nationalgrid

Bring energy to life

Annual Report and Accounts 2021/22

PRINCIPAL PARTNER
COP26 PRESIDENCY UK 2022
DELIVERING THE GLASGOW CLIMATE PACT

We see the future.
It's filled with infinite possibilities.
That's why we are...

Doing Right Now

Our vision is to be at the heart of a clean, fair and affordable energy future. Every day we do the right thing, find a better way, and make it happen.

We are working right now to deliver net zero and keep the network safe and reliable.

Read more about what we are 'Doing Right Now' to enable a clean energy transition in the case studies that feature throughout this report. You can identify these by looking for this icon.

Highlights

Group financial highlights

Statutory earnings per share EPS (p)*

60.6p

Underlying EPS (p)* A

65.3p

Group Return on Equity (RoE) % A

11.4%

* From continuing operations. Prior year comparatives restated for treatment of UK Gas Transmission as a discontinued operation.

Group operational highlights

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

0.13

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

7.5

Employee engagement (%)

81%

Further reading

Online report
The PDF of our Annual Report and Accounts 2021/22 includes a full search facility. You can find the document by visiting the 'About us' section at nationalgrid.com/investors/resources.

Responsible business
National Grid has published its annual Responsible Business Report (RBR). The RBR reports progress on the responsible business agenda, including towards the commitments made in our Responsible Business Charter (RBC). You can find both documents by visiting nationalgrid.com/responsibility.

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 2021/22 was $1.35 to £1 (2020/21: $1.34 to £1).

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

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

Front cover
The North Sea offers an incredible opportunity for the UK and our European neighbours to migrate to a cleaner energy system, as we increase connections to renewable energy sources from the North Sea.

We were excited to be a principal partner for COP26. COP stands for Conference of the Parties. You can read more about our involvement on pages 16 – 17.

For more information, visit nationalgrid.com/responsibility/environment/cop26.

Alternative performance measures
In addition to IFRS figures, management also uses a number of 'alternative measures' to assess performance. Definitions and reconciliations to statutory financial information can be found on pages 268 – 279. These measures are highlighted with the symbol above.

PwC Assured Data
Denotes information subject to limited assurance by PricewaterhouseCoopers LLP; see page 61 for full definition.

Doing Right Now

Fossil-free future

We aim to fully eliminate fossil fuels from our US gas and electric systems, enabling the customers and communities we serve to meet their heating needs without using fossil fuels by 2050, if not sooner.

To achieve our ambition, we are proposing a hybrid approach, with a combination of electric heat pumps, fossil-free gas and hybrid gas-electric systems.

Strategic Report

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.

Further reading
Our business units on pages 50 – 55

Our business units

UK Electricity Transmission
We own and operate the high-voltage electricity transmission (ET) network in England and Wales.

UK Electricity Distribution
We own and operate the electricity distribution networks for the Midlands, the South West and South Wales. The combined network of Western Power Distribution (WPD), which became part of National Grid in June 2021, makes it the largest distribution network operator (DNO) group in the UK.

UK Gas Transmission*
On 27 March 2022, we announced the agreement for sale of a 60% stake in this business, which owns and operates the gas transmission network across Great Britain (including our UK metering business which previously formed part of NGV). The sale is subject to certain conditions.

UK Electricity System Operator
We operate as the electricity system operator (ESO) across Great Britain.

* Discontinued operations.

New England
We own and operate electricity transmission facilities and distribution networks across Massachusetts, New Hampshire and Vermont as well as gas distribution networks across Massachusetts. We sold our Rhode Island electricity transmission and gas and electricity distribution business (NECO) to PPL. The NECO Sale is expected to complete by the end of the first quarter of 2022/23.

New York
We own and operate electricity transmission facilities and distribution networks across upstate New York. We own and operate gas distribution networks across upstate New York, in New York City and on Long Island.

How we fit in the energy system

Generation
Generation is the production of electricity from fossil fuel and nuclear power stations, as well as renewable sources such as wind and solar. In the US, we own and operate electricity generation facilities on Long Island as well as wind and solar generation through our investment in the Emerald Joint Venture.

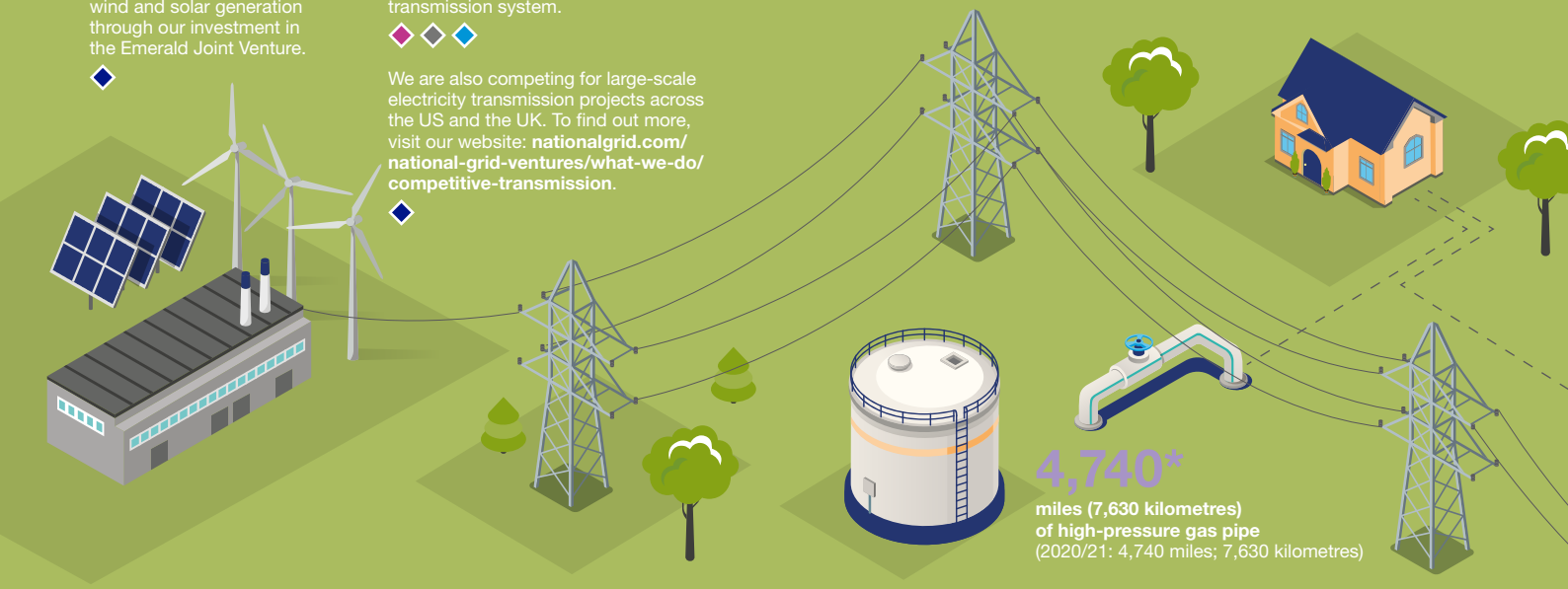
Electricity transmission
We are responsible for ensuring electricity is transported safely and efficiently from where it is produced, to reach homes and businesses reliably. We connect to industrial properties and distribution networks who deliver the electricity on to homes and commercial properties. We also facilitate the connection of generation assets to the transmission system.

We are also competing for large-scale electricity transmission projects across the US and the UK. To find out more, visit our website: **nationalgrid.com/national-grid-ventures/what-we-do/competitive-transmission**.

6,072
miles (9,768 kilometres) of electricity transmission cable and overhead lines
(2020/21: 6,240 miles; 10,042 kilometres)

2,939
miles (4,729 kilometres) of electricity transmission cable and overhead lines
(2020/21: 2,922 miles; 4,701 kilometres)

6,001
miles (9,655 kilometres) of electricity transmission cable and overhead lines
(2020/21: 6,050 miles; 9,734 kilometres)



4,740*
miles (7,630 kilometres) of high-pressure gas pipe
(2020/21: 4,740 miles; 7,630 kilometres)

Renewable energy
We are working with our partners to accelerate the development of our clean-energy future. In support of this goal, we've made significant investments in the US in large-scale renewable energy projects, including wind, solar and battery storage.

Visit our website to find out more information: **nationalgrid.com/national-grid-ventures/what-we-do/renewable-energy**.

Electricity System Operator
We are responsible for making sure the supply of and demand for electricity are balanced in real time every day across Great Britain.

In the US, similar services are provided by independent system operators.

Gas transmission
We are responsible for making sure Great Britain's gas is transported safely and efficiently from where it is produced, to reach homes and businesses reliably. As the gas system operator, we are also responsible for ensuring supply and demand are balanced in real time every day.

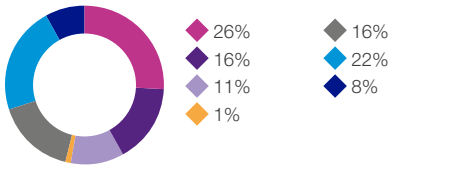
Some of our US businesses are not subject to state or federal ratemaking authority. This includes our interests in the New York Transco and Millennium Pipeline Company.

National Grid Ventures and Other activities

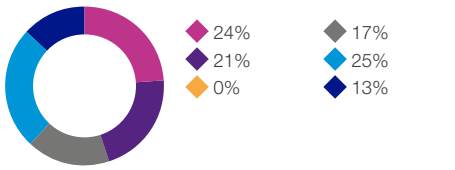
National Grid Ventures (NGV), which operates separately from our core regulated units, is focused on competitive markets across the UK and US. Its portfolio includes electricity interconnectors, liquefied natural gas (LNG) storage and regasification, large-scale renewable generation, conventional generation and competitive transmission.

Other activities primarily relate to National Grid Partners (NGP), the venture investment and innovation arm of National Grid, as well as UK property, insurance and corporate activities.

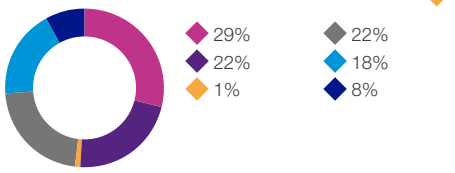
Regulatory asset value (RAV), rate base and other assets (%) A



Statutory operating profit (%)*



Underlying operating profit (%)* A



* From continuing operations.

Gas distribution

In the US, we deliver gas safely and reliably to millions of consumers connected to our distribution systems. Some of our customers pay us for distribution and gas supply costs. Where they choose to buy gas from third parties, they pay us for distribution only.

14,397
miles (23,165 kilometres) of gas pipelines
(2020/21: 14,372 miles; 23,125 kilometres)

22,359
miles (35,975 kilometres) of gas pipelines
(2020/21: 21,388 miles; 34,413 kilometres)

Electricity distribution

We own and operate the power lines and infrastructure that connect the transmission network to the properties of individual consumers. Distribution networks convert high-voltage electricity generated by large power stations, and delivered through the transmission network, to lower voltages. This is then delivered safely and reliably into homes and businesses via our networks.

141,261
miles (227,337 kilometres) of electricity distribution circuits
(2020/21: 141,081 miles; 227,000 kilometres)

24,755
miles (39,831 kilometres) of electricity distribution circuits
(2020/21: 24,706 miles; 39,752 kilometres)

Electricity interconnection

Interconnectors are high-voltage cables used to connect the electricity systems of neighbouring countries. They allow us to trade excess power, such as renewable energy created by the sun, wind and water, between different countries.

We already have interconnectors linking us to France, Belgium, Norway and the Netherlands, and each year they power five million homes. We're currently working on another interconnector to link us with Denmark.

6.4 GW
capacity of interconnectors in operation
(2020/21: 5 GW)

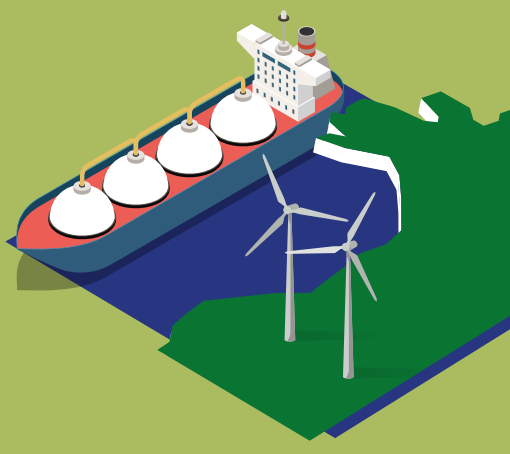
44,536
miles (71,658 kilometres) of electricity distribution circuits
(2020/21: 44,063 miles; 70,897 kilometres)

Storage

Grain LNG is one of three import terminals in the UK. Our world-class facility delivers the highest standards of performance for our customers.

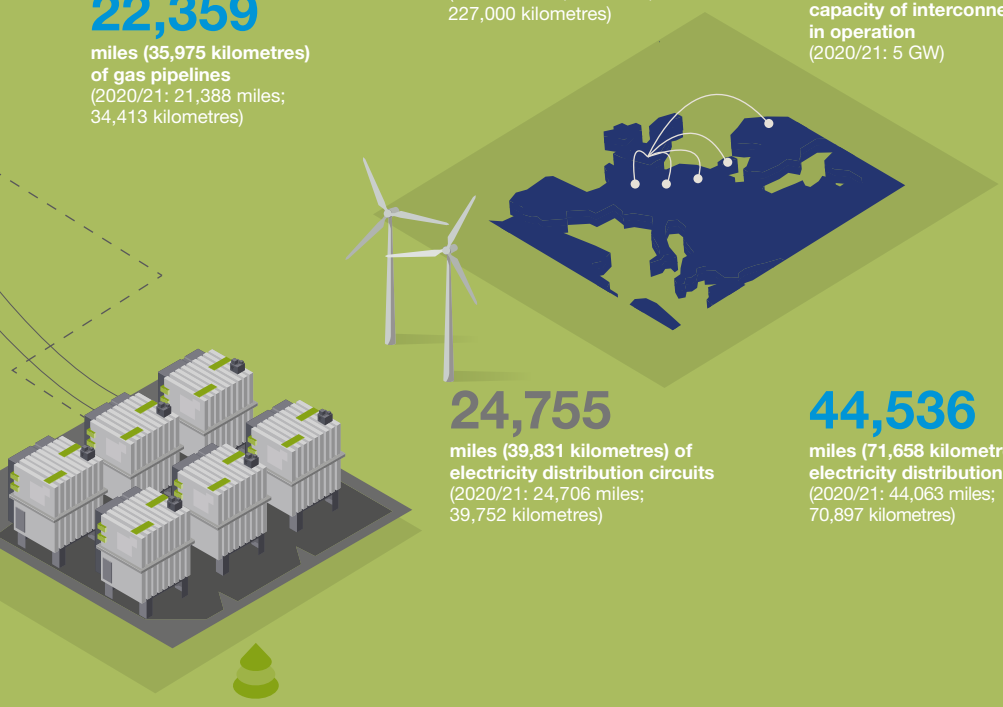
We import LNG from a number of countries and also own storage facilities in the US.

63 ships
unloaded at the Grain LNG terminal
(2020/21: 49 ships)



Innovation

We created NGP which is involved in incubating and investing in startups at the intersection of energy and emerging tech, launching new businesses from scratch, business development, and infusing an entrepreneurial culture into National Grid. NGP aims to create a smarter, renewable future.



How we operate

Our resources and relationships

Internal resources

Physical assets

We own electricity and gas networks that transmit energy over long distances from where it is produced, together with low voltage local networks that distribute energy to the consumers who rely on it. These networks are built to last for many decades and account for the vast majority of our asset base. We also own five subsea electricity interconnectors, with a further subsea cable to Denmark under construction, as well as LNG importation facilities and large-scale renewables in the US.

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.

Colleagues

Our highly skilled, dedicated colleagues have a strong public-service ethos. They manage and maintain the physical energy infrastructure, and assist and develop the many stakeholder relationships crucial to the Company's success.

Strong stakeholder relationships

Our business relies on strong relationships with all our stakeholders. These include:

- Our customers, who depend on us to connect them to the energy they use and who (through a small portion of their energy bills) pay to use our networks. This also includes (in the case of our transmission businesses) the electricity generators and gas suppliers who own the electricity that flows through our cables and gas pipes.
- Our suppliers, who have complementary experience, skills and resources and with whom we agree mutually beneficial contractual arrangements and, wherever possible, take advantage of economies of scale and use sustainable and global sourcing opportunities.
- National and regional governments, local communities, and business and domestic consumers of the energy we transport.
- The economic regulators who set the prices we can charge for providing an economic, efficient and non-discriminatory service as well as the government agencies responsible for health, safety and environmental standards.

Further reading
Our stakeholders on pages 56 – 59.

Our strategy

Enable the energy transition for all

Deliver for customers efficiently

Grow our organisational capability

Empower colleagues for great performance

Why does this matter? Benefits to National Grid

Financial strength

By managing our operations efficiently, safely and for the long term, we generate substantial cash flows. This, coupled with long-term debt financing, enables us to invest in growing our asset base and fund our dividends.

Investment

Efficient investment in our networks will deliver strong and sustainable growth in our regulated asset base over the long term.

Lower capital costs

Using innovation and flexibility initiatives, we look to reduce the amount of network reinforcement costs that would otherwise be needed to deliver the additional capacity required for net zero.

Shareholder returns

Our dividend policy, approved by the Board in March 2021, is to deliver annual dividend per share growth in line with the rate of CPIH inflation. Our dividend has grown consistently for more than 20 years.

We rely on our internal resources and our strong relationships which we use to do business, drawing on our technical expertise and culture in order to deliver value for our stakeholders and for wider society.

How we create value

Our technical expertise

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

Our expertise includes:

Asset management
We invest in and maintain our assets across their life as cost effectively and efficiently as possible.

Engineering
The skills of our engineers are vital in performing safely, efficiently, reliably and sustainably for all our businesses. Our colleagues strive to:

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

Our engineering expertise supports the provision 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 more substantial standalone projects.

Our culture

National Grid's culture is the values, beliefs and behaviours that characterise our Company and guide what we do, so we can respond as the energy transition accelerates.

We maintain high standards of ethical business. We also promote behaviours that are aligned with our values and culture by recognising our employees through a Company-wide reward system. This supports both what they achieve and how they have achieved it.

Strategy and risk management

As the energy industry continues its transition to a cleaner future, our strategy articulates our priorities clearly, while positioning our business to continue to bring long-term economic benefits into the regions where we operate.

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

Further reading
Our strategy on pages 20 – 21.
Innovation on pages 22 – 23.
Internal control and risk management on pages 28 – 32.
Our commitment to being a responsible business on pages 60 – 69.
Our values on page 65.

The value we create

Customers

We aim to deliver safe, reliable, resilient and affordable energy to customers in the communities we serve, driving operational excellence and financial discipline to keep bills affordable for our customers.

Investors

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

Our colleagues

We aim to create an environment where our colleagues can make a positive contribution, develop their careers and reach their full potential.

Contractors and suppliers

We maintain responsible and efficient supply chains where we align our interests, and those of our suppliers, with the interests of customers.

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.

Economic, health, safety and environmental regulators

Through constructive, transparent engagement and consistent, reliable fulfilment of our commitments, we build trust with our regulators.

Why does this matter? Benefits to society

Achieving net zero
In addition to our own commitment to reduce our Greenhouse Gas (GHG) emissions to net zero by 2050, we are working with governments and regulators to help them meet their carbon reduction targets.

Communities
The transition to clean energy must be affordable to all, and we will play our role in ensuring no one is left behind, helping the places where we operate reach their emissions targets.

Job creation
We are providing employment opportunities and supporting our colleagues in building the skills necessary to build a net zero energy system.

Tax contribution
We recognise that our tax contribution supports public services and the wider economy and we endeavour to pay the right amount of tax, at the right time, in accordance with relevant tax laws.

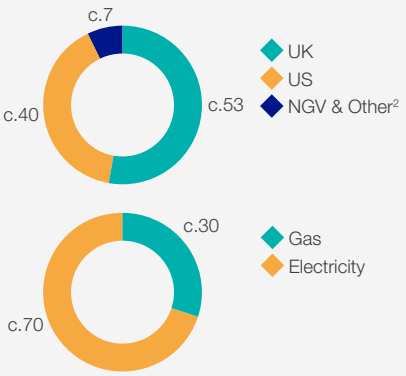
Our long-term value creation is underpinned by significant growth opportunity across the business, driven by our vital role as The Energy Transition Company

Reshaped portfolio

We've reshaped the portfolio and organisation for the opportunities ahead of us. These moves will increase our exposure to electricity, enhancing the long-term growth profile of the Group and better aligning to the energy transition.

Geographic and regulatory diversity

National Grid asset base
post transactions[1]



1. Calculated as an approximate proportion of actual 2021/22 asset base as at year end, including WPD, excluding NECO sale and 60% interest in UK Gas Transmission and Metering.
2. Includes NGP, UK property, insurance and corporate activities.

Delivering growth

Our forecast of £30 – 35 billion of capital investment between 2021/22 and 2025/26 will drive asset growth of 6 – 8% on average per annum (CAGR).

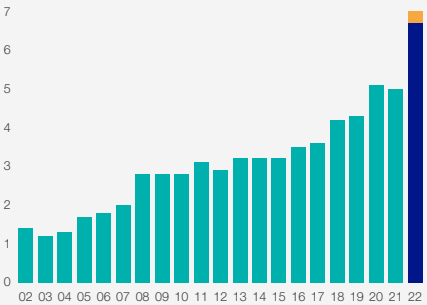
Over two thirds of this is already committed and visible through rate settlements and in our National Grid Ventures business.

History of strong financial performance

Group asset growth A

21/22	8.7%
20/21	5.6%
19/20	9.0%

Capital investment £bn A



FULL YEAR
From continuing operations
Including discontinued operations

Strong operational and financial performance

We have a strong track record of delivering efficiently, and our new operating model will deliver a step change in productivity improvements.

Alongside our asset growth, we forecast to grow our underlying EPS by 5 – 7% compound annual growth rate (CAGR).

History of strong operational and financial performance

RoE (%) A

21/22	11.4
20/21	10.6
19/20	12.0

Underlying (continuing) EPS (p) A

21/22	65.3
20/21	42.4
19/20	47.9

Employee Engagement Score (%)

21/22	81
20/21	81
19/20	77

Our vision for our future energy networks aligns with the global push towards net zero, and demonstrates the vital role we play. And with that vision, as we look to the decades ahead, we believe the scale of opportunity across the business is significant.

1. Our pivot to electricity brings visibility and certainty of growth, right now and out to 2050.
2. Our scale magnifies our vital role at the heart of the energy transition.
3. We have a strong track record of delivering growth.
4. Green capex[1] in decarbonisation of energy systems, will make up around £24bn of our investment between 2021/22 and 2025/26.

1. Capital expenditure invested in decarbonisation of the energy systems and considered to be aligned with the principles of the EU Taxonomy legislation at the date of reporting.

Five-year outlook 2021/22 – 2025/26

Capital investment	**c.£8bn** UK Electricity Transmission
£30 – 35bn	**c.£17bn** New York & New England regulated businesses
	c.£5bn UK Electricity Distribution
	c.£2 – 3bn NGV
Group asset growth	**6 – 8% CAGR**
Gearing	**Peaks in 2021/22, settles slightly above 70%. Credit metrics within current rating band**
Earnings Per Share (EPS)	**5 – 7% CAGR**
Dividend Per Share (DPS)	**Growth in line with CPIH**

Resilient balance sheet

We have visibility to maintain a resilient balance sheet and stable leverage (once all three transactions are complete), to fund asset growth of 6 – 8% on average per annum (CAGR) over the next five years.

Over the next five years we expect senior debt capacity to increase by £2 – 3 billion annually.

Balance sheet metrics

8.9%

RCF/Adjusted debt A

>7.0% Moody's rating threshold

4.7x

FFO Interest cover A

>3.5x Moody's rating threshold (2020/21: 4.5x)

We monitor RCF/adjusted net debt in order to ensure the Group is generating sufficient cash to service its debts, consistent with maintaining a strong investment-grade credit rating. We calculate RCF/adjusted net debt applying the methodology used by the credit rating agency, Moody's Investors Services.

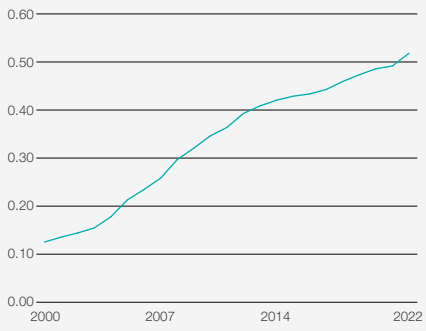
Progressive dividend

We have consistently grown our dividend for more than 20 years.

Full-year dividend 50.97 pence p/share in line with policy, 49.16 pence p/share in the prior period.

As our UK regulatory models move from Retail Price Index (RPI) to the Consumer Prices Index including Owner Occupiers' Housing Costs (CPIH), we aim from 2021/22 to grow the annual dividend per share in line with UK CPIH.

Dividend per share (DPS) (p)



Note: 2000 – 2010 DPS adjusted for 2010 Rights Issue, excludes special dividends.

Our responsible business

We continue to be vocal advocates for a fair and equitable energy transition across wider public policy.

We are a COP26 principal partner and are advocates of transforming commitments into action.

Our Responsible Business pillars

Communities
Deliver energy in a fair and affordable way to the communities we serve.

The economy
Work across our supply chains to ensure that, together, we reflect the diversity of the communities we serve and respond to the economic needs of those communities.

Governance
Achieve 50% diversity[1] in our Group Executive Committee

Our colleagues
Achieve 50% diversity[1] in all our new talent programmes by 2025.

The environment
Accelerate our net zero targets wherever possible.

1. A diverse employee is defined as a colleague who identifies as female, as a person with a disability, as gay, bi-sexual or lesbian or from an under-represented ethnic/racially diverse background.

Chair's statement

"National Grid finished the fiscal year in a position of strength. As nations now focus on energy security and affordability, as well as decarbonisation, we embrace our role in delivering the energy system of the future."

The events of the past year – indeed, the past months – have tested the resolve, culture and resilience of all businesses. As I write this first letter to you in my role as Chair, Ukraine is engulfed in a brutal confrontation with Russia. At National Grid, we supported and adjusted quickly to the Russian sanctions put in place by the UK government. We have also been engaging with the UK government on assuring long-term security of energy supply, including through accelerating the roll-out of renewables. In the US, we continue to work on an agenda of decarbonisation, ranging from new high-voltage electric transmission infrastructure for delivery of low- or zero-carbon resources to operating one of that nation's first hydrogen blending projects. In both countries, we undertake our efforts against the backdrop of elevated energy prices for our customers and heightened concerns about balancing the costs of system enhancements with the affordability of these improvements.

It is a privilege to be the first American to serve as the Chair of National Grid, an iconic industrial company. National Grid has a proud and longstanding heritage, but it is also a business that has long been focused firmly on the future. We didn't start the process of being a state-of-the-art energy system yesterday. For more than two decades we have been working to decarbonise energy. We have been iterating and experimenting with our fulfilment capabilities – with the digital grid, with hydrogen, with multipurpose interconnectors. And we will keep iterating and collaborating until we achieve the necessary levels of performance to assure you that clean energy delivery will be utterly reliable and affordable as well.

At National Grid, we are witnessing the increasing intensity of impatience in society in its pursuit to see changes in the contours of our energy system. We are working on multiple fronts to deliver infrastructure and service more quickly and more cleanly than ever before, including: digitalisation of business systems and operations to ensure service reliability and rapid response time; increased cyber security barriers to protect our critical national infrastructure; and use of advanced technologies, such as artificial intelligence (AI), to optimise our operations. And we are focused on the best possible delivery on the front lines. Perhaps you have noticed that storms are more frequent and severe. Meanwhile, society is dependent on rapid restoration of service. We live in a connected world and none of us easily tolerates a power outage. My National Grid colleagues are thus working in increasingly harsh weather conditions to reconnect customers in ever shorter response times. This is complicated by the fact that we are managing the increased complexity of the grid itself, as renewables become a larger part of the generation mix in both countries.

These are among the issues of today and tomorrow. As Chair, my role is to ensure our governance both challenges and supports decision making that will ultimately lead to a decarbonised and digital future. Our business reorganisation, the refresh of the Board and the thoughtful adjustment of our investment mix are intended to meet these challenges.

A Board for the future

As you will note, several distinguished Board members have reached the ends of their terms. Sir Peter Gershon, Dr Paul Golby, Mark Williamson, and Jonathan Dawson have all served nine-year terms. In addition, Amanda Mesler, who has been a member of our Board for the last four years, has decided not to stand for re-election as her career in technology takes her in some different directions. On behalf of my Board colleagues, I express my appreciation to all of them.

Nevertheless, from this loss comes opportunity. We are fortunate to have recruited five new Directors who bring fresh perspectives and experience to the Board Ian Livingston, Tony Wood, Martha Wyrsch, Anne Robinson and Iain MacKay, bring strategic thoughtfulness, engagement, constructive challenge, independence and gravitas to tackling the issues we face.

Operating with purpose

Moments of societal reckoning over recent times have further cemented my belief that National Grid must respond as a responsible business. It is clear: we are here to serve. Our sense of the larger purpose we play in society helps us keep doing the right thing at the heart of our decision making. As I have travelled around the National Grid system in both countries, I am heartened by the ethos of our people. I have also seen this ethos of community engagement first-hand in the work that is done by Grid for Good, Project C and our Grid Employability programmes, to name but a few examples. Our RBR, which you can find at nationalgrid.com/responsibility, provides an update on our excellent progress to date on key commitments.

Along with purpose comes partnership. Working with regulators, customers, communities, stakeholders and business partners is key to our long-term health as a company. I have appreciated the candour of those of you with whom I have met in the past year. This input – unvarnished and honest exchanges – helps guide the Board deliberations.

Solutions to the challenges of our time must be rooted in an overarching sense that we are in this together, working for the collective good. Geopolitical upheaval only deepens the sense within society that we must embrace change urgently. Across the UK and US, we are working with governments and communities to determine the best way forward for the delivery of net zero. In recognising that National Grid must change, I see that governments, regulators and stakeholders are grappling with how to drive progress as well. I would offer the observation that we all need to break old habits and get on with the business of change.

Looking forward

In the previous fiscal year, we set a strategic course to pivot to a greater focus on electricity as the energy mix of the future. With the acquisition of WPD and the announced sale of a majority stake of our UK natural gas transmission business, our portfolio is changing. The Board will continue to assess the businesses we will participate and grow in as the energy landscape evolves. For example, we welcome the UK government moving forward with the development of a Future System Operator (FSO). This initiative is expected to see us divest our ESO in the future. Similarly, our investments in the various interconnectors which link the UK to continental Europe and our partnership with RWE in the New York Bight auction for offshore wind, are examples of investments where we are leaning into the future energy system.

As you will note in the Notice of Meeting which accompanies this Annual Report, our climate transition plan is being put to a vote by shareholders at our 2022 AGM. I hope you will find that this plan provides tangible evidence of National Grid's resolve to move to net zero, including metrics that facilitate tracking of our progress. We ask for your support of our Climate Transition Plan, your Board of Directors, and various other business matters on which you are asked to vote.

In closing, I would like to recognise our National Grid colleagues with this oft-repeated phrase: if it were easy, everyone would be doing it. The Board recognises your singular efforts, your dedication and your tenacity. Your enthusiasm for delivering net zero and a fair energy transition is, I believe, unparalleled. Thank you for living our values and for Doing Right Now.

Paula Rosput Reynolds
Chair

Final dividend of

33.76p

per share proposed to be paid on 17 August 2022

Full-year dividend (pence per share)

The 2022 Annual General Meeting (AGM) of National Grid plc will be held as a hybrid event at 10.00am on Monday 11 July 2022. More details on the arrangements for this year's AGM and how to view the live webcast of the AGM vote and attend virtually can be found on our website in the Investors section at: nationalgrid.com/investors.

Chief Executive's review

"We will enhance our role in the energy transition and drive long-term shareholder value."

Context in which we are operating

Over the last 12 months, as the world took tentative steps out of the depths of the COVID-19 pandemic, it also witnessed unprecedented climate events, an increasingly divided geopolitical landscape, and – in the UK and US – rising costs of living. As I write, we continue to witness terrible events in Ukraine. The combined turmoil and change of the past year means that all three points of the energy trilemma (security, affordability and sustainability) are now in sharp focus as one.

In a rapidly changing world, it is more important than ever that our vision is clear and our journey to achieve it is well executed. National Grid will be at the heart of a clean, fair and affordable energy future.

There is no doubt that rising gas prices and a higher cost of energy in the UK and US have highlighted the challenge of affordability. Our political stakeholders in all jurisdictions are also grappling with this challenge, and we continue to take a partnership approach with both governments and regulators to deliver an energy transition that leaves nobody behind. Whilst we do not have control over energy prices, we are playing our part by innovating at speed on projects and making significant capital investment to bring cheaper, greener energy to our customers.

I was particularly pleased to see clean energy sitting at the heart of the British Energy Security strategy – net zero is a clear route to a reduction in consumer bills over the long term, increased energy independence and lower carbon emissions. As a sector, we must now work at pace to deliver the ambitious targets set and remain conscious, too, of other opportunities to reach our collective goals, such as increased energy efficiency.

In the UK, we have been working closely with government, industry and the regulator to create the FSO that enables long-term holistic thinking, drives progress towards net zero, and lays the foundations for the regulatory reform necessary to deliver the energy system of the future. As announced in April 2022, the ESO is expected to transfer out of National Grid to become part of the newly created FSO by 2024. We will continue to work closely with all relevant parties to ensure a smooth transition, subject to parliamentary approval and conclusion of the transaction process.

In a fast-moving world, we must remember that the challenge of reaching net zero cannot be underestimated, and significant policy and regulatory change will be needed to get there. We are committed to working together with all our stakeholders to create the right policy and regulatory frameworks to deliver the investment needed at the lowest long-term cost to consumers in all our markets.

Business highlights

Delivering for our customers remains my key focus and I am very clear that this must underpin all that we do. A clear example is our vision for a fossil-free future in the US, launched in April 2022, which places consumer choice and affordability at the heart of fighting climate change.

This vision to fully eliminate fossil fuels from our US gas networks, replacing it with renewable natural gas and green hydrogen, will enable the customers and communities we serve to meet their heating needs without using fossil fuels by 2050, if not sooner. Combined with targeted electrification and enhanced energy efficiency, a 100% fossil-free gas network can deliver a clean energy future that is more affordable and more reliable to more than 20 million people across New York and Massachusetts.

We have made significant progress throughout the year towards a clean energy future in the US. In December, we launched a joint project with the town of Hempstead to build one of the first and largest clean hydrogen projects in the US. The HyGrid project, on Long Island, will blend green hydrogen into the existing distribution system to heat approximately 800 homes and fuel 10 municipal vehicles.

A key highlight of the year for me was National Grid's role as a Principal Partner of COP26. This enabled us to drive action on the fight against climate change more directly than ever before. From meeting with world leaders, to hosting the launch of the global Green Grids Initiative, and sharing our work to enable clean transport, it was a unique opportunity to discuss our learnings with delegations from across the globe and collaborate on how best we can work together to accelerate action.

It is important we match talking with doing. Since COP26, we have had new Science Based Targets approved; with both our UK ET and ED businesses and the ESO limiting their greenhouse gas emissions to a 1.5ºC warming scenario. And against a 1990 baseline, I can now report our carbon emissions are down by 65% across the Group.

The year also saw us deliver on the strategic transactions we announced 12 months ago. The transactions represented a strategic pivot for National Grid and underlined our belief that the journey to net zero will see increased electrification across the UK and US. The Group expects the NECO Sale to complete by the end of Q1 2022/23.

The year saw us make good progress on regulatory matters. In the first half, the Competition Markets Authority (CMA) upheld part of our appeal on RIIO-T2, which saw the removal of the outperformance wedge. In the US, new rate agreements for KEDNY-KEDLI, Massachusetts Gas and Niagara Mohawk were agreed during the year, giving us long-term visibility.

Our National Grid Ventures business continues to deliver clean, green energy through its interconnectors. We completed our fifth interconnector, North Sea Link (NSL), which connects the UK with Norway and is the world's longest subsea interconnector. NSL, which is a joint venture with Norwegian system operator Statnett, can provide enough clean electricity to power 1.4 million homes.

The fire at our IFA interconnector saw a 50% reduction in its capacity. However, I am pleased that our team's fast response and focus on recovery means we now expect the IFA interconnector to return to full service in December 2022, significantly earlier than planned.

WPD, our electricity distribution business, which will shortly be rebranding under the National Grid name, has submitted a highly ambitious business plan for 2023 – 2028 outlining £6.7 billion of investment to drive the pathway to net zero for our customers in the Midlands, South Wales and the South West. This will act as an additional £1.4 billion of investment from present-day levels, whilst maintaining affordability for our customers.

We have reported good operational performance in a year of significant strategic change. We have reported a strong set of results. In May, Ofgem agreed to our request to pay £200 million of interconnector profits back ahead of the planned timeframe, as we took action to lower bills for consumers.

We are investing around £24 billion over the next five years directly into decarbonising energy networks, starting now. This is measured in accordance with the EU taxonomy, and excludes 'clean' spend in areas such as connecting nuclear power and lowering methane emissions through gas pipeline replacement. In every sense, this investment cements our position as The Energy Transition Company.

