Protection of National Infrastructure (CPNI) and the Department for Homeland Security on key cyber risks; • development of an enhanced critical national infrastructure security strategy; • our involvement in the US with developing the National Institute of Standards and Technology Cyberspace Security Framework; • awareness, training and self-assessments; and • cyber response incident procedures and contingency planning.
Catastrophic asset failure results in a significant safety and/or environmental event. **Risk trend: Neutral (18/19 Neutral)**	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 a 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, with safety-critical assets clearly identified on the asset register; • 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; and • in support of this, we developed a capability framework to make sure our workforce have the appropriate skills and expertise to meet the performance requirements in these standards.
Failure to predict and respond to a significant disruption of energy that adversely affects our customers and/or the public. **Risk trend: Increasing (18/19 Neutral)**	We continue to apply a holistic approach encompassing preventative and mitigating actions including pre-emptive measures to maintain network reliability such as: • flood contingency plans for substations; • system operator supply and demand forecasting; • our UK GT Winter Preparedness Plan; • US gas mains replacement programmes; • US storm hardening programme; and • diversity of suppliers in our US gas procurement. Should energy flow disruptions occur: • business continuity and emergency plans are in place and practised, including Black Start testing; and • 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. The ESO considered the significant impact on the UK power networks on responding to the unprecedented decrease in energy consumption and demand during the COVID-19 restrictions.
Failure to adequately identify, collect, use and keep private the physical and digital data required to support the Company's operations and future growth. **Risk trend: Decreasing (18/19 Decreasing Risk)**	Controls for our IT processes have been redefined and are aligned to the National Institute of Standards and Technology (US) and the Network Information and System Regulations (UK). We continue to progress and improve our data management processes including: • implementation of our data and other related business management standards; • data governance councils for UK and US regions; and • increased levels of data leadership and capability with the recruitment of a Chief Data Officer and establishment of an associated function.

Viability statement

The Board's consideration of the longer-term viability of the Company is an extension of our business planning process. The process includes financial forecasting, a robust risk management assessment, regular budget reviews as well as scenario planning incorporating industry trends, considering any emerging issues 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, the principal risks facing the Company as described on pages 23 – 25 are identified, monitored and challenged. Over the course of the year, the Board has considered the principal risks shown in the table below in detail. The Board considered the preventative and mitigating controls and risk management actions in place and discussed the potential financial and reputational impact of the principal risks against our ability to deliver the Company's business plan. These factors were also carefully reassessed in light of the COVID-19 factors.

The assessment of the potential impact of our principal risks on the longer-term viability of the Company tests the significant solvency and liquidity risks involved in delivering our business objectives and priorities. After careful consideration of the uncertain and dynamic COVID-19 events, including reviewing the fast-changing external factors and their cumulative impact in the medium and long term, and other considerations including: our long-term business model, high-quality, long-term assets and stable regulatory arrangements; the Board's stewardship responsibilities; and the Company's ability to model a range of severe but plausible reasonable worst-case scenarios, the Board concluded that it remains appropriate to consider a five-year timeframe over which we should assess the long-term viability of the Company.

Operational impacts

Scenario 1 – A significant cyber-attack.

Scenario 2 – Significant supply disruption event occurring in the US leading to loss of licence.

Scenario 3 – A catastrophic gas pipeline failure in the US.

Scenario 4 – Emerging technology leads to significant numbers of people going 'off grid'.

Scenario 5 – Significant physical damage due to climate change events in the US and the UK along with reputational damage through failure to adjust our business model to meet customer expectations.

Performance impacts

Scenario 6 – The breach of personal data information.

Scenario 7 – The result of a 'Hard Brexit' in the UK.

Scenario 8 – A poor outcome to RIIO-2 negotiations.

Cluster impacts

Scenario 9 – A significant supply disruption event in the US leading to loss of licence coupled with a 'Hard Brexit' and challenging RIIO-2 results in the UK.

Scenario 10 – Failure to adequately respond to the COVID-19 pandemic including triggering a gas pipeline failure and supply disruption in the US leading to loss of licence coupled with challenging RIIO-2 results in the UK.

The following factors have been taken into account in making this decision:

- we have reasonable clarity over a five-year period, allowing an appropriate assessment of our principal risks to be made;
- in order to test the five-year period, the Board considered whether there are specific, foreseeable risk events relating to the principal risks that are likely to materialise within a five to ten-year period, and which might be substantial enough to affect the Company's viability and therefore should be taken into account when setting the assessment period; and
- each principal risk was considered for inclusion within the testing and, where appropriate, a reasonable worst-case scenario was identified and assessed for impacts on operations and/or financial performance over the five-year assessment time period as detailed below.

In addition to testing individual principal risks, the impact of a cluster of the principal risks materialising over the assessment period was also considered. COVID-19 and our management of the issues the business faces during the pandemic, was also noted as an emerging risk that resulted in the addition of a new principal risk. Recent external developments such as the Northeast Supply Enhancement (NESE) Pipeline and events in the downstate NY gas business regarding National Grid's licence and the ability to provide continuing supply to our customers were also considered along with the ongoing regulatory environment in our operating jurisdictions. We also carefully considered the impact of our response to COVID-19 on our business plans and financial models. In the opinion of the Board, the reasonable worst-case scenarios represent the estimated cumulative impact with principal risk clusters.

The reputational and financial impacts for each scenario were considered (to the nearest £500 million). The principal 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. Further, considering the breadth of ramifications COVID-19 may have across different areas of the Company and its consequential power to exacerbate the negative consequences of other principal risks, any potential undesired outcome of COVID-19 was considered in aggregation with other principal risks in the scenarios.

The Board assessed our reputational and financial headroom and reviewed principal risk testing results against that headroom. The testing of risk groups and clusters also included an assessment of the impact upon the business plan, as adjusted for expected impacts of COVID-19. No principal risk or cluster of principal risks was found to have an impact on the viability of the Company over the five-year assessment period. Preventative and mitigating controls in place to minimise the likelihood of occurrence and/or financial and reputational impact are contained within our assurance system.

In assessing the impact of the principal risks on the Company, including our two new principal risks of Climate Change and Response to COVID-19, the Board has considered the fact that we operate in stable markets and the robust financial position of the Group, including the ability to sell assets, raise capital and suspend or reduce the payment of dividends. It has also considered Ofgem's legal duty to have regard to the need to fund the licensed activities of National Grid Gas plc, National Grid Electricity System Operator Limited and National Grid Electricity Transmission plc.

Each Director was satisfied that they had sufficient information to judge the viability of the Company. Based on the assessment described above and on pages 22 – 25 the Directors have a reasonable expectation that the Company will be able to continue operating and meet its liabilities over the period to May 2025.

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 2019; • July 2019; • December 2019; and • March 2020.
Failure to predict and respond to a significant disruption of energy that adversely affects our customers and/or the public.	**Scenario 2** – An extended outage in the US. Included in the cluster testing of **Scenario 9 and 10**.	**Two Board Strategy sessions held during the year:** • bi-annual overviews; • review of the gas business strategies; • external reviews of operational issues within the US gas business; and • review of the sequence of events on Friday 9 August.
Catastrophic asset failure resulting in a significant safety and/or environmental event.	**Scenario 3** – A gas transmission pipeline failure in the US. Included in the cluster testing of **Scenario 10**.	• the Board reviews the current safety performance of the Company at each meeting; • 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 improvements.
Failure to adequately identify, collect, use and keep private the physical and digital 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 capability and 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 Hard Brexit and access to the Internal Energy Market; • proposed response to the Labour Party's proposal to nationalise UK's assets; • implementation of measures to strengthen ability to obtain fair price for UK assets if potential threat of state ownership materialised; and • UK and US regulatory strategies.
Failure to influence future energy policy and secure satisfactory regulatory agreements.	**Scenario 7** – A poor outcome of RIIO-2 negotiations. Included in the cluster testing of **Scenario 9 and 10**.	**The Board received updates and reviews of:** • US regulatory strategy; • UK regulatory strategy; • UK ESO regulatory strategy; • key regulatory policy issues for 2019/20; and • RIIO-2.
Failure to respond to the asset failure resulting in a significant safety and/or environmental event.	**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.
Failure to respond to disruptive factors caused by the COVID-19 pandemic resulting in an impact on our networks, our people and our financial targets.	Included in the cluster testing of **Scenario 9 and 10**.	• Board briefings including a weekly update from the CEO and CFO on our crisis management response; • COVID-19 updates on operational issues, people absences and wellbeing to the Board; and Finance Committee consideration of liquidity; • review of our Business Continuity Planning response and effectiveness of the Crisis Management controls to the SEH Committee; and • briefings from the CFO and finance team on possible financial impacts including a range of scenario modelling and planning.
Failure to respond to physical and transitional impacts of climate change and demonstrate our leadership within the energy sector.	N/A	• Board briefings reviewing our sustainability metrics to reflect and track our impact and progress; and • disclosures with the TCFD including physical and transitional scenario analysis.

Financial review

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 240 – 249.

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.
- 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 doing so, we intend to make the impact of such items clear to users of the financial information in this Annual Report.
- 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.

Initial assessment of the potential impact of the COVID-19 pandemic on the Group's position and results

The COVID-19 pandemic has affected our reported results in the year. To date, we have experienced a more significant impact in our US businesses than in our UK businesses, mainly due to our large US customer base. The most significant impact on our results for 2019/20 is the increase in the bad debt charge, which rose from £181 million last year to £234 million this year for the Group as a whole, and increased in the US from £146 million last year to £231 million this year. The increase in the US charge reflects the impact of moratoriums in response to regulatory instructions as requested by regulatory authorities in the US states in which we operate, which restrict our ability to collect debts due. However, we remain committed to continuing to supply our customers and termination of customer connections has been cancelled.

Additionally, in the US, lower gas volumes (reduced customer demand) increased timing outflows in March 2020, with warm weather also a factor in this increase. In our UK Transmission businesses, the disruption has resulted in a pause to some capex work and although some adaptations to the new environment have been required, there has been no significant cost increase in 2019/20. COVID-19 has not caused a significant disruption to our NGV businesses. In total, other than the US bad debt charge, there has been a relatively small impact on our underlying results for 2019/20 and incremental operating costs of around £10 million have been incurred as a direct consequence of the disruption caused by the pandemic.

For 2020/21, we expect some continuing impact, driven largely by our US operations where we are expecting (i) higher levels of bad debt, (ii) additional direct COVID-19 costs, and (iii) deferral of rate increases. However, given regulatory mechanisms and precedents, we expect to recover a large part of this. In the UK, we do expect to see some limited cost impact from COVID-19. We are also currently working with regulators on support mechanisms for our customers, which may lead to cash flow impacts in 2020/21, but we would ultimately expect to be recoverable. Therefore whilst COVID-19 will impact earnings and cash flow in the short term, we currently anticipate limited economic impact longer term. However, there could be a range of impacts on cash flows and earnings, which could be different from our current assessment.

Summary of Group financial performance for the year ended 31 March 2020

Financial summary for continuing operations

£m	2019/20	2018/19	Change
Statutory results:			
Operating profit	**2,780**	2,870	(3)%
Profit after tax	**1,274**	1,502	(15)%
Earnings per share (pence)	**36.8p**	44.3p	(17)%
Dividend per share (pence), including proposed final dividend	**48.57p**	47.34p	3%
Capital expenditure	**5,079**	4,321	18%
Alternative performance measures:			
Underlying operating profit	**3,454**	3,427	1%
Underlying profit after tax	**2,015**	1,998	1%
Adjusted earnings per share (pence)	**55.2p**	59.0p	(6)%
Underlying earnings per share (pence)	**58.2p**	58.9p	(1)%
Underlying dividend cover	**1.2**	1.2	–
Capital investment	**5,405**	4,506	20%
Retained cash flow/adjusted net debt	**9.2%**	9.4%	20bps
Regulatory performance measures:			
Asset growth	**9.0%**	7.2%	180bps
Group Return on Equity	**11.7%**	11.8%	(10)bps
Value Added	**2,040**	2,071	(1)%
Regulatory gearing	**63%**	66%	(300)bps

We explain the basis of these alternative performance measures and regulatory performance measures and, where practicable, reconcile them to statutory results on pages 240 – 249.

The Group's statutory results for the year were adversely impacted by exceptional charges. The impact on statutory EPS as a result of these charges is presented after each item. These included additional environmental provisions and a reduction in the discount rate applied to certain provisions across the Group (8.6p)and a deferred tax charge due to the reversal of the expected reduction in the UK corporation tax rate originally enacted by the Finance Act 2016 (5.6p). Last year's statutory results were adversely impacted by exceptional charges incurred in respect of the Massachusetts Gas labour dispute (6.2p), our UK and US cost efficiency and restructuring programme (4.7p) and the impairment of development costs in respect of the termination of the NuGen and Horizon nuclear connection projects (3.3p).

Statutory operating profit was also adversely impacted by commodity remeasurement losses of £125 million in 2019/20 (2018/19: £52 million gains) from mark-to-market movements on derivatives which are used to hedge the cost of buying wholesale gas and electricity on behalf of our US customers.

Underlying operating profit was up 1% as higher rate case revenues in our US Regulated businesses and lower operating costs more than offset higher deferrable storm costs, higher bad debts costs, increased depreciation, the non-recurrence of favourable US legal settlements and sale of our Fulham property site in 2018/19. The combination of these factors was partly offset by higher net financing costs, driven by the implementation of IFRS 16 and higher average net debt. Underlying profit after tax increased by 1% and, combined with a higher share count, resulted in a 1% decrease in underlying EPS to 58.2p.

Capital investment of £5.4 billion increased our asset growth to 9%. We delivered Value Added (our measure of economic profit) of £2.0 billion in 2019/20, slightly lower than in 2018/19. Group RoE of 11.7% was comparable to 11.8% in 2018/19, reflecting the higher new rate allowances in our US businesses, while 2018/19 benefited from the Fulham sale and legal settlements. RCF/net debt at 9.2% remained consistent with the Company's strong investment grade credit rating. The recommended full-year dividend per share of 48.57p is in line with policy and is covered 1.2 times by underlying EPS.

The adoption of IFRS 16 'Leases' during the year increased our net debt by £474 million, with a corresponding increase in right-of-use assets recorded on the balance sheet. This standard has resulted in lower operating costs within our businesses, offset by a higher depreciation charge and a higher interest cost.

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	**2019/20**	2018/19	Change	**2019/20**	2018/19	Change	**2019/20**	2018/19	Change
Statutory results	**2,780**	2,870	(3)%	**1,274**	1,502	(15)%	**36.8p**	44.3p	(17)%
Exceptional items	**402**	624		**491**	480		**14.2p**	14.2p	
Remeasurements	**125**	(52)		**148**	19		**4.2p**	0.5p	
Adjusted results	**3,307**	3,442	(4)%	**1,913**	2,001	(4)%	**55.2p**	59.0p	(6)%
Timing	**147**	(108)		**102**	(72)		**3.0p**	(2.1)p	
Major storm costs	**–**	93		**–**	69		**–p**	2.0p	
Underlying results	**3,454**	3,427	1%	**2,015**	1,998	1%	**58.2p**	58.9p	(1)%

Exceptional income/(expense) from continuing operations

	Impact on operating profit		Impact on profit after tax		Impact on EPS	
£m	**2019/20**	2018/19	**2019/20**	2018/19	**2019/20**	2018/19
Changes in environmental provision	**(402)**	–	**(299)**	–	**(8.6)p**	–
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
Deferred tax arising on the reversal of the reduction in UK corporation tax rate	**–**	–	**(192)**	–	**(5.6)p**	–
Total	**(402)**	(624)	**(491)**	(480)	**(14.2)p**	(14.2)p

This year we have classified the following items as exceptional:

- **Changes in environmental provisions:** a £326 million net increase in the provision for estimated costs and cost sharing allocations borne by the Company associated with environmental clean-up related to former manufacturing gas plant facilities, formerly owned or operated by the Group or its predecessor companies and additionally, £76 million for the impact of a reduction of 0.5% in the real discount rate applied to the environmental provisions across the Group; and
- **Deferred tax arising on the reversal of the reduction in UK corporation tax rate:** The Finance Act 2016 reduced the UK corporation tax rate to 17% with effect from April 2020. A £192 million deferred tax charge has been made, following the reversal of this legislation, which retains the UK corporation tax rate at 19%, resulting in an increase in deferred tax liabilities.

In the prior year we classified the £283 million cost arising as a result of the Massachusetts Gas labour dispute as exceptional, along with the £204 million charge relating to the UK and US cost efficiency and restructuring programme and the £137 million impairment charge relating to nuclear connection development costs.

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 losses of £125 million on commodity contract derivatives were incurred in addition to net remeasurement losses of £64 million on financing-related instruments and a further £1 million of remeasurement losses related to our share of post-tax results of joint ventures.

Financial review
continued

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 we are 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. We also collect revenues from customers and pass these on to third parties (e.g. NYSERDA). These variances between allowed and collected revenues and timing of revenue collections for pass-through costs give rise to over- and under-recoveries.

The following table summarises management's estimates of such amounts for the two years ended 31 March 2020. 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. All amounts are translated at the current year average exchange rate of $1.29:£1.

£m	2019/20	2018/19
Balance at start of year (restated)	**403**	301
In-year (under)/over-recovery	**(147)**	111
Balance at end of year	**256**	412

Timing over-recoveries of £146 million in UK Electricity Transmission were more than offset by timing under-recoveries of £54 million in UK Gas Transmission and timing under-recoveries of £239 million in US Regulated in 2019/20. 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 2020 this tax rate was 31%.

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 costs from underlying earnings. In 2019/20, although we experienced a number of storms, the $98 million of deferrable storm costs we incurred (in aggregate) fell just below this threshold. During 2018/19 we experienced bad weather events across the year, with storms unusually occurring during April and May as well as in the winter months. In that year the total net costs exceeded the $100 million threshold and were excluded from our underlying results.

Segmental operating profit

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

Adjusted operating profit

£m	2019/20	2018/19	Change
UK Electricity Transmission	**1,320**	1,015	30%
UK Gas Transmission	**348**	303	15%
US Regulated	**1,397**	1,724	(19)%
NGV and Other activities	**242**	400	(40)%
Total	**3,307**	3,442	(4)%

Underlying operating profit

£m	2019/20	2018/19	Change
UK Electricity Transmission	**1,174**	1,092	8%
UK Gas Transmission	**402**	341	18%
US Regulated	**1,636**	1,594	3%
NGV and Other activities	**242**	400	(40)%
Total	**3,454**	3,427	1%

The statutory operating profit for all three reportable segments fell in the year primarily as a result of the £402 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	2019/20	2018/19	Change
Revenue	**3,702**	3,351	10%
Operating costs	**(2,386)**	(2,573)	(7)%
Statutory operating profit	**1,316**	778	69%
Exceptional items	**4**	237	(98)%
Adjusted operating profit	**1,320**	1,015	30%
Timing	**(146)**	77	(290)%
Underlying operating profit	**1,174**	1,092	8%
Analysed as follows:			
Net revenue	**2,174**	1,954	11%
Regulated controllable costs	**(306)**	(332)	(8)%
Post-retirement benefits	**(48)**	(49)	(2)%
Other operating costs	**(31)**	(65)	(52)%
Depreciation and amortisation	**(469)**	(493)	(5)%
Adjusted operating profit	**1,320**	1,015	30%
Timing	**(146)**	77	(290)%
Underlying operating profit	**1,174**	1,092	8%

Although we legally separated our NG ESO plc business from NGET plc during the year, we continue to report these two businesses in aggregate, within our UK Electricity Transmission segment.

UK Electricity Transmission statutory operating profit increased by £538 million in the year. In 2018/19, 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. Timing over-recoveries of £146 million in 2019/20 compared to under-recoveries of £77 million in the prior year primarily due to the collection of prior year balances.

Adjusted operating profit increased by £305 million (30%), driven by £223 million favourable year-on-year timing over-recoveries. Underlying operating profit increased by 8%. Net revenues (excluding timing) were relatively flat, with higher re-opener allowances for cyber and data centres, funding for ESO legal separation and the RPI uplift, being fully offset by output and allowances true-up in the annual iteration, along with lower ESO incentive income. Regulated controllable costs were lower, with efficiency savings and lower Electricity System Operator separation costs, partly offset by higher IT costs and inflation. Post-retirement benefit costs were little changed year-on-year. Other costs were lower, mainly relating to 2018/19's provisions against income recognised on early termination of connections.

The decrease in depreciation and amortisation charges reflects a benefit from the release of provisions related to prior years.

UK Gas Transmission

£m	2019/20	2018/19	Change
Revenue	**927**	896	3%
Operating costs	**(580)**	(629)	(8)%
Statutory operating profit	**347**	267	30%
Exceptional items	**1**	36	(97)%
Adjusted operating profit	**348**	303	15%
Timing	**54**	38	42%
Underlying operating profit	**402**	341	18%
Analysed as follows:			
Net revenue	**685**	669	2%
Regulated controllable costs	**(127)**	(144)	(12)%
Post-retirement benefits	**(19)**	(27)	(30)%
Other operating costs	**(20)**	(14)	43%
Depreciation and amortisation	**(171)**	(181)	(6)%
Adjusted operating profit	**348**	303	15%
Timing	**54**	38	42%
Underlying operating profit	**402**	341	18%

UK Gas Transmission statutory operating profit increased £80 million in the year. In 2018/19, £36 million of costs in relation to our efficiency and restructuring programme were treated as exceptional. Timing under-recoveries of £54 million in 2019/20 compared to £38 million in the prior year reflecting lower than expected volumes and higher shrinkage costs.

Adjusted operating profit increased by £45 million (15%), including £16 million year-on-year adverse timing under-recoveries. Underlying operating profit increased by 18%. Net revenue (excluding timing) was higher, reflecting the re-opener allowances for cyber and data centres, the RPI uplift and the impact of 2018/19's Avonmouth pipeline project revenue allowance clawback. Regulated controllable costs were £17 million lower, driven by efficiency savings. Post-retirement costs were lower, mainly related to the 2018/19 Guaranteed Minimum Pension (GMP) ruling. Other costs were higher principally due to the non-recurrence of provision releases in 2018/19.

The depreciation charge was lower than in 2018/19 as a result of an additional charge in the prior period following a detailed review of asset lives.

US Regulated

£m	2019/20	2018/19	Change
Revenue	**9,205**	9,846	(7)%
Operating costs	**(8,325)**	(8,421)	(1)%
Statutory operating profit	**880**	1,425	(38)%
Exceptional items	**392**	351	12%
Remeasurements	**125**	(52)	(340)%
Adjusted operating profit	**1,397**	1,724	(19)%
Timing	**239**	(223)	(207)%
Major storm costs	**–**	93	(100)%
Underlying operating profit	**1,636**	1,594	3%
Analysed as follows:			
Net revenue	**5,745**	5,868	(2)%
Regulated controllable costs	**(1,871)**	(1,895)	(1)%
Post-retirement benefits	**(95)**	(94)	1%
Bad debt expense	**(231)**	(146)	58%
Other operating costs	**(1,296)**	(1,309)	(1)%
Depreciation and amortisation	**(855)**	(700)	22%
Adjusted operating profit	**1,397**	1,724	(19)%
Timing	**239**	(223)	(207)%
Major storm costs	**–**	93	(100)%
Underlying operating profit	**1,636**	1,594	3%

US Regulated statutory operating profit fell partly as a result of the £177 million year-on-year adverse swing in commodity contract remeasurements. Exceptional charges also increased reflecting £392 million environmental costs detailed above. In 2018/19, £283 million of exceptional costs were incurred for the Massachusetts Gas labour dispute in addition to £68 million of restructuring costs. Timing under-recoveries of £239 million in 2019/20 compared to timing over-recoveries of £223 million in 2018/19, driven by revenue decoupling, commodity recoveries and lower net energy efficiency collections contributed to a reduction in statutory and adjusted operating profit.

Adjusted operating profit decreased by £327 million (19%), including £462 million year-on-year adverse timing under-recoveries, partly offset by £93 million of deferrable storm costs qualifying as major (in aggregate) in 2018/19. Underlying operating profit increased by 3%. Net revenues (excluding timing) increased by £257 million as the benefits of rate case increments (including KEDNY, KEDLI and Niagara Mohawk) and £82 million from foreign exchange movements. A stronger US dollar increased underlying operating profit by £23 million in the year. US Regulated controllable costs decreased as a result of cost efficiencies (principally from benefit of restructurings and contract management), partly offset by workload increases and inflation. Bad debt related costs increased by £85 million, driven by £117 million additional provision for receivables related to the impact of COVID-19. Depreciation and amortisation increased due to the growth in assets. Other costs were higher due to increased property taxes and higher storm costs partly offset by lower cost of removal. Deferrable storm costs were removed from underlying results last year.

NGV and Other activities

£m	2019/20	2018/19	Change
Statutory operating profit	**237**	400	(41)%
Exceptional items	**5**	–	n/a
Adjusted operating profit	**242**	400	(40)%
Timing	**–**	–	n/a
Underlying operating profit	**242**	400	(40)%
Analysed as follows:			
NGV	**269**	263	2%
Property	**63**	181	(65)%
Corporate and Other activities	**(90)**	(44)	105%
Underlying operating profit	**242**	400	(40)%

National Grid Ventures' statutory operating profits were broadly in line with 2018/19, with higher use of our LNG import terminal at Grain and lower business development costs, offset by lower revenues from our declining meter population and costs related to the Geronimo business.

In 'other' activities, we incurred net costs of £27 million, compared to a net profit of £137 million in 2019/20. The performance of the Property business was lower than prior year reflecting the sale of the Fulham site to the St William joint venture in 2018/19. Corporate and other activities did not include last year's benefit of £95 million of legal settlements to recover costs associated with a US systems implementation. The National Grid Partners operating loss of £11 million was £3 million higher than in 2018/19.

Financing costs and taxation

Net finance costs

Net finance costs (excluding remeasurements) for the year were 6% higher than last year at £1,049 million, with the £56 million increase mostly driven by the impact of IFRS 16, lower capitalised interest and adverse foreign exchange movements, partly offset by interest on tax settlements. The effective interest rate of 4.1% on net debt was 20bps lower than the prior year rate of 4.3%.

Joint ventures and associates

The Group's share of net profits from joint ventures and associates increased as a result of St William's first year of profits. Our Minnesota-based joint venture, Emerald Energy Ventures LLC, which we acquired in July also contributed £1 million of post-tax earnings in 2019/20.

Tax

The underlying effective tax rate of 19.9% was 30bps higher than last year. 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. In the prior year, significantly higher gains on property disposals that were offset by previously unrecognised capital losses resulted in a lower underlying effective tax rate. The Group's tax strategy is detailed later in this review.

Discontinued operations

We completed the sale of our remaining 39% interest in Quadgas HoldCo Limited, the holding company for the Cadent gas networks, 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 the disposal of Quadgas HoldCo Limited within discontinued operations.

Financial review
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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, the acquisition of Geronimo during 2019/20 and, in the case of National Grid Partners, investments in financial assets.

	At actual exchange rates			At constant currency		
£m	**2019/20**	2018/19	Change	**2019/20**	2018/19	Change
UK Electricity Transmission	**1,043**	925	13%	**1,043**	925	13%
UK Gas Transmission	**249**	308	(19)%	**249**	308	(19)%
US Regulated	**3,228**	2,650	22%	**3,228**	2,688	20%
NGV and Other activities	**885**	623	42%	**885**	626	41%
Total	**5,405**	4,506	20%	**5,405**	4,547	19%

Investment in UK Electricity Transmission increased primarily due to Hinkley-Seabank and London Power Tunnels 2 spend. In UK Gas Transmission, investment reduced due to completion of the Feeder 9 gas pipeline replacement project and lower asset health spend. In the US, investment was up 20% on a constant currency basis, reflecting increased capital expenditure in New York (gas pipe replacement and mandated gas works) and higher spend in Massachusetts due to 2018/19's disruption to capex spend caused by the labour dispute. Investment in National Grid Ventures continued to increase with ongoing construction on three new subsea interconnectors, IFA 2 (France), North Sea Link (Norway) and Viking Link (Denmark) and the acquisition of Geronimo, a renewable energy business based in Minneapolis, Minnesota in July 2019 for total consideration of £209 million. In addition, a total amount of £61 million (including joint ventures) was invested by National Grid Partners in the year.

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 from 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 in 2017/18, 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. In our Value Added calculation, we have recognised an asset to reflect expected future recovery of the £117 million COVID-19 related provision for bad and doubtful debts that we have included in 2019/20. 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. Adjusted net debt movements exclude proceeds from the Cadent disposal and, in 2019/20, exclude movements on derivatives which are designated in cash flow hedging arrangements and for which there is no corresponding movement in total assets and other balances.

	2019/20			2018/19		
£m	**31 March 2020**	31 March 2019	Change	31 March 2019	31 March 2018	Change
UK RAV	**20,431**	19,692	4%	19,692	19,005	4%
US rate base	**20,644**	18,407	12%	17,565	16,087	9%
Total RAV and rate base	**41,075**	38,099	8%	37,257	35,092	6%
NGV and Other	**4,105**	3,351	23%	2,815	2,300	22%
Total assets	**45,180**	41,450	9%	40,072	37,392	7%
UK other regulated balances[1]	**(357)**	(302)		(278)	(474)	
US other regulated balances[2]	**1,791**	1,987		1,898	1,920	
Other balances	**(514)**	(679)		(158)	(343)	
Total assets and other balances	**46,100**	42,456	3,644	41,534	38,495	3,039
Increase in goodwill			81			–
Cash dividends			892			1,160
Adjusted net debt movement			(2,577)			(2,128)
Value added			2,040			2,071

1. Includes totex-related regulatory IOUs of £411 million (2019: £519 million), over-recovered timing balances of £24 million (2019: £68 million under-recovered) and under-recovered legacy balances related to previous price controls of £78 million (2019: £149 million).
2. Includes assets for construction work-in-progress of £1,510 million (2019: £1,813 million), other regulatory assets related to timing and other cost deferrals of £642 million (2019: £189 million) and net working capital liabilities of £361 million (2019: £15 million).

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 2019, finalisation of US balances, to reflect the impact of IFRS 16 and to remove the investment in Cadent.

During 2019/20, our combined regulated asset base and NGV and Other businesses' assets grew by £3.7 billion or 9% on a constant currency basis compared to an increase of 7.2% in the prior year. UK RAV growth was 3.8% including RPI indexation of 2.6% while US rate base grew strongly by 12%.

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 £2.0 billion in 2019/20. This was slightly lower than last year's £2.1 billion, with improved US returns and the impact of asset growth, offset by the loss of interest and dividend income from Cadent and higher cash tax. Of the £2.0 billion value added, £0.9 billion was paid to shareholders as cash dividends and £1.1 billion was retained in the business. This measure excludes any benefit arising from the sale of our 39% interest in Quadgas Holdco Limited. Value added per share was 58.9p compared with 61.2p in 2018/19.

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) as disclosed in note 29 to the financial statements. 'Adjusted net debt' used for the RCF/adjusted net debt calculation is principally adjusted for pension deficits and hybrid debt instruments. For a full reconciliation see page 245.

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	2019/20	2018/19	Change
Cash generated from continuing operations	**4,914**	4,464	10%
Cash capital expenditure and acquisition of investments	**(5,098)**	(4,148)	23%
Dividends from joint ventures and associates	**75**	68	10%
Business net cash flow from continuing operations	**(109)**	384	(128)%
Net interest paid	**(884)**	(846)	4%
Net tax (paid)/received	**(199)**	(75)	165%
Ordinary dividends	**(892)**	(1,160)	(23)%
Other cash movements	**10**	15	(33)%
Net cash flow from continuing operations	**(2,074)**	(1,682)	23%
Quadgas sale proceeds	**1,965**	–	n/a
Discontinued operations	**(91)**	85	(207)%
Non-cash movements	**(1,387)**	(1,930)	(28)%
Increase in net debt	**(1,587)**	(3,527)	(55)%
Net debt at start of year	**(26,529)**	(23,002)	15%
Impact of adoption of IFRS 16	**(474)**	–	n/a
Net debt at end of year	**(28,590)**	(26,529)	7.8%

Cash flow generated from continuing operations was £4.9 billion, £450 million higher than last year, principally due to exceptional items in 2018/19 and favourable working capital (mainly higher inflows from collection of prior year winter receivables), partly offset by adverse timing on revenues and provisions. Cash expended on investment activities increased for the reasons described above. Net interest paid increased due to the growth in net debt and also higher interest income received in 2018/19. The Group made net tax payments of £199 million during 2019/20. A 46% scrip take-up in the year reduced the cash dividend to £892 million, £268 million lower than in 2018/19, when the scrip take-up was 26%. Proceeds of £1,965 million (plus £6 million of interest) from the Quadgas HoldCo Limited disposal, were partly offset by outflows for residual provisions and accruals classified within discontinued operations. In 2018/19, discontinued operations included dividend and interest income of £156 million from our investment in Quadgas. Non-cash movements primarily reflect changes in the sterling-dollar exchange rate, the impact of adopting IFRS 16 'Leases', accretions on index-linked debt, finance lease additions 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 2020 the Group reduced its total financial liabilities denominated in US dollars from $21 billion at the start of the year to $20 billion at 31 March 2020, as a 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 senior debt including 13 bond issues, and £1.1 billion of hybrid debt refinancing. The Board has considered the Group's ability to finance normal operations at the same time as funding a significant capital programme, in light of the potential impacts of COVID-19. This includes stress-testing of the Group's finances under a 'reasonable worst case' scenario and consideration of levers available to ensure our businesses are adequately financed. As a result, the Board has concluded that the Group will have adequate resources to do so. In April, we issued £0.9 billion of debt through 2 bonds, evidencing our ability to raise new finance. In addition, as at 17 June 2020, we have £5.8 billion of undrawn committed facilities, all of which have expiry dates beyond June 2021. 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 2020	31 March 2019	Change
Goodwill and intangibles	**7,528**	6,953	8%
Property, plant and equipment	**48,770**	43,913	11%
Assets held for sale	**–**	1,956	n/a
Other (liabilities)/assets	**(349)**	(507)	(31)%
Tax balances	**(4,168)**	(4,000)	4%
Pension liabilities	**(953)**	(218)	338%
Provisions	**(2,654)**	(2,199)	21%
Net debt	**(28,590)**	(26,529)	7.8%
Net assets	**19,584**	19,369	1%

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continued

Property, plant and equipment increased as a result of the continuing capital investment programme, foreign exchange gains and the impact of adopting IFRS 16 ‘Leases’. Assets held for sale comprised our 39% interest in Quadgas, which was sold in June 2019. Pension liabilities increased in the US, as a result of lower asset valuations and foreign exchange movements, partly offset by a lower discount rate. Provisions increased principally as a result of additional environmental provisions recognised in the year and foreign exchange movements. Other movements are largely explained by net working capital inflows and 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 63% as at 31 March 2020. This was down from 66% at the previous year-end and remains appropriate for the current Group credit rating of A-/A3 (S&P/Moody’s).

Retained cash flow as a proportion of adjusted net debt was 9.2%, which is above the long-term average 9% level currently indicated by Moody’s as consistent with maintaining our current Group 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 245, 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.

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	2019/20	2018/19	Change
UK Electricity Transmission	**13.5%**	13.7%	-20bps
UK Gas Transmission	**9.8%**	9.5%	30bps
UK weighted average	**12.4%**	12.4%	–bps
US Regulated	**9.3%**	8.8%	50bps
Group Return on Equity	**11.7%**	11.8%	-10bps

The overall weighted average RoE for the two UK transmission businesses was 12.4%, representing 230 basis points outperformance of the base allowed return. Electricity Transmission performance reduced in the year with improved totex incentive performance offset by lower SO incentives including a reversal of profits recognised in 2018/19. Gas Transmission return increased due to improved totex performance in 2019/20.

RoE for the US Regulated business of 9.3% was 50bps higher in 2019/20, with improved performances in KEDNY, across Massachusetts and in Rhode Island all contributing to this increase. The achieved RoE represents 99% of the weighted average allowed return across all jurisdictions. US returns exclude the impact of the Massachusetts Gas labour dispute in 2018/19. They are also not impacted by the COVID-19 related bad debt provision recognised in 2019/20 and include an adjustment reflecting our expectation for future recovery of these bad debt costs.

Overall Group RoE, which incorporates Property, Corporate and Other, and financing performance was 11.7%, slightly lower than 2018/19.

Tax transparency
As a responsible tax payer, we have voluntarily increased our tax disclosures, which continue to be an area of significant interest to many of our stakeholders.

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 do not have operations in tax havens or low tax jurisdictions without commercial purpose.

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 of 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.

Country-by-country reporting summary

In the current year for the first time we have disclosed in the table below data showing the scale of our activities in each of the countries we operate in. This allows our stakeholders to see the profits earned, taxes paid and the context of those payments.