Doing Right Now

National Grid is a responsible business, because it is the right thing to do. Our RBR, which is published alongside the Annual Report, details our progress to date on the commitments we set out in our RBC.

Communities sit at the heart of our RBC, and I am delighted that our Grid for Good initiative has positively impacted the lives of thousands of young people to date, with participation from hundreds of National Grid volunteers. Grid for Good was created to drive lasting and positive change for disadvantaged young people and we are well on the way to achieving our goal of 125,000 volunteering hours by 2030.

Diversity is critical to business success and I am pleased to report this year that we have no material gender pay gap in the UK business. Of course, this is just one measure, and we recognise that there is more work to do to bring greater diversity to all levels at National Grid.

Key highlights in 2021/22

11.4%

RoE A

£6.7bn

investment in critical infrastructure for the Group (continuing operations) A

In the US, our pay gap sits at 12.6% and we continue to address this as a matter of high priority. I am very clear that we can achieve more with a diverse organisation, and it is vital that we represent the communities we serve.

Over the last year, I am pleased to say we have continued to deliver energy reliably, safely and efficiently for our customers in all jurisdictions, and continue to focus on our safety performance.

Of course, it would not be possible to deliver these results without the hard work of the teams across the business. I would like to take this opportunity to say a sincere and heartfelt thank you to all National Grid colleagues, who, despite living through the most extraordinary and challenging of times, continue to serve the Company with hard work, dedication and outstanding skill.

Looking ahead

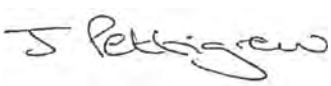
As we look ahead, we do so with optimism. National Grid is uniquely positioned as The Energy Transition Company, at a time when climate goals, customer demands and geopolitics align on the imperative need to fully decarbonise our economies.

In the UK, we will support the government in delivering its British Energy Security Strategy and the ambitious target of delivering 50 GW of offshore wind by 2030, including up to 5 GW floating wind, by developing and delivering transmission project proposals in alignment with the national blueprint. We will work with government and regulators to reform the consenting and regulatory frameworks to deliver the unprecedented levels of new transmission capacity required to deliver the strategy much faster than under the current arrangements. We will complete the integration of WPD into our new Electricity Distribution business and seek a successful outcome in our RIIO-ED2 regulatory process that gives us the flexibility to invest in our distribution networks to support the Strategy and the expected growth in heat pumps, electric vehicles and solar generation.

In the US, we will continue the work started to make fossil-free gas a reality on our networks by supporting legislative and regulatory policies to grow fossil-free gas, developing voluntary tariffs for customer participation in fossil-free gas offerings and running neighbourhood pilots for green H_2 network blending, networked geothermal, and targeted electrification of heating.

National Grid has a key strategic role to play in delivering the legacy of COP26 and we will become even more vocal on this over the next 12 months. We are working side by side with the UK, India and US governments on the Green Grids Initiative to accelerate the decarbonisation of electricity grids globally; we are engaged in the Glasgow Breakthroughs to share learning and drive progress in different sectors; and we will share our views on progress and policy needed globally. We must now move fast to seize the opportunity this decade to keep 1.5°C in sight.

We are leading a clean, fair and affordable energy transition across the jurisdictions we serve, and we do so with pride. No one will be left behind. Our pace will accelerate, our efforts will increase, and our action will be bold. The business is positioned for long-term success.



John Pettigrew
Chief Executive

Q&A

How can we solve the huge challenge of achieving net zero?
Partnership and collaboration hold the key to unlocking some of the biggest global challenges we face. Communities, government, regulators and industry all have a critical role to play in reaching net zero and it is only by working together and challenging each other to be bolder, more innovative, and to deliver at pace that we will achieve this. For the industry, delivering the energy system of the future, while operating and safeguarding the energy system of today, will require a huge shift in mindset. We must rise to this challenge and embrace the opportunity we have to create a fair and affordable future for all.

Why did National Grid feel it was important to be a principal partner of COP26?
Climate change is the biggest challenge we will face as a society – and there is a ticking clock. National Grid is uniquely positioned to lead the energy transition across the UK and Northeast US, but COP26 gave us the opportunity to go further and to collaborate and learn from partners on a global scale.

Why should I invest in National Grid?
The fundamentals of our business are strong; they underpin long-term value creation. We are at the forefront of the green revolution. There is huge business opportunity and we are fully aligned with government and societal demands to deliver greener, cleaner energy. We are Doing Right Now.

Can you share an update on the transactions?
The transactions that we announced in March 2021 and have implemented over the past 12 months represented a strategic pivot for the Company. The acquisition of WPD in the UK, the sale of Rhode Island in the US and an agreement to sell a majority stake in Gas Transmission in the UK, will leave our business split equally between the UK and the US, and with a focus that is 70% on electricity and 30% on gas. This is aligned with our view of the energy transition – gas will continue to have a key role to play, representing around 30% of the energy system by 2050 as we see increased electrification in the journey to net zero.

As CEO, what are you most proud of?
My colleagues. Living and working through a global pandemic has been challenging for everyone in different ways. I am very proud of the way everyone working at National Grid has carried out their duties with skill and professionalism in the most difficult and extraordinary circumstances to keep the lights on and the gas flowing for our customers.

Scan here to view our video

Our business environment

As well as managing the business through the COVID-19 pandemic, rising living costs, and the conflict in Ukraine, our societal ambition remains to achieve net zero. We will work with governments and regulators in the UK and US to help them meet their own carbon-reduction targets in a fair and affordable way.

Fairness and affordability

We are committed to delivering energy safely, reliably and affordably to the communities we serve. As well as affordability, we will play our role in ensuring no one is left behind in the short term due to increased energy prices, or in the longer-term transition to clean energy.

£30 – 35bn

2020/21 – 2025/26 investment across our UK and US businesses

2021/22 developments

UK

Supply and demand mismatches due to factors such as COVID-19 and the conflict in Ukraine have driven surges in energy prices that have challenged many customers; 2021 saw a 330% rise in European gas prices.

In February 2022, Ofgem announced a 54% increase in the energy price cap, caused by the record rise in wholesale energy prices. National Energy Action has anticipated that the number of households in fuel poverty will rise from 4.5 million to around 6 million because of the increased cap.

As a result, the Treasury announced that households will receive up to £350 of government support to help protect them from the rising energy costs. This includes a £200 discount on electricity bills for all consumers from October 2022, and a £150 council tax rebate from April for 80% of council taxpayers in England based on their tax bands.

US

Economy-wide inflation has been amplified in the energy sector. The energy price index rose 26% from February 2021 to February 2022, with all major energy component indexes increasing; natural gas and electricity rose 24% and 9%, respectively.

COVID-19 also brought serious economic hardship to many of our customers, elevating affordability concerns even further, and many moratoria on disconnection for non-payment have expired.

In response, Congress's American Rescue Plan included an additional $4.5 billion in Low Income Home Energy Assistance Program funding, including $535 million for New York and $187 million for Massachusetts.

Our response

- We donated £1 million to support the relief effort in Ukraine, split equally between the British Red Cross, the United Nations refugee agency, and UNICEF.
- We published our first Responsible Business Report in June 2021, providing an update on commitments in our Responsible Business Charter across five key areas: the environment, our communities, our people, the economy and our governance.
- In the UK, our Grid for Good Programme is in its second year of having a positive impact on socio-economically disadvantaged young people during this economic downturn. To date we have helped over 2,750 young people and have over 1,000 National Grid employees registered as volunteers.
- Our Electric Transmission business in the UK leveraged new technologies such as deploying soil stabilisation technology that decreased road-building costs by 30% for the Hinkley Connection Project or using drones to inspect overhead power line networks at lower cost and hazard.
- WPD announced a £500,000 fund to help those in fuel poverty through the 2021/22 winter period, as part of a wider annual £1 million Community Matters Fund. The Fund supported more than 79 grassroots organisations and local authorities, saving an estimated £2 million for 29,000 people in our communities.
- We launched Project C, our community engagement and neighbourhood development programme, across our New York service area. Company employees volunteered at food banks, Habitat for Humanity and Meals on Wheels, and stocked student backpacks and food warehouses, supplied PPE, cleaned up neighbourhoods and parks, offered energy affordability solutions, and much more.
- We gained approval from the New York Public Service Commission in January 2022 for our Expanded Solar for All programme through which we will share approximately $800,000 in community solar savings per month with 160,000 low-income to moderate-Income customers, the largest such programme in the country.

Net zero

We are focused on delivering the energy transition while balancing key societal issues for the regions in which we operate. We are continuing to progress towards our own net zero commitment to reduce our greenhouse gas emissions to net zero by 2050. In this 'critical decade' (2020 – 2030) for climate action, we are committed to working with governments and regulators in the UK and US to help them meet their carbon reduction targets.

Net zero

emissions commitment by 2050

2.5 GW

new renewable energy connected to our transmission and distribution grids in 2021/22

2021/22 developments

UK

Along with hosting COP26, the UK has made a binding commitment to net zero emissions by 2050. Additionally, it committed to phasing out inefficient fossil-fuel subsidies in hopes of limiting global temperature rise to 1.5°C.

In April 2022, in response to the war in Ukraine, the UK increased its ambition further by publishing the British Energy Security Strategy with the vision to produce 95% of electricity from low carbon sources by 2030. It included targets for 50 GW of wind by 2030, 70 GW of solar by 2035, and an additional 24 GW of nuclear by 2050. The strategy highlighted the critical role of network infrastructure in delivering on its ambitions, including recognising the need for a national planning regime and expedited approvals processes.

The UK's carbon intensity dropped to a record-low 39 gCO_2 on 5 April 2021. On that day, over three quarters of the UK's power came from zero-carbon sources: 39% wind, 21% solar, and 16% nuclear.

US

The Biden Administration continued to make climate change a top priority for the federal government.

The $1 trillion Infrastructure Investment and Jobs Act was passed, providing roughly $550 billion of new federal funding for roads, bridges, transit and other physical infrastructure programmes, and contained several National Grid priorities.

The Biden Administration committed the US to the Global Methane Pledge at COP26 to cut emissions 30% by 2030.

Offshore wind is a major growth focus for the Biden Administration, with a 30 GW goal by 2030 and 110 GW by 2050.

By 2030, New York is targeting 10 GW of solar, 9 GW of offshore wind, and 8 GW of onshore wind, and recently doubled its storage goal to 6 GW. Massachusetts' goal is to have 8 GW of solar, 4 GW of offshore wind, and 2.8 GW of storage by 2030.

National Grid booth at COP26 in Glasgow, Scotland, UK

Our response

- We sponsored COP26 as a principal partner, leading the conversation and working closely with the UK government and other sponsors to create a successful and ambitious climate change conference in November 2021.
- In April 2021, our commitments to reduce our emissions in line with climate science were approved by the United Nations' Science Based Targets initiative (SBTi). The targets we have set are consistent with the reductions required to keep warming to well below 2°C. We have also identified where we can accelerate our targets further.
- We worked with the Electric Power Research Institute, the Gas Technology Institute and other utilities to sponsor the Low-Carbon Resources Initiative to accelerate the development and demonstration of low-carbon and zero-carbon energy technologies.
- With 60% of all offshore wind developments in the UK planning to bring their energy onshore through the East Coast, we progressed projects such as the one in Yorkshire Green to increase capacity and relieve constraints on the network.
- We worked with industry players to support decarbonisation projects in heavy industry in Humber and Teeside. The East Coast Cluster won a bid to be one of the UK's first two industrial carbon capture clusters, and it has the potential to transport and store 50% of all UK industry carbon emissions securely, up to 27 million tonnes of CO_2 emissions a year by 2030.
- We worked with Hitachi Energy in a pilot project at Richborough Substation in Kent to replace sulphur hexafluoride (SF_6) gas with a greener alternative. This change forms part of our ambition to reduce SF_6 emissions by 50% by 2030 and remove SF_6 gas from our electricity assets by 2050.
- WPD published an environment strategy in April 2021 that details commitments to ensure environmental responsibility underpins all its activities in RIIO-ED2 and beyond. It provides an overarching pathway to achieving net zero by 2028 (excluding network losses), ahead of the government's target date of 2050.
- We announced our vision for a fossil-free future, fully eliminating fossil fuels from our US gas and electric systems, enabling the customers and communities we serve to meet their heating needs without using fossil fuels by 2050. Our plan is based on energy-efficient buildings, a 100% fossil-free gas network, hybrid electric-gas heating systems, and targeted electrification and networked geothermal.
- We joined seven major US utilities in the Electric Highway Coalition, which will enable more electric-vehicle charging stations along highways across the US.
- In June 2021, we commenced operations of two solar projects totalling 40 MW in Michigan. These employed over 150 workers from communities within 100 miles of each site during construction.

Onsite gas cart used to retro fill existing gas-insulated, high-voltage switchgear, with an alternative low global warming g^3 gas, designed for high-voltage transmission equipment, Richborough Substation, Kent, UK

Our business environment continued

Decentralisation

The energy system continues its transition from high to net zero carbon. This change coincides with a shift to more decentralised resources, 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.

30%

of generation in the UK is connected at the distribution level

11%

of generation in Massachusetts and New York is connected at the distribution level

2021/22 developments

UK

Europe is projected to decentralise faster and further than any other region between now and 2050. The median power plant in Europe could reduce in size by up to 95% due to the scale of distributed generation.

Decentralised electricity systems are increasingly made possible by developments in smart systems and flexibility solutions, and supported by local initiatives to develop decarbonisation pathways.

This increasingly decentralised network presents a paradigm shift for the ESO as we work to enable the transition away from a system developed for a small number of large generation plants. The ESO will continue to innovate to enable Great Britain's electricity system as it transitions to becoming a separate, independent public corporation known as the Future System Operator.

The six UK DNO groups submitted their RIIO-ED2 business plans in 2021, describing the role of decentralised electricity systems in achieving net zero, including the role of the distribution system operator in the future.

US

The US is seeing one of the highest levels of grid investment in the world to meet demand for more decentralised assets such as distributed generation and electric vehicle charging.

In Massachusetts, the Department of Energy Resources officially approved the doubling of the current solar programme to 3.2 GW. The Department of Public Utilities passed a provisional programme regarding cost allocation to support distributed generation. The state also allocated $13.1 million in grants to install 306 direct current fast charging electric vehicle charging ports at 150 locations.

New York's Governor called for a doubling of the energy-storage target to 6 GW by 2030 and intends to establish a world-class battery research and manufacturing centre. Proposals also included a $1 billion investment to support electric vehicle (EV) adoption and charging; $500 million to develop offshore wind supply chains and port infrastructure; and the creation of a green hydrogen hub to compete for $10 billion federal funding.

Our response

- In the UK, we are running three Network Option Assessment Pathfinder projects to pilot innovative ways to ensure grid reliability as we prepare to operate a zero-carbon grid by 2025.
- We connected 406 smaller, distributed generation customers to the network in the UK, double the number we connected two years ago.
- The Equitable Novel Flexibility Exchange (Equinox) project allows WPD customers with heat pumps in their homes to participate in a flexible energy future. This project will assist in the deferral or avoidance of network reinforcement due to the predicted high uptake of heat pumps in the upcoming RIIO-ED2 and beyond.
- WPD published reports for each local authority as part of the Distribution Future Energy Scenarios process, outlining the expected uptake of different demand and generation technologies at a decentralised level. The reports are used to assist local stakeholders with local area energy planning and for WPD to identify areas of strategic investment in the distribution network.
- We connected 207 MW of distributed energy resources in New York in 2021. This is the most distributed generation we have ever connected and earned us the maximum incentive payment.
- Funding was approved for our Active Resource Integration pilot by New York's Public Service Commission. This aims to reduce interconnection costs for up to 15 MW of distributed solar projects.
- We began construction on the New York Energy Solution project to address bottlenecks between demand and distributed renewable generation in New York, enabling further decentralisation.
- We secured $150 million of funding in a joint venture with Emerald Energy Venture to support growth in our distributed renewable energy portfolio.
- We have entered a partnership with Massachusetts-based Form Energy to work on breakthrough long-term energy storage and invested in Viridi Parente's innovative high-density storage technology.

Digitalisation

Our digital aspiration is to be an intelligent connected enterprise bringing customers, employees and assets together to create the most resilient and secure utility. Our vision is to create insights from a single source of consumable and consistent data.

$345m

National Grid Partners' investment in companies whose transformational technologies are making grids greener and more resilient

2021/22 developments

Frontier technologies such as connected sensors, appliances and devices have exceeded the number of people on the planet in 2021. Additionally, the declining cost of computer storage is enabling the management of large volumes of data.

Customers desire a seamless experience, though only 21% felt their utility provider made life easy for them in 2021.

Effective digital transformations of utilities across the globe are enabling them to decarbonise, decentralise and democratise energy resources.

Driven by increased regulator demands, these trends are accelerating in utilities, driving 20% annual growth in global investment in digital electricity infrastructure and software for the past few years.

Our response

- We developed WhenToPlugIn, a new online application in the UK that suggests how to reduce consumers' carbon footprints by identifying periods of the day to use appliances when the energy mix is dominated by renewable and low-carbon sources.
- The launch of the Connected Data Portal enabled WPD to become the first UK DNO to provide all customers and stakeholders with open access to its data, further digitalising customer interactions in areas such as applications for new connections and flexibility service provision.
- We launched the new My Account page to streamline US users' digital experience across any device, enabling electric and gas customers to view energy use, manage account information and enrol in programmes.
- We began using satellite imagery and AI in the US to optimise vegetation management.

Case studies

North Sea Link – specialist barge laying undersea cable in Norway

North Sea Link goes live

The North Sea Link is our latest interconnector to go into operation. It is a joint venture with the Norwegian system operator, Statnett, and cost €1.6 billion over six years to build. The 1,400 MW link stretches 447 miles (720 kilometres) between the UK and Norway under the North Sea, and can power approximately 1.4 million homes. Enabling the trade of renewable energy will help reduce the UK's carbon emissions by 23 million tonnes of carbon by 2030, save customers money, and bolster energy security.

WPD and ET response to Storm Arwen

Winds of over 92 miles per hour (148 kilometres per hour) and heavy snow hit the UK in November 2021, impacting electricity distribution and transmission. All four of WPD's distribution networks were affected, requiring power restoration to over 243,000 properties, answering 98,745 customer calls, and resolving over 1,600 incidents. Our transmission network was also affected, with 45 network faults reported. Fortunately, our automatic protection mechanisms worked well to deal with the faults reported. Overall, well-versed preparation, action and communication resulted in a successful response in our service areas to the worst storm to affect power supplies in 15 years.

Offshore wind lease awarded in the New York Bight

In February 2022, the Bureau of Ocean Energy Management hosted the country's largest offshore wind lease auction to date for seabed development rights between New York and New Jersey. In partnership with RWE, we won the largest of the six sites. The awarded area has the potential to host 3 GW of capacity, enough to power over a million homes. The joint venture, Community Offshore Wind, combines RWE's world-leading offshore wind capabilities with our local expertise in the Northeast and experience with High-Voltage Direct-Current interconnectors. This award supports both companies' efforts to advance a clean energy future and achieve our states' offshore wind and climate targets in the coming decades.

Succeeding with our strategy

Our vision is to be at the heart of a clean, fair and affordable energy future. To deliver our vision in a focused way, we have a strategy which sets the bounds of our business, guided by four strategic priorities.

Further reading:
Internal control and risk management on pages 28 – 32

Strategic priority	Enable the energy transition for all	Deliver for customers efficiently
What this means	We will increase the positive impact we have on society, environmentally and socially, primarily through enabling a transition to a clean energy future. By innovating how our networks deliver energy, investing for a changing climate and influencing policy and regulation, we will enable clean electricity, heat and transport, and promote better outcomes for all where we develop skills and where no one is left behind. Business environment link:	Delivering safe, reliable, resilient and affordable energy for customers in our communities has always been at the heart of what we do. As we invest to decarbonise the energy system, using our operational excellence and financial discipline to keep bills affordable for customers is more important than ever. Business environment link:
2021/22 achievements	• We received the prestigious climate change 'A' score from CDP Climate Change for the sixth consecutive year for our corporate sustainability work in cutting emissions and moving towards a low-carbon economy. • We have 22 GW of renewables connected to our UK and US electricity transmission and distribution networks. • Ofgem's strategic innovation fund awarded us £400,000 for three projects that will help develop a net zero electric transmission network, including replacing SF_6 with a low-carbon alternative and utilising satellite data analytics to future-proof against the impacts of climate change. • WPD is the only DNO to fit three-phase services as standard to all new connections, boosting capacity for EVs and heat pumps. • In the US, our onshore renewables team has secured over 2 GW of power offtake agreements with partners such as Walmart and Home Depot. • We started operations of the 200 MW Prairie Wolf Solar Project in Illinois, which is projected to offset 285,000 tonnes of CO_2 annually. • The New York Power Authority partnered with us in May 2021 on the Smart Path Connect project to rebuild 110 miles of transmission lines. This will support existing renewable resources and result in production cost savings, emissions reductions and decreases in transmission congestion.	• The Edison Electric Institute (EEI) announced us as a recipient of its Emergency Response Award and the Emergency Recovery Award, recognising recovery and assistance efforts following service disruptions caused by extreme weather or other natural events. • We launched the Digitalising Work Management app across 50 Electricity Transmission operations sites in the UK to schedule, dispatch and complete work more efficiently. • WPD achieved the British Institution Standard for Inclusive Service Provision for the ninth year running and was re-accredited with the Customer Service Excellence Standard. • We successfully reached new agreements in regulatory rate cases across our US service areas to continue to serve our customers. • In the US, we were honoured with the ReliabilityOne award for Outstanding Reliability Performance from PA Consulting, recognising reliable electric service, technology and innovation, and customer engagement. • We launched a revamped bill assistance campaign in the US to remind customers about the services and programmes we offer during prolonged cold weather or increasing energy prices.
Key highlights	**19.5 GW** **of wind power on Britain's electricity system on 29 January 2022, setting a new wind power record**	**99%** **of our UK customers affected by the worst storm to affect power supplies in 15 years had power returned within 48 hours**
Looking ahead	• We are developing a Cap and Floor regulatory regime with the UK Department for Business, Energy & Industrial Strategy and Ofgem to apply to future multi-purpose interconnectors. This will reduce the number of radial connections limiting distribution to coastal communities, providing significant cost reductions for consumers, and enable wind developers to access multiple markets. • The Hinkley Point connection transmission project we are developing will enable six million homes to access low-carbon electricity. • WPD will work to ensure the network is ready to enable stakeholders to achieve their net zero ambitions. It will prepare the network for at least 1.5 million additional EVs, 600,000 heat pumps and a significant increase in renewable energy over the next six years. • In the US, we will be working with stakeholders to build towards an integrated clean gas and electric system that would eliminate fossil fuel gas from both the gas delivery and electric systems, as the most practical and affordable path for our customers. • In our US jurisdictions, we have committed to 20,000 EV charging points by 2025 and have applied for funding for an additional 32,000 in Massachusetts.	• Customer focus is something we will continue to improve, building on best practice through our US Customer team and learning from WPD's excellence in customer service. • We have committed to 5,000 volunteer hours in the US and $5 million annually to community organisations for the next decade. • For RIIO-ED2, WPD intends to ensure that power cuts will be at their lowest ever levels and customer satisfaction will be at its highest at over 93%. Crucially, it will achieve all of this whilst maintaining affordability for its customers.

Strategic priority	Grow our organisational capability	Empower colleagues for great performance
What this means	In the context of a rapidly changing energy sector, we will need to build on and evolve our organisational capabilities. We will digitally transform our processes, strengthen our customer focus and sharpen our commercial edge. To successfully make this transformation and achieve results, our ability to implement change effectively will be paramount. Business environment link:	All our people shape the culture and ways of working needed to perform and achieve outcomes that will exceed all our stakeholders' expectations, including those of customers, communities, regulators and investors. Our leaders will encourage people to be at their best when it matters. From attracting diverse talents, developing our people and recognising great achievements, we will ensure our colleagues are engaged and able to work towards a clean energy future. Business environment link:
2021/22 achievements	• At COP26 we launched the AiDash satellite tech partnership to improve the green value of our sites. • We began creating a digital copy of Great Britain's energy system, a central tool that brings together every element of our system to create a collective and dynamic view. The virtual environment allows for testing and modelling to make accurate forecasts which enables commercial decision making and understanding of the impact for customers. • WPD has conducted significant roll-out of innovative flexibility initiatives, including procurement of flexibility services via the Flexible Power brand, which has procured 270 MW of flexibility services during 2021/22, affecting 2.4 million customers and achieving £49 million of deferred or avoided reinforcement. • In the US, we launched Pathfinder, a custom end-to-end solution that digitises and streamlines field force work, enabling work assignment, scheduling, dispatch, field work, data capture, tracking and reporting. • We signed an offshore partnership agreement with RWE Renewables to successfully bid jointly in the New York Bight seabed lease auction. Fifty people worked collaboratively across companies.	• We were named in the Top 10 Outstanding Employers list by the Ethnicity Awards, which recognise companies working to ensure all people are afforded equal opportunity, regardless of race or ethnicity. • We launched MyHub Mentoring, our new mentoring programme that connects our experienced and skilled leaders with colleagues looking to develop professionally in specific areas. • We launched the 'Grid Guide to Our People: Inclusion and Diversity' podcast. • We were ranked 1st in the UK and 3rd globally for gender equality in a report published by Equileap. • As a diversity and inclusivity measure, WPD signed up to participate in the 10,000 Black Interns programme, which aims to help transform the prospects of young black people in the UK by offering internships to black students. • In the US, we received a score of 100 on the Human Rights Campaign Foundation's 2022 Corporate Equality Index, and were named the Best Place to Work for LGBTQ Equality. • We signed up to the Valuable 500 initiative, in line with a core focus of our Responsible Business Charter: strengthening diversity and representation of the workforce. This initiative puts disability on the business leadership agenda with the aim of catalysing inclusive action.
Key highlights	**6 GW** **of network boundary capacity in the UK**	**46%** **of our Board seats are held by women**
Looking ahead	• We will be a leader in pioneering smarter, low-carbon energy networks which at their core are made of resilient transmission and distribution grids. Our focus now is on building the diverse pipeline of employees that will get us to net zero. • The UK energy industry needs 400,000 additional people in new and existing jobs by 2050. • WPD is forecast to avoid £94 million of network reinforcement costs by using flexibility services.	• We will continue to establish our purpose, vision and values, and reinforce our third value to 'make it happen'. • We strive to achieve 50% diversity in all new talent programmes by 2025. • We will look to be included in the 2022 Bloomberg Gender-Equality Index, which tracks transparency in gender reporting. • WPD plans to demonstrate exceptional and embedded employment practices by achieving Gold accreditation with Investors in People by the end of RIIO-ED2.

Innovation

Our commitment to net zero continues to shape our innovation strategy, with our key aim being to deliver cleaner and cheaper energy. Our innovation and Research and Development (R&D) 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 for, and play a pivotal role in, the decarbonisation of energy for power, heat, transport and industry.

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

We set out here some of the key innovation projects our business units have been working on over the financial year. In addition, NGP, our corporate investment and innovation arm, continued to progress investments in emerging technologies and embedded these innovations across our US and UK core operations. You can find more detail about our R&D portfolio for our business units on pages 264 to 267.

Vulnerability and Energy Networks, Identification and Consumption Evaluation (VENICE) in UK Electricity Distribution

WPD has started its largest vulnerability Network Innovation Allowance (NIA) funded project, focusing on developing ways to predict consumer vulnerability and ensure we can target our support and investment in our communities, or even households, that need it most. Working with our partners, the community energy group WREN, Frazer-Nash Consultancy and Frontier Economics, we are looking at how WPD can support vulnerable customers. We are assessing which commercial models would work best to: enable fuel poor consumers to participate in the decarbonisation of the energy system so as to benefit the community and achieve net zero; explore whether we can use smart meter data to identify vulnerable customers, and thus enable us to target support to those in our communities where it would be most effective and who need it most; and the effect of changes in electricity use as a result of the pandemic and whether, for instance, the shift to home working will have an impact on customers in vulnerable situations.

WPD Innovation Engineer, Stuart Fowler said: "VENICE is no ordinary innovation project – it will shine a real light on energy use and help us to reach out to the people who need it most."

Virtual Energy System in ESO

The ESO manages the supply and demand to meet the needs of Great Britain, but it also has a clear mission: to decarbonise the energy system and bridge the gap to net zero. Continuing to innovate and adapt the energy system will require a range of new tools and a reimagining of how the entire industry can come together to have a lasting impact.

To achieve this, in 2021, the ESO launched an ambitious, industry-wide mission to digitalise our energy system by constructing real-time digital twin replicas of our entire energy landscape, working in parallel to our physical system, thereby creating a virtual environment through which we can share data and model and test scenarios to make our decision making more robust. This will create valuable insight to help guide and govern how we generate, manage, store and consume energy, helping us make better decisions for Great Britain's aim of achieving net zero targets more quickly and efficiently.

On 1 December 2021, along with panellists from across Ofgem, BEIS, the Energy Digitalisation Taskforce, Energy Systems Catapult and more, the ESO hosted a one-day conference for the energy industry and wider stakeholders to find out more about the programme, and how to get involved. A series of advisory groups and engagement opportunities are taking place throughout 2022.

Deeside Centre for Innovation – UK ET

National Grid's Deeside Centre for Innovation in North Wales has facilities set up ready for industry participants to trial and assess new technological developments before they go into service on the network. This unique environment allows designs to be validated under more realistic conditions than have been available ever before, with equipment being tested at 4,000 A and up to 600 kV outside of laboratory conditions, in an outdoor environment for extended periods of time – days, months or even years.

UK ET is currently trialling two new innovative projects to cut harmful environmental emissions. Working with UK-based Rawwater, we have started work on delivering a novel method of sealing harmful environmental SF_6 leaks by reducing emissions from small-bore pipework.

Another key innovation project currently underway is the testing of a new patented concrete mixture called Cemfree (owned by DB Group), which potentially has a carbon footprint of 80% less than conventional types. Typical barriers to adoption of innovative concrete products include how they will behave on site and long-term durability. To address this, UK ET is currently testing two large-scale slabs (c.50 cubic metres) to identify the differences in performance between Cemfree and a conventional concrete.

Deeside Centre for Innovation, North Wales, UK

National Grid Partners

NGP, our corporate investment and innovation arm, continued achieving impact for the Group by investing in emerging technologies such as AI, data security and cyber security, and embedding these innovations across our US and UK core operations. NGP's portfolio as at 31 March 2022 comprised 38 companies and four fund investments at a fair value of $491 million.

During the past fiscal year, NGP invested in 13 new startups – AptEdge, Baffle, Cogniac, Compute North, Cyolo, Finite State, Incorta, Pathr, Risilience, Sensat, Sync Computing, TS Conductor and Viridi Parente – whose technology can make power grids greener, more secure and more customer friendly. Existing portfolio company Dragos announced a $200 million funding round in which NGP participated as a returning investor. The Series D round is believed to be the largest ever for an operational technology (OT) cyber security company. NGP first invested in Dragos in 2018, when National Grid began using the company's industrial threat intelligence service to monitor global threats to industrial control systems.

NGP continues to build use cases of its portfolio innovations across our core businesses. Working with NGP portfolio company Cogniac, for example, National Grid Metering is using AI to train an AI model to identify different makes and models of gas-meter regulators (which may benefit from early replacement), using a variety of photographs taken from multiple angles and in various lighting conditions. This is increasingly critical for keeping customers safe and warm.

More than 70% of NGP's portfolio companies have strategic engagements with National Grid to help transform our operations – such as AiDash, which combines satellite data and AI to protect critical infrastructure. After a successful deployment in our US service territories to spot overgrown vegetation that can spark outages or fires, at COP26 AiDash unveiled an environmental stewardship product developed with National Grid and NGP's Innovation team.

In November, at COP26 in Glasgow, NGP hosted the Innovating our Way to Net Zero panel discussion with National Grid CEO John Pettigrew and the chief executives of Edison International and the Electric Power Research Institute on how corporate investments in startups can supercharge new clean energy technologies. Additionally, NGP's NextGrid Alliance (NGA) continues to grow from 60+ member utilities at its launch in 2020 to 80+ global utility companies today. Nearly half the world's regulated energy utilities have participated in NGA workshops in the past year to help advance innovation and accelerate the decarbonisation transition. NGP launched a new online community for Alliance members, at ngalliance.energy, in November.

Since its launch in November 2018, NGP has led more than 50% of its startup investment rounds and achieved four portfolio exits – including October's initial public offering of Vancouver-based Copperleaf Technologies, which helps National Grid and other critical infrastructure companies ensure their capital spending generates the highest strategic value, including planning for net zero.

Framing the pathway to the energy transition is a combination of looking at the mega trends known as the three Ds: digitalisation, decentralisation and decarbonisation. Getting there will require enabling technologies like iOT, data analytics, storage cloud, cyber security, and, in turn, investment in areas such as asset modernisation, increased customer focused solutions and smart enterprise. More details can be found at ngpartners.com, including details of each of our portfolio investments.

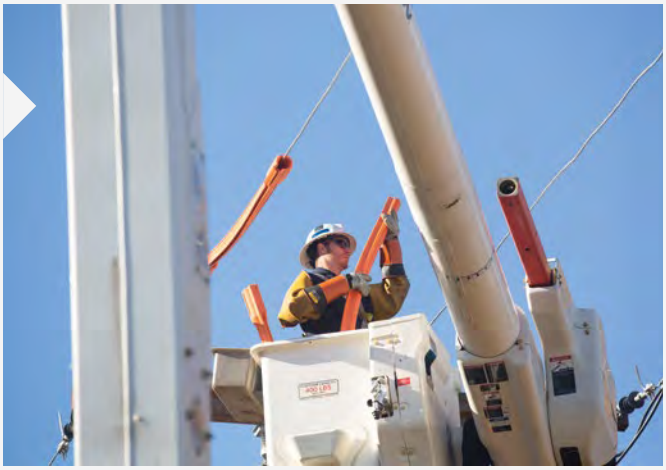
HyGrid – hydrogen blending project in New York

We are excited to have launched the HyGrid project, the largest green hydrogen-blending project for direct use by utility customers in the northeastern US and one of the first in the country. In the town of Hempstead on Long Island, HyGrid is expected to heat approximately 800 homes and fuel 10 municipal vehicles at no additional cost to customers. Much of the equipment required to create zero-carbon hydrogen is already in place at the site; this includes existing wind and solar equipment for generating hydrogen fuel for vehicles, and an adjacent National Grid facility that provides energy for the local neighbourhood. Rudy Wynter, President of National Grid New York, said: "We believe that hydrogen can transform the energy industry, and we are at the forefront."

Fault Location, Isolation and Service Restoration (FLISR) in New England

FLISR is a scheme-based system that monitors and responds to electrical faults along our networks. It identifies and isolates the location of a fault to minimise impact to the grid and the number of customers affected, while enabling a speedier return to service for uninvolved customers when this is safely possible. Creating FLISR capabilities involves installing reclosers and feeder monitors at substations, with preprogrammed logic, to enable near real-time responses to faults.

The technology was installed as part of the Advanced Data Analytics programme. In the midst of the 2021 nor'easter, the FLISR scheme was active on feeders from West Salem and Saugus in the North Shore District in New England. A tree limb created a mainline fault condition between the West Salem substation circuit breaker and the first downstream pole-top recloser on the line. FLISR logic was activated and quickly restored service to 1,531 customers in 16 seconds. The remaining 2,356 customers experiencing the outage had their service restored in 141 minutes after the repairs to the feeder were completed. Had this FLISR scheme not been implemented, all 3,887 customers would have experienced the full outage.



FLISR: installation of recloser. New England, US

Key performance indicators

The Board uses a range of metrics[1], reported periodically, against which we measure Group performance. These metrics are aligned to our strategic priorities.

Link to strategy

Enable the energy transition for all

Deliver for customers efficiently

Grow our organisational capability

Empower colleagues for great performance

Indicates an alternative performance measure

PwC Assured Data
Denotes information subject to limited assurance by PricewaterhouseCoopers LLP see page 61 for full definition.

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/ alternative performance measures 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[1] and wider business performance are considered. For further detail, please see our Directors' Remuneration Report, on pages 108 – 131.

1. Two of our previously reported KPIs: Contribution of our corporate responsibility work and Education, skills and capabilities, have been retired as similar metrics are reported in our RBR.

Financial measures

Strategy link	KPI and performance	Progress in 2021/22
	Group RoE (%) (A) In calculating Group RoE, we measure our performance in generating value for shareholders by dividing our 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. **Target:** 9.75 – 11% each year 2021/22 11.4 2020/21 10.6 2019/20 12.0	Group ROE of 11.4% was higher than 2020/21 (10.6%) with higher regulated financial performance mainly due to the acquisition of WPD and an improved contributions from our non-regulated businesses mainly due to higher interconnector revenues.
	Total regulated asset growth (%) (A) 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. This includes investment for a changing climate, enabling clean electricity, heat and transport. **Target:** 6 – 8% growth each year 2021/22 8.7 2020/21 5.6 2019/20 9.0	Asset growth during the year was 8.7% (2020/21: 5.6%). Capital investment of £7.0 billion (including UK GT), driven by the growth in WPD, along with higher RAV indexation (due to higher inflation) resulted in this increase. Asset growth in 2020/21 was adversely impacted by lower RAV indexation and the impact of COVID-19.
	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, IFA, IFA2 BritNed and Viking Link), investments in, and partnerships with, companies delivering low-carbon energy sources (for example, our partnership with Sunrun) and investments into large-scale renewables (for example, our new investment in NGR). 2021/22 2,610 2020/21 1,874 2019/20 1,440	Investment in delivering new low carbon energy sources increased in the year by £300 million (69%), largely driven by investment in US Offshore Wind (purchase of 3.2 GW seabed lease) and increased investment in onshore renewables, with the latter reflecting the construction of the Noble and Yellowbud projects.