Tax jurisdiction	Revenue: Unrelated party £m	Revenue: Related party[1] £m	Revenue: Total £m	Profit/(loss) before income tax[2] £m	Income tax accrued – current year[3] £m
United Kingdom	5,282	113	**5,395**	1,821	179
United States	9,258	82	**9,340**	(82)	(2)
Ireland	–	–	**–**	–	–
Isle of Man	–	16	**16**	3	–
Luxembourg	–	–	**–**	–	–
Netherlands	–	55	**55**	12	–
Total	14,540	266	**14,806**	1,754	177

1. Related party revenue only includes cross-border transactions.
2. Profit/(loss) before income tax from continuing operations after exceptionals.
3. See the tax charge to tax paid reconciliation below for further information.

Our Hong Kong entity is UK tax resident and our entities in Australia and Canada are dormant. Therefore, those jurisdictions have not been included in the table above.

Our Isle of Man company is a captive insurance company which is treated as a controlled foreign company for UK tax purposes and as such UK corporation tax is paid on its profits by National Grid. In the Netherlands, we have a finance company which raised external finance for the Group and an old holding company which held trading investments which were sold many years ago, which is in the process of being liquidated. The finance company is taxed on its profits in the Netherlands at the corporate tax rate of 25%, whilst the holding company's profits are offset by tax losses on which deferred tax has not previously been recognised.

Transfer pricing is not a significant issue for the Group since there are limited transactions between Group companies, but any transactions between related parties are made on an arm's-length basis and aligned to OECD principles.

Group's total tax charge to tax paid

The total tax charge for the year disclosed in the financial statements in accordance with accounting standards and the equivalent total corporate income tax paid during the year will differ.

The principal differences between these two measures are as follows:

Reconciliation of Group's total tax charge to tax paid

£m	2019/20	2018/19
Total Group tax charge/(credit)	**480**	339
Adjustment for Group non-cash deferred tax	**(348)**	(251)
Adjustments for Group current tax (charge)/credit in respect of prior years	**45**	52
Group current tax charge/(credit)	**177**	140
Group tax instalment payments payable/(repayable) in respect of the prior year	**78**	92
Group tax instalment payments payable/(repayable) in the following year	**5**	(69)
Repayment due to the Group in respect of current year estimated payments	**47**	–
Group tax payments/(refunds) in respect of prior years paid in the current year[1]	**(113)**	(93)
Group tax payments relating to tax disclosed elsewhere in the income statement	**5**	5
Group tax paid/(repaid)	**199**	75
Profit/(loss) before income tax[2]	**1,754**	1,841
	%	%
Effective cash tax rate	**11.3**	4.1
Effective tax rate (see note 7)	**27.4**	18.4

1. Tax refunds in respect of prior years are primarily driven by a refund received in respect of tax losses carried back to earlier years following agreement of historical US Federal tax audits.
2. Profit/(loss) before income tax from continuing operations after exceptionals.

Effective cash tax rate

The effective cash tax rate for the Group is 11.3%. The difference between this and the accounting effective rate of 27.4% (see note 7 on page 143) is due to the following factors.

National Grid is a capital-intensive business, across both the UK and the US, and as such invests significant sums each year in its networks. In 2019/20 the total capital expenditure was £5,079 million. To promote investment, tax legislation allows a deduction for qualifying capital expenditure at a faster rate than the associated depreciation in the statutory accounts. The impact of this is to defer cash tax payments into future years.

Given the substantial amounts of expenditure qualifying for deduction incurred by National Grid this has left us in a net tax loss position in the US in the year ended 31 March 2020. Consequently, in the current period we made no significant federal tax payments.

In the current year we made significant cash tax payments in the UK (£306 million). This was offset by the receipt of cash for tax losses carried back to earlier years in the US as a result of settlement of prior year audits. These receipts in the US also contributed to a lower overall effective rate of cash tax for the Group.

The Group continues to fund deficit payments into its defined benefit pension schemes and has made significant payments into the Gas and Electricity schemes during the course of the year. These payments have further reduced the overall cash tax paid in the UK.

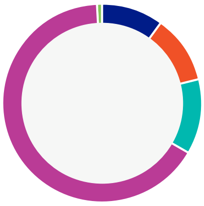
Financial review
continued

Group's total tax contribution

In the current year we have expanded this disclosure to cover our global total tax contribution. The total amount of taxes we pay and collect globally year-on-year is significantly more than just the tax which we pay on our global profits.

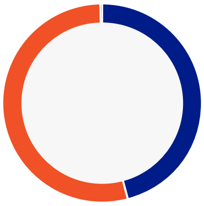
Group's total tax contribution 2019/20 (taxes paid/collected)

Taxes borne



Key:	£m
People	164
Product	185
Profit	199
Property	1,076
Miscellaneous	11
Total	**1,635**

Taxes collected



Key:	£m
People	533
Product	625
Miscellaneous	1
Total	**1,159**

	Tax contribution					
Tax jurisdiction	Income tax paid/ (repaid) on cash basis[1] £m	Property taxes £m	Other taxes borne £m	Taxes collected £m	**Total tax contribution £m**	Number of employees as at 31 March 2020
United Kingdom	306	226	57	586	**1,175**	6,321
United States	(107)	850	303	573	**1,619**	16,748
Ireland	–	–	–	–	**–**	–
Isle of Man	–	–	–	–	**–**	–
Luxembourg	–	–	–	–	**–**	–
Netherlands	–	–	–	–	**–**	–
Total	199	1,076	360	1,159	**2,794**	23,069

1. See the tax charge to tax paid reconciliation above for further information.

For 2019/20 our total tax contribution globally was £2,794 million (2018/19: £2,620 million), taxes borne were £1,635 million (2018/19: £1,422 million) and taxes collected were £1,159 million (2018/19: £1,198 million). Whilst total tax collected in 2019/20 has remained consistent with the prior year, the total taxes borne by the Group has increased from the prior year primarily as a result of higher property and profit taxes being paid.

Two thirds of the tax borne by the Group is in relation to property taxes of which c. £850 million are paid in the US across over 1,100 cities and towns in Massachusetts, New Hampshire, New York, Rhode Island and Vermont. These taxes are the municipalities principal source of revenue to fund school districts, police and fire departments, road construction and other local services.

In the UK we participate in the 100 Group's Total Tax Contribution Survey. The survey ranks the UK's biggest listed companies in terms of their contribution to the total UK government's tax receipts. The most recent results of the survey for 2018/19 ranks National Grid as 21st highest contributor of UK taxes (2017/18: 25th), 18th in respect of taxes borne (2017/18: 23rd) and 5th in respect of capital expenditure (£1,200 million) on fixed assets (2017/18: 4th). Our ranking in the survey is proportionate to the size of our business and capitalisation relative to the other contributors to the survey.

However, National Grid's contribution to the UK and US economies is broader than just the taxes it pays over to and collects on behalf of the tax authorities.

Both in the UK and the US we employ thousands of individuals directly. We also support jobs in the construction industry through our capital expenditure, which in 2019/20 was £5,079 million, as well as supporting a significant number of jobs in our supply chain.

Furthermore, as a utility we provide a core essential service which allows the infrastructure of the country/states we operate in to run smoothly. This enables individuals and businesses to flourish and contribute to the economy and society.

Development of future tax policy

We believe that the continued development of a coherent and transparent tax policy across the Group is critical to help drive growth in the economy. In the UK 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, such as the Electricity Tax Forum and CBI Employment Taxes Working Group, together with the 100 Group in the UK, which represents the views of Finance Directors of FTSE 100 companies and several other large UK companies. 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 Global Business Alliance. This helps to ensure that we are engaged at the earliest opportunity on tax issues which affect our business.

We continue to engage on consultations where 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 tax legislation.

Pensions

In 2019/20, the defined benefits pensions and other post-retirement benefits operating costs decreased by £97 million to £197 million, principally as a result of our UK restructuring programme and the GMP equalisation ruling. Employer contributions during the year were £327 million (2018/19: £418 million), including £86 million (2018/19: £84 million) of deficit contributions.

As at 31 March 2020, 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	14,364	9,384	23,748
Plan liabilities	(12,844)	(11,857)	(24,701)
Net surplus/(deficit)	1,520	(2,473)	(953)

As at 31 March 2020, pension assets of £1,589 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 32.00p per ordinary share ($2.0126 per American Depository Share) which will be paid on 19 August 2020 to shareholders on the register of members as at 3 July 2020. If approved, this will bring the full year dividend to 48.57p per ordinary share, an increase of 2.6% over the 47.34p per ordinary share in respect of the financial year ended 31 March 2019. This is in line with the increase in average UK RPI inflation for the year ended 31 March 2020 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 2020, National Grid plc had in excess of £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 £1,123 million of shareholders' funds. This year's dividend is covered approximately 1.2x by underlying earnings.

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 2018/19, 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 2019, we adopted IFRS 16 'Leases'. This did not have a material impact on the Group's results or financial position, although as described in note 37 to the financial statements, on transition our property, plant and equipment and net debt each increased by £0.5 billion to take account of the additional lease obligations. We note that the rating agencies already made adjustments to impute this and accordingly, adoption of the new standard does not impact our credit ratings.

Post balance sheet events

In the period between 31 March 2020 and 17 June 2020, there have continued to be substantial environmental, economic and social changes in both the UK and US. As described further in the Strategic Report, these have had, and will continue to have, significant ramifications for the Group. Other than as disclosed in respect of those areas where forward-looking forecasts are relevant (notably goodwill impairment reviews (note 11 to the financial statements), expected credit losses on financial instruments including trade receivables (notes 19 and 32) and the presumption of the going concern basis generally (note 1)), none of these developments have impacted or caused adjustment to the financial statements.

Principal operations – UK

Our UK business performed well in 2019/20. We maintained our focus on safe, reliable, customer-led, innovative and efficient operations.

Our UK performance

Optimise performance

Measure	2019/20	2018/19	2017/18
Return on Equity (£m) Ⓐ	**12.4**	12.4	12.1
Statutory operating profit (£m)	**1,663**	1,045	1,528
Underlying operating profit (£m) Ⓐ	**1,576**	1,433	1,560
Adjusted operating profit (£m) Ⓐ	**1,668**	1,318	1,528
RIIO-T1 customer savings (£m)	**128**	101	78

Grow core business

Capital expenditure (£m) Ⓐ	**1,292**	1,233	1,309
Asset growth (%) Ⓐ	**3.8**	3.6	4.5

Customer first

Customer satisfaction: ET
(out of 10)
8.2
(2018/19: 7.9)

Customer satisfaction: ESO
(out of 10)
7.6
(2018/19: N/A)

Customer satisfaction: GT
(out of 10)
8.0
(2018/19: 7.8)

Highlights

Our UK business performed well in 2019/20 as we maintained our focus on safe, customer-led, reliable, innovative and efficient operations. On 1 April 2019, we completed the legal separation of the ESO within a newly formed subsidiary company which 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. Following separation, we moved the Gas System Operator (GSO) function to become part of the Gas Transmission business to further simplify our structure.

Optimise performance

Our safety ambition is to have a culture where we always do the right thing regarding safety. Our strategy is to be proactive in our safety management by engaging our leaders and employees and implementing a consistent and simple risk-based approach. This strategy will enable us to develop the highest level of safety culture maturity. To support this ambition, we are focusing more on leading indicators that measure our positive efforts on safety management to help prevent incidents, while continuing to track more traditional lagging indicators.

As at 31 March 2020, our LTIFR was 0.06. This is better than our UK target of <0.08, and is our best ever LTIFR performance. Our Electricity Capital Delivery business has worked more than a year without having any LTIs in approaching five million person hours of complex construction activity. This outstanding result was driven by a relentless focus on the work we do and commitment to keeping one another safe.

We delivered a good year of returns, with a Return on Equity of 12.4%. Statutory operating profit and underlying operating profit were higher at £1,663 million and £1,576 million respectively.

We have committed to reduce our direct emissions to net zero by 2050 and to increase our influence to support the overall industry-wide transition to a low-carbon future. We have developed solutions to enable the rollout of a strategic backbone for electric vehicles throughout the UK and are working in partnership with industry to develop Carbon Capture and Storage (CCS) solutions. We continue to engage with stakeholders to shape and define the delivery of the £500 million funding commitments to help grow the UK's rapid charging network made in the Chancellor's March 2020 Budget. In addition, the Chancellor announced at least £800 million for a CCS Infrastructure Fund which will support CCS in at least two sites.

Following the floods of 2007, we instigated an investment programme to protect assets against future flooding. The programme ensures overall resilience of the network to threats, focusing on protection of specific sites against the threat of flooding and reducing the likelihood of consumers being affected by a flooding incident on the ET system. Following detailed modelling and consultation with the Environment Agency, permanent flood defences were installed at Thorpe Marsh 400 kV substation in 2014 and a demountable barrier was procured to protect the 275 kV substation which is located on higher ground. Neither of the substations were jeopardised during the flooding event. The ET network remained resilient during Storm Ciara in February 2020.

Customer first

As noted in the Chief Executive's review, at the end of 2019/20, we found new ways to put the customer first in the face of the COVID-19 pandemic.

We work with our customers to meet their needs and deliver successful outcomes for all parties. We were pleased to see continued improvement in our CSAT scores in our ET and GT businesses, achieving scores of 8.2 (2018/19: 7.9) and 8.0 (2018/19: 7.8) respectively. For the ESO, our CSAT score in 2019/20 was 7.6.

In October 2019, we welcomed Ofgem's 'minded-to' position on Hinkley-Seabank connection to use the existing Strategic Wider Works (SWW) mechanism for this vital project. In May 2020, we reached agreement on the final cost and the regulatory funding model. The allowance for the project is £656 million and will be funded through the existing SWW mechanism rather than the Competition Proxy Model (CPM). The project remains on target to be ready for connection in 2025.

Grow core business

In December we awarded the £400 million tunnelling contract associated with our London Power Tunnels 2 project, a 20.8 mile (33.5 kilometre), £1 billion link from Wimbledon to Crayford which will provide significant resilience across South London when completed in 2028. We have embarked on a partnership with a social enterprise, My Kinda Future, to inspire the next generation of engineers in South London and to help us with local recruitment and upskilling required around our key sites. The team will work on designs and set up across key sites this year, launching four different tunnel-boring machines in 2021. Four other major contracts associated with the cable and substation works will be let this year. These partners will form an enterprise, focused on innovation and collaboration to successfully deliver the project outcome, rewiring London and connecting with the capital.

We took over the Western Link HVDC cable with our Joint Venture partner Scottish Power Transmission on 23 November 2019. The link is a submarine HVDC link between Scotland and England and Wales which delivers up to 2,250 MW. We are working with Ofgem after they opened an investigation into the delivery and operation of the cable in January 2020.

A particular highlight has been the completion of the tunnelling for Feeder 9 under the Humber estuary, a critical reinforcement of the gas network.

Evolve for the future

We published and submitted our business plans to Ofgem in December 2019 for our ET, GT and ESO businesses for the 2021–2026 RIIO-2 price control period. These plans have been developed following our largest ever engagement exercise to date, with customers, industry stakeholders, businesses and households across the country.

Our plans include investment to maintain network reliability and provide flexibility and optionality for the UK to achieve net zero greenhouse gas emissions by 2050, while being protected against new threats:

- Our ET plan has a baseline total expenditure spend of £7.1 billion over the five-year period. Our ET business assumes connection of 15.3 GW of customer capacity, providing the UK with clean power and flexible storage, as well as increased investment to maintain reliability and resilience. The baseline spend for ET, under our proposed financial plan, would see consumer bills reduce slightly in real terms.
- Our GT plan has a baseline total expenditure spend of £2.8 billion over the five-year period. Our GT business, which comprises GB gas system operator and gas transmission, includes an increase in asset health and cyber resilience investment, as well as a programme of work to test and prove hydrogen conversion options. The baseline spend for GT, under our proposed financial plan, would see consumer bills reduce slightly in real terms.

These plans will deliver a safer, cleaner, greener and more affordable energy system. We have challenged ourselves to ensure our business plans deliver at the lowest cost and create optionality as we develop the pathway to net zero. We continue to constructively work with our regulator, Ofgem, ahead of draft determinations in the summer and final determinations in November 2020.

The wellbeing of our workforce is important to us. 38% of our UK employees have undertaken mental-health-related training courses during the year, an increase of 30% compared to last year.

The UK cost efficiency programme that we announced in 2018 continues to deliver a more efficient and agile business ahead of RIIO-2. Through this initiative we have simplified ways of working with a leaner organisation and more efficient IT and back office activities. In 2019/20, the programme enabled us to deliver efficiency savings of £54 million in ET, and £19 million in GT.

We have made good progress on the £116 million Dorset Visual Impact Provision (VIP) project, with site establishment and preliminary civil works well underway. We are on track to underground 5.5 miles (8.8 kilometres) of overhead line and remove 22 pylons in the Dorset Area of Outstanding Natural Beauty (AONB) by 2022. Funding and planning applications have been submitted for the Peak District East VIP project. This £43 million project will remove six pylons and 1.2 miles (2 kilometres) of overhead line in the Peak District National Park. The planning application for Snowdonia VIP project has been submitted. This project will replace a section of overhead line which goes through Snowdonia National Park with cables in a 2.1 mile (3.4 kilometre) tunnel. Engineering and consenting activities have also commenced on the first of our RIIO-2 portfolio of VIP projects: the undergrounding of 2.7 miles (4.4 kilometres) of overhead line through the North Wessex Downs AONB.

Scan here to view the story

Our GSO became part of the GT business with effect from 1 January 2020, providing even greater transparency and clarity around the management of Great Britain's gas and electricity networks. A unified GSO and GT structure is a better way to be organised, offering greater alignment, simplified governance, clearer accountability, and better coordination between system operator and gas asset management. It makes the legal separation of the ESO even clearer.

In our GT business we are reviewing the potential to decarbonise the gas network through a transition to carbon-free hydrogen. Working with the UK gas networks on the Gas Goes Green programme, we are identifying the steps required to repurpose our assets to carry hydrogen either as a blend or up to 100%.

nationalgridESO

System Operator

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. We operate an electricity system that is transitioning towards net zero and have seen several new energy records set, as greater levels of renewables continue to connect to the network and coal power stations close. During the spring of 2019 there were 18 consecutive days where coal-fired generation was not part of the generation mix; solar output peaked in May 2019 at around 9.5 GW and the maximum wind output of 16.86 GW was recorded in December 2019. In combination, these changes to the generation mix have led to 2019 being the first year on record in which low-carbon sources generated more electricity than fossil fuel sources. In 2020, we have continued to see further records set. Further details about the ESO power generation mix can be found at: www.nationalgrideso.com/great-britains-electricity-explained

Our ESO RIIO-2 plan proposes new activities that will generate net benefits of around £2 billion for consumers over the five-year RIIO-2 period and spend over its two-year price control (2021–2023) of £514 million. The ambitious ESO plan focuses on how the ESO must evolve to meet the challenges of the changing energy landscape. Supported by a new, bespoke regulatory model designed to drive the right behaviours and outcomes, the ESO will facilitate the transition to a zero-carbon power system. Under RIIO-2, the ESO will lower average annual consumer bills by around £3.

Following the cessation of the UK's Capacity Market scheme in November 2018 due to the ruling of the European Court of Justice, we worked closely with BEIS and Ofgem to initiate contingency plans making sure that security of supply could be maintained during the 2019/20 winter period. On 24 October 2019, the EU Commission ruled on the validity of the Capacity Market state aid challenge, confirming their original decision in 2015 to grant state aid approval. Following the announcement, we have resumed our role as the Electricity Market Delivery Body and ran auctions in early 2020.

On 15 May 2018, Ofgem opened an investigation into the ESO (when it still formed part of National Grid Electricity Transmission plc) pertaining to an alleged breach of its licence condition to operate the system in an economic and efficient manner, including the production and publication of forecasts of demand on the electricity transmission network. The investigation is ongoing.

On 9 August 2019, following the near simultaneous tripping of two large power generators, we experienced power outages in various parts of England and Wales. The frequency on our network dropped resulting in low frequency demand disconnections, preventing further issues. Service was restored within 45 minutes to all customers. In September 2019, we published the technical report into the event. In January 2020 Ofgem published its findings which supported many of the recommendations we included in our report. We operate one of the safest and most resilient power networks in the world and, while we recognise the disruption that the outage caused, our systems performed as they should. We have worked closely with Ofgem, the government, the wider energy industry and other sectors like transport to learn the lessons from this incident.

On 1 April 2019, National Grid ESO became a separate legal entity within the National Grid Group. The major programme to achieve this saw the creation of the NGESO Board, which includes three Non-executive Directors and the creation of a new office space, physically separate from other parts of National Grid. Following separation, we moved the GSO function to become part of the GT business to further simplify our structure and to provide greater clarity. We will continue to regularly review the way we are structured to make sure we are delivering the best possible service for our customers.

Principal operations – US

Our US business performed well operationally and financially in 2019/20, despite challenges across our jurisdictions. We maintained our focus on safe, reliable, customer-led, innovative and efficient operations. We continued to optimise our operational performance.

Our US performance

Optimise performance

Measure	2019/20	2018/19	2017/18
Return on Equity (£m)	**9.3**	8.8	8.9
Statutory operating profit (£m)	**880**	1,425	1,734
Underlying operating profit (£m)	**1,636**	1,594	1,704
Adjusted operating profit (£m)	**1,397**	1,724	1,698

Grow core business

Capital expenditure (£m)	**3,228**	2,650	2,424
Asset growth (%)	**12.2**	9.2	7.4
Rate base* (£m)	**20,644**	17,565	14,762

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

Customer first

US Residential – Customer Trust Advice

59.8%

(2018/19: 58.7%)

Highlights

In the US, in 2019/20 we improved our storm restoration efforts, successfully replaced hundreds of miles of leak-prone pipe in our gas network, exceeded our electric vehicle charging deployment goals ahead of schedule, reached record-setting Distributed Generation (DG) in Rhode Island, and renewed our focus on safety culture.

The clean energy future continues to be a focus in the US. The Company's net zero by 2050 announcement was in line with the ambitious targets and important steps being taken by governments, regulators and across our communities, to deeply decarbonise economy-wide. The US business is currently building a plan to achieve this new target, which will impact our fleet, building stock, and pipeline replacement efforts. At the end of March 2019, we had already reduced emissions by 71% below 1990 levels in the US, exceeding our interim target of 45% by 2020 group wide. We achieved this by focusing on a range of activities, which include a major pipeline replacement programme to minimise gas losses through leakage and the reduction of a high-emission greenhouse gas called SF_6 in our electricity networks.

An important milestone we reached, contributing to decarbonisation, was exceeding our electric vehicle charging station deployment goals ahead of schedule in New York. We enabled over 1,405 ports at roughly 184 customer sites and have a number of customers who are eagerly awaiting an extension of the programme, which will be proposed to our New York State regulator in a future rate case.

In the renewable space, we interconnected a record number of DG projects for our customers in Rhode Island, totalling 99.8 MW and connecting 1,938 applications.

We were pleased to accept a number of awards that demonstrate our commitment to our workforce and customers in 2019/20. National Grid was listed in the top ten of DiversityInc Top Utility and we earned a designation as a "Best Place to Work for LGBTQ Equality" by the Human Rights Campaign Foundation in the Corporate Equality Index 2020.

Forbes named National Grid one of the Best Employers for Diversity in 2020. Edison Electric Institute honoured National Grid in 2019 with an Emergency Assistance Award and Emergency Recovery Award for restoration efforts during hard-hitting storms.

Safety continues to be a critical pillar of our daily operations. The Company is fully committed to the well-being and safety of our workforce and customers alike. This year, a tragic event took the life of one of our employees and reminded us to continue striving to 'find a better way' to improve our safety culture. As at 31 March 2020, our LTIFR was 0.16. We have focused safety culture transformation programmes to engage our workers on hazard and risk awareness, and required controls to prevent safety incidents. We have asked our workforce to direct their attention to the safety of themselves and their colleagues every day.

Optimise performance

During 2019/20, the US business focused on growth, customer value, and deep decarbonisation. Our US Regulated net revenue was £123 million (2%) lower, with £257 million of incremental rate cases and £85 million of exchange rate benefit, more than offset by £465 million adverse timing (lower volumes and commodity recoveries). We invested £3.2 billion in energy infrastructure and technology solutions during the year. We also added 41,043 active new customer accounts across gas, electric and DG combined.

Our energy infrastructure investments are designed to bring cleaner energy to our customers and enhance reliability. One of our larger investments, The Metropolitan Reliability Infrastructure Project, will increase system reliability and operational flexibility of the existing transmission system in Brooklyn, New York. It will also increase supply diversity options and provide capacity for operation in case there is an outage. The project consists of roughly 40,000 feet of transmission main that will connect the Southern line to the Brooklyn Backbone and our Greenpoint Facility by autumn 2021.

Through our gas pipeline replacement programme, we have successfully replaced 460 miles (740 kilometres) of pipe in 2019/20, compared to 400 miles (644 kilometres) in 2018/19. By replacing leak-prone pipe, we are significantly reducing unintended release of natural gas, reducing methane emissions and keeping our customers and communities safe. An innovative robotic sealing technique has helped us to seal cast iron pipes in congested urban areas like Boston and New York City. We are on schedule to replace our leak-prone pipe inventory across the US enterprise within the next 20 years.

A challenge we are currently facing that came to the forefront in 2019/20, is significant growth in demand for natural gas across our service area in New York City and Long Island. That growth is expected to continue over the next 10 years due to increased demand from new construction and conversion of oil to natural gas. As a solution to the gas supply issue, we supported the NESE Pipeline project to meet increased demand. When NESE was not approved by New York State, we ceased to connect new customers to gas in order to ensure we could continue to deliver gas to our existing customers safely and reliably. The New York Public Service Commission ultimately ordered us to connect some of those new customers, which we accomplished by increasing use of temporary supply solutions. We are now working with New York State, our stakeholders and our customers to find long-term solutions to gas supply constraints in the region.

In 2019, we experienced an unprecedented gas supply disruption on Aquidneck Island that required temporarily stopping service to about 7,500 customers. This was caused by a reduction in transmission flow coming into our system in Rhode Island. Since then, we have been working hard to learn from the event and have cooperated with a federal investigation and the Division of Public Utilities and Carriers in a summary investigation. The Division's report, released in autumn 2019, reflected National Grid's fundamental commitment to safety and exemplary emergency response. We have already addressed many of the proposed recommendations included in their report, securing additional winter gas supply, expanding our energy efficiency and demand response programmes and improving long-range planning. We now remain focused on securing the ongoing needs of Aquidneck Island and Rhode Island's energy future.

Customer first

As noted in the CEO review, at the end of 2019/20, we identified new ways to put the customer first in the face of the COVID-19 pandemic.

Our unwavering commitment to our customers was demonstrated by a few initiatives designed to make it easier for our customers to do business with us. We converted more customers to paperless billing by improving our paperless capabilities, strengthened our online marketplace where customers can purchase energy efficiency and smart home products, increased the speed at which we verify our customers' identity who call into the customer service line, and improved estimated time of restoration calculations during storms.

Our proactive outage communications and our Interactive Voice Recording upgrades increased our customer satisfaction scores, while storms and challenges with gas shortages in Rhode Island and downstate New York have caused some headwinds. As a result, customer ease has remained relatively flat and improvements in trust have increased slightly.

We continue to work towards quick and efficient storm response to improve these scores. We have improved our restoration efforts over the past decade by developing an emergency response team that works hard to service our customers. The team focuses on forestry, staging crews, materials, advanced analytics and reporting tools, while employing a classification index that anticipates restoration times based on storm types. We demonstrated efficient and successful storm response in April 2020 when 70 mph+ winds caused power outages for over 200,000 customers across all of our jurisdictions.

National Grid has a long history as a leader in economic development, investing in the communities across our territory. We have seen record-breaking economic development grant activity in New York over the past five years. We help our customers evaluate infrastructure needs and improve productivity, efficiency and profitability so that they remain and grow in the region.

The town of Lima, New York, recently experienced a significant economic boost with the expansion of Bristol ID Technologies creating new jobs within this rural community. The Company's electric capital investment grant provided $118,000 to help offset the new electric infrastructure required for this impactful business expansion, resulting in higher-volume production at a reduced cost and more clients.

Grow core business

In September, the Massachusetts Department of Public Utilities (MADPU) approved an electric rate case, which enables us to deliver on important investments in reliability and storm response, provide greater assistance to income-eligible customers and support electric transportation and energy storage policies that are helping drive us towards a clean energy future. The Company had not updated its rates since 2016 and will not file a new rate case for Massachusetts Electric until 2023.

In December, our Rhode Island Gas and Electric Infrastructure, Safety, and Reliability (ISR) plans were filed with the Rhode Island Public Utilities Commission (RIPUC). The plans provide mechanisms to fund maintaining and upgrading the gas and electric distribution systems by replacing aging equipment, addressing load growth, and responding to emergencies. In addition, the Gas ISR plan allows for proactive replacement of leak-prone pipe. Both of these plans were approved by the RIPUC in March 2020.

In the latest gas rate case, filed April 2019 for KEDNY/KEDLI, the Company proposed a suite of demonstration projects to explore low-carbon heating solutions. The solutions are divided into programmes or technologies. The rate case is still underway. Over the past year, we have taken meaningful steps to develop low-carbon heating solutions. In coordination with all New York's gas utilities, we have developed the RNG Interconnection Guideline. RNG is pipeline-compatible, gaseous fuel with lower lifecycle carbon dioxide equivalent emissions than geologic natural gas. The purpose of the guideline is to provide a necessary technical framework that can incorporate RNG into the natural gas distribution network.

Scan here to view the story

Evolve for the future

Over the past few years, the Company has been hard at work decarbonising the transportation sector.

In partnership with the Capital District Transportation Authority, National Grid deployed four electric public buses in Albany, New York. National Grid and the transportation authority will monitor the range, charging timelines, electricity usage and performance of the vehicles throughout its route network. If the demonstration proves to be successful, the Company will work with other transportation authorities to deploy more electric buses across the region.

In upstate New York, National Grid's EV charging programme surpassed its EV charging installation goal. The Company originally planned to complete 56 projects through this programme with an approximate $3 million allocation. However, we have more than tripled that goal with the completion of over 184 projects. Over 40 of the programme's site hosts serve disadvantaged communities.

Looking ahead

In 2018/19, the Company announced the Accelerate Programme, an ambitious, three-year efficiency challenge that set out an aspirational target of a 20% efficiency improvement in operational and capital expenses across the US business by 2020/21. The Accelerate Programme is aimed at improving both the quality and cost-effectiveness of our services to customers. This programme will continue to allow us to find a better way, so we can grow and serve customers long into the future. As we forge ahead into our clean energy future, we continue to identify pathways for deep decarbonisation along with the states we serve, focusing on the power, heat and transportation sectors. As one of the world's largest investor-owned utilities, we will work alongside policymakers to ensure we can deliver clean, safe, reliable and affordable energy to customers today and tomorrow.

National Grid Ventures and other activities

Our NGV and other activities business performed well in 2019/20. We maintained our focus on safety and reliability while developing new projects to support the energy transition.

Customer first

BritNed availability
98.6%
(2018/19: 98.2%)

Nemo Link availability
96.1%
(2018/19: NA)

IFA availability
91.4%
(2018/19: 93.9%)

Interconnector capacity by 2024
7.8 GW

Optimise performance

Statutory operating profit Ⓐ
£237m
(2018/19: £400m)

Underlying operating profit Ⓐ
£242m
(2018/19: £400m)

Adjusted operating profit Ⓐ
£242m
(2018/19: £400m)

Grow core business

Capital investment Ⓐ
£885m
(2018/19: £623m)

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, large-scale renewable generation and competitive transmission.

Our 'other' activities comprise NGP, 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 NGV and other segment delivered £237 million of statutory operating profit, £242 million underlying operating profit and accounted for £885 million of continuing investment in 2019/20.

As at 31 March 2020, our LTIFR was 0.05. This is better than our NGV target of 0.08.

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 GB and the Netherlands. In 2019/20 BritNed's availability was 98.6%.

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 2019/20, IFA's availability was 91.4%.

Nemo Link 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 GB and Belgium. Nemo Link's availability was 96.1% in 2019/20.

LNG storage and regasification: Grain LNG is one of three LNG importation facilities in the UK. It operates under long-term take or pay contracts with customers and provides importation services of ship berthing, temporary storage, ship reloading and regasification into the NTS. Utilisation of terminal capacity was 30.8% in 2019/20, up from 18.8% in 2018/19. Grain LNG set a record for the highest single-day gas send-out from a European terminal in November 2019.

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.

UK 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 8.8 million domestic, industrial and commercial meters, down from 9.9 million in 2018/19.

US competitive transmission: NGV is a part-owner of Millennium Pipeline, which provides consumers in the northeastern US with additional natural gas infrastructure to meet growing demand for cleaner and more reliable energy. It is strategically positioned to serve utility and power plant loads across New York State and into New England.

NGV is also a part-owner of New York Transco, which energised three new transmission upgrade projects in New York in 2016 that provide several ongoing benefits, including reducing upstate to downstate transmission congestion to save money for electricity consumers and offering better access to clean energy, and supporting the retirement of traditional power generation. The assets include the Ramapo to Rock Tavern 345 kV Line, Frasers-Coopers Corner 345 kV Line and Staten Island Unbottling.

US battery storage: NGV is a 50-50 joint venture partner with NextEra Energy Resources in two battery energy storage systems on Long Island. These include two 5 MW, 40 MWh battery energy storage systems in East Hampton and Montauk, New York. The batteries have helped decrease emissions and enabled energy peak-shaving during the busy summer months on the eastern end of Long Island.

UK 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 2019/20, we disposed of 34 sites and exchanged contracts on a further five land sales, to facilitate the delivery of thousands of new homes across the UK. Our joint venture with Berkeley Group, called St William Homes, has entered its sixth year and recorded its first profit in 2019/20. Around 7,600 homes are already under construction across London and the South East.

Grow core business

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

Construction continues on the 149-mile (240-kilometre) IFA 2 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.

Preliminary construction works have now also commenced on 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 large-scale renewables: NGV completed its acquisition of Geronimo, a leading wind and solar developer in North America based in Minneapolis, in July 2019. Since the acquisition, National Grid has announced the commercial operation of its 200 MW Crocker Wind Farm in South Dakota, along with the signing of a Power Purchase Agreement with Basin Electric Power Cooperative for its 128 MW Wild Springs solar project, also in South Dakota. These developments, together with further activities that build on their strong pipeline of future renewable energy projects, complement the 379 MW portfolio of operational wind and solar assets which are held in joint venture with Washington State Investment Board and operated by National Grid.

US competitive transmission: In April 2019, New York Transco's New York Energy Solution (NYES) was selected by the New York Independent System Operator to provide transmission upgrades that will relieve congestion of New York's bulk electric power system, while enhancing reliability and facilitating upstate clean energy resources to the downstate demand centers. The upgrades will be taking place on an existing 54.5-mile (88-kilometre) utility corridor and on utility-owned land. New York Transco is well into the consenting and permitting process for the NYES project, which remains on track for a late 2023 service date. NGV expects to participate in additional public policy electric transmission projects in New York that will be necessary to accommodate increasing amounts of renewable energy, in particular offshore wind.

UK property: St William continues to grow and we now expect the joint venture to deliver around 20,000 new homes across London and the South East. A further four sites have been negotiated into the joint venture during 2019/20 with further sites expected to be negotiated into the joint venture during 2020/21. In the next 12 months, we expect our St William Homes joint venture to complete construction of over 100 new homes across London.

Scan here to view the story

National Grid Property entered into a new joint venture agreement with Places for People, one of the largest regeneration, development and property management companies in the UK and a registered provider of affordable housing. As part of the venture, we aim to build up to 500 new homes on the first three sites, and delivering 10 sites into the joint venture over the next three years.

Evolve for the future

UK Carbon Capture, Utilisation & Storage (CCUS): In 2019 NGV launched Zero Carbon Humber, a consortium looking to develop the world's first zero-carbon industrial cluster in the UK's Humber region by 2040. Such a project would protect 55,000 jobs in the region and establish the UK as a world leader in CCUS technology.

US offshore wind: Ørsted and Eversource, with support from NGV, are developing the Revolution Wind offshore wind farm which was awarded competitive tenders to supply electricity to distribution utilities in Rhode Island and Connecticut. The proposed 704 MW wind farm will be located over 15 miles (24 kilometres) south of the Rhode Island and Massachusetts coasts. The project is expected to be operational by 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.

National Grid Partners: NGP is the venture investment and innovation arm of National Grid. NGP's portfolio at the close of the fiscal year comprises 21 companies at a fair value of £134 million.