Financial measures continued

Strategy link	KPI and performance	Progress in 2021/22
	NGV capital investment (£m) A NGV is focused on investment in a broad range of energy businesses across the UK and US, including our interconnector business, large-scale renewable generation, LNG storage and regasification, and energy metering.  	NGV capital investment, including Long Island Power Authority (LIPA) Gen ('Genco') has increased year-on-year by £383 million (72%). This is principally due to investment in US offshore wind (purchase of 3 GW seabed lease), increased investment in onshore renewables, reflecting the construction of the Noble and Yellowbud projects, and the Cap.25 project within Grain LNG. Prior year data has been restated to include Genco and exclude NG Metering. This is to align to NGV's current structure. 2019/20 data is not included to align with the data in the financial statements.

Non-financial measures

Strategy link	KPI and performance	Progress in 2021/22
	Cumulative low-carbon generation connected to our UK ET network (GW) Low-carbon generation supported by our network to date.  	A total of 20.9 GW of low-carbon generation is currently connected to our network, following additional offshore wind capacity connecting at Triton Knoll (540 MW), Hornsea 2 (1320 MW) and Lincs Offshore Wind farm (9 MW). The government's 10 point plan alongside the new Energy Strategy and commitment to annual Contract for Difference (CfD) allocation rounds, indicates further increases in low-carbon 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.  	The Company interconnected 569 MW of distributed renewable energy resources in 2021/22 across our service territory, an all-time high and a 20% increase compared with the previous fiscal year. The Company interconnected a record number of distributed renewable energy applications in 2021/22 across our service territory, totalling to 13,400 applications. The State of Massachusetts, New York and Rhode Island installed a record amount of distributed renewable energy capacity (216 MW, 244 MW and 109 MW respectively).
	Cumulative low-carbon generation connected to our UK Electricity Distribution network (GW) Low-carbon generation connected to our UK ED network, to date.  	A total 10.2 GW distribution generation is connected to our network to date, of which 6.7 GW is low-carbon generation. This includes biofuels, wind, solar, hydro and storage.

Further reading:
You can find out additional detail to support some of these KPIs in our Responsible Business Report. This document can be found by visiting: nationalgrid.com/responsibility

Key performance indicators continued

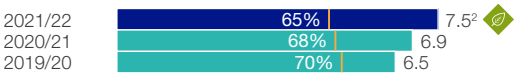
Non-financial measures continued

Strategy link	KPI and performance	Progress in 2021/22

Climate change – Scope 1, 2 and 3 emissions

This is a measure of our reduction of Scope 1, Scope 2 and Scope 3 emissions of the six primary Kyoto greenhouse gases. Our target is to reduce our combined Scope 1 and 2 greenhouse gas emissions by 80% by 2030, 90% by 2040 and to net zero by 2050, compared with our 1990 emissions of 21.6 million tonnes[1]. Furthermore, we target reducing our Scope 3 emissions by 37.5% by 2034 from 2019 emissions of 33.2 million tonnes.

The percentages in the chart below reflect a reduction in our Scope 1 and 2 emissions, from the relevant baseline. The figures are million tonnes of CO_2 equivalent.



The figures in the chart below represent our Scope 3 emissions and are million tonnes of CO_2 equivalent.

1. This 1990 baseline will be updated to reflect portfolio changes in 2022/23. The 1990 baseline does not include emissions from our newly acquired UK ED business (WPD).
2. PwC Assured Data: total Scope 1 and 2 emissions only.

Further reading
You can read more about the Task Force on Climate-related Financial Disclosures and our wider sustainability activities and performance on pages 70 – 83.

Our Scope 1 greenhouse gas emissions for 2021/22 equate to 5.3 million tonnes of CO_2 equivalent (2020/21: 4.7 million tonnes) and our Scope 2 emissions (including electricity line losses) equate to 2.2 million tonnes (2020/21: 2.2 million tonnes). This is a total of 7.5 million tonnes of CO_2 equivalent for Scope 1 and 2 emissions. These figures include line losses and are equivalent to an intensity of around 411 tonnes per £1 million of revenue (2020/21: 467 tonnes). Our Scope 3 emissions for 2021/22 were 30.0 million tonnes of CO_2 equivalent (2020/21: 28.9 million tonnes). 75% of Scope 1 and 2 emissions were in our US business, with 25% in the UK. For our Scope 3 emissions, 91% were in our US business with 9% in our UK business.

Our total energy consumption is 3,502 GWh where the UK and US are responsible for 2,341 GWh and 1,161 GWh respectively. This excludes fuels consumed for power generation in the US which is 19,610 GWh and system losses which are 11,117 GWh.

We measure and report in accordance with the World Resources Institute and World Business Council for Sustainable Development Greenhouse Gas Protocol. Scope 1, 2 and 3 emissions are subject to independent limited assurance against ISAE 3410 Assurance Engagements on Greenhouse Gas Statements. This data complies with the UK government's Streamlined Energy and Carbon Reporting (SECR) requirements. For further detail, please see page 68.

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.

%	2021/22	2020/21	2019/20
UK Electricity Transmission	**99.99993**	99.99997	99.99997
UK Gas Transmission	**100.00000**	100.00000	99.99960
UK Electricity Distribution	**99.99469**	99.99455	99.99469
NE Electricity Transmission	**99.97636**	99.95428	99.91471
NY Electricity Transmission	**99.95261**	99.95429	99.98194
NE Electricity Distribution	**99.92725**	99.91239	99.95205
NY Electricity Distribution	**99.95681**	99.92788	99.93180
Interconnector availability			
IFA interconnector	**61.3**	95.4	91.4
IFA2 interconnector	**90.4**	96.5	–
BritNed interconnector	**80.4**	75.1	98.6
NSL interconnector	**63.3**	–	–
Nemo Link interconnector	**99.0**	99.2	96.1

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

The fire at our IFA interconnector resulted in reduced capacity. The NSL interconnector started commercial operations in 2021/22.

Strategy link	KPI and performance	Progress in 2021/22

Customer satisfaction

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

	2021/22	2020/21	2019/20	Target
UK Electricity Transmission (/10)	**7.78**	8.4	8.2	7.78
UK Electricity System Operator (/10)	**7.3**	7.5	7.6	8.15
UK Electricity Distribution	**9.03**	9.18	9.11	—
UK Gas Transmission (/10)	**8.6**	8.2	8.0	7.9
NE residential — Customer Trust Advice survey (%)	**59.9**	63.3	55.0	—
NY residential — Customer Trust Advice survey (%)	**64.3**	68.1	63.1	—
Metering NPS score (index)	**+53**	+61	+40	—

2021/22 was the trial year for the UK ET Quality of Connections Incentive introduced by Ofgem. This measures key touchpoints throughout the Customer Connection journey and gives us the ability to target specific areas of improvement. UK ET and GT figures represent our baseline targets set by Ofgem for reward or penalty under RIIO-T2 (maximum score is 10). Prior year information is based on RIIO-T1. The change in target in 2021/22 reflects the new Incentive mechanism and change in methodology going forward.

The US metrics measure customers' sentiment with National Grid by asking customers their level of trust in our advice to make good energy decisions. These metrics are tied to the value customers feel they receive from National Grid.

The NPS score reported represents the UK metering business. Although this has seen a decline in 2021/22, action plans are in place to improve the score, going forward.

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

This is the number of worker LTIs 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 2022, our Group lost time injury frequency rate (LTIFR) was 0.13, 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. This result excludes WPD data which can be found on page 51. We are working to harmonise WPD's LTIFR records for data collection, with those of the Group.

We have had a number of disappointing months regarding incidents, the proportion of which relate to slips trips and falls and musculoskeletal strains and twists, where lack of concentration and complacency play a part. In recent months, we completed a review of safety and we are using the outputs to define a Group-wide programme to address these going forward. The programme will include focus on effective behavioural programmes.

The 2019/20 result has been restated. The change results from a review of data collation processes that identified a small anomaly regarding collation of hours worked information

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) called Grid:voice.

Our engagement score was 81%. The result also includes WPD colleagues.

Workforce diversity (%) – ethnicity

We measure the percentage of ethnic minorities in our workforce. We aim to develop and operate a business that has an inclusive and diverse culture (see page 65 — 66).

Our ethnic diversity data for 2021/22 does not include WPD colleagues. We are working to harmonise WPD's ethnicity records for data collection, with those of the Group. We will look to include WPD data next year.

Workforce diversity (%) – gender

We measure the percentage of women in our workforce. We aim to develop and operate a business that has an inclusive and diverse culture (see page 65 — 66).

Our gender diversity data for 2021/22 has been updated to include WPD colleagues, following the acquisition of WPD.

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; it 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 Group Principal Risks (GPRs) and monitors the risk management process through risk review and challenge sessions twice a year.

Risk management process

Risk strategy, policy and processes are set at Group level with the business responsible for implementation. Our Enterprise Risk Management (ERM) process provides a framework to identify, assess, prioritise, manage, monitor and report risks. It supports achieving our vision, strategy and business model as described on pages 4 – 7. This year we established a new risk governance structure with the creation of the Group Executive Ethics, Risk and Compliance Committee (Group ERC), along with equivalent committees in the business units, providing enhanced oversight and governance of risk top-down and bottom-up across the Group.

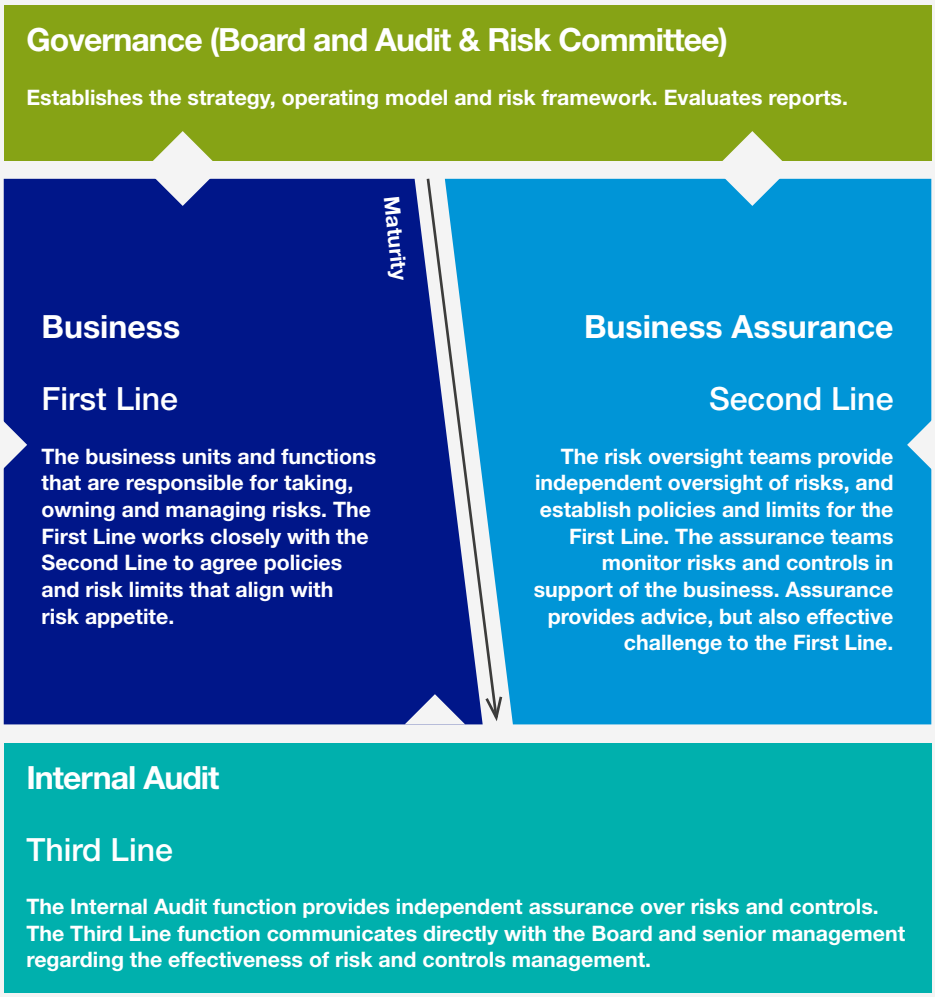
Our corporate risk profile contains the GPRs that the Board considers to be the main uncertainties currently facing the Group as we endeavour to achieve our strategic objectives. These top risks are agreed through discussions on the Group's risk profile with the Group ERC, Audit & Risk Committee and the Board. The risks are reported and debated with the Group ERC every two months, and with the Board at least every six months.

Ukraine-Russia

When the conflict began, we immediately established a crisis assessment team, of multi-disciplined leaders, to oversee and coordinate our response. We evaluated the immediate threat, analysed the risk profile across time horizons including scenario planning, and completed a strategic impact assessment. Although the immediate impact to National Grid was minimal, we increased our focus on risks and strengthened controls associated with cyber and physical security, security of energy supply, political and societal expectations, our supply chains, and sanction compliance.

We supported the UK government with advice on stabilising energy markets, reducing UK (and EU) dependence on Russian energy and developing the British Energy Security Strategy. We made charity donations and provided electrical equipment to support the Ukrainian people (including 500 diesel generator units).

The war, heightened energy bills, and changes to UK and EU energy policy have increased uncertainty across the energy sector. We are continually evaluating how we manage our risks, deliver for our customers, and fulfil our role as The Energy Transition Company.

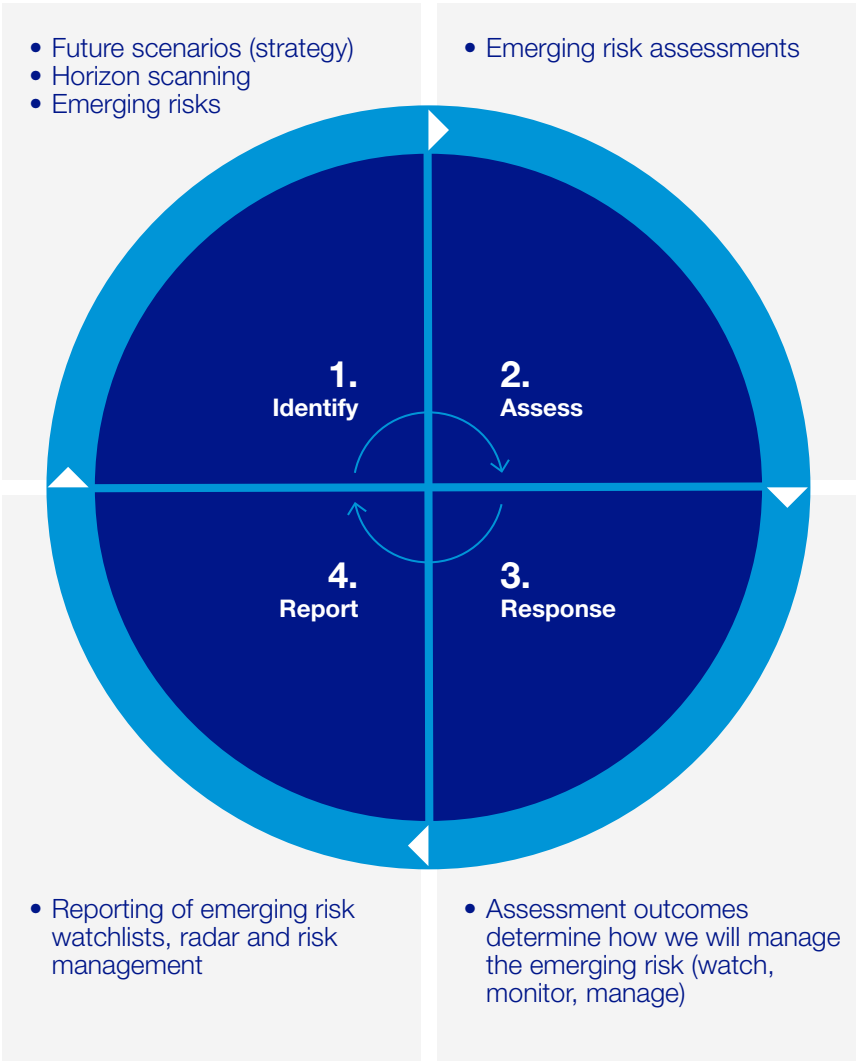


Top-down, bottom-up assessment

Risk management activities take place at 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. For each risk the effectiveness of our internal controls is assessed when calculating the financial, operational and reputational impacts, and how likely the risk is to materialise. Where current risk levels are outside of agreed target scores and our risk appetite, the business area identifies and takes actions to close the gap. Cascade and escalation mechanisms are in place throughout the organisation as appropriate for risk appetite, risks, controls and action plans.

Emerging risks

Emerging risks (ERs) are less defined than GPRs and typically do not pose an immediate threat. They are future focused, with greater uncertainty and are more difficult to quantify; however, they could threaten the future achievement of our strategy. Utilising future scenarios, horizon scanning and emerging risk assessments, we identify ERs that could potentially threaten the achievement of our strategic objectives in the future. Our ongoing ER process includes the identification, assessment, response, and reporting of ERs. Assessment includes the potential impact and velocity (time to impact) and our response is to then either watch, monitor or manage the risks that are reported to the Board and Group ERC using our emerging risk radar.



Changes during the year

The Company's risk profile has been developed drawing upon the most significant risks across our business profiles. Eight GPRs are now carried at Group ERC and Board level as detailed below. We reviewed all GPRs at least twice during the year, including an assessment of the key controls, the key risk indicators (KRIs), risk scores, alignment to risk appetite, and future mitigation actions. Through these reviews, our data management and disruptive forces risks were identified for de-escalation or retirement. There are no significant flags or hot spots that indicate a shift in risk exposure.

This year we split our principal climate change risk to establish a discrete transition climate change risk and incorporated the physical impacts from climate change on our assets (adaptation) into our significant disruption of energy risk, to ensure a clear focus on the actions needed to mitigate these different risks. The significant disruption of energy risk focuses on network reliability and resilience.

Following our agreement to sell a 60% stake in the UK GT business and completion of our preliminary integration activities associated with the acquisition of WPD, we retired our 'transaction-related' GPR.

Continued economic and political turmoil is significant, with years of global energy policy and strategy increasingly being affected. For National Grid, while our current risk levels are predominantly unchanged, the rapidly evolving situation and uncertainty require very careful monitoring and assessment of our GPRs and ERs. They have created an increase in the underlying (inherent) threat across our cyber, disruption of energy, political and societal expectations, and satisfactory regulatory risks, which we are continuously monitoring.

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 we face in achieving our objectives. This aim includes considering inherent risks, which in turn exist because of the nature of day-to-day operations in our industry, including financial risks, which exist because of our financing activities. Our GPRs, and a summary of actions taken by management, are provided on pages 30 – 32. We have provided an overview of the key inherent risks we face on pages 253 – 256, and specifically our key financial risks, which are incorporated within note 32 to the consolidated financial statements on pages 211 – 223. Risk trends reported on the pages that follow take into account controls and any additional mitigation actions, and may be influenced by internal or external developments.

Internal control and risk management continued

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 achieve our strategic objectives is vital to our success. We must attract, integrate and retain the talent we need at all levels of the business. These risks link to our strategic priority to 'empower colleagues for great performance'.

Risk	Actions taken by management
Capability and leadership **There is a risk that we do not have sufficient capability and leadership capacity.** ***Risk trend: Neutral** (2020/21: Neutral) **Strategic priority link** * 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 2022.	We are involved in a number of initiatives to help secure the future engineering talent we require, including industrial placements and internships in the UK and US, advanced and higher apprenticeships in the UK and a graduate development programme across both the US and UK. We are focused on ensuring we have high levels of diversity in these future talent pools. Our entry-level talent development schemes (graduate training and apprenticeships) are a potential source of competitive advantage in the marketplace. We also continue to develop the rigour of our succession planning and development planning process, particularly at senior levels. We are now applying it deeper into the organisation as well as giving continued attention to the ethnic diversity of both our management and field force. There are multiple activities underway to support this agenda, including 'neutral' talent and selection processes, development interventions and a global launch of our diversity, equality and inclusion (DEI) strategy and resources.

Financial risks

While all risks have a direct or indirect financial impact, financial risks are those which relate to financial objectives 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. None of our financial risks are currently classified as GPR. Our key financial risks are described in note 32 to the financial statements on pages 211 – 223.

Strategic risks

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

Management of strategic risks focuses on reducing the probability that the inherent risk would materialise, while improving our ability to respond to the risk effectively should it occur. The risk owners, executive leaders and their teams develop and monitor ways to control the risks. These risks link to our strategic priorities of 'enable the energy transition for all' and 'deliver for customers efficiently'. The political climate and policy decisions of our regulators were key considerations in assessing our risks.

Risk	Actions taken by management
Climate change **There is a risk that we fail to identify and/or deliver upon actions necessary to address the transitional impacts (from a changing energy system) of climate change on our business and demonstrate our leadership of climate change in the energy sector.** **Risk trend: Neutral** (2020/21: Neutral) **Strategic priority link**	Putting in place measures to: • evolve our environmental sustainability metrics to better reflect our strategy, measure our impact and track our progress; • address our GHG emissions and meet our sustainability commitments, including net zero by 2050, hosting our first environmental, social and governance (ESG) investor seminar, including the publication of our Responsible Business Charter setting out what responsibility means for us and our commitments and ambitions over the coming years – progress is reported in our annual Responsible Business Report; • advocate for legislative and policy changes that advance decarbonisation, while proposing and delivering actions in the regions we operate to accelerate decarbonisation for the public and our customers. This work is wide-ranging from system improvements to supporting renewable generation connections, EV proposals, oil to gas/electricity heat conversions, energy efficiency, interconnectors, thought leadership and investment in new and emerging areas. Note that a number of the above measures also address the physical impacts of climate change on our operations; • regularly assess the potential range of net zero pathways and future impact on our gas assets, including evaluation of new and evolving technologies and alternative fuel sources (e.g. hydrogen); • work to include renewable gases in our US gas distribution networks; • commit to making disclosures which are aligned with the Task Force on Climate-related Financial Disclosures (TCFD), including physical and transitional scenario analysis (see pages 70 – 83); • support the charging infrastructure required for increased use of EVs; • promote energy-efficiency programmes for customers in the US; • facilitate decarbonisation in the US and UK, including zero-carbon operation of the GB electricity system through ESO in the UK; and • continue work on programmes to develop skills in our current and future workforce.

Risk	Actions taken by management
Satisfactory regulatory outcomes **There is a risk that we fail to influence future energy policies and secure satisfactory regulatory agreements.** **Risk trend: Neutral** (2020/21: Neutral) **Strategic priority link**	In both the UK and the US, we strive to maintain a good understanding of the regulatory agenda and emerging issues, so that we can select and develop robust, public interest aligned responses 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 key regulatory proceedings such as UK price controls and US rate case filings. Ongoing work to support our regulatory relationships includes: • in the UK, influencing policy through a range of avenues, including inputting and responding to government consultations and other outputs, direct engagement with government departments and engagement with wider stakeholders such as parliamentarians, trade associations and third parties; • in the US, influencing policy through a range of avenues, including inputting and responding to legislative proposals, regulatory rulemakings and requests for information and other outputs; advocating with Congress and the Administration; and engagement with wider stakeholders such as trade associations, think tanks and other non-government organisations; • establishing a regulatory strategy focusing on a transition to performance-based regulation; • establishing 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.
Political and societal expectations and perceptions **There is a risk that we do not position ourselves appropriately to political and societal expectations.** **Risk trend: Neutral** (2020/21: Increasing) **Strategic priority link**	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; • meeting our commitment to be a responsible business (see pages 60 – 69); and • promoting partnerships and proactive policy-change discussions across the jurisdictions where we operate. Considerations on emerging risks and horizon-scanning activities have also been addressed as part of financial and reputational impact assessments. 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.

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 inherent 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 'deliver for customers efficiently'. Principal risk assessment includes reasonable worst-case scenario testing, e.g. 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.

Risk	Actions taken by management
COVID-19 **There is a risk that we fail to respond to significant disruptive factors caused by the COVID-19 pandemic.** **Risk trend: Decreasing:** driven by the move to 'living with COVID-19' policies in the UK and US (2020/21: Decreasing) **Strategic priority link**	The COVID-19 pandemic affected several areas of our business, and we responded with a comprehensive plan, supporting the safety of our workforce and customers. • Mitigating procedures are now part of business as usual, with further improvements to the Crisis Management Framework (CMF) planned. • As COVID-19 rates reduce and the UK and US begin to move to an endemic status, we expect the risk will be retired as a GPR in 2022/23. Throughout 2021/22 we have monitored effects on our people, operations, strategic objectives, regulatory and political engagement, and financial implications. Our approach has been proactive to ensure our business can continue to serve its customers appropriately.

Internal control and risk management continued

Risk	Actions taken by management
Cyber security **There is a risk that we are unable to adequately anticipate and manage disruptive forces on our systems because of a cyber-attack, or poor recovery of critical systems or malicious external or internal parties.** **Risk trend: Increasing:** driven by increased threat from global geopolitical tensions (2020/21: Decreasing) **Strategic priority link**	We are committed to providing secure and resilient services and continue to commit significant resources and financial investment to maintaining the security of our systems and our data. Our approach is holistic and includes: • close partnerships with UK and US government agencies, including the Department for Business, Energy and Industrial Strategy (BEIS), the Centre for Protection of National Infrastructure (CPNI), the Department of Energy and Climate Change and the Department of Homeland Security, to understand risks and collaborate on risk management activities; • utilising good practice frameworks including the National Institute of Standards and Technology Cybersecurity Framework to ensure we can identify, protect, detect, respond and recover from cyber security threats (i.e. implementation of control frameworks across our security programmes in IT, operational technologies and Critical National Infrastructure (CNI); and • a strong focus on compliance with our regulatory obligations including the European Union Directive on Security of Network and Information Systems Regulation (the 'NIS Directive') and US North American Electric Reliability Corporation Critical Infrastructure Protection.
Asset failure **There is a risk of a catastrophic asset failure leading to a significant safety or environmental event.** **Risk trend: Neutral** (2020/21: Neutral) **Strategic priority link**	We continue to focus on risk mitigation actions designed to reduce the risk and help meet our business objectives, including the following: Ongoing preventative measures: • inspection and maintenance programmes including defect management; • UK and US winter-preparedness plans; • US storm-hardening programme; and • outage planning. Event response: • emergency response plans; • incident-management system; • disaster recovery; and • business continuity management. Embedded Group-wide process safety management system: • to make sure a rigorous and consistent framework of risk management exists across our high-hazard asset portfolio, with safety-critical assets clearly identified on the asset register. Implemented asset management and data management standards, including: • supporting guidelines to provide clarity on what is expected; and • a strong focus on what we need in place to keep us safe, secure and legally compliant. Established capability frameworks to make sure our workforce has the appropriate skills and expertise to meet the performance requirements in these standards.
Significant disruption of energy **There is a risk that we fail to predict and respond to a significant disruption of energy supply.** **Risk trend: Neutral** (2020/21: Increasing) **Strategic priority link**	We continue to apply a holistic approach to managing this risk through preventative mitigating actions to maintain network reliability, and timely and effective response plans. Key management actions include the following: Ongoing preventative measures: • inspection and maintenance programmes including defect management; • flood contingency plans for substations; • System Operator supply and demand forecasting; • UK and US winter-preparedness plans; • US gas-mains replacement programmes; • US storm-hardening programme; • outage planning; and • diversity of suppliers in our US gas procurement. Event response: • emergency response plans; • incident-management system; • disaster recovery; and • business continuity management. We have also reviewed market resource adequacy and balancing (where applicable). The short-term controls and investments needed for a resilient network are in place, but further work remains to be done to build our climate adaptation forecasting and control framework for the next decade.

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 strict risk management assessment and regular budget reviews and 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.

Using our established top-down, bottom-up risk-management process, we monitor and challenge the GPRs facing the Company as described on pages 28 – 32. Over the year, the Board has considered the preventative and mitigating controls and risk management actions in place for the GPRs and discussed the potential financial and reputational impact of the GPRs on our ability to achieve the Company's business plan.

The assessment of the potential impact of our GPRs on the longer-term viability of the Company tests the significant solvency and liquidity risks involved in achieving our business objectives and priorities. Although it has considered adopting varying time periods, the Board believes five years is the most appropriate timeframe over which we should assess the long-term viability of the Company.

Our GPRs are subject to annual stress testing to assess whether we have a reasonable expectation that the Company will be able to continue in operation and meet its liabilities as they fall due (our continued viability). Viability is assessed considering the following criteria:

Reasonable worst-case scenario (RWCS)	A theoretical generic representation of a challenging yet plausible manifestation of a risk. The RWCS is considered worst-case once the high-impact, low-likelihood manifestations of a risk have been discounted.
Five-year horizon	A five-year assessment period represents a reasonable time horizon that coincides with our more detailed annual business plan models that reflect the UK price control periods. It is a period over which we can foresee and quantify reasonably accurately the potential impact of future risk events.
Cliff-edge risks	Cliff-edge risks are threats that would occur beyond the assessment period, have a reasonably certain impact and are sufficiently large to threaten our viability. We consult the business to look for significant and potential cliff-edge risks beyond the five-year period. If any such risks are identified, then an assessment period beyond five years is considered.
Financial and reputational risk capacity	We primarily assess our viability from the RWCS in two ways: financial risk capacity and reputational risk capacity.
Business plan stress testing	We assess the financial impact and financial risk capacity of our risk testing using the latest business plan.
Individual risk testing	For each principal risk we assess the potential financial and reputational impact.
Risk cluster testing	We also test for risk clusters. This is the impact of more than one of the principal risks materialising during the assessment period, or where the materialisation of one risk could exacerbate another.
Mitigation actions	Where a risk scenario would potentially exceed our financial risk capacity, we consider reasonable management mitigation.

We considered each GPR for inclusion within the testing and, where appropriate, identified and assessed a RWCS for impacts on operations or financial performance over the five-year assessment time period as detailed below:

Operational impacts

Scenario 1 A significant cyber-attack.
Scenario 2 Significant supply disruption event occurring in the US during peak season.
Scenario 3 A significant process safety gas pipeline failure in NY.

Performance impacts

Scenario 4 Poor outcome of future US rate case filings, and low performance under RIIO-T2 and RIIO-ED2.
Scenario 5 A breach of compliance rules for onshore competition in electricity transmission by ET. NY legislation and political relationships leading to loss of NY licences.
Scenario 6 Inability to recover NY/NE COVID-19-related bad debts through future regulatory agreements.
Scenario 7 Not meeting our net zero targets.

In addition to testing individual GPRs, we also considered the impact of a cluster of the GPRs materialising over the assessment period. By assessing the interconnectivities of our GPRs we have selected the risk cluster RWCS that poses the most significant threat to our viability. Our cluster RWCS is a catastrophic cyber-attack, contributing to a catastrophic asset failure and a significant safety event, causing a significant disruption of energy, and ultimately to a loss of our regulatory licences. The scenario is assumed to occur in our US NY gas businesses.

We considered the reputational and financial impacts for each scenario. The GPR relating to leadership capacity was not tested, as the Board did not feel this would threaten the viability of the Company within the five-year assessment period.

The Board assessed our reputational and financial headroom and reviewed GPR testing results using that headroom. The testing of risk clusters also included an assessment of the impact upon the business plan. No GPR or cluster 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 GPRs on the Company, 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.

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 28 – 32 the Directors have a reasonable expectation that the Company will be able to continue operating and meet its liabilities over the period to May 2027.

Viability statement continued

Principal risk	Viability scenario	Matters considered and overseen by the Board
Cyber security: there is a risk that we are unable to adequately anticipate and manage disruptive forces on our systems because of a cyber-attack, poor recovery of critical systems or malicious external or internal parties.	**Scenario 1** – A significant cyber-attack. Included in the risk cluster testing. £1.5 billion total cost impact.	**The Board reviewed and discussed cyber security reports:** • as part of digital immersion sessions in September 2021 and March 2022, which included the conflict in Ukraine and risk associated with cyber security posed by Russia. **The Audit & Risk Committee reviewed and discussed cyber security reports:** • as part of a cyber risk deep dive at the Audit & Risk Committee in September 2021 and March 2022, including IAM updates.
Significant disruption of energy: there is a risk that we fail to predict and respond to a significant disruption of energy supply.	**Scenario 2** – Significant supply disruption event occurring in the US during peak season. Included in the cluster testing. £50 million total cost impact.	**Two Board strategy sessions were held during the year covering:** • energy transition in June 2021; • the CEO's update on UK and US gas markets, amidst rising prices in October 2021; and • a UK businesses overview in November 2021. **In addition, the following occurred:** • The Finance Committee conducted a review of the black-swan event (Texas). • The Audit & Risk Committee conducted a Risk Deep Dive in March 2022.
Asset failure: there is a risk of a catastrophic asset failure leading to a significant safety or environmental event.	**Scenario 3** – A significant process safety gas pipeline failure in the US. Included in the cluster testing. £3.14 billion total cost impact.	**The Board reviewed and evaluated the current safety performance of the Company at each meeting during the year. In addition, there was:** • an ET performance update in July 2021; • a US Business overview evaluation in September 2021; • a UK Businesses overview in November 2021, including WPD; and • a leading indicators deep dive in May 2022. **Furthermore:** • the Safety & Sustainability Committee conducted an Annual Safety Review in July 2021; and • the IFA fire investigation was reviewed and discussed at the Safety & Sustainability Committee; with the insurance items discussed at the Finance Committee.
COVID-19: there is a risk that we fail to respond to significant disruptive factors caused by the COVID-19 pandemic.	**Scenario 6** – Inability to recover US COVID-19-related bad debts through future regulatory agreements. $369 million net COVID-19 bad debt impact as at 31 March 2022.	• Board briefings including weekly update from the Chief Executive (CEO) and Chief Financial Officer (CFO) on our COVID-19 impacts and 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 through a management exercise.

Principal risk	Viability scenario	Matters considered and overseen by the Board
Satisfactory regulatory outcomes: there is a risk that we fail to influence future energy policies and secure satisfactory regulatory agreements.	**Scenario 4** – Poor outcome of future US rate case filings, and low performance under RIIO-T2 and RIIO-ED2. £500 million cost impact from lower average allowed RoE in US rate cases. £780 million cost impact from nil outperformance under RIIO-T2 and RIIO-ED2.	**The Board received updates and performed reviews in relation to:** • the CMA appeal; • WPD Regulatory strategy; • NY Monitor; • RIIO-T2 overview; • US business overview evaluation; • UK and US gas market amidst rising prices; • the UK regulatory landscape and regulatory framework; and • ESO future outlook.
Climate change: there is a risk that we fail to identify and/or deliver upon actions necessary to address the transitional impacts (from a changing energy system) of climate change on our business and demonstrate our leadership of climate change in the energy sector.	**Scenario 7** – Not meeting our net zero targets. No immediate financial impacts; various reputational impacts were considered.	**The Board and its Committees discussed sustainability metrics and strategy to reflect and track our impact and progress, including:** • a bi-annual review of GPR climate change and climate risk, plus the energy policy environment in the UK; • ESG discussions around energy transition and climate change, including investor expectations; • a discussion on the climate resolution at the 2021 AGM; • disclosures in line with the TCFD recommendations; • the review and approval of the publication of the Responsible Business Charter; • a review of GHG emissions performance by the Safety & Sustainability Committee; and • active participation as a Principal Partner in COP26.
Political and societal expectations and perceptions: there is a risk that we do not position ourselves appropriately to political and societal expectations.	**Scenario 5** – A breach of compliance rules for onshore competition in electricity transmission by UK ET. NY legislation and political relationships leading to loss of NY licences. £400 million UK fines and penalties. Reasonable (rate base) consideration for US assets.	**The Board received updates and reviews in relation to:** • Western Link outcomes; • the NY Monitor update and review meeting with NY Monitor; • the US business overview evaluation; • Audit & Risk Committee-led meetings which were specific to the Federal Investigation (Fraud and Bribery) during July to October 2021; • COP26, leading up to the event in Glasgow; • the Bid Defence Plan; • the UK political landscape; • UK and US gas markets amidst rising prices; • a deep dive on the energy policy environment in the UK; and • the short-, medium- and long-term impacts of the war in Ukraine.
Capability and leadership: there is a risk that we do not have capability and leadership capacity.	**N/A**	**Capability and leadership is an integral part of the Board's vision and strategy. The Board's approach included:** • the approval of Board Committee changes which were made effective from 1 September 2021; • regular leadership updates throughout the year, including a deep dive on leadership in September 2021; • bi-annual updates on people matters; • the People & Governance (P&G) Committee's consideration of the structure, size and composition of the Board and Committees (the P&G Committee also led on Board succession planning – identifying and proposing individuals to be Directors of the Company and establishing the criteria for new positions); and • a review of the Diversity Policy.

Financial review

1 Revenue and profits

The vast majority of our revenues are set in accordance with our regulatory agreements (see pages 245 – 252), and are calculated based on a number of factors including investment in network assets, performance on 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 operating 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 fund our dividends.

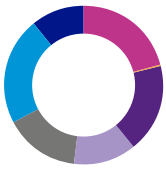
3 Investment

We invest efficiently in our networks to achieve strong and sustainable growth in our regulated asset base over the long term. We also invest in assets in our non-regulated businesses. We continually assess, monitor and challenge investment decisions so we can continue to run safe, reliable and cost-effective networks.

Revenue (%)

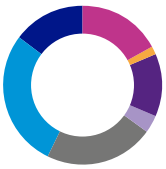
10.2% 23.0% 17.3% 28.1% 7.4% 7.1% 6.9%

Statutory operating profit (%)



21.1% 15.3% 0.1% 21.9% 18.2% 10.7% 12.7%

Capital investment (%)



17.1% 22.3% 1.5% 28.0% 12.8% 14.5% 3.7%

UK Electricity Transmission; UK Electricity System Operator; UK Electricity Distribution; UK Gas Transmission; New England; New York; National Grid Ventures and Other activities

Capital allocation

Our capital allocation is determined by the need to make the investments and outputs required under our regulatory frameworks in the UK and US (which accounted for over 90% of our capital expenditure in 2021/22), balanced with the desire to invest in our other businesses, such as NGV and NGP, which may achieve higher growth. The investments we make seek a balance between growth through investments, such as the WPD acquisition, investments in our higher-growth NGV businesses and through NGP, and the continued growth of our steady cash flow core regulated operations, while ensuring we continue to deliver a consistent and reliable dividend to our shareholders.

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 268 – 279. Our regulatory performance measures have only been calculated for the total Group (or individual entities where relevant), as these are not based on IFRS measures.

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

- **Capital investment and asset growth:** Currently we expect to invest c. £7 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 (RoE) 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 from 2021/22 is to grow the dividend per share at least in line with rate of CPIH each year.

Summary of Group financial performance for the year ended 31 March 2022

Financial summary for continuing operations

Last year we announced that we would make a strategic pivot towards higher growth electricity. On 14 June 2021, we acquired Western Power Distribution plc (WPD) an electricity distribution business based in the South West of the UK. Our planned disposals of the Narragansett Electric Company (NECO) business in Rhode Island and UK Gas Transmission (and metering) are expected to complete during 2022/23. The combination of these transactions has resulted in a change to the Group's structure and a new organisational structure has been implemented.

As a result, the operating segments reported to our Board have changed from those reported in 2020/21. Our segmental reporting for continuing operations is aligned with our five regulated business units, along with National Grid Ventures (NGV) and Other non-regulated businesses. The UK Electricity System Operator is now separately reported from UK Electricity Transmission. The acquisition of WPD introduces a UK Electricity Distribution segment. Our US Regulated segment has been divided between the jurisdictions of New England and New York, to align more closely with our regulatory framework. Lastly, as part of the new organisational structure, our generation business on Long Island in New York is now reported as part of NGV.

The expected disposal in the third quarter of 2022/23 of a majority stake in our UK Gas Transmission businesses (including metering, which was previously reported within NGV) means that this business is now classified as a discontinued operation. The expected disposal of NECO does not meet the definition of a discontinued operation under IFRS, so is reported within New England as part of continuing operations. Both UK Gas Transmission and NECO are classified as held for sale in the balance sheet as at 31 March 2022. NECO was also reported as held for sale in the comparative balance sheet at 31 March 2021.

Unless otherwise stated, the following commentary and analyses are for the continuing operations of the Group (as defined by IFRS 5 'Non-current Assets Held for Sale and Discontinued Operations'). Within the Financial review, 'Total Group' refers to results and balances including discontinued or held for sale businesses (as defined by IFRS 5). Where applicable, comparative amounts have been restated accordingly.

Financial summary for continuing operations

£m	2021/22	2020/21	Change
Statutory results:			
Operating profit	**4,371**	2,401	82%
Profit after tax	**2,183**	1,304	67%
Earnings per share (pence)	**60.6p**	37.0p	64%
Dividend per share (pence), including proposed final dividend	**50.97p**	49.16p	4%
Capital expenditure	**6,185**	4,727	31%
Alternative performance measures:			
Underlying operating profit	**3,992**	2,688	49%
Underlying profit after tax	**2,351**	1,493	57%
Adjusted earnings per share (pence)	**61.4p**	36.7p	67%
Underlying earnings per share (pence)	**65.3p**	42.4p	54%
Underlying dividend cover	**1.3**	0.9	49%
Capital investment	**6,739**	4,843	39%

Financial summary total – including discontinued operations

£m	2021/22	2020/21	Change
Statutory results:			
Operating profit	**5,008**	2,895	73%
Profit after tax	**2,354**	1,641	43%
Earnings per share (pence)	**65.4p**	46.6p	40%
Capital expenditure	**6,446**	4,931	31%
Alternative performance measures:			
Adjusted operating profit, pre timing and major storm costs[1]	**4,726**	3,283	44%
Adjusted profit after tax, pre timing and major storm costs[1]	**2,760**	1,911	44%
Adjusted earnings per share (pence)	**71.0p**	46.4p	53%
Adjusted earnings per share, pre timing and major storm costs (pence)	**76.7p**	54.2p	42%
Capital investment	**7,000**	5,047	39%
Retained cash flow/adjusted net debt	**8.9%**	6.6%	230bps
Regulatory performance measures:			
Asset growth	**8.7%**	5.6%	310bps
Group Return on Equity[2]	**11.4%**	10.6%	80bps
Value Added	**3,833**	1,808	112%
Regulatory gearing	**81%**	65%	1600bps

1. Comparable to 'underlying' results, but including discontinued operations.
2. Group RoE methodology amended in 2021/22 to calculate accretion charge on inflation-linked debt at long-run inflation rates. This provides alignment to treatment of RAV indexation in the metric. Prior year comparatives have not been restated.

Statutory results from continuing operations of £2,183 million were up £879 million from the prior year. Statutory EPS for continuing operations of 60.6p was 23.6p higher than the prior year. The Group's statutory results for the year were impacted by net exceptional charges of £320 million (2021: £52 million net charge) and remeasurement gains of £292 million (2021: £62 million gains). Our 'adjusted' results exclude exceptional items, but are impacted by revenue timing and major (deferrable) storm costs, as explained on page 39. Our 'underlying' results are presented excluding the total impact of exceptional items, remeasurements, timing and major storm costs. A reconciliation between these alternative performance measures and our statutory performance is detailed on page 38 and in the section 'Other unaudited financial information' on pages 268 – 279.

Underlying operating profit for continuing operations was up 49%, driven by the acquisition of WPD, improved performance in NGV, NG Partners and UK Electricity Transmission, along with higher property sales, no depreciation on NECO in New England (held for sale treatment) and a lower adverse impact from COVID-19 compared with 2020/21. Our joint ventures and associates contribution increased (mainly UK interconnector revenues). These factors were partly offset by higher net financing costs from both inflation on RPI-linked debt and interest on a higher level of borrowings related to the acquisition of WPD. Other interest was favourable year-on-year. The tax charge was higher driven by increased taxable profits and additional deferred tax charges in the UK and the US. Underlying profit after tax increased by 57% and resulted in a 54% increase in underlying EPS to 65.3p.

Profit after tax for discontinued operations of £171 million was down £166 million compared with the prior year principally due to exceptional charges related to deferred tax from the change in the UK corporation tax rate, higher interest costs driven by inflation, partly offset by cessation of depreciation following held for sale treatment and higher revenues under RIIO-2.

Capital investment of £7.0 billion (including discontinued operations of £0.3 billion) along with RAV indexation helped increase our asset growth to 8.7%. We delivered Value Added (our measure of economic profit) of £3.8 billion (including UK Gas Transmission) in 2021/22, significantly higher than in 2020/21 mainly as a result of higher RAV indexation. Group RoE of 11.4% was up from 10.6% for 2020/21. RCF/net debt at 8.9% was higher than 6.6% in 2020/21. The recommended full-year dividend per share of 50.97p is in line with the new policy announced in March 2021 of increasing in line with UK CPIH inflation and is covered 1.3 times by underlying EPS.

Profitability and earnings

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

Reconciliation of profit and earnings from continuing operations

	Operating profit			Profit after tax			Earnings per share		
£m	**2021/22**	2020/21	Change	**2021/22**	2020/21	Change	**2021/22**	2020/21	Change
Statutory results	**4,371**	2,401	82%	**2,183**	1,304	67%	**60.6p**	37.0p	64%
Exceptional items	**(166)**	60		**320**	52		**8.9p**	1.5p	
Remeasurements	**(392)**	(34)		**(292)**	(62)		**(8.1)p**	(1.8p)	
Adjusted results	**3,813**	2,427	57%	**2,211**	1,294	71%	**61.4p**	36.7p	67%
Timing	**16**	111		**19**	88		**0.5p**	2.5p	
Major storm costs	**163**	150		**121**	111		**3.4p**	3.2p	
Underlying results	**3,992**	2,688	49%	**2,351**	1,493	57%	**65.3p**	42.4p	54%

Reconciliation of profit and earnings from discontinued operations

Statutory operating profit for discontinued operations of £637 million (2021: £494 million) includes £17 million of exceptional items (2021: £5 million) and timing under-recovery of £80 million (2021: £96 million). Depreciation of the assets in UK Gas Transmission was ceased following reclassification to held for sale (in accordance with IFRS 5) on 1 September 2021. Tax on exceptional items for discontinued operations comprises a £1 million credit in respect of other exceptional items (2021: £nil) and a deferred tax exceptional charge related to the change in the UK corporation tax rate of £145 million (2021: £nil). In our adjusted results for discontinued operations, tax on timing was £15 million (2021: £18 million). Statutory earnings per share from discontinued operations was 4.8p (2021: 9.6p) and underlying earnings per share from discontinued operations was 11.4p (2021: 11.8p).

Exceptional income/(expense) from continuing operations

	Impact on operating profit		Impact on profit after tax		Impact on EPS	
£m	**2021/22**	2020/21	**2021/22**	2020/21	**2021/22**	2020/21
Environmental insurance recovery and change in environmental provisions	**38**	14	**28**	11	**0.8p**	0.3p
Transaction and separation costs	**(223)**	(24)	**(204)**	(24)	**(5.7)p**	(0.7)p
New operating model implementation costs	**(66)**	(50)	**(52)**	(39)	**(1.4p)**	(1.1)p
Net gain on disposal of St William joint venture and release of deferred income	**417**	—	**366**	—	**10.1p**	—p
Deferred tax arising on the change in UK corporation tax rate	**—**	—	**(458)**	—	**(12.7p)**	—p
Total	**166**	(60)	**(320)**	(52)	**(8.9)p**	(1.5)p

This year we have classified the following items as exceptional:

- **Environmental insurance recovery:** a £38 million gain related to an insurance receivable for site remediation costs related to our US Superfund sites environmental provision, recorded as exceptional in line with the treatment of the related costs;
- **Transaction and separation costs:** £223 million of transaction costs associated with the acquisition of Western Power Distribution (WPD), the sale of NECO and the sale of UK Gas Transmission (2021: £24 million);
- **New operating model implementation costs and efficiency programme:** £66 million of costs in relation to the design and implementation of our new operating model that is designed to transform our operating framework (2021: £50 million);
- **Gain on disposal of St William property joint venture and release of deferred income:** £228 million gain on the divestment of a 50% interest in an equity investment in March 2022 along with release of £189 million of deferred income arising on historical sales made to that joint venture; and
- **Change in UK corporation tax rate:** a £458 million deferred tax charge for the increase in UK corporation tax rate from 19% to 25% which takes effect from 1 April 2023.

In the prior year we also classified as exceptional the £14 million credit for partial release of US environmental provisions previously treated as exceptional.

We also exclude certain unrealised gains and losses on mark-to-market financial instruments from adjusted profit; see notes 5 and 6 to the financial statements for further information. Net remeasurement gains of £392 million on commodity contract derivatives (i.e. 'mark-to-market' movements on derivatives used to hedge the cost of buying wholesale gas and electricity on behalf of our US customers) occured during the year, in addition to net remeasurement gains of £59 million on financing-related instruments (used to hedge interest and currency risk on net borrowings); along with a further £56 million of remeasurement losses related to our share of post-tax results of joint ventures.

The expected future exceptional costs related to the new operating model and cost efficiency programme are expected to be in the region of £100 million.

Exceptional items for discontinued operations

Discontinued operations includes an exceptional item of £17 million (2021: £5 million) related to cost efficiency programme and separation costs ahead of the sale of the UK Gas Transmission and Metering business.

Timing over/(under)-recoveries

In calculating underlying profit, we exclude regulatory revenue timing over- and under-recoveries and major storm costs (as defined below). 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, an adjustment will be made to future prices to reflect this over-recovery; likewise, if less than this level of revenue is collected, an adjustment will be made to future prices in respect of the under-recovery. 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 2022 for continuing and discontinued operations. 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 $1.35:£1.

£m	2021/22	2020/21[1]
Balance at start of year (restated)	**43**	259
In-year (under)/over-recovery – continuing operations	**(16)**	(111)
In-year (under)/over-recovery – discontinued operations	**(80)**	(96)
Balance at end of year	**(53)**	52

1. March 2021 balances restated for segmental changes and to correspond with 2020/21 regulatory filings and calculations.

In 2021/22, we experienced timing under-recoveries of £85 million in UK Electricity Transmission, over-recoveries of £22 million in UK Electricity Distribution, under-recoveries of £47 million in UK Electricity System Operator, under-recoveries of £32 million in New England and over-recoveries of £126 million in New York. 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.

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 and allowances) are recoverable under our rate plans but are expensed as incurred under IFRS. Accordingly, where the net total incurred cost exceeds $100 million in any given year, we exclude the net costs from underlying earnings. In 2021/22, we incurred deferrable storm costs, which are eligible for future recovery of $220 million (2021: $201 million).

Segmental operating profit

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

Adjusted operating profit

£m	2021/22	2020/21	Change
UK Electricity Transmission	**1,067**	1,094	(2)%
UK Electricity Distribution	**909**	—	n/a
UK Electricity System Operator	**7**	(60)	(112)%
New England	**743**	611	22%
New York	**780**	665	17%
NGV and Other activities	**307**	117	162%
Continuing operations	**3,813**	2,427	57%
Discontinued	**654**	499	31%
Total	**4,467**	2,926	53%

Underlying operating profit

£m	2021/22	2020/21	Change
UK Electricity Transmission	**1,152**	1,052	10%
UK Electricity Distribution	**887**	—	n/a
UK Electricity System Operator	**54**	70	(23)%
New England	**886**	727	22%
New York	**706**	722	(2)%
NGV and Other activities	**307**	117	162%
Continuing operations	**3,992**	2,688	49%

Statutory operating profit increased in the year, primarily as a result of the 9.5 months' contribution from WPD, the exceptional gain on disposal of our St William joint venture, higher UK Electricity Transmission revenues, increased interconnector revenues and fair value gains in NG Partners, no depreciation of our Rhode Island business and a lower adverse impact from COVID-19 compared with 2020/21. These benefits were partly offset by higher exceptional charges than in 2020/21 along with adverse year-on-year movements on timing recoveries. 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	2021/22	2020/21	Change
Revenue	**2,035**	1,974	3%
Operating costs	**(980)**	(894)	10%
Statutory operating profit	**1,055**	1,080	(2)%
Exceptional items	**12**	14	(14)%
Adjusted operating profit	**1,067**	1,094	(2)%
Timing	**85**	(42)	(302)%
Underlying operating profit	**1,152**	1,052	10%
Analysed as follows:			
Net revenue	**1,883**	1,823	3%
Regulated controllable costs	**(227)**	(192)	18%
Post-retirement benefits	**(26)**	(32)	(19)%
Other operating costs	**(55)**	(44)	25%
Depreciation and amortisation	**(508)**	(461)	10%
Adjusted operating profit	**1,067**	1,094	(2)%
Timing	**85**	(42)	(302)%
Underlying operating profit	**1,152**	1,052	10%

UK Electricity Transmission statutory operating profit was £25 million lower in the year, mainly due to adverse year-on-year timing movements. In 2021/22, there were £12 million of exceptional costs related to establishing our new operating model (2021: £14 million). Timing under-recoveries of £85 million in 2021/22 compared with over-recoveries of £42 million in 2020/21 are primarily due to the under-recovery of pass-through costs, inflation true-ups and last year's collection of prior period under-recoveries, partly offset by an over-collection of Transmission Network Use of System (TNUoS) revenues in the current year.

Adjusted operating profit reduced by £27 million (2%), but this included £127 million adverse year-on-year timing movements. Underlying operating profit increased by 10%. Net revenues (adjusted for timing) were higher under the first year of RIIO-T2, with indexation and lower totex capitalisation rates (increased 'fast money') offsetting the lower returns in the current year. In the prior year, revenue was impacted by an adverse MOD adjustment in the final year of the RIIO-T1 price control.

Regulated controllable costs were higher from additional workload agreed for RIIO-T2, inflationary increases and the non-recurrence of favourable credits in 2020/21, which more than offset 2021/22 efficiency savings and the absence of prior period COVID-19-related costs. Other costs were higher, mainly relating to a £10 million settlement related to Western Link.

The increase in depreciation and amortisation reflects continued investment. In 2021/22, a benefit arising from the review of assets' useful economic lives was broadly offset by asset write-offs.

UK Electricity Distribution

£m	2021/22	2020/21	Change
Revenue	**1,482**	—	n/a
Operating costs	**(573)**	—	n/a
Statutory operating profit	**909**	—	n/a
Exceptional items	**—**	—	n/a
Adjusted operating profit	**909**	—	n/a
Timing	**(22)**	—	n/a
Underlying operating profit	**887**	—	n/a
Analysed as follows:			
Net revenue	**1,357**	—	n/a
Regulated controllable costs	**(180)**	—	n/a
Post-retirement benefits	**(24)**	—	n/a
Other operating costs	**(86)**	—	n/a
Depreciation and amortisation	**(158)**	—	n/a
Adjusted operating profit	**909**	—	n/a
Timing	**(22)**	—	n/a
Underlying operating profit	**887**	—	n/a

'UK Electricity Distribution' refers to WPD, which was acquired on 14 June 2021. The results presented are for the 9.5-month period of ownership and no amounts for WPD are included in the consolidated results of the Group for year ended 31 March 2021.

Statutory operating profit of £909 million for the 9.5 months included £22 million of timing over-recoveries of 'Distribution Use of System' (DUoS) volumes and the adverse impact on our revenues from UK corporation tax capital allowance 'super deductions', partly offset by an under-collection of earned incentives and inflation true-ups. Excluding timing, underlying profit was £887 million for the 9.5 months of ownership since June 2021. Controllable costs and post-retirement benefit costs of £204 million were lower than the estimated equivalent period in the prior year, mainly as a result of the disruption arising from COVID-19 during 2020/21. These costs include engineering management costs, supporting our customers and the maintenance of our four electricity distribution networks, including activities such as vegetation management in order to prevent line damage. Depreciation and amortisation charges include amortisation of fair value adjustments applied to property, plant and equipment (PP&E) at the date of acquisition.

UK Electricity System Operator

£m	2021/22	2020/21	Change
Revenue	**3,455**	2,018	71%
Operating costs	**(3,450)**	(2,071)	67%
Statutory operating profit/(loss)	**5**	(53)	(109)%
Exceptional items	**2**	(7)	(129)%
Adjusted operating profit/(loss)	**7**	(60)	(112)%
Timing	**47**	130	(64)%
Underlying operating profit	**54**	70	(23)%
Analysed as follows:			
Net revenue	**240**	107	124%
Controllable costs	**(129)**	(99)	30%
Post-retirement benefits	**(16)**	(13)	23%
Other operating costs	**(5)**	(9)	(44)%
Depreciation and amortisation	**(83)**	(46)	80%
Adjusted operating profit/(loss)	**7**	(60)	(112)%
Timing	**47**	130	(64)%
Underlying operating profit	**54**	70	(23)%

UK Electricity System Operator statutory operating profit increased £58 million in the year. In 2021/22 there were £2 million of exceptional costs related to establishing our new operating model, compared to a £7 million credit related to release of previous reorganisation provisions in the prior year. Timing under-recoveries of £47 million in 2021/22 compared with under-recoveries of £130 million in the prior year. Timing in 2021/22 predominately included £44 million for the Balancing Services Use of System (BSUoS) price cap deferral support scheme compared with £109 million in 2020/21 for TNUoS demand under-recovery during COVID-19 and £22 million for the BSUoS Covid Support Scheme.

Adjusted operating profit increased by £67 million almost entirely driven by the £83 million year-on-year timing movement, partly offset by asset impairments. Excluding the impact of timing, underlying operating profit decreased by 23%. Net revenue (adjusted for timing) was £50 million higher, reflecting higher revenues under RIIO-2 related to additional workload agreed under the new price control and higher earned incentives. Regulated controllable costs including pensions were £33 million higher in total, in line with the expected higher volume of work required to deliver the ambitious RIIO-2 business plan. Depreciation and amortisation was £37 million higher as a result of our investment in transformational IT systems, in addition to asset impairments for work that may no longer be required.

New England

£m	2021/22	2020/21	Change
Revenue	**4,550**	4,214	8%
Operating costs	**(3,786)**	(3,600)	5%
Statutory operating profit	**764**	614	24%
Exceptional items	**80**	8	900%
Remeasurements	**(101)**	(11)	818%
Adjusted operating profit	**743**	611	22%
Timing	**32**	11	191%
Major storm costs	**111**	105	6%
Underlying operating profit	**886**	727	22%
Analysed as follows:			
Net revenue	**2,500**	2,430	3%
Regulated controllable costs	**(813)**	(810)	—
Post-retirement benefits	**(40)**	(43)	(7)%
Bad debt expense	**(45)**	(127)	(65)%
Other operating costs	**(494)**	(450)	10%
Depreciation and amortisation	**(365)**	(389)	(6)%
Adjusted operating profit	**743**	611	22%
Timing	**32**	11	191%
Major storm costs	**111**	105	6%
Underlying operating profit	**886**	727	22%

New England statutory operating profit increased by £150 million, as a result of the £90 million year-on-year favourable movements in commodity contract remeasurements (which are passed on to customers), mostly offset by exceptional charges booked in the current year for the disposal of our Rhode Island business and the cost efficiency programme. In 2020/21, exceptional charges were lower, comprising £8 million of costs related to establishing our new operating model and transaction costs. Timing under-recoveries of £32 million in 2021/22 compared with timing under-recoveries of £11 million in 2020/21, related to revenue decoupling and recovery of cost on our energy efficiency programme. Storm costs (deferrable and non-deferrable) were broadly flat year-on-year, with a lower number of storm events occurring during 2021/22, but a higher 'per storm' cost. These factors, along with an adverse impact from COVID-19 in the prior year and exchange movements, resulted in an overall increase in statutory operating profit and adjusted operating profit.

Adjusted operating profit increased by £132 million (22%), including £21 million year-on-year adverse timing under-recoveries. Major storm costs of £111 million exceed our threshold to be excluded from underlying, but were a repeat of the high level of deferrable storm costs we incurred in 2020/21. Underlying operating profit increased by 22%. Net revenues (adjusted for timing) increased by £91 million from the benefits of rate case increments in Massachusetts Gas and Massachusetts Electric, capital trackers and higher revenues from new customer connections along with income from sale of property. New England controllable costs were held broadly flat year-on-year, with increases from higher workload, IT costs and inflationary impacts, being mostly offset by efficiency savings, favourable settlements and non-recurrence of costs incurred in the prior period including COVID-19 disruption costs. Provisions for bad and doubtful debts of £45 million were £82 million lower than 2020/21, which had additional provision for receivables related to the impact of COVID-19. Depreciation and amortisation increased due to the growth in assets, but was more than offset by a benefit from cessation of depreciation in NECO as a result of it being reclassified to held for sale. Other costs were higher due to increased property taxes and increases in environmental reserves.

New York

£m	2021/22	2020/21	Change
Revenue	**5,561**	4,605	21%
Operating costs	**(4,466)**	(3,910)	14%
Statutory operating profit	**1,095**	695	58%
Exceptional items	**(24)**	(7)	n/a
Remeasurements	**(291)**	(23)	n/a
Adjusted operating profit	**780**	665	17%
Timing	**(126)**	12	n/a
Major storm costs	**52**	45	16%
Underlying operating profit	**706**	722	(2)%
Analysed as follows:			
Net revenue	**3,400**	3,136	8%
Regulated controllable costs	**(963)**	(981)	(2)%
Post-retirement benefits	**(44)**	(47)	(6)%
Bad debt expense	**(87)**	(198)	(56)%
Other operating costs	**(989)**	(792)	25%
Depreciation and amortisation	**(537)**	(453)	19%
Adjusted operating profit	**780**	665	17%
Timing	**(126)**	12	n/a
Major storm costs	**52**	45	16%
Underlying operating profit	**706**	722	(2)%

New York statutory operating profit increased by £400 million, principally as a result of the £268 million year-on-year favourable movements in commodity contract remeasurements (which are passed on to customers) and net exceptional gains including £38 million environmental insurance recovery for costs related to our obligations to clean up Superfund sites, compared to a £14 million environmental credit (reversal of cost previously booked as exceptional) in the prior year. Timing over-recoveries of £126 million in 2021/22 compared with timing under-recoveries of £12 million in 2020/21, driven by commodity price fluctuations and high auction sale prices on transmission wheeling. Major (i.e. deferrable) storm costs of £52 million were £7 million higher year-on-year, but as in 2020/21, the total costs passed our threshold ($100 million in aggregate with New England) and so are excluded from our underlying results. These factors, along with a prior year adverse impact from COVID-19 disruption resulted in an overall increase in statutory operating profit and in adjusted operating profit.

Adjusted operating profit increased by £115 million (17%), aided by £138 million year-on-year favourable timing swings and lower year-on-year impact of COVID-19, but partly offset by higher environmental charges in 2021/22. After further adjusting to exclude the impact of timing and major storm costs, underlying operating profit decreased by 2%. Net revenues (adjusted for timing) increased by £126 million from the benefits of rate case increases in KEDNY, KEDLI and Niagara Mohawk (partly offset by use of deferral credits to reduce the impact on customer bill increases and a 'make whole' adjustment for the rate case settlement in downstate New York). Regulated controllable costs were lower year-on-year, with increased workload and IT costs and also inflationary impacts, more than offset by cost efficiency savings, favourable credits in 2021/22 and the non-recurrence of costs arising in 2020/21. Provisions for bad and doubtful debts decreased by £111 million, driven by 2020/21's additional provision for receivables related to the impact of COVID-19. Depreciation and amortisation increased due to the growth in assets and the accelerated depreciation of certain gas assets and IT systems. Other costs were higher due to an increase in environmental provisions (mostly driven by inflation), increased property taxes, cost of removal and customer funded work, partly offset by receipt of a historical property tax refund.

NGV and Other activities

£m	2021/22	2020/21	Change
Statutory operating profit	**543**	65	735%
Exceptional items	**(236)**	52	(554)%
Adjusted operating profit	**307**	117	162%
Timing	**—**	—	n/a
Underlying operating profit	**307**	117	162%
Analysed as follows:			
NGV	**286**	185	55%
Property	**40**	22	82%
Corporate and Other activities	**(19)**	(90)	(79)%
Underlying operating profit	**307**	117	162%

NGV's statutory operating profits were £100 million higher than 2020/21, driven by higher interconnector revenues, which benefited from a full year's contribution from our second French interconnector (IFA2) and the commissioning of North Sea Link earlier than expected, along with the impact of higher commodity prices and increased revenues in our onshore renewables in the US. These were partly offset by a write-down for assets damaged by a fire at Sellindge in September 2021, which caused an unplanned outage for our legacy French interconnector (IFA1) and a £3 million exceptional charge in relation to establishing our new operating model (2021: £2 million).

In Other activities, we incurred an exceptional gain of £417 million related to the disposal of our 50% interest in the St William property joint venture and release of associated deferred income on historical sales made to the joint venture. We also incurred an exceptional charge of £22 million related to establishing our new operating model (2021: £26 million), £95 million (2021: £24 million) of transaction costs for the acquisition of WPD, and £61 million of costs incurred for the separation of NECO and UK Gas Transmission. In 2021/22, underlying operating profit of £21 million (including corporate costs), compared with net costs of £68 million in 2020/21. This increase included benefits from higher fair value gains on our NG Partners investments and the release of an aged liability related to historical balances for unclaimed dividends in the Group. Excluding the gain on disposal of St William, the underlying performance of the property business was up £18 million, driven by increased sales compared with 2020/21.

Financing costs and taxation – continuing

Net finance costs

Net finance costs (excluding remeasurements) for the year were 25% higher than last year at £1,081 million, with the £216 million increase driven by interest costs of £130 million (net of amortisation of debt fair value adjustments) for debt acquired with WPD, £99 million of interest and fees for £8 billion of additional borrowings used to finance the acquisition, a £145 million impact of higher inflation on our RPI-linked debt and an increase in borrowings as a result of organic asset growth. These higher costs were partly offset by favourable year-on-year non-debt interest income, with benefits from interest on pension and other post-employment benefit (OPEB) liabilities, increased capitalised interest and higher levels of other interest income from US financial investments compared with 2020/21. The effective interest rate for continuing operations of 3.2% is in line with the prior year rate.

Joint ventures and associates

The Group's share of net profits from joint ventures and associates increased by £82 million compared with 2020/21, mainly as a result of higher interconnector revenues in both Nemo Link up £37 million and in BritNed up £28 million and higher sales in our St William property joint venture (prior to disposal of this investment in March 2022) and an improved contribution from our joint venture investment in NG Partners.

Tax

The underlying effective tax rate (excluding joint ventures and associates) of 24.3% was 260bps higher than last year (2020/21: 21.7%). The tax charge in 2021/22 included additional deferred tax charges in the UK for the change in the UK corporation tax rate and the unitary state deferred tax remeasurement which occurred as a result of the expected sale of our Rhode Island business in the US. The Group's tax strategy is detailed later in this review.

Discontinued operations

On 27 March 2021, we announced the agreed sale of 100% of our UK Gas Transmission business (including metering) to a new entity (the 'Acquiring Entity') in exchange for £2.2 billion cash consideration, £2.0 billion of debt financing and a 40% interest in the Acquiring Entity on completion. The other 60% in the Acquiring Entity will be owned by a consortium of Macquarie Infrastructure and Real Assets and British Columbia Investment Management Corporation. The sale is expected to complete in the third quarter of this financial year subject to the receipt of all regulatory approvals. The results of our 100% share of this business (including metering) are presented as 'discontinued operations' in 2021/22, with comparatives restated accordingly. On 1 September 2021, this business met the IFRS 5 criteria to be classified as held for sale and depreciation was stopped from that date. As described in note 10 to the financial statements, separation and transaction costs relating to the disposal of this business are included within discontinued operations.

UK Gas Transmission (including metering)

£m	2021/22	2020/21	Change
Revenue	**1,374**	1,122	22%
Operating costs	**(737)**	(628)	17%
Statutory operating profit	**637**	494	29%
Exceptional items	**17**	5	240%
Adjusted operating profit	**654**	499	31%
Timing	**80**	96	(17)%
Adjusted operating profit (excluding timing)	**734**	595	23%
Analysed as follows:			
Net revenue	**977**	889	10%
Regulated controllable costs	**(160)**	(157)	2%
Post-retirement benefits	**(17)**	(18)	(6)%
Other operating costs	**(55)**	(28)	96%
Depreciation and amortisation	**(91)**	(187)	(51)%
Adjusted operating profit	**654**	499	31%
Timing	**80**	96	(17)%
Adjusted operating profit (excluding timing)	**734**	595	23%

UK Gas Transmission statutory operating profit increased £143 million in the year. In 2021/22, there were £14 million of costs incurred in separating the business from the Group and transaction-related costs in preparation of the sales process; and £3 million (2021: £5 million) of exceptional costs related to the reorganisation and cost efficiency programme. Timing under-recoveries of £80 million arose in 2021/22, mainly related to recovery of shrinkage costs from higher gas prices. This compared with under-recoveries of £96 million in the prior year from under-collections relating to the change to the gas capacity charging regime and lower demand, partly offset by a lower return of prior period over-recoveries.

Adjusted operating profit increased by £155 million (31%), including £16 million less adverse timing year-on-year. Excluding the impact of timing, adjusted operating profit increased by 23%, mostly from the cessation of depreciation since 31 August 2021, when the business was classified as held for sale. In 2021/22, depreciation of £91 million was £96 million lower than the prior year. Net revenue was £88 million higher, reflecting new prices under RIIO-T2 and the impact of the change to CPIH and regulatory depreciation profile change under the new price control. Regulated controllable costs (including pensions) and other costs were £29 million higher as a result of increased customer-funded works, higher Network Innovation Competition costs, higher meter displacements and a beneficial provision release in the prior period.

Within UK Gas Transmission, our non-regulated metering business's operating profit of £150 million was in line with the prior year, with the benefit from lower depreciation being offset by the adverse impact of fewer meters as these are being phased out and replaced by smart meters.

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. Value Growth, which is derived from Value Added, forms part of our long-term management incentive arrangements.

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

Capital investment

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

	At actual exchange rates			At constant currency		
£m	**2021/22**	2020/21	Change	**2021/22**	2020/21	Change
UK Electricity Transmission	**1,195**	984	21%	**1,195**	984	21%
UK Electricity Distribution	**899**	—	n/a	**899**	—	n/a
UK Electricity System Operator	**108**	88	23%	**108**	88	23%
New England	**1,561**	1,437	9%	**1,561**	1,429	9%
New York	**1,960**	1,738	13%	**1,960**	1,729	13%
NGV and Other activities	**1,016**	596	70%	**1,016**	596	70%
Continuing	**6,739**	4,843	39%	**6,739**	4,826	40%
Discontinued	**261**	204	28%	**261**	204	28%
Total Group	**7,000**	5,047	39%	**7,000**	5,030	39%

Capital investment in UK Electricity Transmission increased by £211 million compared with 2020/21, primarily due to London Power Tunnels 2 and Hinkley-Seabank, partly offset by lower Smartwires spend. The acquisition of WPD during the year resulted in a £899 million increase in reported capital investment year-on-year. In New England, capital investment was up £132 million on a constant currency basis, reflecting higher spend on gas assets driven by decreased COVID-19 restrictions compared with 2020/21 and higher investment in electric assets related to asset condition. In New York, capital investment was £231 million higher (on a constant currency basis), as a result of accelerated leak-prone pipe replacement work in our gas businesses, investment in Northwest Nassau connection, higher investment in our electric assets to reinforce the network and increase capacity and reliability, investment in SmartPath Connect and Energy Highway, and decreased COVID-19 restrictions compared with 2020/21. Capital investment in NGV was significantly higher than in 2020/21, with continued investment in the Viking Link interconnector (Denmark), increased spend on our Grain LNG facility, partly offset by completion of the North Sea Link interconnector (Norway) this year, but a £373 million step up in US Ventures' capital investment, including purchase of a 3.2 GW potential offshore wind seabed lease in New York. In addition, a total amount of £93 million was invested by National Grid Partners in 2021/22, compared to £38 million in the prior year.

In UK Gas Transmission, capital investment increased by £57 million from non-load spend, with increased work at St Fergus, continued investment at Peterborough and Huntingdon compressor stations, increased investment at Hatton and higher cyber spend compared to 2020/21.

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. These alternative performance measures include regulatory assets and liabilities and certain IFRS assets and liabilities of businesses that are classified as held for sale under IFRS 5.

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. Our UK OpCo RAVs are different to the IFRS carrying value of PP&E and intangibles in these entities. This is a result of the annual indexation (inflationary uplift) adjustment applied to RAV compared with the IFRS value of these assets (which are held at amortised cost), or in the case of WPD, the result of acquisition fair value adjustments (where PP&E at acquisition has been valued above RAV). 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. The impact of US tax reform in 2017/18 which resulted in a reduction in IFRS deferred tax liabilities, and from a regulatory perspective remains as a future obligation, results in a regulatory liability within US rate base (£0.7 billion in New England and £0.9 billion in New York at 31 March 2022). In our Value Added calculation, we have recognised an asset to reflect expected future recovery of £202 million COVID-19-related provision for bad and doubtful debts that we have included in 2021/22 (2021: £179 million). Regulatory IOUs which reflect net over- or under-recoveries compared with our regulatory allowances are treated within this table as obligations but do not qualify for recognition as liabilities (or assets) under IFRS. The increase in regulatory assets and other balances (including goodwill) and the increase in net debt as a result of the WPD acquisition along with associated transaction costs have been excluded when calculating the in-year Value Added for 2021/22. However, these balances are included within amounts reported as at 31 March 2022. Adjusted net debt movements 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. Within our Value Added calculation, total assets and other balances, goodwill and adjusted net debt movement all exclude the impact of reclassifications to held for sale for NECO in 2020/21 and the UK Gas business in 2021/22. Separation and transaction costs related to the disposal of these entities are also excluded from in-year Value Added and have been deferred to match against the anticipated proceeds on disposal of these businesses in 2022/23.

Financial review continued

The table below includes related balances and net debt for UK Gas Transmission and Metering and NECO, despite being reclassified as held for sale under IFRS.