Our stakeholders

As the Board of Directors, we prioritise our responsibilities to our different but interrelated stakeholder groups and wider society. We endeavour to ascertain the interests of our stakeholders and reflect them in the decisions that we make. We recognise that in balancing those different perspectives, it isn't always possible to achieve each stakeholder's preferred outcome.

You can find out more about our key stakeholders and their interests, how we engaged with them and how this influenced decision-making in our 'Section 172(1) Statement' that follows. For more details on how our Board operates, including the matters it discussed and debated during the year, see pages 64 – 87.

How we create value for our stakeholders

The long-term success of our business is critically dependent on the way we work with a large number of important stakeholders. We aim to create value for our stakeholders every day by maintaining levels of business conduct that are governed by our values. We continue doing so as the energy landscape changes.

How our Board keeps up to date with stakeholder interests

Reporting and monitoring: Our Company-wide engagement collates information on stakeholder interests that informs business-level decisions, with an overview of developments being reported on a regular basis to the Board or a Board Committee. In some cases, this will be through an annual or more frequent round-up for the business area interfacing with the relevant stakeholder (this is generally the case for customers and suppliers).

Direct engagement: In other instances, one or more members of the Board may be involved directly in the engagement (such as shareholder or other investor networking). In each case, it is important for all members of the Board to gain sufficient understanding of the issues relating to every stakeholder, so their views are taken into account in Board discussions. The table below sets out our focus on the key relationships and shows how the relevant stakeholder engagement is reported up to the Board or Board Committees to help inform decisions made by Directors.

We have provided some examples of how particular engagement outcomes were considered by the Board below, noting that these examples are not exhaustive in summarising all our stakeholder considerations. Within each example, when outlining how the Board considered the impact on a particular stakeholder group, we also list the broader range of stakeholders the Board considered as part of its discussions.

We considered the interests of our stakeholders in reviewing matters such as our liquidity and financial arrangements, our dividend, operational matters, for example resolving the gas supply issues in New York City and Long Island and developing our business plans. You can also read more about how the Board showed regard for the interests of various stakeholder groups through a worked example of its response to the COVID-19 pandemic on page 65.

This section, How we create value for our stakeholders, serves as our section 172 (1) statement.

Stakeholder group	How we engage and communicate	How stakeholder interests have influenced decision-making and the execution of our strategy
Our investors – individual shareholders	**Company engagement** The Company Secretariat team, together with the Company's Registrar, engage with our retail shareholders throughout the year to deal with enquiries relating to shareholdings. **Board-level engagement** Updates from Company-level engagement with shareholders are provided to the Board as appropriate. The AGM and shareholder networking programme provide the Board with valuable opportunities to engage with our shareholders. All members of the Board attended the 2019 AGM to discuss proposals and answer shareholder questions as necessary. The shareholder networking programme in 2019 included presentations, and a visit to our Gas National Control Centre in Warwick where shareholder attendees had direct one-to-one contact with senior management, Board members and engineers across a two-day period. During the shareholder networking programme and 2019 AGM, the Board members listened and responded to views of our shareholders. Any resulting actions were fed back to the businesses as necessary.	We recognise the importance of keeping an engaged shareholder base so that we can closely monitor their interests. As such, the Company Secretariat team, in collaboration with our Registrar, implemented an asset reunification programme in January 2020. This exercise provided us with an opportunity to re-unite as many shareholders as possible with their unclaimed assets. The programme will continue throughout 2020 and so far, as at 30 May 2020, £13 million was reunited with the respective shareholders and we have re-engaged 8,372 shareholders on the register. Ongoing engagement between our investors and the political sub-group of our Executive Committee highlighted concerns around the UK Labour Party's policy for state ownership of the UK operating companies. The Board, in line with its fiduciary duty to its shareholders, took steps to protect the value of shareholdings in the event of UK state ownership. **Views of other stakeholder groups considered** Customers, Regulators, Communities and governments, Our colleagues, Suppliers
Our investors – institutional (equity investors and debt investors)	**Company engagement** Over the year, the Investor Relations team held 436 investor meetings across 10 countries and 26 cities: met with over 400 institutions, representing 49.9% of our share register; and hosted three site visits, offering investors the opportunity to meet divisional management and view our assets. Our engagement programme focuses on updating investors on the regulatory and operational progress in our UK, US and NGV businesses, as well as the growth opportunities available to us. During the year, the Debt Investor Relations team in Treasury held meetings between senior Group Treasury representatives and debt investors in the UK, Continental Europe and the US. Topics covered included our financial results, US rate case filings and bond issuance. The team also met with debt investors at various conferences over the course of the year. **Board-level engagement** The Board received regular feedback on investor perceptions and opinions about the Company and as part of our engagement programme we provide the opportunity for our current and potential investors to meet with the Chairman, the Executive Committee and operational management. Additionally, the Board received the results of an independent audit of investor perceptions where interviews were carried out with investors to establish their views on the performance of the business and management. The findings and recommendations of the audit were then reviewed by the Board.	The investor perception study highlighted that senior management was held in high regard and that the ability to maintain operational excellence is taken for granted. The survey further noted that there was an opportunity for the Company to raise the profile of the role it is playing in the energy transition and also emphasised the strategic benefits of the combination of the Company's UK and US assets. Our investors also expect that we stand for something far more than providing economic returns. To facilitate the change towards net zero, in January 2020, we also announced the launch of our first green bond, issued by National Grid Electricity Transmission plc. The €500 million proceeds from the bond issuance will finance electricity transmission projects with environmental benefits. An ESG data book was published in the year to measure the overall performance of the Company in operating responsibly, while creating positive social impact. In preparing this data book, we held discussions with investors to identify the most commonly used ESG data providers, and reviewed these questionnaires to determine the most relevant data to communicate to investors. During this process over 400 questions were reviewed. Subsequently, these were consolidated and refined down to those included in this document. **Views of other stakeholder groups considered** Regulators, Communities and governments, Our colleagues

Our stakeholders continued

How we create value for our stakeholders continued

Stakeholder group	How we engage and communicate	How stakeholder interests have influenced decision-making and the execution of our strategy
Our colleagues	**Company engagement** Engagement with our people takes many forms, including reviewing and implementing actions from the EES results; Employee Resource Group (ERG) sessions, which provide the opportunity for ERG chairs and leads to discuss the importance and impact of their group and provide valuable feedback on inclusion and diversity related topics; meetings with trade union representatives, and leadership offsites located at a range of different business locations in the UK and US. **Board-level engagement** The annual EES provides senior leaders and the Executive Committee and Board with an insight into how our employees are feeling about the Company and its direction. Action plans are developed to progress any areas of improvements that are identified. The Board also conducts site visits and meets with a wide range of employees through our employee engagement programme: you can read more on this on page 73. The Executive Committee also received regular talent updates and considered the remuneration structure for senior management.	The topics discussed and actions from Board and Executive Committee's engagement with our people can be found on page 73. The Board was pleased to see a continued improving trend in overall employee engagement through the 2020 EES results. The introduction of the Leadership Index has allowed leaders to gain feedback from their direct reports on areas where their personal actions, style and behaviours can have an immediate impact on enablement and engagement. The Leadership Index will be a key focus area for 2019/20.
Our regulators	**Company engagement** **UK** – regular interactions with Ofgem and the Health and Safety Executive. The Company also organises stakeholder fora and consultations with stakeholders, including members of the public, our suppliers and customers around specific projects and proposed business plan submissions for RIIO-2. We work with other networks and organisations outside of the energy industry to identify good practice. **US** – regular interface with both federal and state regulators and customers on an ongoing basis, as well as the pre-filing stakeholder engagement programme in the build-up to and during any rate case process. Specific engagement was undertaken regarding the decarbonisation pathways and the Niagara Mohawk Power Corporation advanced metering infrastructure. **Board-level engagement** The Board met with the Chair, CEO and incoming CEO of Ofgem in November 2019. The topics of conversation included our net zero ambition, with a focus on practical solutions to move the agenda forward. The discussions also covered RIIO-2. The outcomes of engagement activities are reported to the appropriate forum and ultimately to the Executive Committee and Board. In the US, any rate case engagement is reported up to the Executive Committee and the ordering of Executive Committee and Board as appropriate. The Board met with the Governor of Massachusetts and a member of the Governor's office in March 2019. Recognising the severity of the adverse reaction of various stakeholders to the gas moratorium that was enforced by the Company in downstate New York, the Board commissioned two external reviews to understand how the US business had made the original decision. Long-term solutions are being implemented.	In the UK, discussions with our regulators have contributed to the productive outcome of key business issues such as: • the 9 August 2019 power outage: the Company had regular engagement with Ofgem and the UK government, and the Board regularly discussed the outcome of investigations and reports focused on this, including the response to Ofgem on the findings from the investigation. In January 2020, the Board welcomed Ofgem's report on this incident which confirmed that our actions did not cause the outage. • the future of our ESO business, which will be reviewed by Ofgem following legal separation last year. • RIIO-2 business plans: for the development of the RIIO-2 business plans, we have followed Ofgem's enhanced stakeholder engagement process, which is based on greater engagement with our industry and end consumers to prioritise their needs in our RIIO-2 business plans. Three independent groups were established to provide challenge throughout this process – two independently Chaired User Groups, (one for the ESO and one for the transmission businesses) and an Ofgem Challenge Group. Regular discussions were held at the Executive Committee and the Board on progress with stakeholder engagement, the development of the RIIO-2 business plans and on interactions with the challenge groups. On invitation, the Chairs of the Chaired Independent User Groups met with the Board in 2019. Following a period of engagement with Ofgem, we submitted our final business plans for RIIO-2 in December 2019. Thereafter, engagement has continued with Ofgem evidencing various aspects of the Company's RIIO-2 business plans such as the formal question and answer process to explore our RIIO-2 business plan submission ahead of its draft and final determinations later in 2020. In the US we refined the Company's regulatory strategy and business planning for rate cases and other US regulatory priorities. The Company's rate case pre-filing stakeholder engagement programme has become a major contributor to the Company's successful rate case outcomes. The external reviews conducted on the gas moratorium have highlighted lessons and recommendations which are already being implemented. In the short term, all affected customers have been contacted and plans are in place to make sure that they are connected to a gas supply in the near future. Medium- to long-term solutions that are in the best interests of our customers and regulators continue to be progressed. The Board is closely monitoring the output of these developments. **Views of other stakeholder groups considered** Customers, Investors, Communities and governments, Suppliers, Our colleagues.

Stakeholder group	How we engage and communicate	How stakeholder interests have influenced decision-making and the execution of our strategy
Communities and governments	**Company engagement** Regular discussions and satisfaction surveys to journalists and government. Policy and public affairs and in house US government relations teams develop, grow and leverage the Company's relationships with key politicians, officials, wider stakeholders and influencers to ensure the Company is connected with legislation and government policy. Engagement with local communities in the form of consultations during construction phases of projects and work with environmental education centres. We liaise with land owners and wider communities where the Company has assets and we have established dedicated teams to manage relationships. **Board-level engagement** During the year, the Board received regular updates on the potential impact of renationalisation which had been included as a policy in the Labour Party manifesto ahead of the December 2019 UK General Election. Regular updates were also received in relation to Brexit. The downstate New York gas moratorium and feedback from engagement with the Governor of New York formed an important part of the Board's agenda for the US business.	The Board agenda continued to be strongly focused on community and governmental issues this year such as: • the December 2019 UK General Election and the resulting exit from the European Union on 31 January 2020. We have continued to work with our UK regulators and the UK government to ensure that free trade agreements are negotiated for our interconnectors so that consumers continue to reap their benefits. We have also looked after the interests of our European staff and sought to ensure continued co-operation in energy balancing across Europe in the future. • in the US, the impact on communities following the gas moratorium in downstate New York was considered in depth by the Board and the Safety, Environment and Health Committee. We progressed dialogue with the New York State Governor and enacted settlement agreements and are now developing long-term solutions. • the clean energy agenda: UK and US governments and communities are strongly focused on carbon reduction activities. To focus on meeting our net zero commitment and embedding sustainability into our culture, we applied a sustainability lens across our operations and challenged our businesses to commit to challenging targets. In the US, at the state level, we have strong alignment with policymakers and regulators who, like us, are committed to a cleaner energy agenda. In the UK, we continue to work to maintain access for customers to european energy that is affordable and renewable, and the Board also approved the Company's announcement of its target to become carbon neutral by 2050. **Views of other stakeholder groups considered** Customers, Investors, Regulators, Suppliers, Our colleagues
Our customers	**Company engagement** **UK customer programme** – we use several channels such as operational fora, liaison meetings, market research, stakeholder events and interactive customer listening sessions to engage with our customers. We have in place a robust governance structure to ensure our engagements and insights are shared at all levels. This includes a strategic meeting accountable for customer and stakeholder experience across the UK core business. It is chaired by our UK Executive Director and attended by the UK Executive Committee members on a quarterly basis. To support this, we have a committee made up of senior leaders from across the UK business. This governance is designed to ensure our pipeline of work addresses customer needs and continuously raises the bar. We also ensure customer experience remains one of our top priorities by measuring and tracking progress against our customer experience strategy throughout the Company. **US customer team** – collects and communicates 'voice of customer' feedback throughout the business, gathered via customer surveys on a tracking and ad hoc basis to measure customer sentiment of residential, commercial and wholesale customers. An online community of 6,000 residential customers enhances insight with fast and continuous feedback. We are also leveraging design to inform customer experience solutions, process changes and product development. **Board-level engagement** In the year, the Board received updates on both the UK and US customer strategies. Bi-annual reports were also submitted to the Board from the UK, US and NGV businesses.	In the UK, feedback received through our stakeholder-led RIIO-2 business plan provided an understanding on how satisfied our customers are with the service we provide. Their views on the outputs we should provide during RIIO-2, how these should be delivered and the effect on their bills, were considered by the Board. In the US, we have incorporated 'voice of the customer' in Executive Committee and Board papers and received feedback to support our five new strategic imperatives which will guide our customer focus. The Executive Committee and Board also received updates on the US KEDNY/KEDLI and Niagara Mohawk rate case filings. **Views of other stakeholder groups considered** Investors, Regulators, Our colleagues, Communities and government
Our suppliers	**Company engagement** Strategic relationship meetings are conducted regularly between suppliers and the procurement team. We work closely with our suppliers and peers to build on our knowledge and promote best practice in the industry to combat issues such as climate change. **Board-level engagement** Bi-annual reports relating to our suppliers were submitted to the Executive Committee and annual reports to the Board.	In collaboration with our suppliers, our focus is on delivering low-carbon and sustainable schemes for our projects. We established major contracts that will support our role in accelerating the clean energy transition. For example: • the Board were updated on the six-year, £400 million contract with Hochtief-Murphy Joint Venture, who will deliver the tunnelling and shaft work for the London Power Tunnels 2 project; and • the Board received an update on the chosen supplier, Balfour Beatty, who had been chosen to be the civil works supplier for the Company's interconnector to Denmark. The four-year, £90 million contract will deliver the British onshore civils works for the project. **Views of other stakeholder groups considered** Investors, Regulators, Communities and government, Customers

Our commitment to being a responsible business

In 2019, National Grid conducted a comprehensive review of where we can create the most positive impact on society. The resulting principles of responsibility are being embedded to inform everything we do as a business.

Responsibility at National Grid

Our purpose is to "Bring Energy to Life" and we do this through the delivery of the electricity and gas that powers our customers and communities; safely, reliably, and efficiently. But we also have an important role as a responsible citizen in society as a whole, in our communities, and as a responsible employer.

To further this ambition, during 2019/20 we applied the lens of being a purpose-led organisation, including the principles of an ESG (Environmental, Social and Governance) framework, to review and adapt the way we manage our business responsibly, looking at everything from our strategic investment process, to our role in the community, to our procurement processes and policies. This brings together, and enhances, our focus on the environment, people and communities that have been at the core of our approach to responsible business for many years.

We have committed to embedding the following five key elements of being a responsible business into our strategy and goals. These are areas where the Company can create maximum total societal impact: the environment, our governance, our colleagues, the communities we serve and operate within, and the economy.

This approach has informed and guided our response to the COVID-19 crisis, with a focus on caring for our colleagues, supporting the communities and customers we serve, and helping protect and restore the economies we operate within.

Our approach to reporting

This section contains information relating to the key focus areas that are considered material to shareholders, as identified by our internal review of total societal impact.

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.

Our principles of responsible business

Our communities

We are committed to delivering sustainable energy safely, reliably and affordably for the communities we serve. In 2019 we recognised the importance of ensuring that our communities enjoy the benefits of the clean energy transition and that no one should be left behind in delivering those benefits.

These shifts in our sector will require investment. We are committed to working with the communities we serve to help them meet, or exceed, their overall climate and carbon ambitions, and we will look to do so in an affordable way. As we develop long-term affordability targets, we will ensure that National Grid's cost to our customers is reported transparently on an annual basis.

As well as affordability, the principle of fairness is also important. We will play our role in ensuring that no-one is left behind in the transition to clean energy, and that the associated benefits are enjoyed by all. A fully decarbonised transportation infrastructure, for example, should be accessible by everyone across the communities we serve.

Finally, we embrace our responsibility to maintaining the delivery of energy to the communities we serve, safely and reliably.

Engaging with our communities

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 18.

Supporting communities to thrive

Responsibility in our communities means safely maintaining the resilient energy systems society expects and has become accustomed to, as well as ensuring that our economic and social role in the community has the greatest possible positive impact. That's why we partner with charity organisations and encourage and enable our employees to volunteer to work with them. In early 2020 we launched a Company-wide community investment strategy to ensure that our programmes enable skills development with a focus on lower-income communities. These programmes are intended to create employment opportunities in the energy sector, related to the clean energy transition. We are committed to tracking programme participants from initial interaction all the way through to eventual employment either at National Grid, our partners, suppliers or other organisations involved in the challenge of meeting net zero. Our goal is to create 45,000 jobs across the US and UK through this new initiative.

> **"In early 2020 we launched a Company-wide community investment strategy to ensure that our programmes enable skills development with a focus on lower-income communities."**

45,000

Jobs to be created across the UK and US to support lower-income communities

£47m

(2018/19: £54m)

Contribution of our corporate responsibility work

Part of our responsibility is to serve society fairly and affordably. In the US we already care for vulnerable customers with low-income programmes, bill discounts and free energy efficiency advice. In response to the COVID-19 crisis, we have expanded customer support, paused late payment collections activities, and placed a freeze on related service cutoffs.