	2021/22					2020/21		
£m	31 March 2022	Acquisition of WPD[1]	31 March 2021[2]	Value Added	Change	31 March 2021	31 March 2020	Change
UK RAV	**31,593**	**8,476**	**20,876**	**2,241**	**11%**	20,872	20,431	2%
US rate base	**22,178**	**—**	**20,687**	**1,491**	**7%**	20,041	18,598	8%
Total RAV and rate base	**53,771**	**8,476**	**41,563**	**3,732**	**9%**	40,913	39,029	5%
NGV and Other	**5,226**	**—**	**4,920**	**306**	**6%**	4,458	3,942	13%
Total assets	**58,997**	**8,476**	**46,483**	**4,038**	**9%**	45,371	42,971	6%
UK other regulated balances[3]	**84**	**230**	**(140)**	**(6)**		(160)	(368)	
US other regulated balances[4]	**2,621**	**—**	**1,995**	**626**		1,974	1,613	
Other balances	**(878)**	**(168)**	**(336)**	**(374)**		(336)	(514)	
Total assets and other balances	**60,824**	**8,538**	**48,002**	**4,284**		46,849	43,702	3,147
Cash dividends				**922**				1,413
Adjusted net debt movement[1]				**(1,373)**				(2,752)
Value Added				**3,833**				1,808

1. The acquisition of WPD on 14 June 2021 resulted in an increase in assets which has been excluded from the total change in the year used to calculate Asset Growth and Value Added for 2021/22. The increase in goodwill and intangible licence recognised on the acquisition of WPD and the associated fair value of net debt acquired and cash proceeds (along with associated transaction costs) are excluded from the total adjusted net debt movement in the year used to calculate Asset Growth and Value Added.
2. March 2021 balances restated for segmental changes and to correspond with 2020/21 regulatory filings and calculations.
3. Includes totex-related regulatory IOUs of £271 million (2021: £293 million), under-recovered timing balances of £346 million (2021: £153 million over-recovered) and under-recovered legacy balances related to previous price controls of £9 million (2021: £nil).
4. Includes assets for construction work-in-progress of £2,139 million (2021: £1,671 million), other regulatory assets related to timing and other cost deferrals of £759 million (2021: £714 million) and net working capital liabilities of £277 million (2021: £390 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 2021 and finalisation of US balances.

During 2021/22, our combined regulated asset base and NGV and Other businesses' assets grew by £4.0 billion or 9% on a constant currency basis compared with an increase of 6% in the prior year. UK RAV growth was 10.7% including CPIH indexation of 6.2% and RPI indexation of 9.0% while US rate base grew strongly by 7.2%.

Value Added, which reflects the key components of value delivery to shareholders (i.e. dividend and growth in the economic value of the Group's assets, net of growth in net debt) was £3.8 billion in 2021/22. This was higher than last year's £1.8 billion, with £1.0 billion of the year-on-year increase arising from higher RAV indexation in UK Transmission, £0.8 billion of RAV growth from WPD (for the 9.5 months owned in 2021/22), stronger NGV and Other performance, higher US returns and a smaller adverse impact from COVID-19 compared with 2020/21, offset by higher interest and increased tax paid. Of the £3.8 billion Value Added, £0.9 billion was paid to shareholders as cash dividends and £2.9 billion was retained in the business. Value Added per share was 106.5p compared with 51.3p in 2020/21.

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 274. 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	2021/22	2020/21	Change
Cash generated from continuing operations	**5,788**	3,967	46%
Cash capital expenditure and acquisition of investments	**(5,781)**	(4,741)	22%
Disposal of St William joint venture	**413**	—	n/a
Dividends from joint ventures and associates	**166**	80	108%
Business net cash inflow/(outflow) from continuing operations	**586**	(694)	(184)%
Net interest paid	**(1,013)**	(737)	37%
Net tax paid	**(298)**	(91)	227%
Ordinary dividends	**(922)**	(1,413)	(35%)
Other cash movements	**30**	14	114%
Net cash outflow from continuing operations	**(1,617)**	(2,921)	(45)%
Acquisition of WPD[1]	**(7,837)**	—	n/a
Discontinued operations	**657**	408	n/a
Proceeds from bridge loan taken out to acquire WPD	**8,200**	—	n/a
Other net cash flows from investing and financing transactions	**628**	2,608	n/a
Increase/(decrease) in cash and cash equivalents	**31**	95	(67)%
Reconciliation to movement in net debt			
Increase/(decrease) in cash and cash equivalents	**31**	95	(67)%
Increase in borrowings for bridge loan	**(8,200)**	—	n/a
Less: other net cash flows from investing and financing transactions	**(628)**	(2,608)	n/a
Cash and borrowings reclassified as held for sale at end of year	**4,063**	1,119	n/a
Fair value of net debt acquired with WPD	**(8,147)**	—	n/a
Other non-cash movements in net debt	**(1,382)**	1,438	n/a
Increase in net debt	**(14,263)**	44	n/a
Net debt at start of year	**(28,546)**	(28,590)	—%
Net debt at end of year	**(42,809)**	(28,546)	50.0%

1. Includes £44 million cash and cash equivalents acquired with WPD

Cash flow generated from continuing operations was £5.8 billion, £1,821 million higher than last year, mainly due to the contribution from WPD, lower adverse year-on-year timing under-recoveries, higher revenues compared to 2020/21, higher spend on provisions and exceptional charges, offset by favourable working capital inflows on payables. Cash expended on investment activities increased as a result of continued organic growth in our regulated and non-regulated businesses, the impact of acquiring WPD, partly offset by disposal of financial investments.

The disposal of our St William investment in March 2022 generated £413 million of proceeds in the year. The cash acquisition of WPD in June 2021 for £7.9 billion increased net debt, along with a further £8.2 billion increase from the fair value of net debt acquired. Net interest paid increased as a result of the bridge loan taken out to finance the purchase of WPD, interest for borrowings acquired with WPD and increased base rates on borrowings. The Group made net tax payments of £298 million during 2021/22. The cash dividend of £922 million, reflected a higher scrip uptake of 48% (2021: 17%).

Discontinued operations represents UK Gas Transmission and Metering which generated higher cash inflows in 2021/22, principally as a result of improved year-on-year performance and no pension deficit payments in 2021/22. Non-cash movements primarily reflect changes in the sterling-dollar exchange rate, accretions on index-linked debt, lease additions and other derivative fair value movements, offset by the amortisation of fair value adjustments on the debt acquired with WPD. Closing net debt of £42.8 billion excludes £1.2 billion of net debt in NECO and £4.1 billion of net debt in NG Gas plc which has been classified as held for sale on 31 March 2022.

During the year we raised over £4.2 billion of new long-term senior debt to refinance maturing debt and to fund a portion of our significant capital programme. The new bonds issued include further borrowings under our Green Financing Framework. In addition, we raised £8.2 billion under a bridge financing facility to fund the purchase of the UK Electricity Distribution business. This bridge facility remained outstanding at 31 March 2022 as we continue to progress the sales of our US Rhode Island business and our UK Gas Transmission business. We expect the proceeds from these sales to be received, and for the bridge facility to be repaid in full, this financial year (2022/23).

As at 18 May 2022, we have £6.8 billion of undrawn committed facilities available for general corporate purposes, including £350 million related to National Grid Gas plc, all of which have expiry dates beyond May 2023. National Grid's balance sheet remains robust, with strong investment grade ratings from Moody's, Standard & Poor's (S&P) and Fitch.

The Board has considered the Group's ability to finance normal operations as well as funding a significant capital programme, taking account of the disruption caused by the energy crisis. This includes stress-testing of the Group's finances under a 'reasonable worst case' scenario, assessing the timing of the NECO and National Grid Gas plc transactions, and the further levers at the Board's discretion to ensure our businesses are adequately financed. As a result, the Board has concluded that the Group will have adequate resources to do so.

Financial position

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

Summary balance sheet

£m	31 March 2022	31 March 2021	Change
Goodwill and intangibles	**12,804**	6,031	112%
Property, plant and equipment	**57,532**	47,043	22%
Assets and liabilities held for sale	**2,812**	3,557	(21)%
Other net assets/(liabilities)	**(334)**	(1,896)	(82)%
Tax balances	**(6,685)**	(4,817)	39%
Net pension asset/(liabilities)	**3,075**	715	330%
Provisions	**(2,539)**	(2,227)	14%
Net debt	**(42,809)**	(28,546)	50%
Net assets	**23,856**	19,860	20%

Goodwill and intangibles increased as a result of the acquisition of WPD during the year. Property, plant and equipment increased as a result of the continuing capital investment programme, the acquisition of WPD and foreign exchange gains offset by reclassifications to held for sale. Assets held for sale comprises assets and liabilities of NECO and UK Gas Transmission (including metering) both of which we expect to sell during 2022/23 (see note 10 to the financial statements). Tax balances increased principally as a result of the acquisition of WPD, deferred tax on actuarial gains on pension assets, accelerated tax depreciation from ongoing capital investment and the impact of the UK tax rate change on deferred tax balances. Net pension assets increased in both the US and UK as a result of higher asset valuations from investment returns, higher discount rates on liabilities and foreign exchange movements along with the acquisition of WPD. Provisions were higher principally as a result of increases in environmental and other provisions, the impact of acquiring WPD and foreign exchange movements. Other movements are largely explained by net working capital inflows, reclassifications to held for sale, the impact of the acquisition of WPD 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 increased significantly in the year to 81% as at 31 March 2022. This was up from 65% at the previous year end, principally as a result of an £8 billion 'bridge loan' used to acquire the equity of WPD and £8 billion fair value of net debt acquired with WPD. The proceeds from the sales of NECO and UK Gas Transmission expected to occur in 2022/23 will be used to repay this loan, which would substantially reduce the level of gearing in the Group. Taking into account the benefit of our hybrid debt, adjusted gearing as at 31 March 2022 was 80%. Once this bridge loan is repaid, gearing should return to a level appropriate for the current overall Group credit rating of BBB+/Baa1 (S&P/Moody's).

Retained cash flow as a proportion of adjusted net debt was 8.9%. This is above the long-term average level of 7% 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 RoE.

As explained on page 274, 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. Group RoE includes our UK Gas Transmission business.

Regulated RoEs are measures of how the businesses are performing compared with the assumptions and allowances set by our regulators. US jurisdictional and UK entity regulated returns are calculated using the capital structure assumed within their respective regulatory arrangements and, in the case of the UK, assuming inflation of 3% RPI under RIIO-1 and 2% CPIH under RIIO-2. 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	2021/22	2020/21	Change
UK Electricity Transmission	**7.7%**	13.8%	-610bps
UK Electricity Distribution	**13.6%**	n/a	n/a
UK Gas Transmission	**7.8%**	9.6%	-180bps
New England	**8.3%**	7.5%	80bps
New York	**8.8%**	6.7%	210bps
Group Return on Equity[1]	**11.4%**	10.6%	80bps

1. Group RoE methodology amended in 2021/22 to calculate accretion charge on inflation-linked debt at long-run inflation rates. This provides alignment to treatment of RAV indexation in the metric. Prior year comparatives have not been restated.

As a result of the new RIIO-2 price control, the allowed returns that UK Electricity Transmission and UK Gas Transmission can earn have decreased compared with the allowed returns under RIIO-1. In 2021/22, UK Electricity Transmission achieved operational returns of 7.7%, 140bps higher than base allowed return under RIIO-2, mainly from totex performance related to savings on capital delivery. UK Electricity Distribution achieved an operational return of 13.6% in 2021/22 under RIIO-1, or 400bps outperformance, mostly as a result of strong incentives performance, but also totex outperformance driven by efficient capital expenditure. UK Gas Transmission's return decreased due to lower returns allowed under the new RIIO-2 price control, but achieved operational returns in 2021/22 were 7.8%, 110bps higher than allowed, from totex outperformance, driven by cost efficiencies and incentives.

New England's achieved return of 8.3% was 85% of the allowed return of 9.8% in 2021/22 as a result of higher IT and workforce costs, but this was an improvement on the achieved return of 7.5% or 77% of the allowed return in 2020/21, driven by rate increases and a smaller adverse impact from COVID-19 compared with the prior year. New York's achieved return of 8.8% was 99% of the allowed return of 8.9% in 2021/22. This was an improvement compared with an achieved return of 6.7% in 2020/21, as a result of new rate agreements and a property tax rebate in the current year, and non-deferrable storm costs exceeding allowances plus non-recurring charges in the prior year. The quoted returns for New England and New York represent the weighted average return across OpCos within each jurisdiction. US returns were not affected by the COVID-19-related bad debt provisions recognised in 2020/21 which included an adjustment reflecting our expectation for future recovery of these bad debt costs.

Overall Group RoE, which incorporates NGV, Property, Corporate and Other plus financing and tax performance was 11.4%.

Tax transparency

As a responsible taxpayer, we have voluntarily included additional tax disclosures, which we believe are of significant interest to many of our stakeholders.

Tax strategy

National Grid is a responsible taxpayer. 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.

Our financial statements have been audited. The figures in the tax transparency disclosures in the Annual Report and Accounts have been taken from our financial systems, which are subject to our internal control framework.

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 Chief Financial Officer who oversees and approves the tax strategy on an annual basis. For more detailed information, please refer to our published global tax strategy on our website.

Country-by-country reporting summary

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.

2021/22	Revenue					
Tax jurisdiction	Unrelated party[1] £m	Related party[2] £m	**Total £m**	Profit/ (loss) before income tax[3] £m	Income tax accrued – current year[4] £m	Tangible assets/ (liabilities) other than cash and cash equivalents[5] £m
United Kingdom	9,165	122	**9,287**	2,501	290	27,846
United States	10,646	45	**10,691**	1,395	6	29,686
Isle of Man	—	18	**18**	(48)	—	—
Luxembourg	—	—	**—**	—	—	—
Netherlands	—	33	**33**	—	—	—
Guernsey[6]	—	4	**4**	—	—	—
Cross-border consolidation	—	—	**—**	—	—	—
Total	19,811	222	**20,033**	3,848	296	57,532

2020/21	Revenue					
Tax jurisdiction	Unrelated party[1] £m	Related party[2] £m	**Total £m**	Profit/ (loss) before income tax[3] £m	Income tax accrued – current year[4] £m	Tangible assets/ (liabilities) other than cash and cash equivalents[5] £m
United Kingdom	5,482	106	**5,588**	1,718	213	20,796
United States	9,297	43	**9,340**	341	3	26,247
Isle of Man	—	15	**15**	23	—	—
Luxembourg	—	—	**—**	1,667	—	—
Netherlands	—	52	**52**	1	—	—
Guernsey	—	—	**—**	—	—	—
Cross-border consolidation	—	—	**—**	(1,667)	—	—
Total	14,779	216	**14,995**	2,083	216	47,043

1. Unrelated party revenue comprises revenue from continuing operations of £18,449 million (2021: £13,665 million) and revenue from discontinued operations of £1,362 million (2021: £1,114 million).
2. Related party revenue only includes cross-border transactions and comprises related party revenue from continuing operations of £189 million (2021: £164 million) and related party revenue from discontinued operations of £33 million (2021: £52 million).
3. Profit/(loss) before income tax (PBT) from operations after exceptionals comprises continuing operations PBT of £3,441 million (2021: £1,664 million) and discontinued operations PBT of £407 million (2021: £419 million).
4. Current year income tax accrued comprises current year income tax from continuing operations of £261 million (2021: £160 million) and current year income tax from discontinued operations of £35 million (2021: £56 million). See the tax charge to tax paid reconciliation below for further information.
5. Tangible assets comprises property, plant and equipment and excludes tangible fixed assets for business classified as held for sale of £7,892 million (UK Gas Transmission £4,719 million, NECO £3,173 million) (2021: NECO £2,713 million).
6. The Guernsey captive was acquired as part of the acquisition of the WPD Group during the year ended 31 March 2022.

Our Hong Kong entity is UK tax resident and is now dormant and our entities in Australia and Canada are dormant. Our entity in Ireland is in liquidation and our entities in Jersey were fully liquidated and dissolved during the period. Therefore, those jurisdictions have not been included in the table above.

Our Isle of Man and Guernsey companies are captive insurance companies which are treated as controlled foreign companies for UK tax purposes and as such UK corporation tax is paid on their profits by National Grid. In the Netherlands, we have a finance company which borrowed money externally and on-lent it to another Group company. Both loans have now been settled. It is taxed on its profits in the Netherlands at the corporate tax rate of 25%.

As part of our response to the Labour Party's proposal to nationalise nearly all of National Grid's UK assets we implemented measures, which included a Luxembourg holding company, in order to strengthen our ability to get a fair value for the assets in the event of a nationalisation.

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.

Financial review continued

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 (continuing and discontinued)

£m	2021/22	2020/21
Total Group tax charge[1]	**1,494**	442
Adjustment for Group non-cash deferred tax	**(1,233)**	(218)
Adjustments for Group current tax (charge)/credit in respect of prior years	**35**	(8)
Group current tax charge	**296**	216
Group tax instalment payments (repayable)/payable in the following year	**(1)**	(7)
Tax recoverable offset against current tax payments due	**–**	(55)
Tax instalment payments overpaid in the current year	**18**	–
Group tax payments/(refunds) in respect of prior years paid in the current year	**15**	(8)
Group tax payments relating to tax disclosed elsewhere in the financial statements	**3**	11
Group tax paid[2]	**331**	157
Profit before income tax[3]	**3,848**	2,083
	%	%
Effective cash tax rate[4]	**8.6**	7.5
Effective tax rate[5]	**38.8**	21.2

1. Total Group tax charge from operations after exceptionals comprises tax charges of continuing operations of £1,258 million (2021: £360 million) and discontinued operations of £236 million (2021: £82 million).
2. Total Group tax paid comprises tax paid for continuing operations of £298 million (2021: £91 million) and discontinued operations of £33 million (2021: £66 million).
3. PBT from continuing operations after exceptionals comprises continuing operations PBT of £3,441 million (2021: £1,664 million) and discontinued operations PBT of £407 million (2021: £419 million).
4. Effective cash tax rate for continuing operations after exceptionals is 8.8% (2021: 5.5%) and discontinued operations is 8.1% (2021: 15.8%).
5. Effective tax rate for continuing operations after exceptionals is 36.6% (2021: 21.6%) and discontinued operations is 57.5% (2021: 19.6%).

Effective cash tax rate

The effective cash tax rate for the total Group is 8.6%. The difference between this and the accounting effective rate of 38.8% is due to the following factors.

An increase in future tax rates impacting the calculation of deferred taxes.

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 2021/22 the Group's total capital expenditure was £6,446 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.

In the current period, the US federal taxable income was offset by brought-forward net operating losses which primarily arose from deductions for qualifying capital expenditure incurred by National Grid in earlier years. Hence no significant federal tax payments were made in the current period.

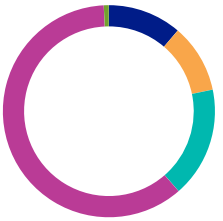
The Group continued to make significant payments into some of the UK defined benefit pension schemes. These payments have further reduced the overall cash tax paid in the UK.

Group's 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. To provide a full picture, we have disclosed the Group's global total tax contribution which includes contributions from both continuing and discontinued businesses.

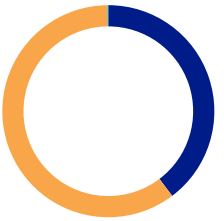
Group's total tax contribution 2021/22 (taxes paid/collected)

Taxes borne



Key:	£m
People	221
Product	206
Profit	331
Property	1,191
Miscellaneous	15
Total	**1,964**

Taxes collected



Key:	£m
People	697
Product	1,056
Miscellaneous	2
Total	**1,755**

2021/22	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[2] as at 31 March 2022
United Kingdom	315	302	114	1,110	**1,841**	13,424
United States	16	889	328	645	**1,878**	17,332
Ireland	–	–	–	–	**–**	–
Isle of Man	–	–	–	–	**–**	–
Luxembourg	–	–	–	–	**–**	–
Netherlands	–	–	–	–	**–**	–
Total	331	1,191	442	1,755	**3,719**	30,756

1. See the tax charge to tax paid reconciliation above for further information.
2. Number of employees is calculated as the total National Grid workforce across all parts of the business, including Non-executive Directors and Executive Directors. All are active, permanent employees as well as both full-time and part-time employees.

2020/21	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[2] as at 31 March 2021
United Kingdom	158	225	58	672	**1,113**	6,657
United States	(1)	816	309	602	**1,726**	17,026
Ireland	–	–	–	–	**–**	–
Isle of Man	–	–	–	–	**–**	–
Luxembourg	–	–	–	–	**–**	–
Netherlands	–	–	–	–	**–**	–
Total	157	1,041	367	1,274	**2,839**	23,683

1. See the tax charge to tax paid reconciliation above for further information.
2. Number of employees is calculated as the total National Grid workforce across all parts of the business, including Non-executive Directors and Executive Directors. All are active, permanent employees as well as both full-time and part-time employees.

For 2021/22, our total tax contribution globally was £3,719 million (2020/21: £2,839 million), taxes borne were £1,964 million (2020/21: £1,565 million) and taxes collected were £1,755 million (2020/21: £1,274 million). Our taxes borne have increased in the year primarily due to higher income taxes paid. Taxes collected have increased as a result of higher indirect taxes.

Approximately two thirds of the tax borne by the Group continues to be in relation to property taxes, of which £889 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 2020/21 ranks National Grid as the 19th highest contributor of UK taxes (2019/20: 19th), the 15th highest in respect of taxes borne (2019/20: 11th) and the 3rd highest in respect of capital expenditure (£1,594 million; 2019/20: £1,663 million) on fixed assets (2019/20: 6th). 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 2021/22 was £6,446 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.

We continue to engage on consultations with policymakers where the subject matter impacts taxes borne or collected by our business, with the aim of openly contributing to the debate and development of tax legislation for the benefit of all our stakeholders.

To ensure that the needs of our stakeholders are considered in the development of tax policy 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 Group is an active member in the Edison Electric Institute, the American Gas Association, the Global Business Alliance, the American Clean Power Association, the Energy Storage Association and the Solar Energy Industries Association.

Feedback from these groups, such as the results of the 100 Group Total Tax Contribution Survey, and consideration of third party reporting frameworks like the GRI (Global Reporting Initiative) helps to ensure that we consider the needs of our stakeholders and are engaged at the earliest opportunity on tax issues which affect our business.

Pensions

In 2021/22, defined benefits pensions and other post-retirement benefits operating costs increased to £321 million (2020/21: £302 million) with £66 million related to an increase from the acquisition of WPD in 2021/22.

During the year, our pensions and other post-retirement benefit plans improved from a net surplus position of £715 million at 31 March 2021 to a net surplus of £3,075 million at 31 March 2022. This was principally the result of actuarial gains on plan assets of £0.8 billion (as a result of higher investment returns) and actuarial gains on plan liabilities of £1.6 billion (reflecting higher discount rates from corporate bond yields net of higher expectations for long-term RPI inflation). The acquisition of WPD in June 2021 increased the Group's net pension surplus by £566 million, but this was offset by the reclassification of National Grid Gas plc's section of the NGUKPS (£664 million in surplus) at 31 March 2022 to held for sale. Employer contributions during the year were £300 million (2020/21: £274 million), including £84 million (2020/21: £88 million) of deficit contributions. As at 31 March 2022, the total UK and US assets and liabilities and the overall net IAS 19 (revised) accounting surplus (2020/21: surplus) 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 (£m)	16,865	10,148	27,013
Plan liabilities (£m)	(14,275)	(9,663)	(23,938)
Net surplus (£m)	2,590	485	3,075

As at 31 March 2022, we recognised in the statement of financial position pension assets of £3,885 million (UK pensions £2,668 million; US pensions £732 million; and US other £485 million) and pensions liabilities of £810 million (UK pensions £78 million; US pensions £248 million; and US other £484 million).

Dividend

The Board has recommended an increase in the final dividend to 33.76p per ordinary share ($2.0929 per American Depository Share), which will be paid on 17 August 2022 to shareholders on the register of members as at 6 June 2022. If approved, this will bring the full-year dividend to 50.97p per ordinary share, an increase of 3.7% over the 49.16p per ordinary share in respect of the financial year ended 31 March 2021. This is in line with the increase in average UK CPIH inflation for the year ended 31 March 2022 as set out in our dividend policy. Our aim is to grow the annual dividend in line with CPIH, thus maintaining the dividend per share in real terms. The Board will review this policy regularly, taking into account a range of factors including expected business performance and regulatory developments.

At 31 March 2022, National Grid plc had £12 billion of distributable reserves, which is sufficient to cover more than five years of forecast Group dividends. If approved, the final dividend will absorb approximately £1.2 billion of shareholders' funds. This year's dividend is covered approximately 1.3x 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.

New accounting standards

We did not adopt any new accounting standards in 2021/22. Amendments to certain existing accounting standards were adopted during the year, but these had no material impact on the Group's results or financial statement disclosures.

Post balance sheet events

On 6 April 2022, the UK government announced that ESO will become part of an independent system operator public body, following the Future System Operator consultation. On 11 May 2022, Ofgem approved the Group's request to return £200 million of interconnector revenues subject to the cap and floor regime to consumers ahead of schedule. For further details, see note 38 to the financial statements.

UK Electricity Transmission

We performed well in 2021/22 as we maintained our focus on safe, customer-led, reliable, innovative and efficient operations to drive forward the net zero agenda.

Highlights

ET has performed strongly over 2021/22, increasing annual investment by 20% as part of our £8 billion RIIO-T2 promise. We have maintained our focus on safety, customers, reliability and innovation to continue driving forward the net zero agenda.

We submitted a technical appeal to the CMA regarding the RIIO-T2 cost of equity and outperformance wedge. The CMA found in our favour on the outperformance wedge, which has since been dropped from the RIIO-T2 regulatory framework.

We have installed 53 T-pylons as part of the route connecting Hinkley Point C nuclear power station to over 6 million homes and businesses. We have completed almost 6.2 miles (10 kilometres) of underground tunnelling as part of our London Power Tunnels (LPT2) project and met 100% of our milestones.

Enable the energy transition for all

We outperformed this year's proportion of our SF_6 Science Based Targets to reduce emissions by 50% by 2030 through a programme of targeted repair, refurbishment and asset replacement. We have been collaborating with suppliers, universities and innovators across the world to trial SF_6-free assets. We have switched 10% of our operational fleet to electric as part of the process of going fully electric by 2030.

We connected over 5 GW of generation to the network as part of our commitment to connect over 15 GW of customer capacity over RIIO-T2 to provide the UK with clean power and flexible storage.

Despite a quadrupling of new connection requests, our teams achieved a Quality of Connection (customer satisfaction) score of 7.8 in 2021/22.

Deliver for our customers efficiently

Over the year, we have replaced over 900 assets to maintain a safe and reliable network. The network stood up well against the recent storms and although we experienced multiple circuit trips, the majority were returned via the automatic protection Delayed Auto Reclose (DAR) system. No loss of demand occurred through any of the storms, with only 27 MW of Energy Not Supplied against our incentive target of 103 MW.

Western Link delivers green energy to where it is needed and enables a more efficient electricity system. Due to delays with the complex construction phase, the joint venture agreed to a £15 million payment into Ofgem's redress fund (NGET's share was £10 million) and to return £143 million to consumers in payments through mechanisms outlined in the price control. This has ensured ET did not benefit from the delay.

We have delivered £24 million efficiencies with our Evolution programme.

Grow our organisational capability

The introduction of SmartWires provides greater control and flexibility of the power flow across our transmission boundaries and the installation of Connectnow is the first Digital Transmission Owner portal in the UK, allowing our customers to understand where to connect and to manage their project portfolios.

Our Deeside Innovation Centre is now operational and enabling the trialling of innovative energy solutions. This will accelerate the deployment of new technologies to facilitate net zero and reduce the cost of maintaining and managing the network.

Empower colleagues for great performance

It is over 12 months since any of our 2,500 field and office-based employees suffered an LTI. However, we are disappointed that the frequency of LTIs amongst our contractors has increased above our 0.1 target following 18 contractor LTIs in the year. We are actively working with our contractors to eliminate this gap by ensuring requirements are clear and consistent across all parties.

We are digitalising our operations in order to better enable our people; for example, our Agile Field Force programme has freed up 20,000 hours of engineer time every year. This enables engineers to focus on using their core skills to maintain and install new assets.

The first of 53 T-pylons, erected in September 2021 as part of the Hinkley Connection project in the UK

Looking ahead

In order to migrate to a cleaner energy system, we need to connect increasing amounts of renewable energy from the North Sea and the UK's East Coast. The complexity and scale of the infrastructure investments associated with our East Coast programme will require us to make a step change in how we work with developers, suppliers, environmental groups and local communities so we can find the best local and environmental solutions possible.

We will reform the customer connections process to be more efficient, connecting our customers more quickly and making full use of the data and products available to drive transparency. We will release capacity for our teams through reduced admin time, using standardisation and by enabling customers to self-serve to ensure all our work adds value.

UK Electricity Distribution

We have performed well in 2021/22 as we maintained excellent customer service and delivery of our innovative projects.

Highlights

WPD has delivered excellent service for our 8 million customers and remains on track to outperform the majority of our RIIO-ED1 targets. We have continued to outperform our targets for customer minutes lost and customer interruptions by 30% and 27% respectively from the underlying performance benchmark, accident rates have reduced to 0.62 accidents per 100 staff, and our Scope 1 and 2 emissions (excluding losses) have continued to get smaller with a 52% reduction since 2014/15. We have also supported almost 26,000 fuel poor customers, leading to estimated annual savings of £14.6 million for these customers.

Our hard work in conducting our business with the highest standards is reflected in WPD winning the Disruptor Award at the Utility Week Awards for our Flexible Power initiative.

Enable the energy transition for all

We have several innovative delivery projects underway to drive a fair energy transition for all. In RIIO-ED2, we will build on these foundations to ensure customers are able to connect low-carbon technologies (LCTs) quickly and easily. We have centralised our process for domestic LCTs, offering a next day approval for most EVs and heat pumps.

Our RIIO-ED2 Business Plan includes core commitments which are targets to ensuring that vulnerable customers do not miss the benefits associated with the shift to a smart energy system. This includes offering 600,000 Priority Service Register (PSR) customers a bespoke smart energy action plan, supporting local communities via a Community Matters social initiative and installing solar PV on schools in areas of high economic deprivation.

In May 2022, Ofgem announced that WPD had agreed to pay £3.7 million for each of the four licences we operate, totalling £14.9 million. This followed the outcome of an investigation into the level of information, advice and services provided to customers on the PSR. We have made changes to our policies and processes to ensure we are fully complying with the expectations Ofgem has clarified in our licence.

Deliver for our customers efficiently

Even though we had to change some practices due to the COVID-19 pandemic, we have continued to provide the highest level of service to our 8 million customers. Our hard work is reflected in our excellent performance against the Broad Measure of Customer Satisfaction (BMCS) results, scoring 9.03 out of 10 overall.

Grow our organisational capability

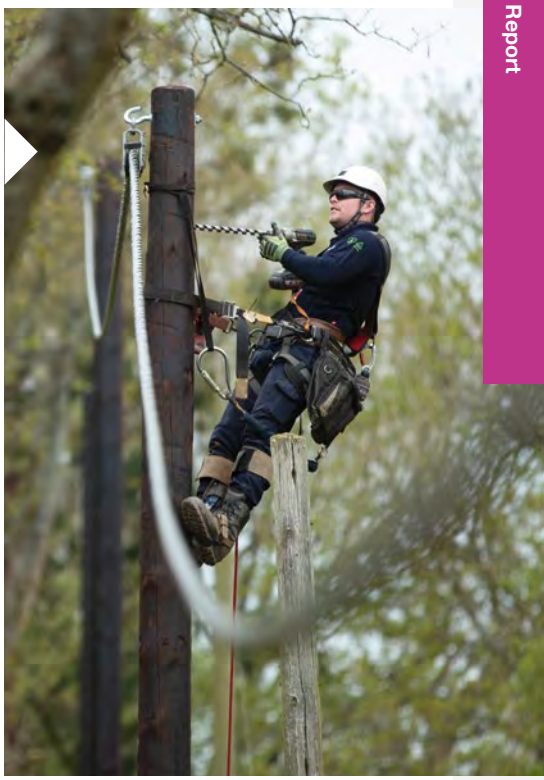
We have established plans and work programmes to build a 'green recovery' from the effects of the COVID-19 pandemic. The nationwide call for evidence to support network investment projects saw WPD receive feedback from more than 200 stakeholders, and this helped us target the network investment to the areas that see the most benefit. All 73 projects have been given the go-ahead, each meeting the Ofgem-backed initiative's criteria of enabling net zero and providing a wider social benefit. The successful projects, which will be completed in the next two years, range from installing new substations to reinforcing existing parts of the network. In total, 55% of the projects relate to customers wanting to connect public EV charging hubs in some form and we estimate that customers could connect up to 50% more ultra-rapid EV chargers because of these investments, many at motorway service areas.

Empower colleagues for great performance

During the year, the WPD Chief Executive met up with small groups of colleagues to hear their views on WPD. The sessions were attended by colleagues across various roles and encouraged suggestions to be brought forward to drive an overall performance improvement within the organisation. This direct feedback from colleagues will be crucial in producing ideas, innovations and solutions to the many challenges and opportunities that we will have in the business going forward.

Looking ahead

We are determined to achieve a sustainable energy future by delivering a dynamic, innovative and high-functioning energy grid that stands ready to serve many generations to come. Change is already well underway, with unprecedented levels of flexibility and efficiency, and new distribution system operator capabilities already in place. In RIIO-ED2, we will accelerate the rate of this change, placing customers at the heart of a swift and effective transition to a smart, decarbonised energy future.



Works to improve the overhead network in Droitwich, North Worcestershire, UK

We will utilise innovative and digitalised solutions to enhance our operations. We will instil a culture across our business that maximises every opportunity to innovate and work smarter for our customers. We have embedded £723 million of efficiency savings into our RIIO-ED2 Business Plan thanks to our proven track record of innovation development and roll-out. Without this, required investment in RIIO-ED2 would have been £7.4 billion, which would have resulted in increases to customer bills. Instead, by working smarter and embracing a culture of continual innovation, we will deliver our RIIO-ED2 commitments with a budget of £6.7 billion whilst maintaining affordability for our customers.

In addition, we will deliver an extra £95 million of efficiency savings over RIIO-ED2. We anticipate a 108% increase in the level of load-related schemes, with only an 8% increase in engineering management and support costs. By adopting a 'flexibility first' approach to all load-related investment decisions, we have committed that by 2028 we will avoid over £94 million of network reinforcement costs by operating the existing primary and secondary networks more flexibly.

UK Gas Transmission*

We have commenced RIIO-T2 strongly and made good progress preparing for the sale of a majority stake in the Gas Transmission business.

Highlights

The RIIO-T2 price control will provide a high degree of cash flow certainty for the GT business for the five-year period to March 2026. Detailed plans are in place to deliver against our targets, through continued strong incentive performance, as well as preparing for the energy transition. GT made a strong start to RIIO-T2, with strong financial results, customer metrics, and continued high levels of safety and operational performance. We continued to support our colleagues through the COVID-19 pandemic, ensuring alignment to government guidelines at all times.

GT continues to work with industry peers to support the transition to a hydrogen network and has now commenced construction of FutureGrid – a £9 million full-scale hydrogen test facility, funded through the Network Innovation Competition.

Looking ahead

Following the announcement on 18 March 2021 of the intention to sell a majority stake in the GT business, preparations have been ongoing throughout the year for the design of a standalone business. The sale of a 60% equity interest in the GT business to a consortium of Macquarie Asset Management and British Columbia Investment Management Corporation was announced on 27 March 2022. The results of GT are presented as discontinued operations in 2021/22.

We are committed to supporting our people through the remaining stages of the sales process, providing access to all necessary information as well as increased engagement across the business. We are working closely with BEIS, Ofgem and all other industry stakeholders to provide assurance of our unrelenting focus on delivery of RIIO-T2 performance and ensuring security of supply throughout the transitional period and beyond.

Bacton Gas Terminal, Norfolk, UK

* Discontinued operation.

UK Electricity System Operator

We are working with stakeholders to support progress towards net zero while maintaining energy security and minimising costs for consumers.

Highlights

As Great Britain's electricity system operator, we are at the heart of the energy transition, operating one of the safest, most reliable and fastest decarbonising networks in the world.

The ESO launched its Future Energy Scenarios in July 2021, which outlines four different, credible pathways for the future of energy between now and 2050.

Looking ahead

In April 2022, BEIS and Ofgem announced their decision to establish an expert, impartial Future System Operator to drive progress towards net zero while maintaining energy security and minimising costs for consumers, which will incorporate and build upon the existing capabilities of the ESO. We will continue to work closely with government, the regulator and industry as we enter the transition period, which will require communication and engagement with our impacted colleagues, who are an essential part of this new organisation, and a complex separation activity, particularly of IT systems.

ESO Control Centre, UK

New England

In 2021/22, we performed well throughout the region while still dealing with the effects of the COVID-19 pandemic, severe weather events and significant organisational changes. There was a continued focus on safety, storm response and the clean energy transition.

Boston Common Park, Massachusetts, US

Highlights

We used lessons learnt throughout the pandemic to help navigate the ever-changing COVID-19 protocols in the region. Colleagues continued to work safely, whether in the field or utilising our hybrid or remote work model. In addition, we found ways to give back and support the communities we serve by assisting with COVID-19 vaccinations and donating hygienic safety products to non-profit organisations.

New England faced several challenging storms this fiscal year. Our field crews and emergency response organisation conducted thorough emergency planning and collaborations across divisions, which resulted in our crews safely and efficiently restoring power to our customers. Our restoration efforts were recognised once again as we were awarded EEI Emergency Response Awards for both Tropical Storm Henri and the October Nor'easter.

Safety is a pillar of our daily operations, and we continue to focus on the wellbeing and safety of our workforce and customers alike. We have improved our safety score for near misses and good catches and, as at 31 March 2022, our LTIFR was 0.18.

Enable the energy transition for all

In 2021, we worked with the City of Melrose to deploy 15 pole-mounted EV chargers to expand EV adoption, accelerate usage and lower installation costs. This project is the first deployment of elevated, pole-mounted EV chargers by an investor-owned utility in the US.

We have focused on advancing clean transportation by working with cities such as Beverly on an electric school bus project, incorporating a fully electric-powered backhoe into our fleet, and proposing our largest ever EV programme with Massachusetts regulators.

The Company also continued to reduce methane emissions from our gas network. We replaced over 170 miles (274 kilometres) of leak-prone gas pipes across New England, improving pipeline safety and reducing greenhouse gas emissions.

In March 2022, as part of the DPU 20-80 proceeding, we and our fellow Massachusetts gas utilities filed a plan with the Department of Public Utilities that outlines exactly how to get to a decarbonised heating future. We believe our approach will most effectively balance affordability and equity, safety, reliability, and resilience. Our plan strives to retain customer choice around heating solutions, reduce overall energy costs, increase investment and adoption of energy-efficiency measures, and make provisions for utilising non-pipe alternatives where safe and cost effective.

Deliver for our customers efficiently

We aim to provide a fairer, cleaner and more affordable gas service to our customers. The Department of Public Utilities approved our five-year rate plan on 1 October 2021. The plan supports capital investment and provides resources to meet our work plans over the next five years.

We also received approval of our geothermal demonstration programme, which secured funding for four district geothermal system installations for existing Massachusetts gas customers.

Grow our organisational capability

In July 2021, the Company's Massachusetts Phase 3 Electric Vehicle proposal was filed with the DPU to build upon our first two Electric Vehicle Market Development Programs by providing offerings to meet the diverse transportation needs of all the Company's customers, building the infrastructure required to support state-wide EV adoption, and helping to enable the Commonwealth's broader transition to a clean transportation future. The Company is proposing to run the Phase III Program for a period of four years, with a total budget of approximately $278 million.

In October 2021, we appointed a New England President to our Group Executive Committee. The Committee's wide range of experience will help lead the clean energy transition for all of our communities.

The sale of our Rhode Island electricity and gas business will serve as a vital step in furthering our strategic vision. To prepare for the sale, we established a transition team of over 250 people across 19 functional areas to set up both the future Massachusetts and Rhode Island businesses for success. The sale has received all required regulatory approvals, including from the Rhode Island Division of Public Utilities and Carriers. That decision, however, has been appealed to the RI Superior Court by the RI Attorney General. We are confident that the Division's approval of the sale will be upheld and look forward to closing the transaction as expeditiously as possible.

Empower colleagues for great performance

Our colleagues worked to create an equitable impact in our communities. The New England Gas Diversity, Equality and Inclusion Council is a grassroots group of both union and management field employees. The group recently launched two initiatives to recruit and retain employees from diverse backgrounds, including hosting a pipeline career development day at local high schools. By investing in our communities through education and upskilling talent to adapt to the changing energy system, we are tackling our DEI commitments.

Looking ahead

Customers are always at the forefront of everything we do, and we must consistently deliver a safe and reliable service. The various organisational changes in our region will allow us to provide a better service to our customers. This is the foundation for us to continue to be greener, stronger and more reliable.

New York

In 2021/22, we achieved overall strong results throughout the region. Throughout the various organisational model changes, severe weather events, rate cases and public opposition in our region, we prioritised safety, bold clean energy and climate action plans, and our commitment to the communities we serve.

Highlights

New York encountered several challenging storms, but we remained focused on emergency planning and restoration efforts. This year we received an EEI Emergency Response Award and the 2021 ReliabilityOne® Award for Outstanding Suburban and Rural Service Area Utility in the Northeast as we hit our regulated reliability goals for the 14th consecutive year.

Safety remained one of our top priorities in the region. We continued to use the tools and processes developed at the onset of the pandemic to safely navigate through the various spikes in COVID-19. We have improved our safety score for near misses and good catches, and as at 31 March 2022, our LTIFR was 0.13.

Enable the energy transition for all

In New York, we are doing our part to fulfil the clean energy transition. In 2021, we worked with the town of Hempstead, New York, and introduced one of the country's first and largest clean hydrogen demonstration projects. The HyGrid Project located in Point Lookout on Long Island will blend green hydrogen into the existing distribution system to heat approximately 800 homes and fuel a fleet of municipal vehicles.

We are also working with the New York Power Authority to build the Smart Path Connect project, a $1 billion transmission upgrade that will enable the integration of 1 GW of renewable energy to the grid. In addition, we have proposed nearly $700 million in short-term transmission upgrades in upstate New York that would unlock roughly 2.6 GW of clean energy resources.

The solid rate case agreements that have been completed for KEDNY, KEDLI and NMPC are essential steps in energy transition. These rate agreements will provide us with the funding needed to create the energy infrastructure and service our New York customers demand and deserve.

Deliver for our customers efficiently

In New York, we are serving our customers and communities through our new initiative, Project C. Project C focuses on four key priorities: clean energy and sustainability; workforce development; neighbourhood investment and community engagement; and environmental justice and social equity. By providing grants to non-profits, recreational programmes, and local economic development partners, we will support the revitalisation of communities and small businesses across our service area.

With the cost of heating increasing this past winter, we collaborated with AARP New York and the Public Utility Law Project (PULP) to make income-eligible customers aware of our Energy Affordability Programme (EAP). Our Consumer Advocates helped seniors with enrolment in EAP and provided information on other no-cost, energy-saving programmes to improve the comfort of their homes.

Grow our organisational capability

We play a key role in combatting climate change and providing climate solutions. As part of the lead-up to COP26, we joined forces with government leaders from around the world at Climate Week NYC, where we were the headline partner, to focus on fulfilling and increasing commitments to climate action. Several National Grid leaders contributed to the global conversation on climate change and how to take action.

Another significant highlight in our region was bringing 900 of our Long Island gas field employees through a gas business enablement go-live. We successfully provided colleagues with tools and applications to meet the needs of our customers, communities and regulators.

Empower colleagues for great performance

After nearly three years of planning, our new Brooklyn, New York office at 2 Hanson Place opened in 2021. This highly anticipated space was built on the Smart workspace strategy, and we ensured it incorporated principles of sustainability and human wellbeing in its design and operations. The building was also designed to WELL and Leadership in Energy and Environmental Design building standards, which resulted in an Award of Excellence by the New England chapter of CoreNet Global.

View of Albany, New York, US

Looking ahead

The New York team had a good year, and we are excited about what is ahead. We will continue to make strategic investments in our network, invest in our communities through Project C, and create a stronger, more diverse workforce for the future.

National Grid Ventures and Other activities

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 competitive markets across the UK and US. Its portfolio includes electricity interconnectors, LNG storage and regasification, large-scale renewable generation, conventional generation and competitive transmission. Other activities primarily relate to NGP, the corporate investment and innovation arm of National Grid, as well as UK property, insurance and corporate activities.

Despite ongoing challenges presented by the COVID-19 pandemic in the US and UK, NGV businesses performed well in 2021/22, including commissioning the North Sea Link interconnector between the UK and Norway and the Prairie Wolf Solar Project in Illinois. NGV also successfully secured a seabed lease in the New York Bight offshore auction together with RWE Renewables. In March 2022, National Grid Property completed the sale of National Grid's 50% interest in the St William Homes LLP joint venture to The Berkeley Group plc.

The safety and wellbeing of colleagues continues to be a key priority across NGV. As at 31 March 2022, NGV's LTIFR was 0.14.

Enable the energy transition for all

NGV plays an important role for the National Grid Group in developing, constructing, operating and investing in infrastructure to support the energy transition and security of supply in both the UK and the US.

In the UK, NGV is the leading developer and operator of interconnectors, which are high-voltage subsea cables that enable the UK to share excess power, such as wind, solar and hydro generation, with neighbouring markets.

In October 2021, NGV commissioned North Sea Link, which at 447 miles (720 kilometres) is the world's longest subsea interconnector. NGV also operates links to Belgium, France and the Netherlands. By 2030, we estimate that 90% of the energy imported by NGV interconnectors will be from zero-carbon energy sources.

NGV is part of the Northern Endurance Partnership, a consortium developing CO_2 transport and storage technology for the East Coast Cluster (ECC) in the North of England. The ECC, which aims to transport carbon emissions from the Humber and Teesside for safe storage deep under the Southern North Sea, is one of two industrial clusters selected by the UK government to be delivered this decade.

Ofgem has agreed to National Grid's offer to make an early payment of £200 million of interconnector revenues to consumers, via the regulator, as part of the interconnector regulatory regime. The payments will be made over the next two years, to help reduce consumer energy bills.

In the US, NGV and RWE Renewables successfully secured a seabed lease as part of the US Bureau of Ocean Energy Management's New York Bight auction. Community Offshore Wind, a joint venture between the two companies, will develop the awarded seabed, which has the potential to host 3 GW of capacity. NGV's National Grid Renewables business started commercial operations of its 200 MW Prairie Wolf Solar Project in Illinois and began construction on 674 MW of solar and energy storage projects in Texas and Ohio.

NGV is part owner of New York Transco, which started construction of the largest transmission project in New York in 40 years to enable 1 GW of renewable energy onto the system.

NGP had a portfolio which comprised 38 companies and four fund investments at a fair value of $491 million, as at 31 March 2022.

Deliver for our customers efficiently

In the UK, NGV's interconnector portfolio comprises 6.4 GW of operational capacity. Together with France's Réseau de Transport d'Électricité (RTE), NGV operates the IFA and IFA2 interconnectors connecting France and Great Britain. IFA, a 2 GW HVDC cable, suffered a major fire in September 2021. Half of the link, representing 1 GW, was safely returned to service the following month. The remaining 1 GW is expected to return to service in December 2022. IFA2 is a 1 GW cable stretching 149 miles (240 kilometres). BritNed is an independent joint venture between National Grid and TenneT, the Dutch transmission system operator. It owns and operates a 1 GW HVDC link between Great Britain and the Netherlands. 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 Great Britain and Belgium.

NGV's 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 National Transmission System (NTS). Grain LNG's road tanker loading facility 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.

NGV is a part owner of Millennium Pipeline, which provides consumers in the northeastern US with additional natural gas infrastructure to meet growing consumer 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.

Inside the UK valve hall at NGV's 1GW IFA2 interconnector

Grow our organisational capability

NGV established a portfolio management function to optimise the existing portfolio and identify future opportunities for growth.

Empower colleagues for great performance

NGV prides itself on a diverse and inclusive culture, which includes 46% diversity across new hires in 2021/22.

Looking ahead

In the UK, NGV will grow its interconnector portfolio by 1.4 GW in the next two years, with construction underway on the Viking Link interconnector. Developed together with Danish transmission system operator Energinet, Viking Link will be a 475 mile (765 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. Work is also underway to expand Grain LNG's storage capacity from 1.0 million m^3 to 1.2 million m^3 by 2025, further supporting the UK's gas security of supply.

Stakeholder engagement

Effective engagement with our stakeholders is key to successful achievement of the Group's strategy in the long term.

Section 172(1) statement

During the year, the Directors acted in the way they considered, in good faith, most likely to promote the long-term success of the Company for the benefit of its members as a whole, with due regard to the matters set out in section 172 of the Companies Act 2006. Examples of how the Directors have had regard to these matters during the year are set out on pages 56 – 59, which together form our section 172(1) statement.

The Board recognises its responsibilities to each of National Grid's stakeholder groups and to wider society. The Directors endeavour to ascertain the interests and views of our stakeholders and consider these when taking decisions.

The Board oversees a governance framework that enables decisions to be taken at the right time in the most appropriate forum. We recognise that it is not always possible to achieve each stakeholder's preferred outcome and consideration of each stakeholder group depends on the matter at hand. The Board strives to balance the different priorities and interests of our stakeholders in a way compatible with the long-term, sustainable success of the business and which maintains a standard of business conduct aligned to our values and purpose.

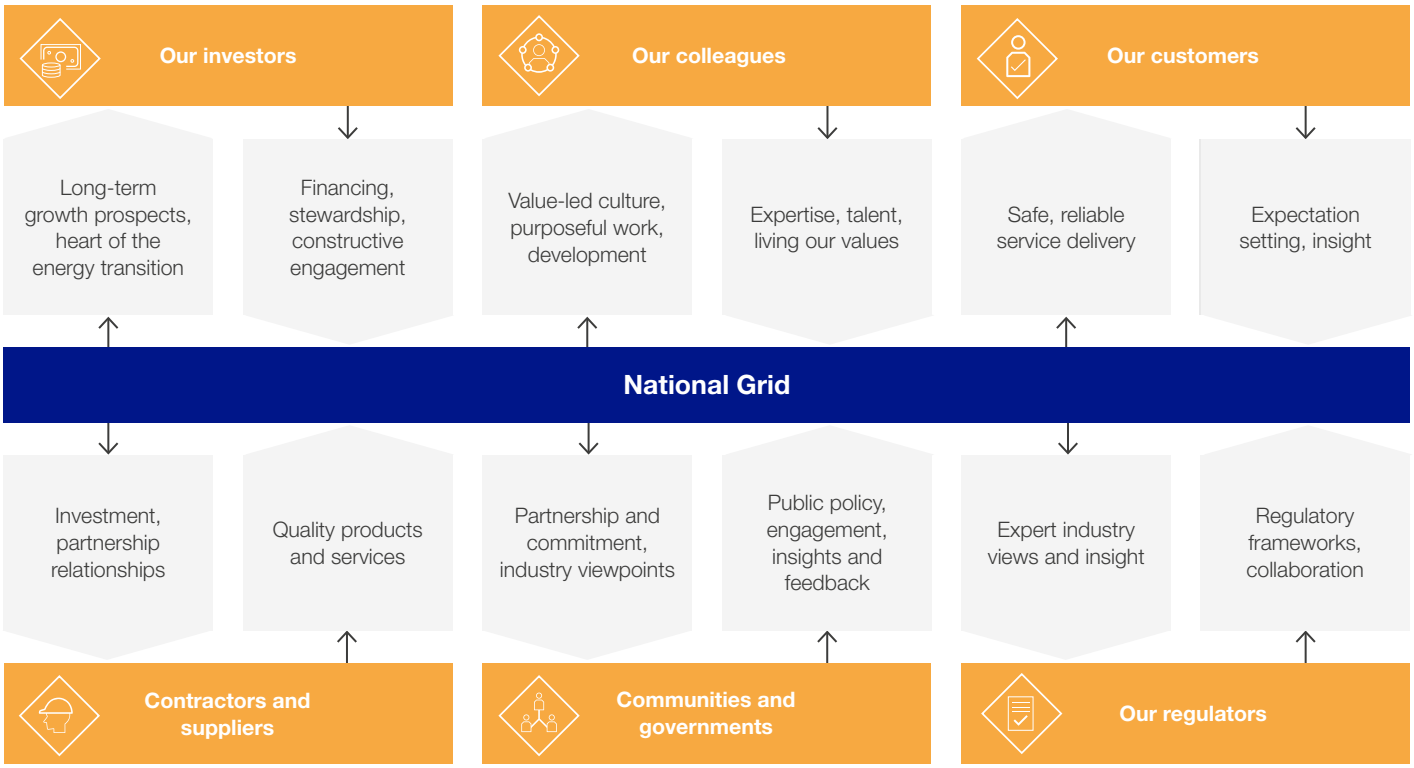
Our approach to stakeholder engagement

Most engagement with key stakeholders is carried out by management teams and takes place at business level and the Directors engage directly with stakeholders where possible. Reporting mechanisms are in place to collate feedback and developments from such engagement and enable a flow of this information to the Board and Board Committees, to inform decision making.

An overview of business-level engagement and outcomes is reported to the Board or appropriate Board Committee on a regular basis. The cadence and content of such reports to the Board are considered bi-annually as part of the forward business review by the Chair, Chief Executive and Group General Counsel & Company Secretary, to ensure sufficient consideration is given to pertinent matters and affected stakeholders. One of the Board's objectives is to routinely bring external viewpoints into Board discussions, which have included external speakers, training sessions and organisational deep dives led by colleagues from across the business, during the year.

The Board has identified the stakeholder groups it considers key and some examples of how we have engaged with these groups, together with the outcomes and impacts of engagement on our business and Board decisions, are set out on pages 57 – 58. These examples are not exhaustive and we have integrated reporting on how stakeholder views are considered throughout this report. The following should therefore be read in conjunction with this statement:

- Pages 92 – 94 set out key matters considered by the Board during the year.
- Pages 4 – 7 describe our business model including how our business interacts with our key stakeholders, and why they are important to us.
- Pages 60 – 69 set out our commitment to being a responsible business and the action we have taken during the year.
- Pages 15 – 19 explain developments in our business environment and our responses.
- Pages 101 – 103 explain the activities of the Audit & Risk Committee in response to allegations of fraud and bribery offences by former National Grid employees in our US business.



Engagement with our stakeholders

Stakeholder group – Our investors

How we engaged

In November 2021 we held our 'Doing Right Now' Investor Day, attended by the Chief Executive and senior leaders, where we announced our new organisational structure and associated cost-efficiency target, and further clarified our five-year plan announced in May 2021.

The Chief Executive attended the UK Global Investment Summit in October 2021, which focused on opportunities for investors and businesses as part of the UK's Green Economic Recovery.

Our Remuneration Committee engaged with shareholders on key remuneration topics, particularly development of the new remuneration policy, which will be put to a shareholder vote at our 2022 AGM.

Outcomes and actions

An independent investor-perception study following the Investor Day found the Company's critical role at the heart of the energy transition was well understood and there was a high degree of trust that the Company will fulfil this role successfully. The need to maintain the momentum to integrate our ESG reporting and talk more about future opportunities for the network, particularly in the US, was highlighted. Responses have informed our ongoing investor relations communication strategy and we will address key themes at investor events throughout 2022.

At the 2021 AGM, the Board proposed, and shareholders approved, an amendment to Company's Articles of Association to enable the holding of hybrid AGMs. This flexibility will enable more of our shareholders to participate in future AGMs, using online facilities. We intend to hold a hybrid AGM for the first time in 2022.

Our unique investment proposition is set out on pages 8 – 9.

Stakeholder group – Our colleagues

How we engaged

As COVID-19 restrictions in the UK eased, the Board was able to safely participate in site visits in early 2022. Following extensive oversight by the Board of the investigation into a catastrophic fire at the IFA interconnector site in Sellindge during 2021, three Non-executive Directors visited the site in March 2022. They met with a range of workers on site and heard views on safety practices.

The annual Grid:voice engagement survey provides insights into what is important to our colleagues and how they are feeling about the Company's strategy and leadership. The results of this survey were provided to the Board and plans put in place to progress any areas of improvement identified. Further information about the Board's employee engagement programme is set out on pages 96 – 97.

Outcomes and actions

Feedback from our annual Grid:voice survey has led to development of our home-working IT capabilities and of our flexible working policy, following a strong indication of a preference among the workforce to continue with hybrid ways of working.

Specific indicators are used as a measure of culture in relation to employee perception of safety and leadership. You can learn about how the Board oversees corporate culture and the progress we are making on these indices on page 95.

Employee engagement and workforce diversity are two of our non-financial KPIs. Further information is on page 27.

Read about our commitments to our colleagues and how we are living our corporate values on pages 65 – 66.

Stakeholder group – Our customers

How we engaged

Bi-annual updates are provided to the Board on UK, US and NGV customers, including progress on deliverables linked to our strategic priorities.

As recommended by the NY Monitor, the Company produced a supplementary report to its Natural Gas Long-Term Capacity Report for Brooklyn, Queens, Staten Island and Long Island (published in 2020), which analysed gas supply constraints in downstate NY and identified options for meeting future demand. The supplementary report was based on the results of an extensive outreach programme to measure customer and other stakeholder support for the various supply options for future demand. Engagement occurred through multiple channels, including social media and web platforms. Regular reports and analysis were provided to the Board to inform strategy development in this area.

WPD has an established customer panel that meets quarterly, with members who represent a wide range of customers and other key stakeholder groups. This enduring, expert engagement plays an important role in challenging our approaches, helping WPD achieve its purpose of delivering good value and high-quality services for its customers.

Outcomes and actions

The Board spent considerable time discussing the customer viewpoints presented as part of the downstate New York supply analysis together with the report's findings and consideration of the robustness of the report's methodology.

The Board noted the impact of adverse weather conditions on customers across the network during 2021 and early 2022. Several storms in the UK and the US caused power outages in a number of areas. The Company was able to provide a strong operational response to Storm Henri in New England, due largely to the Company's investment in Rhode Island infrastructure over the past five years. You can read more about our storm response on page 19, in our business unit updates on pages 50 – 55, and in our Safety & Sustainability Committee report on page 106.

To address the challenges of engaging with end customers, who often have little prior knowledge of WPD, an enduring cohort of 96 customers have undergone a programme of research and focus groups over several months, enriching their understanding and ability to offer informed scrutiny of our plans.

Our stakeholders continued

Stakeholder group – Suppliers and contractors

How we engaged

Regular reports relating to interactions with our suppliers were provided to the Group Executive Committee and to the Board. Additional information about specific challenges as they arise, such as those presented by the heightened energy prices in the UK and the related security of supply are included in management reports to the Board to inform discussions.

In January 2022, the Safety & Sustainability Committee welcomed external speakers from Quanta Services Inc., a major supplier of infrastructure services to the Group in the US.

The Board receives an annual update on the approach taken to address modern slavery risks across our supply chain and the proposed commitments for the following year.

Outcomes and actions

We strive to work only with businesses that adhere to our Code of Conduct and continue to work closely with our suppliers and peers to share and build upon existing knowledge and promote best practices within the industry.

We have worked with Ofgem via the ENA with WPD participation in working groups to facilitate the recovery of Supplier of Last Resort (SoLR) costs for suppliers.

In response to developments in the UK gas and energy markets, we established an organisation-level Energy Market Risk Committee to monitor and consolidate the risks and impacts of the current market for reporting to the Board.

The Board considers and approves the Company's Modern Slavery Statement annually. This statement is available at nationalgrid.com/modern-slavery-statement.

Stakeholder group – Communities, governments and environment

How we engaged

We were a principal partner at COP26 in 2021. The Company hosted a number of sessions and events, including the Chief Executive co-hosting the launch of the Green Grids Initiative with the UK government.

One of the Board's aims is to provide positive advocacy for key public policy and regulatory changes in support of net zero. The Chief Executive and other members of senior leadership have met directly with members of the UK and US governments during the year as part of the Company's ESG outreach to highlight our continuing efforts towards a clean energy transition.

In response to the situation in Ukraine, the business has established a Crisis Assessment Team to assess the situation on an ongoing basis and additional Board reporting has been implemented to ensure prompt information flows. The Board advises as to actions that may be undertaken quickly, where appropriate.

Outcomes and actions

As part of enabling the energy transition for all, the US business established independent New York and New England Advisory Boards to provide objective input and external expertise to US senior leaders. The boards will enable the Company to build on existing relationships while creating new relationships, and advance the Company's profile as a socially responsible and purpose-led organisation among our stakeholders in the US.

The Company was invited and agreed to participate in the Green Grids Initiative's UK secretariat after COP26. Further information on this and our other COP26 activities is on pages 16, 17 and 69.

WPD was the first DNO to develop a Social Contract as a vehicle for delivering social and environmental value for our employees, customers and wider society. Co-created with stakeholders, the Social Contract sets out our ambitions to maximise the positive impact of what we do.

Read about our community programmes on page 62.

Stakeholder group – Our regulators

How we engaged

The Board receives regular updates from the business on regulatory matters.

The NY Monitor attended the Company's Board meeting in June 2021 to engage in discussion with the Directors about the Company's supplementary report to its Natural Gas Long-Term Capacity Report for Brooklyn, Queens, Staten Island and Long Island (published in 2020). The session covered the culture of the Company's US business, issues of supply and demand in New York and the need for third-party and regulatory support for innovative change. There was a second meeting with the NY Monitor in September 2021, hosted by a subset of the Directors.

The Company seeks to maintain a collaborative relationship with all its regulators. The Board met with Ofgem senior leadership in March 2022.

Outcomes and actions

During the year, US regulatory matters, the RIIO-ED2 regulatory consultation and our engagement with Ofgem have been considered in depth by the Board. The Board discussed the complexity of the downstate New York supply challenges and confirmed that this would continue to form part of the Board's agenda in 2022.

The Board noted the Company's engagement with Ofgem on changes to SoLR rules which will improve the viability of suppliers to retail customers.

As we work to drive progress towards net zero and a secure energy future, the Company has, and will continue to, consult extensively with Ofgem and BEIS on development and implementation of the FSO. Read more about the ESO on page 52.

Case study: Strategic portfolio repositioning

The Nemo Link Interconnector that runs between Britain and Belgium powers the Richborough and Canterbury, high-voltage overhead line.

In March 2021, we announced our plan to reposition our portfolio through three strategic transactions: the acquisition of WPD, and the sale of NECO and of a majority stake in NGG. The Board has spent a significant amount of time during the year overseeing the progress of these transactions and considering the ongoing implications for our business and stakeholders.

A Transaction Steering Committee (chaired by the Chief Executive) and a Transaction Management Office were established to provide executive-level oversight and a layer of governance over the transaction programmes. Regular reports and updates were provided to the Board on progress, including deep dives and the results of ongoing stakeholder engagement to inform decision-making at all stages.

Read more about our strategic portfolio positioning in our Chair's statement and Chief Executive's review on pages 10 – 14 and our strategy and risk management for climate change on page 74.

Section 172 considerations:

Likely long-term consequences of decisions
The decision to undertake a strategic portfolio pivot, and specifically the three transactions announced during the 2021/22 financial year, considers the long-term sustainable growth profile of the Group as key. The transactions are aligned to our wider ambition to be at the heart of the energy transition. The decision to acquire WPD, the UK's largest electricity distribution business, increases our exposure to electricity, which is expected to see a high level of asset growth as a part of the UK government's plans to decarbonise the energy system.

Interests of our colleagues
The Board has considered the impacts of the integration of WPD on existing and incoming employees and of separation on employees of NECO and GT at every stage. This includes the technological and operational aspects of their work environments and continuity of rewards. The Board oversaw an engagement plan for the integration of WPD employees and the Chief Executive toured key WPD sites in September 2021. The CEO of WPD will lead the UK distribution business as part of the enlarged Group.

Fostering business relationships with suppliers, customers and others
The Company expects to provide benefits for customers and suppliers as a result of greater interconnectivity of the network following the onboarding of WPD. In conjunction with the NGG Sale, the Company engaged in dialogue with BEIS in relation to the newly implemented National Security and Investment Act 2021 in the UK.

Impact on community and environment
The Company recognises the importance of WPD to the communities it serves and has announced its intention to maintain the WPD headquarters in Bristol and offices in other key locations. WPD's community programmes have been maintained and are being integrated into the Group's wider projects. The strategic portfolio repositioning is aligned to the Group's wider ESG strategy. For more information see page 74.

Maintaining a reputation for high standards of business conduct
The Board oversees the process for obtaining the appropriate regulatory approvals required for each of the transactions before they are able to complete. Regular updates on progress were provided to the Board.

Need to act fairly between members
The Company endeavours to provide investors with clear and transparent reporting on its plans and progress. The Investor Day in 2021 was an opportunity for investors to hear about the Group's five-year plan and to ask questions of a broad group of business leaders. The Company maintains an investment grade credit rating supporting its sustainable dividend policy.

Our commitment to being a responsible business

Our RBC focuses our actions on where we can create the most positive impact for society.

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, fairly and affordably, and this is the core of our role as a responsible citizen. It is also vital to focus on how we fulfil our purpose, minimising negative impacts and enhancing our overall contribution to society.

We published our RBC in October 2020 and the commitments we made then remain the foundation of our activity. The RBC contains a series of commitments under five headings: the environment, our communities, our colleagues, the economy and our governance. These commitments are now built into business plans and performance against each commitment is regularly reviewed. During 2021/22, we received external validation from the SBTI for our National Grid Group interim GHG reduction targets, aligned to a 'Well below 2°C' pathway. Alongside this, we have undertaken a programme to release value from unclaimed shares over 12 years old and will explore ways to use this value to enhance our community investment programmes.

Our approach to reporting

We have published our second separate RBR for 2021/22, which has been guided by internationally recognised reporting standards. The RBR contains information relating to our material focus areas and provides detail on our management approach, performance and the new commitments set out in the RBC. Certain metrics are subject to independent external assurance. Our performance data is subject to different levels of assurance, including external (limited) assurance for key metrics, and a reporting process and controls review by National Grid's Finance second line risk and controls team.

This section of our Annual Report provides a high-level summary of our approach to responsible business and meets regulatory requirements with regard to certain responsible business-related topics. Except where expressly stated or clear from the context, the data in this section does not include WPD data. You can find the RBR and RBC here: nationalgrid.com/responsibility

Our communities

While continuing to place public safety and network reliability and resilience as top priorities, we are focusing in particular on the affordability and fairness of our service to the community and developing the skills of young people from some of the more deprived communities where we operate to help us in the clean energy transition.

The economy

We are continuing to develop our infrastructure, invest in innovation that benefits our customers and wider society, and pay the right tax, as well as working to influence our supply chain to focus on diversity and responsible behaviour.

Our governance

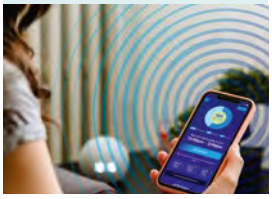
We will hold ourselves accountable on these commitments and ensure that stakeholder voices continue to be heard at the highest level, and that they influence our approach. We will ensure we maintain the highest standards of ethical conduct.

Our people

While continuing to ensure our people are kept safe and healthy, and that work conditions meet their expectations, we are stepping up our efforts in relation to diversity and inclusion – focusing on fairness in pay and opportunity, transparency and training around issues of gender and ethnicity.

The environment

While continuing to manage our environmental performance responsibly, we have emphasised the need to facilitate the transition to a clean energy system, to achieve net zero by 2050 for our Scope 1 and 2 emissions, dramatically reduce our Scope 3 emissions and continue to improve the biodiversity of land that we own.



Material issues for Global Reporting Initiative (GRI) reporting purposes

Our communities

- Affordability
- Community engagement
- Science, technology, engineering and mathematics (STEM) education
- Workforce development
- Network reliability
- Customer satisfaction
- Cyber security
- Public safety
- Connectivity

The economy

- Right tax
- Fair return
- Investment (long-term and local)
- Green financing
- Supplier prompt payment
- Supply chain engagement

Our governance

- Board representation and role
- Stakeholder engagement
- Emerging risks
- Skills for the future on the Board
- Transparency and reporting
- Culture
- Ethics and human rights
- Compliance

Our people

- Social mobility
- Diversity, equity and inclusion
- Fair pay
- Employee rights
- Employee health and safety
- Mental health and wellbeing
- Purpose, values and culture

The environment

- Enabling a clean energy system
- Our own emissions
- Air quality
- Land use
- Water
- Circular economy
- Habitat and biodiversity
- The energy transition

Our approach to managing responsible business matters

Our overall approach to responsible business can be summarised as:

- identifying our key stakeholders, understanding how they interact with our operations, activities and value chain, and the issues that are relevant to them;
- adopting a logical process for prioritising those issues, to identify the most material matters; and
- responding to the priorities by developing appropriate strategies, policies, programmes, targets and performance indicators, and reporting regularly and transparently on our progress.

In establishing our priorities, we are also guided by recognised frameworks such as the United Nations Global Compact Principles and Sustainable Development Goals.

Over the years, we have developed a series of processes and policies to ensure we manage responsibility issues effectively. Descriptions of the policies and the outcomes pursued in relation to the matters listed on page 60 are discussed, where material, throughout this section and our RBR.

A full list of our policies, and our Code of Ethics, can be found online, at nationalgrid.com/about-us/corporate-governance.

Assurance

We engaged PricewaterhouseCoopers LLP (PwC) to undertake a limited assurance engagement for 2021/22 data only, using the International Standard on Assurance Engagements (ISAE) 3000 (Revised): 'Assurance Engagements Other Than Audits or Reviews of Historical Financial Information' and ISAE 3410: 'Assurance Engagements on Greenhouse Gas Statements'. PwC have provided an unqualified opinion in relation to the 2021/22 KPIs and other data that are identified with the symbol and feature on page 1, pages 26 – 27, page 68 and page 83. Details of PwC's full limited assurance opinion and National Grid's Reporting Methodology are set out in the RBR. Data that has been assured by PwC is identified with the symbol .

Non-financial information

This section provides information as required by regulation in relation to:

Environmental matters
– pages 15 – 19; and
– pages 67 – 83;

Our employees
– pages 21 – 22
– page 27
– pages 50 – 55
– pages 65 – 66
– page 95 – 96

Social matters
– pages 15 – 19; and
– page 62

Human rights
– page 64 and page 263

Anti-corruption and anti-bribery
– page 63 – 64 (see also pages 101 – 105)

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 4 – 7

KPIs
– pages 24 – 27

Principal risks
– pages 28 – 32

Audit & Risk Committee report (our due diligence)
– pages 101 – 105

People & Governance Committee
– pages 99 – 100

Our stakeholders
– pages 56 – 59

Safety & Sustainability Committee
– page 106

Our communities

We go beyond our role in delivering safe, reliable energy for our communities so that everyone can play a role in an affordable energy transition.

Our commitments	Progress in 2021/22	Status
We will deliver sustainable energy reliably. We're committed to making sure our systems are resilient and can play a leading role in disaster recovery	UK ET – 99.99993% US ET – 99.95894% US ED – 99.93472%	Our networks continue to run at a high level of reliability
Provide access to skills development for 45,000 people by 2030, particularly lower-income communities	5,233 people (cumulative since 2020/21) 3,972 people 2021/22 only	Our skills programmes have continued at a lower level through COVID-19
Deliver energy in a fair and affordable way to the communities we serve	We invested £18.3 million during 2021/22 to support communities affected by COVID-19 and recent rises in energy prices	We are investing more in community support for COVID-19 and rising energy prices

> **"We have released significant new funds into our community investment programme."**

Engaging with our communities

We seek regular feedback from our customers and communities and act to improve performance. Our approach has been to go beyond providing the safe, resilient energy systems society expects, and work to ensure our economic and social role has the greatest possible impact. This involves developing infrastructure such as our work in East Anglia and helping consumers use energy more efficiently. Our WhenToPlugIn app in the UK informs consumers when the electricity in their homes is coming from clean and green energy sources.

We also partner with charity organisations such as Trussell Trust and Red Cross and encourage employees to volunteer in the community. 1,167 National Grid employees have registered to volunteer their time to support our Grid for Good programme.

An energy transition for all

The technological and environmental benefits of the clean energy transition should benefit everyone, and we will play our role in ensuring that no one is left behind. A fully decarbonised transportation infrastructure, for example, should be accessible by everyone across the communities we serve.

Part of this role includes protecting and supporting vulnerable customers. In the US, we do this through low-income programmes and energy-efficiency programmes. In the UK, in 2017, we established a £150 million Warm Homes Fund designed to support local authorities and others in helping approximately 50,000 households suffering from fuel poverty. During 2021/22, this fund has helped the Fuel Bank Foundation to provide crisis support. We are also supporting Citizens Advice in its work to support those struggling with the rising cost of living, including energy bills.

In 2020, we also launched the Green Light Signal, a smart light bulb that turns green when electricity in your region is more than 50% low carbon. The bulb and new WhenToPlugIn app are designed to engage customers and communities in the transition to low carbon and build understanding of progress.

Benefiting communities

We are supporting opportunity and growth in our communities. We launched Grid for Good in 2020 to achieve social mobility for disconnected young people in the communities we serve. This year the programme has supported 3,972 young people, helping to inspire and develop the skills needed for net zero. In the UK, we support communities affected by our infrastructure projects, where grants are available for local projects that bring social, economic or environmental benefits. In addition, as part of capital delivery projects, we work with third-party organisations to provide community benefits at scale.

In the US, we support the National Grid Foundation, a non-profit charitable organisation. The Foundation awards grants to non-profit organisations focused on educational and environmental challenges. The Foundation currently disburses nearly $4 million a year; for 2021, this was $3.77 million.

In 2021/22, we launched Project C for our community to promote and develop our community programmes in New York State. Across Massachusetts, New York and Rhode Island, we provided total funding of approximately $12 million a year through centrally-led programmes in support of charitable organisations.

During the year, we recorded over 23,416 hours volunteered by our colleagues in support of a variety of causes. As we come out of COVID-19 restrictions, we will need to grow our programmes to meet our 2030 commitment of 500,000 hours.

The economy

Our work to deliver secure, reliable, affordable energy underpins the wider economic success of our customers and their communities, their states and nations we serve. We are investing in innovation and raising Green Finance to help enable the energy transition.