In the UK, National Grid established a £150 million Warm Homes Fund. This is the largest private sector investment in energy efficiency ever made in the UK, and is designed to support local authorities, registered social landlords and partnerships to help approximately 50,000 households suffering from fuel poverty. Protecting vulnerable customers remains a key priority as we seek to ensure that no-one gets left behind in the transition. And by engaging with customers to reduce their energy usage, we can also help them reduce their carbon emissions, contributing to the overall decarbonisation of the economy.

Reliability and resilience are part of our regulatory duty, but also our social contract. There isn't a choice between a clean energy system and a reliable one. Due to the effects of climate change, we expect our network will need to be more prepared to recover from extreme weather events, and we are committed to ensuring the reliability of supply, as well as playing a leading role in disaster recovery.

Case study – UK

The Hinkley Connection Project

Our project will connect the UK's first nuclear power station for a generation; introduce T-pylons to our network; and release low-carbon and renewable energy from the south west. It's a positive and exciting future. Getting there, however, means impacting communities with construction for seven years.

In return, we're helping local people create a future of their own and are investing in the local economy via adult skills and employment. Working with stakeholders we have created bespoke training and support for the long-term unemployed. Our aim is to help more than 300 long-term unemployed into work; so far, 49% of those under training have gained employment.

We listened to government agencies, local authorities, job centres and charities – as well as our customer, EDF. Their feedback helped us design a course that responds to local labour markets and, with retention a key challenge, encourages trainees to complete it. Based on stakeholder feedback, we emphasised traffic management training.

Stakeholders challenged us to focus training in areas most affected by construction and we are now revisiting our approach.

Through our commitment to benefit the communities in which we operate, we are connecting with people, as well as low-carbon generation, leaving a legacy of job creation and upskilling.

Case study – US

Ideal Dairy Farm, New York

The New York State Energy Research and Development Authority and National Grid work collaboratively to deliver technical and financial resources to the agriculture community across New York State. We are pleased Ideal Dairy, LLC has been a beneficiary of this scheme.

Energy costs are a significant expense for a farm. Expansion has always been part of Ideal Dairy farm. Recognising the importance of greater economies of scale, Ideal Dairy decided to proceed with a multi-million dollar expansion project. National Grid provided financial incentives for the energy-efficient equipment as well as an economic development grant for a new commercial underground three-phase 1,600 amp service to support this expansion. The new well-lit parlour and barns with efficient ventilation systems keep the areas bright and comfortable for the cows and workers. This optimises production.

Ideal Dairy has grown from 1,230 cows in 2016 to 2,300 cows while doubling production to 22,000 gallons of milk a day through efficiencies. With the success of this project, they added a freestall barn in 2019 and plan for another one in 2021. They anticipate this will enable them to grow to 3,000 cows. Through this expansion, Ideal Dairy is improving the environment by reducing their energy consumption, and keeping their workers satisfied, whilst serving their community.

Our commitment to being a responsible business continued

Environmental: The path to net zero

We are embracing our role at the heart of the energy system and understand the critical role we play in tackling climate change. The markets in which we operate have announced ambitious carbon reduction targets and further legislative actions are anticipated in all our markets. These targets will be challenging and we embrace the opportunity to support the delivery of these goals.

While the biggest impact we can have is supporting the economy-wide clean energy transition, it is important we also reduce our own direct impact on the environment.

In 2012, we developed our environmental sustainability strategy, "Our Contribution", to set a framework for embedding sustainable decision-making into our business operations. We focused on three key areas – climate change, responsible use of natural resources and caring for the natural environment – and set targets to deliver progress through the end of 2020. In 2019/20, we have continued to advance our work.

We continue to focus on carbon reduction being factored into both our major investment decisions and our tender process for major construction projects. These actions encourage not only our teams, but also our supply chain to deliver lower-carbon solutions. Supply chain emissions are classified as Scope 3 emissions and, as such, the tender carbon weighting will help us reduce our Scope 3 emissions.

We also have programmes in place to ensure that we are making improvements to the natural environment. One such programme focuses us on finding better ways to deliver an increase in environmental benefits on non-operational land, while working with local partners and communities. Work under this programme prioritises local environmental benefits, for example increasing pollination, community access to green space and bio-diversity (see the Pollinator Meadow Project case study below).

"In 2019 we furthered our commitment to combating climate change with the announcement that we will aim to achieve net zero for our direct emissions by 2050."

Our Contribution Progress Highlights

Metric	End of Calendar Year 2020 Target	Progress through 2019/20
Reduce Scope 1 and 2 GHG Emissions	45% reduction	70% reduction
Send zero office waste to landfill	100% from major sites	95%
Reuse or recycle recovered assets	100% by 2020	100%
Recognise and enhance the value of our natural assets	50 sites	50 sites with 8 additional sites in progress
Carbon pricing	Implement carbon pricing in major investment decisions	On track to complete in major business areas by end of 2020

Case study – US

Pollinator Meadow Project – Pawtucket, Rhode Island

Our electric transmission corridors must be regularly maintained to prevent vegetation from endangering the wires. We see this as an opportunity to practise environmental stewardship.

As meadows are becoming rare as more New England pastures grow back into forests, transmission line corridors are increasingly important as low growing-shrub and meadow habitat. To assess the viability and practicality of incorporating wildflower plantings into our vegetation management program, we implemented a pollinator pilot project in Pawtucket, Rhode Island. During this pilot, we converted almost two acres of transmission line corridor to wildflower meadow. The project was a success and the flowers continue to flourish. We will continue to monitor the project and are committed to creating at least one new pollinator site in the US per year, over the next five years.

Projects like these not only help the environment, but also allow us to build connections with local environmental organisations and customers and increase public understanding of our vegetation management programmes.

Case study – UK

Chairman's Awards: Save Evie's Whale

The annual Chairman's Awards are a demonstration of how we use governance to bring our purpose, vision and values and the role we play in society to life. Every year more than 150 teams submit entries that show how the work we do at National Grid contributes positively to our people, our customers and communities now and in the future.

In 2019 the "Save Evie's Whale" campaign was chosen as the winner of the Chairman's Awards at an event in New York. The campaign was inspired by Evie O'Grady, the seven-year-old daughter of one of our employees, who made a drawing of a whale – because she was so upset about the number of whales dying due to plastic pollution in our oceans. Evie's drawing and her story became an inspiration to encourage employees to think about the environmental impact of single-use plastics. In June 2019 we made a commitment to remove single-use plastics from sale at our UK offices by 2020.

The "Save Evie's Whale" campaign brought that commitment to life and provided a platform to engage with employees and suppliers about reusable cups and other materials, and effective recycling behaviours. Piloted in our Warwick UK offices, with the campaign we have successfully eliminated plastic straws and plastic cutlery and eliminated over 46,000 polystyrene containers and 22,000 plastic containers going into general waste annually. The programme also created significant cost savings by reducing the use of consumables, improving recycling rates, and cutting the volume of waste generated. "Save Evie's Whale" has since been rolled out in offices across the UK, and also at local schools and community groups, inspiring behaviour change in society. Over 4 million pieces of single-use plastic have so far been eliminated.

4 million+

pieces of single-use plastic eliminated

Building on earlier actions to manage office waste, we launched waste reduction campaigns across our offices in the UK and the US. In the UK we have eliminated over four million items of single-use plastics, mainly related to food and beverages (see the Save Evie's Whale case study on the previous page). In 2019, we also diverted 95% of office waste from our targeted sites away from landfill, and are aiming to complete work at the remaining sites in 2020.

Our Further Commitments to Reducing our Impact and Achieving Net Zero

As we work to meet our 2020 'Our Contribution' commitments, we will continue to reduce our carbon footprint, maximise the value of our resources and enhance the environment; however, we recognise that we can do more to combat climate change and improve the environment. To accomplish this, as part of our Responsible Business review, we are developing new metrics and targets to further challenge us and allow for monitoring and evaluating our performance. These will be announced later this year.

The cornerstone of our revised targets is our commitment to achieve net zero for our scope 1 and 2 greenhouse gas emissions by 2050 that was announced in November 2019. This replaces our previous target of an 80% reduction by 2050 to better align with our ambitions. We also set more ambitious interim targets for our emissions reductions of 80% by 2030 and 90% by 2040.

To achieve these targets, we will also progress our emission reductions by continuing, and accelerating, current emissions reduction programmes, and by looking for new, innovative ways to reduce our emissions. We are reducing leakage from our gas pipelines through our gas mains replacement programmes and through innovative robotic pipe sealing techniques. We are piloting the use of parts of our gas network for the distribution of hydrogen and RNG. We are working with suppliers to evaluate potential alternatives to SF_6.

Energy efficiency is one of our key focus areas. We have ongoing energy reduction targets in our US and UK core office facilities. As an example of our progress, in the UK, we have exceeded our target by reducing energy consumption by 11% from a 2015/16 baseline. In the US, we performed whole-building LED replacements at two of our key locations and expect to yield annual site electricity savings of 6% and 17%. We are also working to reduce our transport energy use through the purchase of alternative fuel fleet vehicles and employee programmes promoting the purchase/lease of electric vehicles.

For the US and UK, our operational energy use is 2,330 GWh, our facilities energy use is 285 GWh, our transport energy use is 405 GWh and electricity energy losses from our networks are 12,311 GWh. US generation is also responsible for 12,892 GWh. In these figures, facilities energy use is defined as the energy used in powering and heating our offices, whilst operational energy accounts for energy used in fulfilling our primary business. Transport covers business travel, including our own fleet, hire cars and personal car use for business.

Understanding National Grid's greenhouse gas emissions

We monitor and report our greenhouse gas emissions in accordance with the World Resources Institute and World Business Council on Sustainable Development Greenhouse Gas Protocol.

Scope 1: Direct Emissions from the operational activities of National Grid.

Scope 2: Indirect Emissions from gas and electricity purchased and used by National Grid.

Scope 3: Other Indirect Emissions from activities occurring from sources that National Grid does not own or control.

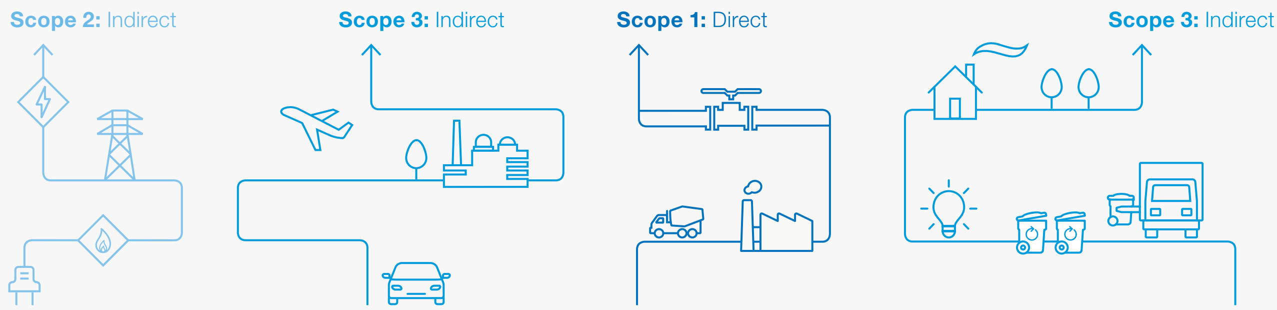
Our main sources of greenhouse gas emissions are shown below.

We have committed to achieving net zero emissions for our Scope 1 and 2 emissions by 2050. Most of our Scope 3 emissions are emitted from two key business activities: the sale of gas and electricity to customers in the US (82%) and the purchase of goods and services (18%). We are working with our customers and our supply chain to reduce Scope 3 emissions and assessing appropriate targets for our Scope 3 emissions to align with pathways to 2050 targets.

Key:

◆ included in our net zero target

Greenhouse gas emissions



Upstream

Scope 2 ◆
- Line losses from our electricity transmission and distribution lines
- Energy purchased for use at our facilities
- Use of electric drive compressors in our gas business

Scope 3
- Purchased goods and services
- Business travel
- Employee commuting

Our operations

Scope 1 ◆
- LIPA electricity generation
- Leaks and venting from our gas transmission and distribution systems
- SF_6 leaks from our electric equipment
- Fleet vehicle use
- Gas-fired compressor use

Downstream

Scope 3
- Use of 'sold product' or emissions from our customers' use of the gas and electricity we purchase on their behalf
- Waste management

Our commitment to being a responsible business continued

Our colleagues

We employ around 23,000 people, located both in the UK and the US. Our people are the lifeblood of National Grid. Their safety and wellbeing are our primary concern and a priority for every one of us at National Grid – they underpin everything we do. Any safety incident is one too many and we continually strive to improve safety for our employees. 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.

Our COVID-19 response started with supporting our people to work safely from home or as required in the field for essential activity, and to support their physical and mental health needs wherever they are. We have also facilitated volunteering opportunities during the crisis, and increased paid-time available for volunteerism.

Preparing our colleagues for the clean energy transition

Responsibility towards our people also means training them and (re)skilling them for the evolving needs of our businesses. The necessary skills and profiles of our employees and those at our partners and competitors are changing. We need forward-thinking, creative minds to help meet the challenges we face in connecting people to the energy they use. We anticipate a number of areas of increased focus in the future, such as data analytics to manage more complex grid flows and the customer interactions needed to balance supply and demand. We will also need skills to design and implement new energy technologies, such as renewables and heat pumps. Technicians will have skills to install and maintain energy efficiency measures and technologies as well as skills to support the deployment and enablement of new heating technologies such as hydrogen and change management skills to bring society along in the green transition. In 2019 National Grid commissioned a "Net Zero Skills Report" to identify the jobs needed to help society achieve net zero and provide a basis for engagement with stakeholders working on the challenge alongside us.

Investing in our colleagues

Our people and our communities will benefit from the time and financial investments we are making in ensuring that the future skills needed for National Grid, and the broader energy industry, are available. We are developing national and local skills development partnerships and initiatives, with a focus on the lower-income communities we serve. We aim to give access to 45,000 young people from these communities over the next five years, tracking their progress from first interaction right through to employment at National Grid, our partners and suppliers, or adjacent companies and industries. Our employees are expected to play a critical role in these programmes.

Keeping our colleagues safe

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 20. 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 19, and find out how we manage our operational risks on pages 22 – 25.

Engaging with our colleagues

Through a third-party partner, we carry out an annual EES 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 20.

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

Employee engagement score
77
(2018/19: 73)

The Times
Top 50
Employers for women

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.

Our culture

The culture we strive for stems from embracing our values: every day we do the right thing, find a better way and make it happen. You can read more about our values on page 12. 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 pages 22 – 25.

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 for a healthy lifestyle and mental wellbeing. We engaged in mental health awareness week focusing on tools to support managers and employees dealing with mental health and wellbeing. The training has been well attended. We supported World Mental Health Day to focus on suicide prevention and encouraging employees to talk and help remove stigma. In 2019, the UK and NGV businesses signed up to the Mental Health at Work Commitment focusing on six key commitments which are implemented and monitored through the Thriving at Work standard. In the US, we are tackling musculoskeletal and soft tissue injuries through preventive athletic training programmes to encourage stretching and flexing before undertaking manual tasks. In 2019, the US launched a Fatigue Risk Management System, with essential training for employees and supervisors to identify and mitigate fatigue risk in each area of Operations.

Gender pay gap

We review gender and ethnicity pay gaps annually in both the UK and US and although we are broadly comfortable with our performance, we continue to strive to recruit and develop more women and ethnic minorities. For more information about our UK gender pay, visit our website at: www.nationalgrid.com/careers/understanding-our-uk-gender-pay-gap

Promoting an inclusive and diverse workforce

National Grid is dedicated to building a workforce which is representative of the communities we serve, in all aspects of diversity. We also continue to provide an inclusive culture across each stage of our colleague journey.

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, is 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.

We are committed to transparency and reporting annually on our progress on BAME and female representation on our Board, at manager level, among new joiners and our workforce as a whole. We remain focused on bringing the best diverse talent into our organisation and supporting them to reach their full potential.

We also adopt this approach to our future talent, with our Apprenticeship and Graduate programmes actively encouraging applications from diverse candidates. During 2019/20, in the US we attracted 31% female applicants and 51% ethnically and racially diverse applicants to our graduate development roles. We also took 36% female applicants and 52% ethnically and racially diverse applicants into our internship programmes. Our UK Graduate Programme attracted 25% female applicants and 57% ethnically and racially diverse applicants. Our UK Industrial Placement and Student Internship programmes attracted 28% female applicants and 45% ethnically and racially diverse applicants.

A total of 18.3% of our workforce have declared themselves to be of 'minority' racial or ethnic heritage and we currently have 24.7% females across our total workforce. We are very much aware, however, of the number of 'declined to state' responses we have across all diverse characteristics and as a result in 2019/20 we launched our #thisisme campaign, not only to increase our disclosure rates, but also to demonstrate our commitment to a culture of openness and security for colleagues to share who they are. This year also saw a number of our most senior leaders participate in reverse mentoring. This allowed them to get a different perspective on life, not only at National Grid but also more generally. This has provided a mutual knowledge share and dialogue between senior individuals from our organisation and more junior individuals from a diverse range of background with fantastic feedback from all parties.

We continually work to ensure our application, assessment, development and training provisions more broadly, are all inclusive and accessible. We offer our current colleagues training and development programmes which ensure they are aware of acting on bias, while providing specific development programmes for our diverse colleagues in both the UK and US. We have 17 Employee Resource Groups (ERG) (11 in the US; 6 in the UK), which are all highly active and visible across the business, with events and awareness-raising campaigns throughout the year (including a strong presence at WorldPride in New York this year). Our ERGs also provide a crucial support network to our diverse colleagues.

We continue to participate in numerous awards and benchmarks to recognise the great work of our colleagues (including Disability Confident, The Times Top 50 Employers for Women, Best Places to Work for LGBT Equality and Forbes 2019 Best in State Employer; we were also shortlisted in the Top 10 Outstanding Employers at The Ethnicity Awards for 2019). These also offer us the opportunity to learn, focus our strategy and continually improve our approach to inclusion and diversity. We have close partnerships with external best practice organisations and are active members of sector- and industry-wide groups which ensure we are sharing best practice and campaigning at a sector-wide level for greater inclusion for all.

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.

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, the 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 2020

	Our Board[1]	Senior management[2]	Whole company[3]
	number	number	number
Male	8	165	17,379
Female	4	82	5,690
Total[6]	**12**	**247**	**23,069**
Male (%)	66.7	66.8	75.3
Female (%)	33.3	33.2	24.7

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 20.