Our commitments	Progress in 2021/22	Status
Maintain reinvestment in our infrastructure and demonstrate the social benefits of our new infrastructure programmes	Group – £6.7 billion (continuing operations)	In line with our commitment of reinvestment in infrastructure
Continue to invest in developing technologies and innovations that benefit our customers and wider society	We have developed our Green Financing arrangements and through NGP we have committed £93 million of investment in technology and innovation	On track to deliver our investment in developing technologies and innovations
Continue to influence our supply chain to operate as responsible businesses	CDP A listed for supply chain standards and members of the Race to Zero	We continue to develop our supply chain standards and have committed to at least 75% of our top 250 suppliers to have active carbon reduction targets by 2030

Through National Grid Partners, in 2021/22, we committed to

£93m

of investment in technology and innovation

Our contribution

Our economic contribution to society comes primarily through the delivery of safe and reliable energy but also through our role as an employer, a tax contributor, a business partner and community supporter.

We help national and regional governments formulate and manage 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 secure, reliable energy supply and the clean energy transition, each of which are key in protecting future economic growth, safety and wellbeing in society.

During the year, we invested £6.7 billion (continuing operations) in our energy infrastructure. This investment allows us to continue to provide secure and reliable supplies and underpin the wider success of the economy.

Finance, tax and investment innovation

We published our Green Financing Framework in November 2019, and since then have issued bonds from our UK and US electricity businesses, now totalling £1,791 million, funding projects to enable the transition to clean energy.

We have issued £565 million Green ECAs for our interconnector portfolio to prepare us for a variable renewable energy (VRE) future. More information is available in our first Green Financing Report, now part of our Responsible Business Report.

NGP is the venture investment and innovation arm of National Grid, with a portfolio that comprises 38 companies and four fund investments at a fair value of $491 million at the close of the fiscal year.

Our approach to tax is part of our commitment to being a responsible business and is guided by our values. We are committed to a coherent and transparent tax strategy and details of this are set out on page 47.

Partnership with our supply chain

We aim to build partnerships with small and local businesses, and all suppliers who set clear ambitions related to the environment, diversity, economic wellbeing and governance. We are fair to our suppliers and committed to paying them promptly. Across the Group, over 90% of supplier payments were made to contractual terms.

We have aligned our Global Supplier Code of Conduct to our RBC pillars and require suppliers to share our commitment to respecting, protecting and promoting human rights. We expect our suppliers to comply 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 of 1977. We also require them to adhere to the Principles of the UN Global Compact, the International Labour Organization minimum standards, the Ethical Trading Initiative Base Code and the US Victims of Trafficking and Violence Protection Act of 2000.

In the UK, we are an accredited Living Wage Foundation Employer and paying a real living wage is a requirement for all our suppliers based in the UK.

Expanding the diversity of our supplier base is an important part of our procurement strategy. In the US, we partner in a number of programmes including the Greater Boston Chamber of Commerce Pacesetters Program and the New York & New Jersey Minority Supplier Development Council. We are also partners in the Ascend Long Island project, providing specialised programmes to promote minority business growth and job opportunities.

Our governance

Adopting the right approach to governance and the highest ethical standards is critical to the success of our business.

Our commitments	Progress in 2021/22	Status
Continue to review and adapt our policies to reflect and support our responsible business commitments and ambitions	Appointment of a Chief Sustainability Officer, joining our Chief Diversity Officer. All RBR commitments embedded into business planning and targets	In 2021/22 we have moved our governance to better reflect our RBC priorities
Continually review the Company culture to ensure it is inclusive	Purpose has moved to be the most important cultural aspect in our annual leadership culture survey	In 2021/22 purpose has moved to be at the heart of how we do business
Commitment to a Group Executive Committee diversity ratio of 50% and ambition to achieve the same for Board diversity	The diversity of our Board is now 53.8%, Group Executive Committee diversity is 53.8%, and the diversity of our Senior Leadership Group is 49.5%	We have made positive progress in achieving diversity at Board level and good progress on diversity at senior leader level

Stakeholder engagement

We prioritise our responsibilities to our different but interrelated stakeholder groups and are careful to ensure we understand the interests of our stakeholders and reflect them in our decisions. Stakeholder engagement plays an important role in how our Board ensures responsibility in governance. This includes listening to our stakeholders' views, inviting external guests to meetings, and using independent research to bring the voice of the customer and other stakeholders into the Boardroom.

Highest ethical standards – ethical business conduct

We regard the potential for bribery and corruption as a significant risk to the business and have established policies and governance that set and monitor our approach to preventing financial crimes, fraud, bribery and corruption, including our Code of Ethics (covering anti-bribery and anti-corruption). We have a Company-wide framework of controls designed to prevent and detect bribery.

Our Code 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'. Our Group Ethics, Risk and Compliance Committee oversees the Code of Ethics and associated awareness programmes. We issue this Code and operate an e-learning course for all colleagues so they adequately understand our zero-tolerance approach.

We also have an Anti-Financial Crimes policy that applies to all colleagues 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 and ensure adequate procedures are in place.

Any cases alleging bribery are referred immediately to the relevant ECC so the members can satisfy themselves that cases are managed effectively, including ensuring any lessons learnt are communicated across the business. We investigate all allegations of ethical misconduct thoroughly, take corrective action and share lessons learnt. We also record trends and metrics relating to such allegations.

Each business function 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. Business areas self-assess the effectiveness of controls and provide evidence that supports reported 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 the presentation of a Certificate of Assurance from the Chief Executive to the Board (following consideration by the Audit & Risk Committee). You can read more about the Audit & Risk Committee's role, including its ongoing assessment of the adequacy of our anti-bribery and anti-corruption policies and processes, on pages 101 – 105.

In New York, we were the victim of criminal activity where former employees circumvented controls to commit fraud in the procurement of DNY Facilities work. We engaged professional consultants to perform a comprehensive review of our control framework. Whilst our procurement controls were found to be effective, we are implementing recommendations to make improvements to our control framework and Ethics and Business Conduct Program.

Highest ethical standards – human rights

Respect for human rights is incorporated into our employment practices, and values, and is integral to our Code of Ethics. This is vital in maintaining our reputation as a company our stakeholders want to do business with, and our employees want to work for.

Although we do not have specific policies relating to human rights, slavery or human trafficking, we cover these issues through related policies and procedures such as our approach to diversity, anti-discrimination, privacy, equal opportunity and, in addition, our Global Supplier Code of Conduct integrates human rights into the way we screen and interact with our supply chain.

Whistleblowing

We have a confidential internal helpline, and an external 'Speak-Up' helpline available at all times in all the regions where we operate. We publicise the contact information to our colleagues and on our external website so concerns can be reported anonymously. Our policies make it clear that we will support and protect whistleblowers and not tolerate any form of retaliation.

Our people

Our colleagues are vital to our business and we strive to be the employer of choice, attracting a diverse range of highly skilled people who feel they can be themselves at work.

Our commitments	Progress in 2021/22	Status
Be as transparent as possible internally and externally on gender and ethnicity/race	We have begun internal reporting on a much wider range of diversity metrics, to underpin our commitment to diversity	ON TRACK – Following launch of internal reporting, we expect further granularity of external data over the next 2 years
Achieve 50% diversity in our Senior Leadership Group and new talent programmes by 2025	Our Senior Leadership Group diversity is 49.5% and new talent programmes are at 55.6%	We have made steady progress on diversity of these key groups and we expect to achieve target ahead of 2025

Our values

Our culture

Leaders who model change
- Leaders are responsible for change and encourage colleagues to make decisions and take responsibility.
- Measured feedback for all leaders to adjust and align behaviour and increase accountability.
- Leaders act safely, inclusively and with integrity.

Develop a results-orientated and purpose-driven mindset
- Greater accountability.
- Improve success for our customers and continue to improve efficiency.
- Embrace bold thinking and new ideas.
- One team, focused on finding solutions.

Our values are at the heart of everything we do
- Colleagues are recognised for living our values.
- Encourage storytelling of how we are changing; encouraging colleagues to speak up where people are not living our values.
- Our values are instilled into our people, processes, policies and ways of working.

Grid:voice engagement score

81%

(2020/21: 81%)

Safe to say 'yes' index in Grid:voice

73%

(2020/21: 67%)

"Our employee engagement score has stayed consistent."

Reflecting the communities we serve

Diversity is central to our business at every level of operation and we want our Board and Group Executive Committee to reflect the communities we serve.

Our Board diversity is now 53.8% and our Group Executive Committee diversity is 53.8%. We also measure the diversity of our Senior Leadership Group[1], to indicate the diversity of internal progression potential to the executive level. The diversity of this group is 49.5%, which we consider positive for a technical or engineering organisation, but we will not consider ourselves sufficiently diverse as an organisation until we reflect our customers and the communities we serve.

1. Senior Leadership Group: this includes the Group Executive Committee members and the c.110 senior colleagues in the Company. Please note, this differs from the definition of senior management which includes both senior colleagues and subsidiary directors.

Case study: Community action in East London

In March 2022, a group of National Grid leaders volunteered at Mudchute Park and Farm, a community charity set in 32 acres of countryside in the Isle of Dogs, London.

Mudchute runs a working farm, stables and educational activities – giving under-privileged and under-represented communities in East London the chance to learn and play in a safe, natural setting. It receives a small grant but relies on volunteers and fundraising, so has struggled to cover the costs of animal care and the services it runs during the pandemic.

Working in teams and encouraged by TV presenter Tommy Walsh – a keen supporter of the charity – our leaders transformed a wild stretch of ground into an attractive wooded garden in just a few hours. They cleared weeds, built features to attract bees, insects and pondlife, laid paths, erected raised beds, planted flowers and fruit saplings, and repaired and painted a playhouse.

Their work leaves a legacy that will make a difference to hundreds of local school children and others in the neighbourhood for years to come. National Grid has committed to continue its support for the charity and provide opportunities for colleagues to return to undertake further work.

Volunteering work at Mudchute Park and Farm, East London, UK

Engaging our colleagues

We rely on our colleagues to achieve success for the business. We aim to attract and retain the best people by striving to be recognised as an employer of choice that values diversity.

We work towards going beyond the main aspects of the employer-employee relationship, to create a culture focused on the value we can add to society.

Colleague and contractor safety and wellbeing

We have a fundamental duty of care to ensure our colleagues are kept safe at work, and that their health is not affected as a result of their employment. The health, safety and wellbeing of employees and contractors is our primary concern. Any safety incident is one too many, and we work to improve our performance through effective policies, standards, procedures and training.

We measure safety performance through a combination of leading and lagging indicators, and LTIFR is one of the core KPIs of the business (see page 27). We take a proactive, risk-based approach to managing health and wellbeing, and have documented standards relating to occupational health and safety, process safety, and wellbeing and health. Incidents are reported to the highest level, and the Safety & Sustainability Committee of the Board undertakes regular deep dives on safety-related topics (see page 106).

Living wage and gender pay gap

We believe everyone should be appropriately rewarded for their time and effort. In the UK, we are accredited by the Living Wage Foundation, a commitment which extends to our contractors and the work they do on our behalf. 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 and increase individual salaries as required, and also promote the commitment to our suppliers.

We review gender and ethnicity pay gaps annually in both the UK and US, and further information is provided in the RBR.

Promoting an inclusive and diverse workforce

Our policy is that people who identify as having a disability should be given full and fair consideration for all vacancies against the requirements for the role. Where possible, we make reasonable accommodations and provide additional resources for employees who identify as having a disability. We are committed to equal opportunity in recruitment, training, promotion and career development for all colleagues, including those with disabilities.

The gender demographic table on the right shows the breakdown in numbers of employees by gender at different levels of the organisation. We have included information relating to subsidiary directors, in accordance with the Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013. 'Senior management' is defined as those managers who are at the same level, or one level below, the Group Executive Committee. It 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. For further, more-detailed information relating to our approach and performance on gender and ethnic diversity, please see our RBR.

We continue to be recognised in awards and benchmarks including being listed Outstanding Employer for Race at the UK Ethnicity Awards, recognised in the top 10 for Company and Diversity Team of the Year at the British Diversity Awards and moved from 480 to 187 in the Financial Times special report on Diversity Leaders. We have close partnerships with external best practice organisations and are active members of sector- and industry-wide groups that ensure we are sharing best practice and campaigning at a sector-wide level for greater inclusion for all.

Gender demographic as at 31 March 2022

	Our Board[1]	Senior management[2]	Whole Company[3]
Male	7	110	23,639
Female	6	58	7,117
Total	**13**	**168**	**30,756[4]**
Male (%)	53.8%	65.5%	76.9%
Female (%)	46.2%	34.5%	23.1%

1. 'Board' refers to members as defined on the Company website.
2. 'Senior management' refers to subsidiary Directors as well as the Senior Leadership Group.
3. In scope are active, permanent employees. Band A-F, Staff, Union, Schemes & Expats, NG Renewables, WPD.
4. Total Company Headcount includes UK GT and metering and varies from RBR due to WPD employees shown separately in RBR but included in Annual Report.

The environment

We are at the heart of the transition to net zero for our customers and the communities we serve, enabling the renewable and low-carbon energy supply and reducing emissions from our own emissions to net zero by 2050.

Our commitments	Progress in 2021/22	Status
We will reduce Scope 1 and 2 greenhouse gas (GHG) emissions 80% by 2030, 90% by 2040 and net zero by 2050 from a 1990 baseline	Connection of renewables and low-carbon supplies continues but for 2021/22 this reduction is outweighed by growth in LIPA emissions	ON TRACK – Our long-term plan to reduce emissions despite additional running of generation under contract with LIPA
We will reduce Scope 3 GHG emissions by 37.5% by 2034 from a 2019 baseline	Recovery of gas demand post-COVID-19 has led to a short-term return of emissions, rising back to historical pre-COVID-19 levels	ON TRACK – We are developing a long-term plan to drive down emissions in line with our 2034 targets and we have announced our vision in the US to fully eliminate fossil fuels from both our gas and electric systems by 2050, if not sooner
We will reduce SF_6 emissions from our operations by 50% by 2030, from a 2019 baseline	During 2021/22 we reduced emissions through leakage reduction and announced a further important partnership with Hitachi to deliver a retrofit gas replacement for SF_6	ON TRACK – Our work remains in line with our long-term plan to reduce emissions through leakage and then innovate with partners to find a lower emissions alternative
We will move to a 100% electric fleet by 2030 for our light-duty vehicles	We have joined EV100 to support the wider campaign to electrify, and launched a partnership with Ford for light trucks	ON TRACK – New programmes on light trucks and electric-only fleet choices to help achieve this commitment
We will reduce energy consumption in our offices by 20% by 2030	72% reduction in energy consumption against our 2020 baseline	ON TRACK – We have a number of schemes in the pipeline to make our buildings more efficient
We will improve the natural environment by 10% on the land we own by 2030	We have remediated 21.6 hectares of land in 2021/22	ON TRACK – With programmes delivering improvement to the natural environment ahead of 2030
We will achieve zero-carbon emissions from business air travel	We have delivered this commitment with a significant reduction in air travel due to COVID-19 and all remaining travel has been offset	ACHIEVED – We will continue to restrict air travel to below 50% of pre-2019 levels to maintain our commitments in the RBR

Energy consumption

Our energy consumption is a key area of focus as this, in turn, affects our carbon emissions.

Our energy consumption consists of both fuel consumed and energy purchased from third parties, including renewable energy. Total energy consumption was 3,502 GWh (12,606,859 Gigajoules), an increase of 12% on the previous year. Of this, 99% was from non-renewable sources, with no significant change from the previous year. Total energy consumption in the UK was 2,341 GWh and total energy consumption in the US was 1,161 GWh.

Operational energy use was 1,190 GWh (2020/21; 1,748 GWh), our transport energy use was 362 GWh (2020/21; 369 GWh), electricity consumption was 987 GWh (2020/21; 852 GWh) and heating was 163 GWh (2020/21; 156 GWh).

Electricity consumption includes the energy consumed in operating the generation assets in the US. Total energy does not include fuels consumed for power generation on behalf of LIPA, the contracting body, amounting to 19,610 GWh (net of energy required to operate the generation assets), a 21% increase on the prior year. Energy consumption related to power generation can vary greatly year-on-year and is determined by LIPA. We therefore report an energy consumption figure net of power generation allowing us to report underlying energy consumption across our business. For transparency, we have reported energy consumption from power generation as a separate line item. Transport covers company car business travel, and our own operational ground and aviation fleet. In addition to energy consumed, we calculate that system losses accounted for a further 11,117 GWh, of which 51% occurred in the US. This was a 0.3% decrease on the previous year.

Note: 2020/21 energy consumption has been re-stated to account for a minor misstatement following data reconciliation.

Climate change

Streamlined Energy and Carbon Reporting (SECR)

	mtCO₂e	
	2021/22	2020/21
Scope 1 (direct emissions)	**5.3**	4.7
Scope 2 (direct emissions)		
Market based	**2.2**	2.3
Location based	**2.2**	2.2
Total Scope 3 emissions	**30.1**	28.9
US Cat 3 (fuel and energy related activities)	**4.3**	4.1
US Cat 11 (use of sold products)	**18.9**	18.2
UK and US Cat 1 (purchased goods and services)	**6.7**	6.6
UK and US Cat 7 (employee commuting)	**5**	5
UK and US Cat 6 (business travel)	**11**	6
UK & US Cat 5 (waste generated in operations)	**7**	6

Further reading
page 26

We generate GHG emissions across Scope 1 (direct emissions from our operational activities), Scope 2 (indirect emissions from our purchase and use of gas and electricity) and Scope 3 (other indirect emissions from activities and sources outside of our ownership or control). Our RBC sets out a number of ambitious climate-related commitments, the most significant of which is to achieve net zero by 2050. Through this commitment we will reduce Scope 1 and 2 emissions by 80% by 2030, 90% by 2040, and net zero by 2050, from a 1990 baseline. At the end of 2021/22, we have achieved a 65% reduction.

Our Scope 3 target covers emissions across our entire value chain with a commitment to reduce the carbon emissions by 37.5% by financial year 2034 (from a financial year 2019 baseline). Our interim Scope 1, 2 and 3 emission reduction targets are validated by the SBTi, demonstrating a clear, credible commitment to achieve our longer-term net zero strategy in line with a well below 2°C pathway. Other commitments, including those relating to reductions in SF_6 emissions and increasing the proportion of EVs in our own fleet, are set out in the RBC.

We will publish our Climate Transition Plan in June 2022 as part of the RBR.

We are working to reduce our business travel emissions by changing to alternative fuel vehicles and reducing business flights. The response required by the COVID-19 pandemic has resulted in more flexible ways of working and has reduced business travel. We will reduce the energy consumed in our buildings and procure green energy where possible.

Our Scope 1 emissions were 5.3 $mtCO_2e$, a 12% increase on the prior year (4.7 $mtCO_2e$). Of this, 89% arose in the US and 11% in the UK. The increase resulted mainly from generation emissions exceeding projected levels due to increased LIPA operating hours, required to replace shortfalls in off-island generation and transmission.

Scope 2 emissions are reported on a market and location basis:

- market based – 2.2 $mtCO_2e$, similar to the prior year
- location based – 2.2 $mtCO_2e$, similar to the prior year

Approximately 57% of Scope 2 emissions (location basis) were generated in the UK, with the remainder through US operations. Reduction in Scope 2 emissions was mainly due to a reduction in emissions from line losses, resulting from a reduction in grid electricity carbon intensity.

Our total Scope 3 emissions are calculated as 30.1 $mtCO_2e$ for the year, an increase of 4% on the prior year.

We measure and report in accordance with the World Resources Institute and World Business Council for Sustainable Development Greenhouse Gas Protocol. 100% of our Scope 1, 2 and 3 emissions are independently assured against ISAE 3410 Assurance Engagements on Greenhouse Gas Statements, using an 'Operational Control' approach to determine our GHG emissions organisational boundary. The sources of Scope 1, 2 and 3 emissions are detailed in the RBR. We have also published a document, 'Our Reporting Methodology', which details the methodologies and protocols used for calculating key responsible business metrics.

Case study: COP26 activities – Green Grids Initiative

As part of our principal partner role for COP26, we supported the UK government in developing a new international partnership, the Green Grids Initiative. The first programme of this initiative, a new UK-India initiative was launched at COP26, with the CEO attending the launch alongside the Prime Minister of the UK, Boris Johnson, and the Prime Minister of India, His Excellency Shri Narendra Modi, and Director General of the International Solar Alliance, Dr Ajay Mathur. The programme, which is also supported by the US government, aims to share lessons and expertise between the two countries and, in doing so, accelerate international decarbonisation efforts. We are providing personnel and expertise to support the programme.

This initiative forms part of a number of programmes launched or supported by the UK COP26 presidency. We have also supported engagements with Indonesia, South Africa, Vietnam and Laos as part of our principal partnership of COP26, sharing lessons and expertise with peer utilities and energy ministries in those countries to build confidence in the path to net zero.

Right to left: National Grid CEO, John Pettigrew; UK Prime Minister, Boris Johnson; Indian Prime Minister, Shri Narendra Modi; and Director General of the International Solar Alliance, Dr Ajay Mathur – at the launch of the Green Grids Initiative, 'One Sun One World One Grid' at COP26

Case study: Green Light Signal and EV Road Trip

As we connect low-carbon power to our electricity networks we are creating the means to decarbonise much of the economy, including power, transport, industry and some heat.

Engaging our customers and communities in the transition to net zero is key to building confidence and understanding of the transition to net zero. As part of our engagement, our customers and communities told us they were not sure how green their power was today and whether the transition would happen. So we wanted to show them.

To show customers and communities how things were changing, in the UK we created a smart light bulb that turns green when the local power is low carbon, and in the US we created a number of EV Road Trips, to help build confidence in the transition to EVs. The Green Light Signal and associated 'WhenToPlugIn' app featured in UK national media, saw thousands of downloads, lit up 10 Downing Street ahead of COP26, and won a Bronze award at the Eurobest advertising awards. Our EV Road Trip received over 2 million impressions on social media and positive coverage from a range of stakeholders and the media.

Green Light Signal, a smart bulb that glows green when the local power is low carbon

The EV Road Trip, took place in 2021, covering New York, Massachusetts and Rhode Island

Task Force on Climate-related Financial Disclosures

Climate change is the defining challenge of the 21st century and in our role as The Energy Transition Company we understand the critical role we need to play in navigating the change and uncertainty facing the economies we serve in reaching their carbon reduction targets.

That change and uncertainty presents significant risks and opportunities to our business model that we manage with the due focus and attention required to enable the positive, responsible change needed by all of our stakeholders.

We are committed to developing a business model that is consistent with the objectives of the Paris Agreement, and therefore set a commitment in November 2019 to reduce our Scope 1 and 2 emissions to net zero by 2050. The details of the interim targets that we have set to achieve this are included in our RBC that we published in October 2020. This includes approved science-based targets for Scope 1, 2 and 3 emissions across our Group. This year sees the second iteration of our RBR which details our progress against all commitments set out in our RBC, including our emissions reduction targets.

In this year's disclosure we have fully complied with the FCA listing rule LR 9.8.6R(b). Our climate-related financial disclosures are considered to be consistent with the TCFD's recommendations and recommended disclosures. Please see the index on page 71 for where we respond to each recommendation and recommended disclosure.

In reaching full compliance this year, we have refreshed our energy transition scenarios and completed the first stage of our comprehensive Group-wide assessment into the physical risks facing the Group under 2°C and 4°C scenarios, with the outcomes detailed in this disclosure. We have also published our first Climate Transition Plan, which provides greater detail and clarity on how we will achieve our emissions reduction targets.

Crocker Wind Farm, National Grid Renewables, South Dakota, US

Highlights of the year

Development of a best-in-class Climate Change Risk Tool to assess the physical impacts from climate change scenarios

CDP Climate A rating for 6th year in a row

Acquisition of WPD which completes the pivot of our UK business towards electricity

Continued development of our net zero strategy

Specific science-based targets aligned to a 1.5 degree pathway for our UK Electricity Transmission and UK Electricity System Operator businesses

Principal partner for COP26 climate change conference

Publication of provisional EU Taxonomy aligned KPIs, including our forecast EU Taxonomy aligned capital expenditure for the next five years

Increased alignment of Executive remuneration to climate reduction targets

Our climate-related financial disclosures cover all of the TCFD's recommendations and recommended disclosures. The following index navigates between our disclosures and the TCFD's recommendations and recommended disclosures:

Governance

Disclose the organisations governance around climate-related risks and opportunities

a) Describe the board's oversight of climate-related risks and opportunities: page 72 – 'Governance of climate-related risks and opportunities'

b) Describe management's role in assessing and managing climate-related risks and opportunities: page 73 – 'Management's role'

Risk management

Disclose how the organisation identifies, assesses, and manages climate-related risks

a) Describe the organisation's processes for identifying and assessing climate-related risks: page 74 – 'Our strategy and risk management for responding to climate change', page 74 – 'Identifying and assessing the impacts of climate-related risks and opportunities'

b) Describe the organisation's processes for managing climate-related risks: page 75 – 'Climate change and enterprise risk management'

c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management: page 74 – 'Identifying and assessing the impacts of climate-related risks and opportunities'

Strategy

Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning where such information is material

a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term: page 79 – 'Our significant climate-related risks and opportunities and our strategic response'

b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning: page 74 – 'Our strategy and risk management for responding to climate change', page 79 – 'Our significant climate-related risks and opportunities and our strategic response'

c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario: page 76 – 'Physical modelling', page 78 – 'Transition scenarios modelling'

Metrics and targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material

a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process: page 83 – 'Climate change metrics and targets', page 79 – 'Our significant climate-related risks and opportunities and our strategic response'

b) Describe Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions, and the related risks: page 83 – 'Climate change metrics and targets' shows cross-reference to separate ARA disclosure: page 26

c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets: page 83 – 'Climate change metrics and targets' shows targets, where considered relevant

The world's first row of T-pylons, Hinckley Connection Project, UK

Task Force on Climate-related Financial Disclosures continued

Governance of climate-related risks and opportunities

The Board's role

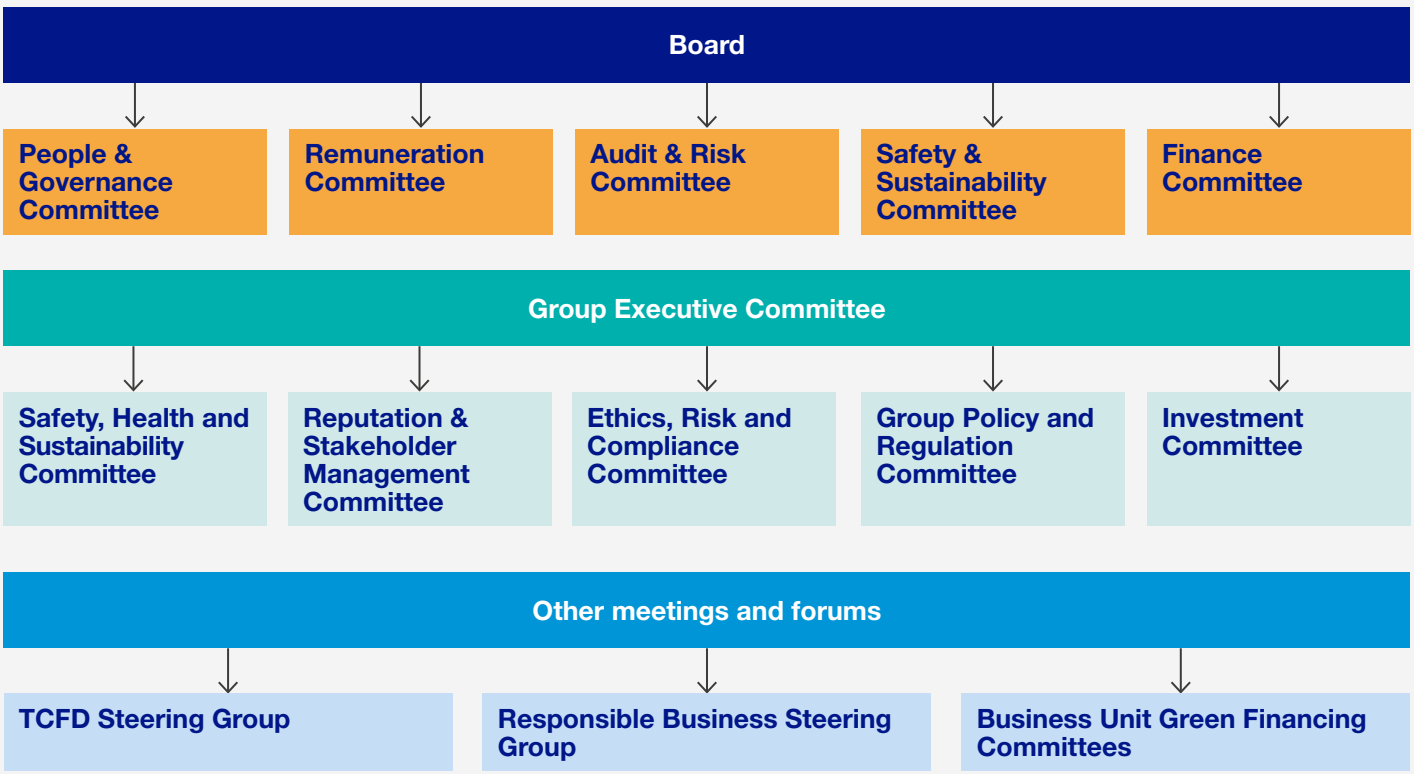
The **Board of Directors** is responsible for setting and leading the Company's climate-related strategy and goals, and has oversight of climate-related risks and opportunities impacting the Group. The Board in turn delegates some elements of responsibility to various sub-committees as described below. Our Board members bring a variety of skills and experience to the Board, including expertise in ESG and climate change matters. See page 88 – 89 for an overview of the Board's skills and experience.

In the year, the Board received regular updates from the Chair of the Safety & Sustainability Committee, providing an overview of matters discussed at the Committee meetings. This included updates on progress against goals and targets for addressing climate-related issues. The Board also receives a CEO report at each Board meeting which informs on how the Company is tracking against performance against metrics and targets and progress is reported through a regular dashboard. Additional updates received by the Board in the year are outlined here:

- The Board was informed that the carbon emission reduction targets that had been set had been verified by the SBTi.
- The Board was updated on current ESG positioning in the Company, including key strategy enhancements to keep pace with and to choose where to lead as a responsible business, and assurance around the right governance in place to provide a central organisational focus to drive strategy and performance. The Board was also updated on the impact of acquiring WPD on the Company's ESG agenda and opportunities including climate-related matters.
- The Board discussed various aspects of the US business with US management, which included an update on the significant acceleration of the energy transition following President Biden's election and the Company's key clean energy ambitions in the US strategy.
- An enrichment session was hosted by the Chief Sustainability Officer and management to provide focus for the Board on the Company's ESG and climate-related commitments, ahead of Board approval of year-end sustainability reporting. The session promoted the understanding of the architecture of the ESG commitments, the flow of approvals at various Committees, key stakeholders that are engaged in the process and to assure that ESG stewardship is well embedded at Board level.

The Board also reviewed its entire governance framework in the year to ensure the remit of the Committees remained appropriate and well placed to progress the Board's agenda going forward, in particular around tackling climate change and monitoring progress against net zero aims. Three of the Board Committees refreshed their remit and focus, including the Safety, Environment & Health Committee, which became the Safety & Sustainability Committee. Within the business there has been a continuing move towards clearer ownership of climate issues; a Chief Sustainability Officer was appointed in September 2021, providing a single point of accountability across the Group for our overarching sustainability strategy to help deliver the energy transition and ensure we drive our own emissions down to net zero by 2050. The Chief Sustainability Officer attends all Safety & Sustainability Committee meetings and provides regular updates at Board and management level, including holding a Board ESG enrichment session, covering ESG commitments, reporting and developments. The remit of the Board and its Committees under our governance framework is set out on page 91. Terms of reference for the Board and its Committees are available at nationalgrid.com.

Climate governance



The Safety & Sustainability Committee is responsible for assessing and monitoring the Group environmental sustainability strategy and performance, as well as how the Company adapts its business strategy considering potential climate change risks and opportunities. This includes reviewing whether appropriate progress is being made against our net zero aims. Progress around GHG emissions was considered and challenged in the year. The remit of the Committee was extended in the year to provide further oversight of climate-related matters including climate scenarios within TCFD and progress against the Company's climate transition plan which they reviewed in the year. The Committee also noted the changes to the Group Climate Change Risk which moved from what was a single strategic risk, to two risks – one strategic and one operational.

The Remuneration Committee recommends to the Board the remuneration policy for Executive Directors and the leadership team including approving how ESG targets are incorporated into our incentive arrangements. The Committee also reviews workforce remuneration and monitors related policies, satisfying itself that incentives and rewards are aligned to National Grid's strategy, culture and long-term sustainable success. During the year the Committee considered the remuneration policy to be presented to shareholders for approval at the 2022 AGM and increased the proportion of incentives linked to ESG and progress against climate-related targets.

The People & Governance Committee oversees a diverse succession pipeline, helping to ensure we have the right people to deliver our strategy and net zero ambition. During the year the Committee approved the appointment of several new Non-executive Directors, taking into consideration skills and experience including climate. Martha Wyrsch, appointed in 2021, brings sound knowledge and experience around climate-related issues through her experience as CEO of a major international gas transmission business, as well as leading the growth and development of Vestas' renewables business in the US, where she spearheaded the expansion of its wind farm portfolio. Anne Robinson joined the Board in January 2022, bringing strong ESG experience and insight into investor perception around climate. Anne and Martha both joined the Safety & Sustainability Committee on appointment and along with the other members received an induction tailored to the Committee including around climate issues. See page 100 for more information around the skills and experience of our Board.

The Audit & Risk Committee has oversight over non-financial disclosures and assurance, including our RBR reporting, TCFD reporting and reporting in line with leading ESG frameworks such as the Sustainability Accounting Standards Board (SASB), the Global Reporting Index (GRI) and the EU Taxonomy. The Committee received papers in March and May 2022 on the financial reporting and disclosure considerations in relation to climate change.

The Finance Committee oversees our financing strategy, including the issuance of National Grid plc's €850 million Green Bond in September 2021. The Finance Committee also considers the financial impact of environmental factors on our credit metrics and relevant considerations with regard to debt investors, pension and insurance strategy.

Management's role

The Board delegates to management responsibility for asset investment and maintenance planning, implementation of the net zero strategy and overseeing the development of the RBC. Management is also responsible on a day-to-day basis for the climate-related risks and opportunities faced by the Group and for delivering the roadmaps to achieve the net zero strategy set by the Board. Throughout the year, the **Group Executive Committee** created a number of sub-committees with delegated responsibility over specialist areas that receive updates on climate-related matters ahead of presentation, where applicable, to the Board and Committees.

The Safety, Health and Sustainability Sub-Committee reviews and manages Group-wide safety, environment and health tracking/monitoring and related decisions. The Chief Sustainability Officer attends this Committee, providing a link between management and Board discussions around climate-related issues. In the year, the Committee spent time reviewing progress against the Company's climate-related targets and shaped related strategy. In particular, the Committee reviewed potential impacts on our climate strategy and progress towards net zero from external events including the war in Ukraine and the energy crisis.

The Reputation & Stakeholder Management Executive Sub-Committee provides oversight of responsible business policy development and engagement including in relation to the RBR and climate-related disclosures.

The Ethics, Risk and Compliance Committee oversees the implementation of the Group's risk management framework and assessment of principal risks including climate change.

The Policy and Regulation Sub-Committee agrees and provides strategic oversight of Group public policy priorities and positions.

The Investment Committee has delegated authority to approve investment decisions including those related to our Renewables business.

Other forums

A TCFD steering group comprising representatives from Group External Reporting, Sustainability, Corporate Strategy, Group Risk and Company Secretariat oversees progress against the TCFD recommendations and the publication of our annual disclosure.

A Responsible Business steering group, chaired by the Chief Sustainability Officer, provides oversight of the integration of responsible business into National Grid including the development of ESG targets and future ESG strategy.

Business Unit Green Financing Committees chaired by the Group Treasurer, provide governance over our Green Financing Programme and approve the publication of our Green Financing Report, which provides an analysis of how we utilised the proceeds from our portfolio of Green Bonds and their environmental impact.

Our businesses. Further delegation and responsibility is given to the core operational businesses including the Business Unit Presidents, who are responsible and held accountable for delivering the net zero roadmaps for their businesses.

Our functions. Corporate Affairs, Group Finance, Sustainability and Group HR are responsible for supporting the businesses in achieving their net zero pathways.

Paula Rosput Reynolds, onsite at London Power Tunnels, London, UK

Task Force on Climate-related Financial Disclosures continued

Our strategy and risk management for responding to climate change

National Grid has four strategic priorities, as set out on pages 20 – 21, the first of which is to enable the energy transition for all. We have committed to support the decarbonisation of the communities that we serve, migrating to cleaner energy solutions. We have also committed to enabling a fully decarbonised electricity grid, to lead the way on the decarbonisation of gas and to enable the decarbonisation of transport. To support these strategic ambitions, we have recently executed a strategic pivot, via three transactions which will enhance our role in the energy transition. These transactions were the acquisition of WPD, the UK's largest electricity distribution network operator, in June 2021; and the proposed sales of our Rhode Island gas and electricity business in the US and of a majority stake in our UK Gas Transmission business expected to complete during 2022. Upon successful completion of all transactions, the contribution of electricity to National Grid's portfolio will increase to around 70% of the Group.

Across all of our businesses, we aim to play a leading role in enabling and accelerating the transition to a clean energy system, balancing decarbonisation, affordability and reliability of supply. Working closely with governments, other stakeholders, subject matter experts, and partners around the world and through our work for COP26, we focus on the technical and commercial solutions that will help achieve net zero for the energy sector. The biggest impact we can have is in enabling the economy-wide clean energy transition, but we must also reduce our own impact on the environment and strengthen our resiliency to risks that we have less control over. To accomplish this, our RBC commitments to reduce Scope 1 (direct emissions from our operational activities), Scope 2 (indirect emissions from our purchase and use of electricity) and Scope 3 (other indirect emissions from our value chain activities) emissions align with the requirements of the Paris Agreement and SBTi. These commitments, along with our overall suite of environmental sustainability initiatives, are reviewed in accordance with our quarterly business reviews, incorporating the risk and opportunities management processes detailed below, and reported accordingly to the Group Executive Committee and Board.

Carbon pricing is one of the tools we use to support the delivery of our emissions reduction targets. We participate in traded carbon markets where our operations are covered by these frameworks, have regulatory incentives to reduce SF_6 and methane emissions that are underpinned by a carbon price, and have applied an internal carbon price of $60/£45 per tonne (set in 2017) in investment decision making. Additionally our latest UK regulatory agreements apply a price of £241/tonne.

We've found that a carbon price alone is unlikely to drive the changes needed to meet our net zero goals. As important are policies and commitments, such as those we have to remove and reduce SF_6 leakage on our networks, and replace our fleet with electric vehicles. We are currently reviewing our approach to investment decision making to ensure we have the right mix of approaches to meet our commitments.

Identifying and assessing the impact of climate-related risks and opportunities

The scale of ambition and speed of change required to meet net zero emission targets, along with the changes in weather patterns, present both risks and opportunities to our business. These risks and opportunities, which are informed by our physical and transition risk scenario analysis and our horizon scanning processes, are built into our business planning and investment decision processes where we assess the degree of exposure to climate-related financial risks and opportunities. For our regulated businesses, our plans to address these are formulated with and agreed to by our regulators. Our management is incentivised through our target setting and remuneration policy to deliver the actions necessary to achieve our net zero objectives. This year, we agreed new ESG-related targets for our long-term incentive programme as detailed on page 113. We also launched a suite of internal climate change e-learning modules to help all employees learn more about climate change and our role in the energy transition. To accompany this, we conducted extensive pre- and post-COP26 employee engagement campaigns.

See page 75 for detail on our scenario modelling and page 79 for further detail on the significant risks and opportunities we identified and our response.

Case study Innovation for net zero

With funding from Ofgem's Strategic Innovation Fund (SIF), we are delivering three innovation projects to help deliver a net zero electricity network.

- The Sustainable Electrical Gas Insulated Lines (SEGIL) project will investigate the feasibility of an SF_6-free Gas Insulated Line (GIL) solution to provide cost competitive, high-capacity transmission connections over 2000MVA to increase available network capacity for new offshore wind generation. The project will look at the options to replace SF_6 with alternative low-carbon footprint gases as a viable means of GIL insulation.
- The Super Conductor Applications for Dense Energy Transmission (SCADENT) project will develop an understanding of the barriers, opportunities, and benefits of modernising existing electricity infrastructure by replacing conventional cables with the use of High Temperature Superconductor (HTS) cable technology. This will increase network capacity, delivering time, cost, and carbon savings with reduced energy losses and wider environmental benefits including reduced disturbance to local communities caused by construction activities.
- The Eye in the Sky Project, which utilises satellite data to improve grid resilience in emergency situations, will investigate new satellite data analytics solutions that can help GB networks to improve the visibility of infrastructure and assets, response in emergency and risk assess effects of climate change. Novel uses of satellite data and digital platforms can significantly improve network planning, modelling and forecasting capabilities, and improve the response to climate change effects like flooding, strong wind, snow storm or wildfire and provide warning to the networks for better planning and resource allocation during extreme weather events.

Climate change and enterprise risk management

Climate change is considered as part of our ERM process and has been one of our GPRs since autumn 2019. The ERM process is the framework through which the Group identifies, assesses, prioritises, manages, monitors and reports risks. This process is described on page 28 and includes the identification of a series of Group-wide controls and actions to mitigate the climate change principal risk (this is further described on page 30).

Historically, the climate change risk at the GPR level was managed through one broad risk covering both physical and transitional impacts of climate change on our business. In December 2021, the Executive Ethics, Risk & Compliance Committee agreed to split the climate change GPR into two distinct elements: adaptation and mitigation child risks. This has enabled greater alignment to our strategic objectives. The adaptation activity, absorbed within the 'significant disruption of energy' risk's control framework, will help ensure we continue to 'deliver for our customers efficiently', and the new standalone mitigation risk is aligned to our strategic objective, 'enable the energy transition for all'. This has generated greater oversight, focus and adoption of two distinct and proportionate control frameworks in line with the new Group risk appetite – mitigating downside risk, and maximising opportunities, where applicable.

Original Group climate change principal risk

There is a risk that we fail to identify and/or deliver upon actions necessary to address the physical and transitional impacts of climate change on our business and demonstrate our leadership of climate change within the energy sector.

1. Climate change adaptation risk

The adaptation risk relates to the physical impact of climate change to our assets across the Group. This adaptation element of the original climate change risk is managed as part of the 'significant disruption of energy' GPR, wider resilience activity and associated internal controls.

2. Climate change mitigation risk

The mitigation risk relates to our Group-wide strategy for climate change including our commitments of achieving net zero, and the role our Group plays in driving the energy transition. This is now managed as a standalone GPR.

We have further developed our risk and opportunity horizon scanning to assess critical trends to the energy transition. With our senior stakeholders and supported by external risk experts, we identified key indicators and metrics which are measured on a monthly basis versus thresholds. These are analysed against our current strategy and business plans for their potential impact and plausibility. Emerging risks are managed under our risk management framework with results reviewed by senior leadership (detailed further on page 29).

Integration of climate change into our overall risk management

Consistent with the Group's overall approach to risk management and internal control, climate change risk management activities take place through all levels of our organisation. Our risk governance model drives an effective 'top-down, bottom-up' approach which allows the Group Executive Committee to define and cascade the GPRs to each business area; and in parallel, all business areas identify and escalate the operational risks that could impact their business model and objectives. The disclosure on page 28 provides further detail.

The Group's Risk Taxonomy supports all levels of the business to categorise any climate change risk into one of our four taxonomy groups: strategic, operational, financial and compliance; sub-categories beneath these four groups allow the business to select a more granular taxonomy grouping with an assigned risk appetite. The individual business unit or Group Function Risk Committees oversee, discuss and challenge new and existing climate change risks using the ERM framework and scoring methodology to ensure each risk has an appropriate inherent, current and target score for likelihood, financial and reputational impact. Where current risk levels are outside of agreed target scores and our risk appetite (based on the taxonomy), the business area implements actions and internal controls to close the gap.

To support accountability for both aspects of climate change risk, each business unit and applicable Group functions are currently in the process of considering, and where necessary, adopting an individual adaptation and mitigation child risk. As WPD is new to the Group, we are still in the process of integrating WPD into our ERM processes and will report back on our progress with respect to WPD's climate change risk management next year.

Our climate-related scenario analysis

Scenario analysis to 2050 and beyond guides our strategic and financial planning with respect to climate change. Our scenarios consider the potential physical impacts to the Group of average global temperature increases of 2°C and 4°C. We also consider potential transitional impacts of scenarios of average global temperature increases of 1.5°C in accordance with the Paris climate agreement.

Transitional scenarios modelled
Physical scenarios modelled

Slow progress

- Decarbonisation progress is made but too slow to meet net zero targets
- Increase in distributed generation and local solutions where local authorities compensate for lack of overall national progress
- System becomes increasingly unequal

Orderly transition

- Reaches most net zero targets through an orderly approach
- Governments pursue suite of solutions for large-scale and consumer options
- Coordinated pathway between key market players e.g. orderly reduction in natural gas
- Increased investment in renewable electric generation and networks
- Gas network evolution to allow H2 clusters and/or clean gas blending

Acceleration

- Reaches 2030 net zero targets to be on track for 2050
- Electrification of heat and transport at fast pace
- Accompanied by large-scale investments (network, storage)
- Increased grid scale and interconnection with smart homes and end-use electrification
- Faster gas demand reduction

Task Force on Climate-related Financial Disclosures continued

The scenarios executed in 2021/22 build on those of previous years and will evolve as we continually monitor emerging trends in technology and wider market developments. We developed the following stretching, plausible alternative futures for our society by using different assumptions across variables, including (but not limited to) technology, policy, consumer behaviour, competition and science. We tested the resilience of our business strategy against these different transition scenarios, whilst focusing our physical risk scenarios on the climate change hazards which present the greatest physical risk to the Group's operations.

Physical modelling

The climate hazards that we tested in our 2 degree and 4 degree scenario analysis are summarised below. The climate hazard data is sourced from the national climate assessments (NCA4 in the US, and UKCP18 in the UK). These assessments include data from the Federal Emergency Management Agency, NOAA Physical Sciences Laboratory, Environmental Protection Agency, Met Office, Environment Agency and academic literature. The scenario data is modelled using IPCC's Representative Concentration Pathway (RCP) scenarios of RCP8.5 (4°C) and RCP4.5 (2°C).

Climate hazard	Definition and Threshold	Potential change by 2070s (4°C scenario)*	Confidence level
Coastal flooding	Frequency of occurrence of coastal flood and future impacts due to sea level rise	Significant increase in frequency	Medium
River flooding	Frequency of occurrence of river flooding due to over 25mm (1 inch) daily rainfall	Significant increase in frequency	Medium
Storms (Compound Events)	Number of days per year when high winds are above 34 m/s (76 mph) and high rainfall above 25mm (1 inch) on the same day. Displayed separately for summer (March – August) and winter (September to February) seasons	Summer – slight increase in frequency Winter – no change in frequency, but potential increase in intensity	Low
High wind	Number of days per year when maximum daily wind gust is above 34 m/s (76 mph)	Decrease or no change in frequency, but increase in intensity	Low
Lightning	Number of lightning events	Increase in frequency	Low
High temperatures	Number of days per year when maximum daily temperature is above 30°C (86°F) in the UK and 95°F (35°C) in the US	Significant increase in frequency	High
Low temperatures	Number of days per year when maximum temperature is below 0°C (32°F) in the UK and 10°F (-12°C) in the US	Decrease in frequency	High
Freeze-thaw cycles	Number of days per year when maximum daily temperature is above 0°C (32°F) and minimum daily temperature is below 0°C (32°F) in the same day	Significant decrease	High
Heatwaves	Number of times per year when maximum daily temperature is above 30°C (90°F) and minimum daily temperatures is above 20°C (70°F) for 3 consecutive days	Significant increase in frequency	High

* The UKCP18 national climate assessment does not include data for the 2°C (RCP4.5) scenario. Therefore, the above highlights the potential changes under a 4 degree scenario for both the UK and the US. The changes outlined will still occur under the 2 degree scenario but there will be more intense and higher frequency of occurrence under 4°C.

Physical insights

In assessing the physical impacts of our scenarios, we grouped our portfolio of assets into 12 asset types to assess vulnerability to these hazards. For our 2 degree scenario, the climate data was not yet available in the UK national climate assessment chosen for this analysis, but based on the US findings under this scenario, we can assume similar impacts in the UK, as outlined below. Note, vulnerability to hazards does not mean that risks will be realised. Whether vulnerability translates into risk depends on the exposure (location) of individual assets relative to projected changes in climate hazards, as well as any site-specific resilience measures in place. Although to a lesser degree, our analysis has identified consistent risks that exist today, e.g. flooding, consistent with our wider risk management we are implementing necessary responses to those risks, e.g. flood defences, to ensure reliable operation of our assets and sufficient resilience today as well as into the future.

Most hazards are projected to increase in frequency in the future, with high temperatures and coastal flooding of particular concern. In most cases the level of risk is greater in a 4°C scenario than a 2°C scenario.

The hazards that we consider are:

- Coastal flooding
- High winds
- High and low temperatures
- Lightning
- River flooding
- Freeze-thaw cycles
- Heatwaves
- High winds and high precipitation

Underground infrastructure is protected from high wind, compound (storm) events and lightning.

Most hazards are projected to increase in frequency in the future, with high temperatures and coastal flooding of particular concern. In most cases, the level of risk is greater in a 4°C scenario than a 2°C scenario.

Risks from high temperature and heatwaves will increase significantly over time for many asset types, particularly overhead lines for transmissions and distribution.

Some gas pipeline infrastructure in the US has a high risk of low temperature and freeze-thaw hazards today.

Storms (compound hazards) are difficult to assess with confidence but they are likely to be more intense, though changes in frequency are unclear. We do know that climate change will lead to increased rainfall, wind speeds, and coastal flooding/storm surges due to sea level rises, so this may make future coastal storms more damaging.

Risks from river and coastal flooding are significant for all asset types now and in future climates. By the 2070s, almost all assets by the coast may be at high risk from coastal flooding. In coastal areas, assets can be exposed to increases in occurrence of coastal flooding and high temperatures in the future. For some asset types, most of the infrastructure is located in coastal areas, such as terminals and converter stations in the UK, and LNG/CNG facilities and generation assets in the US. Generation assets on Long Island are highlighted for the particular risk of coastal flooding.

Our risk assessment shows the risk to our existing asset portfolio only. If the distribution and types of assets change, then the cumulative picture of risk will change too.

The insights from our physical risk scenario modelling show that all scenarios will result in physical impacts to the Group's assets across consistent areas of our operations; however, the impacts are most material in a 4°C scenario.

We are continuing to progress our physical risk analysis to inform our strategic planning and investment choices. Over the next year, we aim to implement a higher resolution assessment of key risks identified, particularly where risk is extremely localised, e.g. flood-related risk and coastal areas which are exposed to multiple hazards. We will consider the interdependencies between hazards to better understand the resiliency of asset criticality and prioritisation of actions to reduce risks. We also aim to add socio-economic data into the model, to understand where communities at greater socio-economic risk, like environmental justice communities, and at-risk assets are coupled. The next version of our risk assessment will also incorporate National Grid Renewables and WPD. For further detail on our assessment of the physical impacts of our scenario modelling, please refer to the Climate Change Risk Tool case study below.

Case study: Climate Change Risk Tool

We have developed an innovative Climate Change Risk Tool (CCRT) which allows each business to make more tailored use of the scenario analysis. The CCRT is available to all, so offers a simple way for employees such as asset owners, strategy managers and senior leaders to access the information they need for their particular interest area and at the right level of detail.

The CCRT gives a UK and US geographical overview of climate change risk and allows users to filter information focused to their business area, specific asset types and to a grid square level of 12km in the UK and 7km in the US.

The hazards that we consider are:

The CCRT shows the changing climate change risk profile for 2030, 2040, 2050 and 2070. An example of the results from the CCRT showing the changing risk profile of high temperatures on our UK Electricity Transmission assets under a 4 degree climate scenario is shown on the right. The CCRT shows that as we progress out to 2070, there will be an increased frequency of high temperature as a hazard in the UK, i.e. the number of days per year when the maximum daily temperature is above 30°C (shown on the-left hand graph and map). We can then see on the right-hand graph and map the level of risk this translates for our ET assets across the network and over time.

Task Force on Climate-related Financial Disclosures continued

Transition scenarios modelling

Our transition scenarios are developed using driving forces which we monitor regularly as part of our risk management process and annually in our strategic horizon scan. In our analysis, we do not make a judgement on the likelihood of any one scenario relative to others; and by design, the analysed scenarios do not encompass all possible future pathways and their associated risks. There are limitations within the scope of our modelling, e.g. available data across other sectors, but to minimise this impact we have utilised a wide range of resources and compared our results with external scenarios.

Transition insights

Whilst current global climate policies and actions suggest a lower than 4°C scenario, a 4°C scenario was still modelled in line with our approach to scenario modelling outlined above. The transition impact to the Group is most significant in scenarios resulting in a lower degree of warming given the increased action required. The following five transition insights are therefore most relevant to a 2°C (or lower) scenario. However each still applies, albeit to a lesser extent, to a 4°C scenario as well.

Insight and factors

1

Urgent collective action required across society
To reach net zero requires new policies and technology development. Action is required by a wide range of stakeholders in the industry as a result of the public expectations on climate change; there is a push for new policies, action and government and State targets in the regions we operate.

2

Retaining consumer buy-in will be key
To reach net zero, consumers can drive domestic heating and transport decarbonisation by switching to low-carbon alternatives such as EVs and heat pumps.

EVs are expected to represent 90% of the fleet by 2050 with 30% of households electrified.

3

Electricity use and share of final demand will increase
Grids are expected to grow to deliver an increase of 50 – 160% of current demand by 2050 as fuel switching reduces final energy demand with both heating and transport sectors decarbonising.

4

Energy supply structure will shift
There will be a shift to renewables power, notable offshore wind and solar. Offshore wind is expected to triple in output from 2030 to 2050.

5

Pathways will adapt to global and local realities
The US Northeast region is expected to import hydrogen to support decarbonisation, but in the UK Blue hydrogen and CCUS may develop due to policy and geology.

None of the transition scenarios tested threaten the viability of the Group and we are in a strong position to adapt our portfolio to maximise the opportunities of the energy transition. Further detail on the transition risks and opportunities identified in our scenario analysis, including estimated qualitative and quantitative impacts where applicable, can be found on pages 79 – 82.

How we manage our climate-related risks

As part of our ERM process, risk owners and other key stakeholders establish internal controls to manage the risk within appetite. Regular risk reviews consider the effectiveness of individual controls as well as the collective strength of the internal control framework which determines the financial and reputational impact, and likelihood of the risk to materialise. Where current risk levels are outside of agreed target scores and our risk appetite, remedial or continuous improvement plans will be agreed to mitigate the current risk score.

The controls for our new climate change principal risk (mitigation) have evolved in line with our strategy and regulatory frameworks. They include controls on strategic oversight and governance (for example, Board and Group Executive Committee sign-off on strategy and oversight of delivery against net zero action plans), business unit roadmap and operational plans to deliver net zero targets (that are aligned to Group's strategy) and investment plans (providing leadership to structural changes, e.g. bringing to scale new technologies). Controls related to the climate change risk are also reflected throughout other relevant risks, for example regulatory outcomes; political and societal expectations; and significant disruption of energy.

The significant disruption of energy risk and controls demonstrates how we are adapting as an organisation to manage the impact of climate change to our assets. Our key climate adaptation controls include the following:

- Fit for Future of Electricity Strategy: a corporate strategy that considers the future electricity business, including our network resilience and changing environment, and the steps to ensure our business remains resilient in the future, such as enhanced design standards, and investments on asset hardening and flood protection.
- Engineers Governance forums: Chief Engineers and Engineering Duty Holders meet to provide guidance and data-sharing on key topics such as resilience.
- Resilience and Asset Management Business Management Standards (BMS): sets out minimum requirements and framework for resilience capability and managing asset risk to ensure each business unit is prepared for the next disruptive event, including the changing environment.
- Organisational Resilience Competency Framework: to guide, measure and where applicable, heighten our resilience response across the Group under different climate change scenarios.
- Business Continuity and Crisis Management: ongoing development of a new business continuity software application to ensure a consistent view across the Group, and internal crisis management tool to respond more effectively to incidents, drive consistency, and identify and track actions.

The quality of assurance over key controls has been enhanced following roll-out of a new control testing methodology, that integrates the first line and second lines of defence.

Key controls related to Group and business areas GPRs are self-assessed by first line teams (control owners and/or performers), and tested by second line teams, who review the design and operating effectiveness; all captured in our GRC system. Any ineffective controls are identified and remediated. Risk owners across the Group have the ability to view assurance of their controls in real time, using newly developed PowerBI dashboards.

As outlined above, with regard to our greenhouse gas emissions, where specific actions are identified to achieve our strategy, drive desired behaviours and manage our risks, we set SMART targets for those accountable. Performance against those targets is published transparently, principally through the RBR and the results contribute to the assessment of remuneration for those accountable. For the most material performance measures, an external assurance opinion is received over the accuracy of preparation; a copy of this opinion can be found on our website.

Our significant climate-related risks and opportunities and our strategic response

Guided by our scenario modelling, strategic planning and risk management approaches articulated above, the climate-related risks and opportunities that pose a potentially significant financial or reputational impact are detailed below, along with our basis of measuring the risk/opportunity and our strategic response to each risk/opportunity that underpins our resilience assessments. To assess the relative materiality, we established scope of impact, timeframe and likelihood for each risk and opportunity using internal analysis, market data and input from subject matter experts across our business. Refer to the subsequent section for further information on measurement indicators, including our performance against them. We assessed which businesses would be impacted against whether there was a risk that could materially affect our ability to meet business objectives and/or, is of material importance to stakeholders. The timeframes we have used to assess the climate-related risks and opportunities are short: up to 2025, medium: from 2025 to 2030 and long-term: from 2030 to 2050. Our 'likelihood' assessment is an indicative estimate of the probability for material financial impacts with reference to the following categorisation:

- **Low:** Very unlikely to unlikely
- **Moderate:** About as likely as not to occur
- **High:** Likely to very likely to occur

Risk/opportunity	Potential impact	Our response
1. Transition Risk & Opportunity Retaining customer buy-in will be key: cost transparency and scrutiny on Network Operators is likely to increase as there will be a focus on the impact of transition costs on customers' bills. Whilst National Grid can support the progression towards an affordable transition, there is a risk that customers and/or regulators may perceive that too little is being done to manage pressures on affordability, resulting in damaged reputation and damaged regulatory relationships. **Business:** Group-wide **Timeframe:** Short, medium and long term **Likelihood:** Moderate **Measurement indicators:** % of NG transmission/distribution costs on customer bills, customer trust survey, feedback through the fair transition plan.	The reputation of our business has wide implications to our operations; affecting our regulatory negotiations and the resulting regulatory returns and incentives of the frameworks within which we operate. Our reputation can affect our cost of doing business, from customer feedback, employee retention, productivity, supplier relationships, and ultimately our share price. All have impacts that can move in either way, depending on our perceived success in enabling the fair and affordable energy transition. Due to the nature of the risk/opportunity, and the degree of external variables affecting the matter, it is difficult to meaningfully quantify the risk. However, if not managed effectively, it could undermine the corporate strategy and materially impact our financial performance.	Being at the 'heart of a clean and fair transition' is our purpose and our regulatory strategy team has a strong focus on affordability for consumers, working with regulators to minimise impacts to customer bills and to introduce affordability mechanisms. We will also advocate for anticipatory investment to minimise the costs to consumers and will use our CCRT to inform our investment decisions to ensure the resilience of our assets. An example of our focus on affordability for customers is our recently launched Expanded Solar-For-All programme in the US, where nearly 160,000 National Grid upstate New York electricity customers will benefit from new solar-energy bill credit, thanks to a joint offering from National Grid and the New York State Energy Research and Development Authority (NYSERDA). The Expanded Solar-For-All programme, approved by state regulators in January 2022, will automatically provide monthly credits to income-eligible customers enrolled in National Grid's Energy Affordability Programme. The programme is designed to deliver the benefits of community solar to low-income customers, who are often shut out of renewable energy sources due to cost. Community solar is a large array of solar panels at an offsite location that allows customers to access solar power without installing panels on their homes. Developers build and operate the community solar projects, and energy delivery companies like National Grid purchase and distribute the credits generated by the projects to participating customers. The bill credits would grow over three years as the programme expands, with customers receiving monthly discounts. In Expanded Solar-For-All's first phase, National Grid anticipates providing $240 million in total bill credits during the 25-year lifetime of the programme. A proposed second phase would further expand the programme, doubling the total anticipated bill credits to $480 million over the programme's lifetime. The second phase will be contingent on approval by state regulators. The Expanded Solar-For-All programme brings to life two pillars of Project C, National Grid's commitment to the communities where we work and live: clean energy and sustainability, and environmental justice and social equity.

Task Force on Climate-related Financial Disclosures continued

Risk/opportunity	Potential impact	Our response
2. Transition Risk & Opportunity Urgent collective action is required: with its central role as the backbone of the energy sector, National Grid can play a crucial role in the transition. As a result, public focus will increase on our Company, increasing reputational risk. **Business:** Group-wide **Timeframe:** Short, medium and long term **Likelihood:** Moderate **Measurement indicators:** GHG emissions, Climate Transition Plan, customer feedback	The reputation of our business has wide implications to our operations; affecting our regulatory negotiations and the resulting regulatory returns and incentives of the frameworks within which we operate. Our reputation can affect our cost of doing business, from employee retention, productivity, supplier relationships, customer feedback, cost of/access to finance and ultimately our share price. All have impacts that can move in either way, depending on our perceived success in enabling the energy transition. Due to the nature of the risk/opportunity, and the degree of external variables affecting the matter, it is difficult to meaningfully quantify the risk. However, if not managed effectively, the matter could undermine our corporate strategy and materially impact our financial performance.	To date, we have endeavoured to take account of this by being at the heart of a fair, clean and affordable future, working with governments, policy makers and regulators to shape net zero strategy. Accordingly, we have positioned ourselves as 'The Energy Transition Company' acting as a principal sponsor of COP26, and our ESO business has set an ambition to operate a zero-carbon system by 2025, with the goal to run 100% carbon free energy 24/7/365 by 2035. We will continue to focus on enabling the transition, including working in partnership with our regulators and other stakeholders to develop investment plans in line with the net zero commitments of their jurisdictions, whilst managing the costs to consumers. We have developed roadmaps and track progress against key milestones for each of our business units which include the actions, conditions and assumptions that will support the delivery of our emissions reduction targets. These plans are consolidated into a group roadmap which is presented in our Climate Transition Plan, which we've published alongside this year's Responsible Business Report.
3. Transition Opportunity Electricity use and share of final demand will increase: with the transition pivoting energy needs from fossil fuels to cleaner gas and electricity, the Group will deliver a larger share of society's needs in the future. This will increase investment opportunities as growth is across transmission and distribution electricity networks. **Business:** ET, ED, NY, NE, NGV, ESO **Timeframe:** Short, medium and long term **Likelihood:** High **Measurement indicators:** EU Taxonomy KPIs, green capex forecasts, GHG emissions	Sensitivities have been run versus our business plan to investigate the impact of the scenarios and we will continue to monitor triggers to capital expenditure. We estimate that the Orderly Transition or Acceleration scenario would result in an increase over the Slow Progress scenario of between 0.5% to 1.0% in underlying operating profit CAGR over the period to 31 March 2031. Capital expenditure increases may include expanding electricity networks, natural gas leak reductions and investment and expansion of renewable generation operations, but these are expected to be within our regulatory regime. Beyond 2030, and in line with our scenario modelling, the trends towards greater electrification, driven by expanded renewables generation and investment into decarbonising our gas networks is expected to continue and may accelerate.	Our acquisition of WPD positions National Grid for this increase in electricity use across transmission and distribution. We are also continuing to invest in both onshore renewables via National Grid Renewables and in our interconnector portfolio, which will form an important part of UK decarbonisation. Across our businesses, we are also heavily investing in the infrastructure required to support the decarbonisation of transport and during 2021 in the US we delivered 1,684 EV charging ports in our jurisdictions, a company record for a calendar year. We are also carrying out critical studies and pilots exploring how to decarbonise our gas networks, for example the HyGrid project described in Transition Risk 6 and the FutureGrid project, which is testing the possibility of converting the NTS in the UK to transport hydrogen. In the UK, we are continuing to work with the Department for Transport and the Office of Zero Emissions Vehicles to ensure that the underlying network infrastructure is in place, ahead of need, to support the successful delivery of Project Rapid. We welcomed the Transport Decarbonisation Plans commitment to publish an Electric Vehicle Charging Infrastructure Strategy and establish a Delivery Body to progress the grid upgrades required to meet future ambitions. We also continue to engage with key stakeholders from across all modes of transport through our 'ask, not tell' engagement principles to understand the main barriers and potential future demand and infrastructure requirements for each sector.

Risk/opportunity	Potential impact	Our response
4. Transition Risk Electricity use and share of final demand will increase, alongside increasing volumes of intermittent renewable energy. System resilience will be key to ensure security of supply. **Business:** ET, ED, ESO **Timeframe:** Short, medium and long term **Likelihood:** Moderate **Measurement indicators:** Network reliability	Our role as the ESO is pivotal to delivering the energy transition. If the system operator is not prepared with the systems and processes to operate a decarbonised energy supply system, there will be significant costs from increased market inefficiency and the potential for network outages impacting our customers. In the shorter term, failures could affect us through lost regulatory incentive income, which link directly to reliability. See our Segmental analysis and Revenue notes on pages 156 and 158 for further detail on the size of our ESO business.	Our ESO business is investing to ensure it is 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. This year, the ESO agreed to 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. We are also supporting the accelerated development of electricity grids worldwide. At COP26 we joined the UK and Indian governments to launch the Green Grids Initiative, One Sun One World One Grid (GGI-OSOWOG), aiming to accelerate global expansion and modernisation of energy grids. This is an ambitious plan backed by over 80 countries and looks to harness the full potential of renewable resources globally, through much greater interconnection of electricity grids, so electricity can be moved from where it's generated to where it's needed. The GGI will help make this happen by bringing together a global coalition of stakeholders, including governments and businesses, to speed up the expansion of energy grids across regions and continents. We are playing a leading role in this as a member of the GGI.
5. Transition Opportunity Energy supply structure will shift: Growth in investment will occur in our markets as well as in adjacent markets, providing opportunity for our NGV and NGP businesses. As pathways adapt to global and local realities, technologies and market expectations will develop new commercial opportunities from the transition towards net zero that will continue to present opportunities to shape our portfolio and strategy. **Business:** NGV, NGP **Timeframe:** Short and medium term **Likelihood:** Moderate **Measurement indicators:** NGP value creation, NGV capital investment, EU Taxonomy KPIs, cumulative investments into large-scale renewables, investment in R&D	With effective investment and proactive market engagement, there will be opportunities to grow new and existing revenue streams and to generate sustained green capital investment. We also anticipate the opportunity for investment in large-scale renewables to expand as the energy transition accelerates, with further innovation to create opportunities of additional revenue streams in the future. Our capital investment forecast to 2026 contains c.£1.6bn relating to renewables.	Our NGV and NGP businesses actively monitor and participate in emerging growth opportunities and will continue to do so in the future. During the year, National Grid Renewables invested £199 million into renewable generation assets via the Emerald joint venture. Further to this, NG Renewables invested £223 million in the offshore wind seabed lease awarded in the New York Bight. During the year, NGP, our venture capital business that invests in energy technology startups, made 13 new investments bringing the total portfolio value to $491 million across 38 investments. Example investments include: TS Conductor, a California-based company whose technology replaces legacy materials in high-voltage electricity transmission lines with a next-generation conductor that doubles the lines' capacity without the need to retrofit towers or other infrastructure; and Risilience, a UK-based startup that helps companies manage their transformation to net zero emissions. We also continue to invest in our interconnector portfolio and, once Viking Link becomes commercially operational in 2023/24, NGV will hold 7.8 GW of interconnector capacity and the focus will switch to multi-purpose interconnectors, which will increase interconnection and facilitate the construction and expansion of wind farms in the North Sea.

Task Force on Climate-related Financial Disclosures continued

Risk/opportunity	Potential impact	Our response
6. Transition Risk Pathways will adapt to global and local realities: there are multiple net zero pathways for heating which have different impacts for our US gas activities. Whilst all pathways expect a reduction of the usage of fossil gas in the long term, there are opportunities for the development of fossil-free alternative fuels. The different pathways result in a risk that our natural gas infrastructure will not be useful as long as is currently assumed in our financial planning and accounting. **Business:** NY, NE **Timeframe:** Long term **Likelihood:** Moderate **Measurement indicators:** Gas UEL sensitivities, GHG emissions, Climate Transition Plan	We have performed sensitivity analysis to assess the impact shortening the useful economic lives of our gas business assets would have upon the Group's financial results, which may result in an increase in depreciation expenses of up to £180 million to 2050 for US regulated assets. This sensitivity calculation excludes any assumptions regarding the residual value for our asset base and the effect shortening asset depreciation lives would be expected to have on our regulatory recovery mechanisms. For further information, see page 181.	We are pursuing zero fossil fuel gas and electric systems by 2050, if not sooner, in the US. The vision proposes a hybrid approach to heating that enables customers to have more affordable and practical choices to become fossil-free. More details can be found in our Vision Report https://www.nationalgrid.com/us/fossilfree. We will continue to engage in key regulatory proceedings and processes in New York and Massachusetts to maximise recovery on our gas business assets. These include the ongoing DPU 20-80 'Future of Gas' proceeding in Massachusetts and a KEDNY/KEDLI depreciation study that will be submitted to the New York PSC in advance of our rate case filing in 2023.
7. Physical risk Our assets are at risk of physical impacts from extreme weather events such as storms and flooding. There will also be increased frequency of weather incidents and changing long-term climate trends leading to asset damage and operational risks. **Business:** Group-wide **Timeframe:** Short, medium and long term **Likelihood:** High **Measurement indicators:** Network reliability, major storm costs, climate change risk tool outputs	We experience significant costs as a result of asset damage and operational interruptions due to major storms (2021/22: £163 million 2020/21: £150 million). We therefore continue to invest in storm hardening across the Group, with a further £36 million invested in the year. We are in the process of expanding our scenario modelling to forecast the likely financial implications of a 2 and 4 degree scenario over the long term. We expect to report these results in our 2022/23 reporting.	An example of our work in this area is the $741 million of investment our New York business has committed to in the five year capital investment forecast to FY26. This investment covers a range of storm hardening measures, upgrades and repairs to our infrastructure to make it less susceptible to storm damage. These include inspection and maintenance, minor storm hardening, vegetation management, flood mitigation, side tap fusing, and multi-value transmission reliability. In the UK, our ESO business has undertaken Mapping Impacts and Visualisation of Risks (MIVOR) of extreme weather on system operation to evaluate the impacts of extreme weather events on system operation up to 2050 under RCP 4.5. The results will enhance the accuracy of energy system impact modelling and will also focus on the impacts of the whole supply chain, renewable generation, network assets, and demand, ensuring that the learnings produced are relevant to the whole energy system.

Climate change metrics and targets

We have metrics and targets that allow us to measure our impact on the environment, demonstrate our commitment and monitor our performance. These were published in October 2020 within our RBC and, on an annual basis, we report our progress against those targets in our RBR and our key metrics in respect of our GHG emissions can be found on page 26. We have a commitment to reduce 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, from a 1990 baseline. Alongside this, we have a Scope 3 emissions reduction target of a 37.5% reduction by FY 2034 from an FY 2019 baseline year. This target includes all of our Scope 3 emissions. Our GHG emissions reduction targets are science-based and approved by the SBTi.

Numerous underlying metrics support and complement this goal as part of our broader sustainability ambition, including reducing our energy consumption, enhancing the natural value of our landholdings, recycling and/or reusing our recovered assets and reducing our office waste. These are discussed in more detail on page 67 and in our RBR. The metrics comprise several business unit level metrics that are then tracked and monitored by business unit, and presented to senior management on a quarterly basis, with accountability at the local level.

With reference to the principles of the EU Taxonomy, we have disclosed the proportion of our IFRS revenue, operating expenditures and capital expenditures that align with the climate change mitigation and adaptation objectives of the EU's taxonomy. Given the climate change mitigation objective's alignment to the principles of the Paris Agreement, the disclosures provide a transparent view of the Group's compatibility with the net zero goals of the economies we serve during the year ended 31 March 2022. Our assessment is presented within our RBR; please see page 53 of our RBR for the complete disclosure.

We continually review our metrics and targets 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 June 2022, we published our Climate Transition Plan alongside our RBR. Note, whilst we do not consider water use as a significant climate-related financial risk for the Group, performance metrics are contained in the RBR.

Further, we are closely monitoring developments regarding the UK's greening finance initiative, the formation of the ISSB and the proposals to deliver a comprehensive global baseline of sustainability-related disclosure standards. Whilst we currently leverage the GRI, SASB, EU Taxonomy, EEI and TCFD frameworks in our RBR to maximise the usefulness of our reporting, we are encouraged to see advancement to further align sustainability reporting disclosures. Please also refer to the RBR for the limited scope assurance opinion received over our most material sustainability metrics.

A complete index of the quantitative measurement indicators used to manage each climate-related financial risk and opportunity is below:

Measurement indicator	Risk/Opportunity	2021/22	2020/21
Scope 1, 2 and 3 emissions and intensity[1]	1, 3, 6	See page 26	
Consumer Trust Survey (US)[1]	1, 2	62.4%	66.2%
NG UK's transmission costs' contribution to consumer bills[1]	2	£29.04	£29.52
NG UK's distribution costs' contribution to consumer bills[1]	2	£98.85	£95.81
US Electric: Average Customer Bill (Low Income Customers Excluded)[1]	2	$1,613.35	$1,563.14
US Gas: Average Customer Bill (Low Income Customers Excluded)[1]	2	$1,314.24	$1,156.45
US Electric: Average Low Income (only) Customer Bill[1]	2	$1,107.07	$1,026.82
US Gas: Average Low Income (only) Customer Bill[1]	2	$904.72	$771.56
Green Capex five-year forecast (2021/22-2025/26)	3	c.£24bn	n/a (1st year of reporting)
Network reliability[1]	4, 7	See page 26	
NGP value creation	5	See page 55	
Cumulative investments into large-scale renewables	5	See page 81	
NGV capital investment	5	See page 25	
Investment in R&D	5	See page 162	
Gas UEL sensitivities	6	See page 181	
Major storm costs	7	See page 39	

1. Refer to RBR reporting methodology for calculation methodology: https://www.nationalgrid.com/responsibility/responsible-business-report