Our commitment to being a responsible business continued

Total headcount as at 31 March 2020[4]

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

Work pattern

	Full-time		Part-time[5]	
	number	%	number	%
UK	6,027	95.3	294	4.7
US	16,629	99.3	119	0.7
Total[6]	**22,656**	**98.2**	**413**	**1.8**

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	
	number	%	number	%
UK	4,548	72.0	1,773	28.0
US	12,831	76.6	3,917	23.4
Total[6]	**17,379**	**75.3**	**5,690**	**24.7**

Ethnicity demographic as at 31 March 2020

'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	17,482
Minority	3,918
Declined to state	1,669
White (%)	81.7
Minority (%)	18.3

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 and severance.

	Voluntary	Non-voluntary	Total
	%	%	%
UK	6.4	4.8	11.2
US	7.7	1.6	9.3
Total[6]	**7.4**	**2.4**	**9.8**

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

National Grid traditionally has low voluntary turnover and high employee tenure, driven by high engagement and good career opportunities as evidenced by our high internal churn rates. Non-voluntary attrition is in the majority comprised of severance.

Training days per employee

From 1 April 2019 to 31 March 2020, the total number of training days delivered per employee (as recorded in our HR systems), across the whole Company was 6.0 days (2018/19: 5.3). There was also a reduction in training activity towards the tail-end of March as a result of the COVID-19 lockdown in both our UK and US businesses.

Promotion rate

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

	Promotion rate %
UK	14.1
US	16.1
Total	**15.5**

The economy

Our economic contribution to society comes primarily through the delivery of safe and reliable energy. Crucially, we make sure energy reaches homes and businesses safely, reliably and efficiently. But our contribution as a responsible, purpose-led business also comes as an employer, a tax contributor, a business partner, and community partner.

We help national and regional governments formulate and deliver their energy policies and commitments. Our approach to regulatory consultation is to seek a framework that puts consumers at the centre of our price control, while enabling the clean energy transition. Evolving that partnership to help enable the clean energy transition and slow the pace of climate change before it cannot be reversed, will also be key in protecting future economic growth, and safety and wellbeing in society.

Our geographic footprint means that our economic contribution is felt in lower-income communities that can truly benefit from the ripple effect of our local presence, from rural communities in New England, to the UK where most of our economic contributions are made outside London. Our tax contribution helps to fund services and we are committed to a coherent and transparent tax policy and recognise our economic role in society in doing this (more information on tax can be found on pages 28 – 37).

> **"We are fair to our suppliers and committed to paying them promptly."**

We are fair to our suppliers and committed to paying them promptly. We also influence our supply chain to operate as responsible businesses, requiring all suppliers to share our commitment to respecting, protecting and promoting human rights.

This includes alignment to the United Nations Compact Guiding Principles, the International Labour Organisation standards and the Ethical Trade Initiative Base Code as a reference standard.

Governance

Our approach to corporate governance plays an important role in helping us develop our culture at National Grid – a culture that embraces diversity and inclusion, and an environment where everyone can fulfil their potential. Our Board will continue to play a vital role in setting the tone right from the top. We apply a robust framework to ensure that stakeholder considerations are suitably captured and enhancements made to strengthen the views of stakeholders in the boardroom.

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. We were recently recognised by Ethisphere as one of 2020's World's Most Ethical Companies. 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 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, the US Trafficking and Violence Protection Act 2000 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 financial crimes, fraud, 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 76 – 81. None of our investigations over the last 12 months have identified cases of bribery.

Anti-financial crimes policy

We have launched a new Anti-Financial Crimes policy which applies to all employees and those working on our behalf. It sets out our zero-tolerance approach to bribery, fraud, money laundering, tax evasion and other corrupt business practices.

To ensure compliance with the UK Bribery Act 2010 and other relevant legislation, we operate an anti-financial crime risk assessment process across the Company to identify higher-risk areas and make sure adequate procedures are in place to address them. Fraud and bribery risk assessments are conducted 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.

> **"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, Find a Better Way and Make it Happen."**

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, Find a Better Way and Make it Happen. 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. Our Code is updated every three years and is currently being updated with a release date later in 2020. In addition, we have a new Ethics Business Management Standard which provides a framework around our ethics programme and describes what is expected of the business.

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

Our GSCoC is issued to our suppliers annually and sets out our expectations and fundamental principles, including preventing and detecting bribery and corruption, which should extend into the supply chain. 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 adherence to the principles of the United Nations Global Compact, in accordance with all applicable local, state, federal, national and international laws or regulations including the UK Bribery Act 2010 and the US Foreign Corrupt Practices Act 1977. 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 speak-up 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.

Our commitment to being a responsible business continued

Preventing modern slavery

We strive to prevent modern slavery from 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 Statement if required. Each year, we update our own Statement and publish this on our Company website in line with the Modern Slavery Act's requirements. In 2019, our Statement was independently assessed by Development International, a new ranking of the nation's largest publicly listed organisations, and we were listed in the top quartile for FTSE 100 listed companies. In 2018, we were also assessed by the Business & Human Rights Resource Centre (BHRRC) and were positioned 12th in the FTSE 100 ranking and recognised as one of a 'small cluster of leaders standing out' in this space. BHRRC did not publish a ranking in 2019.

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 2019, we continued to engage with suppliers identified as being within potentially high-risk categories. Through this engagement, which included a US workshop following on from the UK workshop in 2018, we encouraged our suppliers to conduct similar risk assessments with their own supply chain.

We also facilitated an industry masterclass to discuss common issues in the sector and work more closely together to increase awareness and drive positive change.

We are an active member of the United Nations Global Compact Modern Slavery Working Group, signatories to the Construction Protocol, 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 human rights risks form part of our sourcing process.

In 2019 we signed up to the People Matter Charter which has been created by the Supply Chain Sustainability School, of which we are a partner member, to develop and implement consistent workforce standards throughout our industry.

Non-financial information

This section 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 information describing the business relationships, products and services which are likely to cause adverse impacts in relation to the matters above, can be found as follows:

- business model – pages 2 – 7;
- KPIs – pages 18 – 20;
- principal risks – pages 22 – 25; and
- Audit Committee Report (our due diligence) – pages 76 – 81.

Our policies and related governance

Descriptions of the policies and the outcomes pursued in relation to the above matters are discussed, where material, throughout this section. A full list of our policies can be found online, at www.nationalgrid.com/about-us/corporate-governance

In addition to our policies, we have a suite of Business Management System (BMS) standards. These standards provide the foundation for bringing energy to life for our stakeholders. They act as our guiderails by defining the minimum requirements for the high value and risk activities most important to our business – allowing our leaders to effectively drive change instead of responding to it.

The BMS delivers benefit in four key ways:

Risk Mitigation: The BMS defines and sets minimum requirements for our principal and other risks so they can be effectively and consistently managed across our businesses.

Best Practice: The BMS establishes a common language and framework for what constitutes best practice and provides the opportunity for Communities of Practice (CoP) to share across the organisation.

Standardisation: The BMS helps us build efficient processes and lean functions in our business areas with global responsibilities – HR, IT, Procurement, Finance and Corporate Affairs. By building one way of doing things, we can capture the maximum benefit from our work.

Simplification: The BMS acts as a catalyst to challenge and remove documentation and rules that don't deliver value. The standards will also increase the freedom of leaders to act, knowing the boundaries which can't be compromised as they strive to work in new and innovative ways.

Some of the BMS standards that we pursue to ensure consistent governance on a range of non-financial matters, can be seen below. They are not limited to this selection. These have been summarised for the purpose of the Non-Financial Information Statement.

Policies and documentation

People

- Our Code of Ethical Business Conduct for employees: helps our ethical reputation while ensuring we maintain stakeholder confidence in our ability to deliver on our ethical commitments.
- The Wellbeing and Health BMS Standard: enables our business to proactively manage our health risks and controls by fostering a proactive approach to wellbeing that can measure and target areas of greatest impact for the business.
- The Occupational Safety BMS Standard: ensures that no matter where in the world our employees or contractors work, they can expect to receive the same consistent and high level of protection for their own safety.
- The Process Safety BMS Standard: helps to protect people and the environment from the risk of major accidents by establishing a safety-focused culture. Process safety is an important commitment at National Grid. Our aim is to be recognised as a high performer in process safety through the demonstration of industry-leading risk controls, performance and cultural maturity across the management of all of National Grid's major hazard assets.
- The Human Resources BMS Standard: sets out what is expected of our leaders when managing their employees throughout the employment lifecycle.
- The Performance Excellence BMS Standard: sets out how we at National Grid 'find a better way'. It provides the basis for continuous improvement across everything we do.

Environment

- The Environmental Sustainability BMS Standard: establishes environmental compliance and environmental sustainability performance requirements for all operational and non-operational activities.

Society

- The Stakeholder Engagement BMS Standard: defines performance requirements for digital and physical external stakeholder engagement by creating a consistent approach towards addressing the most important stakeholder issues and opportunities.

Human rights and anti-corruption and anti-bribery matters

- Procurement Standard: defines how to improve efficiency within our supply chain expenditure.
- Global Supplier Code of Conduct.
- Modern Slavery Act.
- Human rights.

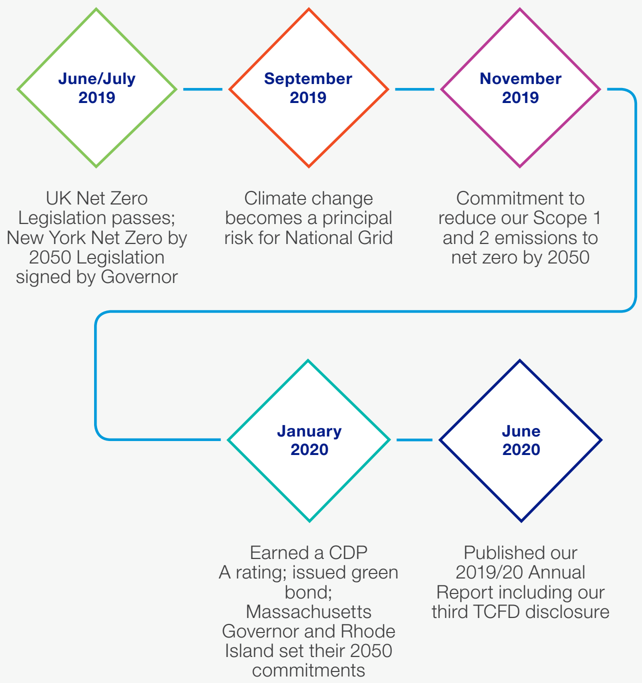
Task Force on Climate-related Financial Disclosures (TCFD)

National Grid has committed to implementing the recommendations of the TCFD in full, and below is our third disclosure which builds on our previous two.

This year we have continued to make good progress on the recommendations, aided by developments in the markets we operate in, with aggressive 'net zero emissions' and renewable targets set in the UK, New York State, Rhode Island and Massachusetts in the last 12 months, as well as increasing public scrutiny and focus across the sector and in corporate boardrooms. This year, we have progressed our scenario planning work, elevated climate change as a principal risk to our Group risk register, issued our first green bond, and evolved our greenhouse gas emission reduction targets. Our work was recognised by CDP as we were named on its climate change A List for the fourth year in a row.

In our 2018/19 disclosure, we outlined the areas we planned to focus our attention on during 2019/20. The table below outlines those actions, the progress we have made against each during this financial year, and our areas of focus for the upcoming financial year.

Key Milestones in 2019/20



Focus Area	Actions outlined in 2018/19	Progress made in 2019/20	Actions to progress in 2020/21
Governance	Ensuring senior leadership has an appropriate understanding and responsibility for the risks and opportunities associated with climate change.	The Board and Executive Committee have discussed climate change throughout the year and taken actions as follows: • engaged with key stakeholders on aspects of the net zero transition, for example, bringing in the UK Committee for Climate Change to speak to Electricity Transmission executives; • senior leadership devoted a day to responsible business and our total societal impact, including climate change; and • committed National Grid to reduce our Scope 1 and 2 emissions to net zero by 2050.	Continue to increase knowledge and skills among senior leadership in this area and include climate change expertise as a factor to consider in our Board succession planning.
Strategy	The use of climate-related scenarios to inform our business strategy (and disclosure of the possible outcomes under those scenarios).	We have undertaken an analysis of the impact to our business model of transitional scenarios where decarbonisation goals are, or are not, met. The details of this are presented in the scenarios section of this disclosure.	Assess the physical risk to our assets using updated climate scenarios and quantify the potential impacts. Incorporate this work into the transition scenario analysis. Build on the transitional scenarios we have developed.
Risk Management	Embedding climate change into our risk management process.	After a full review of our risks, climate change is now a principal risk for the Group, from its previous status as an emerging risk. See page 23. We also developed 'business unit specific risks' to ensure that each part of the business has specific climate change risks.	Deliver identified control actions to mitigate climate change risk. Continue to review the risk and controls as further information is developed, including through scenario planning work.
Metrics and Targets	The development of metrics and targets to assess performance, and influence decision-making and remuneration.	We announced our commitment to be net zero for Scope 1 and 2 emissions by 2050 in November 2019. We revised our interim Scope 1 and 2 targets to an 80% reduction by 2030 and a 90% reduction by 2040. In addition, our NGESO published an update to their operability strategy showing the milestones to deliver zero carbon operation of the Great Britain Transmission network by 2025. See page 39.	Personal objectives will be set throughout the business to ensure delivery against our commitments. Continue monitoring our metrics and targets and develop and/or evolve metrics, as needed.

Task Force on Climate-related Financial Disclosures (TCFD) continued

How do we approach the governance of climate-related risks and opportunities?

The **Board of Directors** is responsible for the oversight of climate-related risks and opportunities impacting the Group. During the year, there has been an increased focus on climate-related matters as the landscape evolved with regulatory developments and changes in stakeholder expectations. The Board was involved in the following discussions relevant to climate change:

- Approving the Group's commitment to achieve net zero for our Scope 1 and 2 greenhouse gas emissions by 2050 replacing our previous target of 80% reduction by 2050. In addition, we have set the following interim targets: 80% reductions by 2030 and 90% by 2040.
- Climate change was elevated to a principal risk during the year, with the risk now being owned by Alison Kay, a member of the Executive Committee who has responsibility for Group Safety, Health and Environment. The governance process that was undertaken to upgrade the risk from an emerging risk to a principal risk is described in the case study on page 23.
- Strategy sessions were held, which included discussions related to climate change and considered the scenario testing performed this year (discussed on page 26). Topics discussed included the clean energy transition, the future of heat, as well as our strategy for renewables and electrification of vehicles. In addition, the Board held four sessions to consider our role as a responsible business and our role as a key facilitator of the energy transition featured.
- Approving the RIIO-2 submissions which reflect our investment proposition for supporting the UK energy transition.
- Quarterly review of performance on our environmental sustainability metrics and targets.

Responsibility for asset investment and maintenance planning is delegated by the Board to the **Executive Committee** who then further delegates the responsibility to the core operational businesses.

What is the oversight process for climate change related risks and opportunities?

The **Safety, Environment and Health Committee** (SEH Committee) is responsible for assessing the Group environmental sustainability strategy and performance, as well as how the Company adapts its business strategy considering potential climate change risks and opportunities. As part of this, the SEH Committee tracks, challenges and seeks assurance for the delivery of the plans approved by the Executive Committee.

The **Audit Committee** remains responsible for reviewing and approving the content of our TCFD disclosures and is taking an increasingly active role in overseeing disclosures around metrics and targets. The Committee considered papers in September 2019, November 2019, March 2020 and May 2020 summarising the financial reporting and disclosure considerations in respect of climate change.

The **Finance Committee** is responsible for overseeing our financing strategy. This year, the Committee reviewed and approved our Green Financing Framework. This framework, published in November 2019, aims to facilitate the disclosure, transparency and integrity of our Green Financing for our stakeholders.

A **TCFD steering group** oversees progress against the TCFD recommendations and the publication of our annual disclosure. The group reports to the Chief Financial Officer, Andy Agg.

Future Intent

As the climate change landscape is evolving, we will continue to build upon the good base level of experience and knowledge within senior management (including at Board and Executive levels), as well as consider climate change expertise in our Board succession planning. The SEH Committee will continue to monitor our environmental sustainability performance quarterly and approve updates to our environmental sustainability strategy and targets annually. The Audit Committee will continue to oversee the programme to evolve the assurance model for our responsible business reporting. The Finance Committee will consider the financial impact of environmental factors on our credit metrics and relevant considerations with regards to debt investors.

What is our strategy for responding to climate change?

Our strategy focus is three-fold: tackle the climate crisis by helping the markets we operate in transition to a net zero economy, while reducing our own impact on the environment and ensuring our networks operate reliably under changing conditions. Our strategy is informed by the evolving climate change policy and ambitions of the states and countries in which we operate, by the risks and opportunities identified during our continuing climate change scenario testing and by our ambition to have a positive impact.

Our financing strategy, which includes us issuing debt from our operating companies, is focused on aligning the debt issuances to the business purpose of each of our regulatory deals. As part of this strategy, we launched a Green Financing Framework to enable us to issue green bonds, loans or other financial instruments in November 2019. Green bonds allow us to access new capital pools and engage with investors who are keen to work with asset owners to facilitate the clean energy transition. In January 2020, we issued our first green bond in the UK, with the €500 million proceeds being used to finance projects with an environmental benefit across our UK electricity business. We are currently evaluating issuing a green bond in the US in 2020.

Regulatory Framework

The next 10 years are a crucial period with expected rapid change in the energy system, and therefore it is vital that the funding and regulatory framework is in place to deliver against these targets. Across our business, we are developing proposals for our regulatory rate filings that support our strategy to enable the transition and reduce our own impact.

UK RIIO-2 Business Plans

Our RIIO-2 Business Plans were developed through a comprehensive stakeholder engagement programme throughout the RIIO-2 process and have also evolved to reflect the UK government target, announced in June 2019, to achieve net zero emissions by 2050. Our plans cover a crucial period (2021 – 2026) for investment to help deliver the UK's net zero target. The route to net zero emissions is not yet clear but our plans are flexible enough to deliver the investment needed in the 2020s. We have built a plan to align with the pathway to net zero by 2050.

In our Electricity Transmission business, we propose £1.35 billion of expenditure to connect new generation and transport electricity across the country to where it is consumed, connect us to neighbouring electricity markets and support the Electricity System Operator in being able to operate a zero-carbon electricity system by 2025. Whilst consistent with Ofgem's business plan criteria, we recognise that these investments alone are insufficient to deliver net zero targets and have therefore proposed whole system options to accelerate progress towards net zero, for example through ultra-rapid vehicle charging at motorway service areas. As the optimal path to achieving net zero is unclear, we developed a series of uncertainty mechanisms that allow our plans to flex to deliver against the range of low-carbon system developments our customers could bring forward.

In our Gas Transmission business, we recognise that natural gas has an important role to play in supporting the transition to a low-carbon future. Natural gas, hydrogen and biomethane can help to decarbonise heat, the biggest source of UK carbon emissions. Our business plans cover a period where developing options and understanding choices is key. We will focus on leading the development of options associated with gas transmission, specifically hydrogen, to facilitate the decarbonisation of heat, industry and transport.

In our ESO business, our business plans focus on facilitating the transition to net zero. For example, our business plans aim to deliver new architecture and systems in our control centres to be able to operate a zero carbon network by 2025, and new monitoring and control systems to ensure power system stability in a low-carbon world.

Across all our businesses our plans include targets and commitments to manage our own environmental impact, with £530 million of investment planned across Electricity and Gas Transmission. We have committed to reducing NO_x emissions from our gas compressors, and achieving net zero construction emissions by 2025/26. We are targeting investments to replace leaking SF_6 (an insulating gas and source of GHG emissions) equipment to reduce emissions by 50% by 2030, phasing out the procurement of new assets containing SF_6 and introducing SF_6 free technologies.

In the UK, there is uncertainty on what further measures will be needed to adapt to climate change and meet the UK goal of net zero by 2050. We welcome Ofgem's Decarbonisation Action Plan and the shift to a more flexible, adaptive regulatory price control regime with a system-wide net zero re-opening mechanism.

US Rate Cases
In the US, we have ongoing and upcoming regulatory rate case proceedings. In all proceedings, gas and electric, we are focused on including proposals to support our climate change strategy and enable the net zero transition of the states in which we operate.

In the US gas distribution businesses, we are focused on decarbonising our gas networks and the heating sector. We are doing this by reducing emissions related to natural gas through energy efficiency and demand response, continued investment in our leaking pipe replacement programmes and advancement of the future of heat. For example, we included a $90 million future of heat proposal in our April 2019 KEDNY/KEDLI filing which combined expanded energy efficiency and demand response programmes, renewable natural gas interconnection investments, geothermal investments, and a hydrogen blending study. We plan to include future of heat proposals and continued pipe replacement programmes in our next Niagara Mohawk and Massachusetts gas rate filings. This work aligns with the Rhode Island Heating Sector Transformation, launched by the Governor in July 2019 to identify how the heating sector needs to change to meet the state's climate objectives. This initiative concluded in April 2020 with recommendations provided to the Governor. Those recommendations included increased energy efficiency, electrification through air and ground source heat pumps, and fuel decarbonisation through renewable natural gas and renewable oil.

In the US electric distribution businesses, we are focused on climate change and the new energy landscape. For our next Niagara Mohawk rate case filing, we will submit a proposal that focuses on three key areas: grid modernisation, customer engagement and supporting the state to achieve its clean energy goals outlined in the Climate Leadership and Community Protection Act (CLCPA). We will also leverage these grid modernisation investments to enable customers to engage with their energy consumption in an informed and seamless manner. Enabling New York State's clean energy transition is a common theme across all the above-described proposals and will be further enabled by our work in the electrification of transportation. The Massachusetts rate filing, approved in October 2019, includes work to advance Massachusetts's climate objectives including a climate change mitigation and adaptation plan, an off-peak rebate programme for electric vehicle owners, approval to include up to $50 million in energy storage in our 2021 grid modernisation plan filing, and a path forward for a significant investment in electric vehicle charging infrastructure in 2021. In Rhode Island, we launched an electric vehicle infrastructure and off-peak rebate programme and will be filing a Grid Modernisation and Advanced Metering Functionality proposal in the second half of 2020/21.

Future Intent
We are in the process of updating our budgets and forecasts to reflect the detailed financial impacts of our net zero strategy.

How have we advanced our climate change scenario analysis?

This year, we have advanced our scenario analysis work that considered both the transition and physical risks to our business. This work is and will continue to inform our strategy and investment plans.

Transition Risk Analysis
To further understand the risk that climate change could have on our business, we have undertaken a high-level scenario analysis. We used two scenarios: the first assumes that the global response to the threat of climate change is enough to limit global average temperature increases to no more than 1.5ºC above pre-industrial levels (as set out in the Paris Agreement) by 2100 (**the 1.5ºC scenario**). The second scenario assumes that the 1.5ºC target is missed by some margin, comparable to a 4ºC global average temperature increase (**the 4ºC scenario**).

To facilitate business planning, we have considered scenarios out to 2030. In this analysis, we assessed the impacts of the scenarios without factoring in activities we might take to adapt to the threats of climate change, or the opportunities of decarbonisation.

We made the following simplifying assumptions:

- In the 1.5ºC scenario, rapid changes are made to progress decarbonisation goals: coordinated policy, regulation and customer behaviour favours bans on polluting technologies, and support for low-carbon solutions. We have assumed that transition impacts in this scenario would be focused around technological shifts to support decarbonisation.
- In the 4ºC scenario, changes are less rapid and less comprehensive, and emissions remain high, so that the physical ramifications of climate change are more apparent by 2030. In rationalising this slower global progress, our 4ºC scenario assumed fragmented and ad hoc policy (within the Group's operating territories and globally).

The main transition impacts of the 1.5ºC scenario were:

- **A trend towards more large-scale renewables in the generation mix:** this would be a positive development for the Group, but for our electric network businesses the rate of new connections could increase beyond today's levels: this could increase costs or, without investment ahead of need, lead to a backlog.
- **A trend towards electrification:** increases in electricity demand would likely trigger electricity network upgrades and investment. Although network costs are a very small proportion of the customer bill, spikes in spending would need to be managed in conjunction with our regulators to ensure that customers, especially lower-income customers, are not unduly adversely affected.
- **Public pressure on gas:** in line with the Committee on Climate Change and other external sources, we do not believe substitutes to methane gas for space heating can reach scale in our territories by 2030 (or even 2040, unless extensive new policy is rapidly deployed). However, in this scenario we anticipate that, without mitigating action to reduce and offset emissions, there is a risk of pushback against the use of gas by environmental groups or concerned citizens. We are already experiencing growing resistance to building new gas infrastructure in our US business from politicians, concerned citizens and environmental groups.

The main impacts of the 4ºC scenario were:

- **Physical ramifications of climate change:** in this scenario we expect extreme weather events of escalating severity and frequency, which could increase disruption to our assets and our customers. This would require investment to 'harden' assets and would heighten the safety risk to our field employees. Our approach to physical climate risk is discussed in more detail below.
- **Lower system visibility:** as this scenario sees less coordinated policy and regulation in pursuit of decarbonisation, we would anticipate a greater variety of solutions being deployed across our networks. This could increase overall system costs and reduce visibility over the network, potentially slowing our responsiveness to disruptive events. We do note, however, that a greater number of distributed assets would increase the potential for local balancing, which could mitigate this.
- **Inequality of access:** without carefully designed policy, we believe decarbonisation activities have the potential to leave some sectors of society behind: for example, heat pumps and the energy efficiency upgrades they typically require are currently cost-prohibitive for many. As well as the ethical implications of this, there is a risk to the Group, especially for our US businesses, that a proportion of our customers would struggle to pay their bills.

Analysis shows that, without action, both scenarios present risks to us. However, while these would need to be managed, we would not need to materially change our business model. We also note that for a group in our position, some of these changes represent material opportunities.

Physical Risk Scenario Analysis
We recognise that, due to the amount of carbon already in the atmosphere, some escalation of extreme weather events is likely in both the '1.5ºC' and '4ºC' scenarios, especially under a longer-term view. This year, we began Group-level work to assess our physical risks to ensure that any necessary measures to defend our assets are identified. We ran an initial workshop with the US, UK and NGV teams and the UK Meteorological Office (Met Office) consultancy team to define the key areas of focus (e.g. flooding, icing and hurricane frequency for the US and UK regions) and define how the climate science can answer the questions we have on the weather conditions our assets will have to operate in up until 2100. Using the output of this work, we will develop and progress a scope to analyse weather data specific to the regions we operate in and assist in developing an understanding of the vulnerability of our assets as well as the mitigating measures that will be needed to protect them. We are also undertaking work with a team from the Massachusetts Institute of Technology (MIT) to study the impacts of weather changes related to climate change in the northeastern US.

Task Force on Climate-related Financial Disclosures (TCFD) continued

What are the risks and opportunities from climate change?

The rapid changes in the energy market and demands to meet net zero emission targets present several challenges that are both a risk and opportunity for us. In addition, the changes in temperature and weather patterns have and continue to present challenges and risks. These risks and opportunities, along with a summary of the work we are doing to address them, are presented in the table below.

Risk/ opportunity type	Description	Our response
Transition		
Markets	The operating environment and regulatory framework are rapidly changing in line with the decarbonisation of the electricity and gas networks in the UK and US.	Facilitating the transition to a low-carbon economy is central to our purpose as a business, and certain key actions we are taking in relation to decarbonisation and decentralisation are set out on pages 12 – 15.
Markets	Commercial opportunities from the transition towards net zero (short/medium and long-term).	Development of a strategy to enable the building of charging stations across our US jurisdictions and UK highways and to meet demand for **electric vehicles**. We have developed a dedicated programme to understand what is required to incorporate **hydrogen and renewable natural gas** into the gas supply. Acquisition of Geronimo, a leading developer of wind and solar generation assets based in Minneapolis, Minnesota, to help position us to develop and **grow a large-scale renewable business** in the US. Our **interconnectors** form an important part of the UK decarbonisation, by allowing us to exchange surplus renewable electricity with neighbouring countries. We are leading the development of **Carbon Capture Utilisation and Storage (CCUS)** technology in the Humber, UK, to support this area to become the first zero carbon region in the world. **Our continuing energy-efficiency** programmes across Massachusetts, Rhode Island and New York have reduced CO_2 emissions by more than 725,000 metric tonnes over the past year which is equivalent to the GHG emissions from over 156,000 passenger vehicles driven for one year.
Markets	Changes in supply and demand for existing and new technologies.	Our analysis, underpinned by the ESO Future Energy Scenarios (FES) shows that, even with increased decentralisation of electricity, there is a key role for Electricity Transmission in the UK under a range of scenarios that meet the UK's 2050 climate change goals. As the transition to renewable generation continues, we will work with the Long Island Power Authority (LIPA) to transform our generation fleet by responding to future RFPs. Under our existing contracts which extend through 2028, LIPA determines their reliability and sustainability needs and which units are operated, retired or transformed. Our FES will be aligned to not meeting, meeting or exceeding the 2050 net zero target.
Security and reliability	Electricity grid reliability and peak capacity.	Our principal focus is around ensuring that our electricity network is able to actively support and contribute to a future where demand for and supply of electricity are ever changing. With growth in renewables increasing intermittency on the network, and electrification of transport and heat likely, we are working with our stakeholders to ensure that grid reliability is understood, managed and planned at appropriate levels.
Security and reliability	Facilitating zero carbon operation of the Great Britain electricity system.	In April 2019, the ESO announced its ambition to transform the operation of the electricity system by 2025. Our goal is to be able to operate the system safely and securely at zero carbon whenever there is sufficient renewable generation online and available to meet the total national load. To facilitate this, the ESO has agreed contracts with five parties, worth £328 million over a six-year period, in a world-first approach to managing the stability of the electricity system.
Physical risks		
Extreme weather	Physical impacts from extreme weather events such as storms and flooding.	We continue to address the physical risks from extreme weather-related events, with a focus on flooding events (in both the UK and US) and storm hardening (in the US). See case study on page 61. As this work continues, it will be informed by not only the weather patterns we are experiencing, but also the results of the ongoing scenario testing.
Changing weather conditions	Increased frequency of weather incidents leading to asset damage/compromise and operational risks.	We will undertake a review of resilience from weather impacts to date. Work is ongoing to update standards with updated information. As an example, our US engineering team is updating standards for new and rebuilt substations to address changes in inland and coastal flooding projections. The ongoing scenario testing will consider whether our design standards are still appropriate under different scenarios, for example, a wider temperature range.
Changing weather conditions	Changes in supply of and demand for gas and electricity as a result of changing weather conditions.	The ESO is undertaking a project, Mapping Impacts and Visualisation of Risks of extreme weather on system operation (MIVOR), to evaluate the impacts of extreme weather events on system operation up to 2050.

Future intent

We will continue our physical risk analysis in 2020/21, including a review of the effectiveness of adaptation measures to date, identification of future areas of vulnerability, and assessment of these against future weather conditions and the likelihood of that happening. We will complete the scenario testing and determine any further adaptation measures that need to be undertaken. While financial provision has been made in the UK business plans for flood measures based on 2019 climate science data, additional adaptation measures can only be determined after this exercise has been completed and will be considered under the uncertainty mechanism provisions in the RIIO-2 business plans. The US business plans also include actions to harden our networks against expected weather conditions in the nearer term, but this work will help us better plan for future conditions.

What is the process for identifying and managing climate-related risks?

Our approach to identifying and managing the risks in our business is set out on page 22. During the year, a Group-level bespoke climate change principal risk was developed and added to our Group risk register, as described in the case study on page 23. The newly added climate change principal risk is underpinned by a series of Group controls and actions to mitigate the risk (this is further described on page 24). Several of the Group-level controls have been implemented while others are in progress. Ongoing work includes establishing programmes to develop the skills in our current and future workforce. Our recent report, Building the Net Zero Energy Workforce, looks at the skills and expertise the energy sector will need to help the UK reach its emissions target. It also identifies the need to recruit for 400,000 jobs in the sector between 2020 and 2050 to meet the target. Supported by the #jobthatcantwait campaign, we will be recruiting new talent who can help deliver the transition to net zero and adapt our networks accordingly. We have seen a marked increase in applicants in response to this campaign.

Following the adoption of the Group-level climate change principal risk, the US and UK businesses developed bespoke climate change risks on their respective risk profiles. These risks are being cascaded to the underlying operating business units to develop to ensure their risks and control actions are specific to them.

Future intent

The Executive Committee will review the results as part of the regular semi-annual review of Group risks in early 2020/21 and as part of that discussion will specifically consider whether changes need to be made to the Group climate change risk.

Case study: extreme weather-related planning

Ensuring network reliability is core to our business and we are constantly undertaking actions, often referred to as storm hardening, to improve our networks' resilience to the increasing frequency of strong weather events, given the significant impact this can have on our customers. These activities have focused on both our electric and gas businesses. As noted in the financial review (see page 30), this year we incurred $98 million of major storm costs, the majority of which are recoverable under our rate plans. Examples of ongoing efforts in 2020/21 include hardening efforts for our gas assets in Long Island and New York City. We worked with a collaboration of New York State and New York City representatives and other key stakeholders, to develop recommendations for future storm hardening and resiliency projects for our gas network, strategies for addressing climate risk factors, and guidelines for incorporating climate change projections in long-term capital planning. Another example is our annual investment in our electric distribution infrastructure to improve resilience and grid modernisation work to increase speed in knowing outage locations and improving our ability to restore supply.

In the UK, flood defence has been a keen focus for the business. Our target is resilience to 1 in 1000-year flooding events in the UK or a 0.1% chance in any given year. This resilience level was developed through consultation with Ofgem and BEIS via the ENA Flood Working Group and recognised in the National Flood Resilience Review 2016 as being best practice for critical local and national infrastructure. As of 31 March 2020, we had invested £71 million in flood defences with work completed or in progress at 37 sites and expected to be completed at a further 12 sites in 2020 and 2021. Our RIIO-2 (2021 – 2026) plans aim to protect a further 100 sites from surface-level flooding and recommend further investments to manage the risks posed from the secondary impacts of flooding, such as erosion and subsidence to our tower and cable routes.

Task Force on Climate-related Financial Disclosures (TCFD) continued

Image: Newtown Creek, a renewable gas project

Case study: the future of heat

The transition to a low-carbon economy is and will continue to change the sources of energy used (e.g. heat pumps and hybrid solutions), and the way energy is supplied and consumed (e.g. building retrofits to improve energy efficiency). Gas distribution in the US and gas transmission in the UK and US remain core to our business strategy, and we believe it will remain central to the energy mix in both countries. There is likely to be a mosaic of solutions, including reducing emissions from the natural gas transmission and distribution networks, as well as conversions to both electric and lower carbon gas heating (renewable natural gas or gas blended with hydrogen), focusing on cost-effective solutions and meeting different consumer needs.

In conjunction with government agencies, other utilities and key stakeholders and other gas networks, we have developed a programme of work to gather evidence and help us understand what is required to incorporate hydrogen and renewable natural gas into the gas supply. We are also working with industry to consider what improvements and changes are needed to maintain well-functioning, liquid gas markets throughout the transition, and ensure security of supply and delivery of natural gas, renewable natural gas and hydrogen.

Refer to page 13 for further details on the future of heat.

What metrics are used to assess these risks and opportunities?

We have continued to advance our environmental sustainability strategy, focusing on three key areas: climate change, responsible use of natural resources and caring for the natural environment. We have metrics and targets that allow us to measure our impact on the environment, demonstrate our commitment and monitor our performance. As previously discussed, the cornerstone of our suite of metrics is our commitment to reducing our impact by achieving net zero for our Scope 1 and 2 emissions by 2050, with interim targets of an 80% reduction by 2030 and a 90% reduction by 2040. Numerous underlying metrics support this goal and our broader sustainability ambition, including reducing the carbon footprint of our operating facilities, enhancing the natural value of our properties, recycling and/or reusing our recovered assets and reducing our office waste. These are discussed in more detail on pages 50 and 51.

We have also included enhanced disclosures in the financial statements prepared under IFRS to explain how we have considered the financial impacts of climate change, in particular evaluating the impact of new net zero commitments in our territories, and the effect this has had on judgements and estimates such as the useful economic life of our assets. See notes 1 and 13 to the financial statements for details. This remains a recurring area of focus for the Audit Committee.

Future intent

We continually review our metrics and targets, as needed, to ensure that the data we are measuring is meaningful, aligns with our strategy, and is providing the information the business and our stakeholders need to effectively monitor our performance and demonstrate our progress. In 2020/21, we will be laying out our pathway to achieve our net zero by 2050 emission reductions and setting targets to align our ambitions and provide better visibility to our progress.

We are also evaluating development of a meaningful Scope 3 target that enables us to align to Science Based Targets Initiative (SBTI) criteria, specifically focusing on our customers.