Centrica - Climate Change 2020

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

About us - Centrica is a leading international energy services and solutions company focused on satisfying the changing needs of our customers and enabling the transition to a lower carbon world. We supply over 26m customer accounts mainly in the UK, Ireland and North America, through strong brands such as British Gas, Direct Energy and Bord Gáis Energy, supported by around 9,000 engineers and technicians. Our areas of focus for growth are Energy Supply, In-Home Servicing, Home Solutions and Energy Optimisation alongside Business Services and Solutions.

Following our strategic review in 2015, we've re-positioned our business away from power generation and oil and gas production, towards services and solutions that help our customers run their world more sustainably. The majority of our power generation assets have been divested or decommissioned, gas storage has ceased at Rough and having placed our Exploration & Production assets into a joint venture, we have since announced in 2019 our intention to exit oil and gas exploration and production altogether. Consequently, we focus our CDP response and will be scored under the Electric Utilities module.

Our impact on climate change - Our direct carbon emissions under scope 1 include those from sources we own or control such as power generation, gas production and storage as well as emissions arising from our property, fleet and travel. Indirect carbon emissions under scope 2 arise from electricity purchased and consumed across our offices and assets. Scope 3 emissions are those we do not produce but are the result of products and services we provide, such as electricity and gas sold to customers from wholesale markets alongside products and services purchased to run our business.

Why reducing our impact on climate change is important to us - Climate change is one of the greatest global challenges facing society. The implications are far-reaching and the energy sector is at the forefront of the need to respond. We believe that decarbonisation is increasingly being driven by decentralisation, digitisation and increased customer control. This changing energy landscape, coupled with our capabilities as a leading energy services and solutions company focused on a world moving to a lower carbon future, enables us to play a key role in shaping the energy transition while supporting national and international carbon reduction targets.

Ambitions to tackle climate change – In 2019, we introduced our 2030 Responsible Business Ambitions which set out 15 global goals to contribute to a more sustainable world. Supporting the United Nation's Sustainable Development Goals and aiming to address some of the most challenging issues facing society, our Ambitions help tackle climate change, build a more skilled and inclusive workforce, innovate to make our customers' lives easier and make our communities stronger. We are reducing our impact on climate change by focusing on three key areas:
1. **Helping our customers reduce emissions in line with Paris goals** – With over 90% of our carbon emissions arising from customer consumption, the greatest contribution we can make in tackling climate change is to help our customers reduce emissions by 25% by 2030. We will directly target a 3% reduction through our services and solutions, while indirectly reducing emissions by enabling a cleaner energy system and influencing energy policy. In 2019, we made strong progress in this area, enabling customers to reduce their emissions by 3.9% which is equivalent to the annual emissions of around 900,000 homes.
2. **Enabling a decarbonised energy system** – By 2030, we want to have delivered 7GW of flexible, distributed and low carbon technologies which is equivalent to over 10% of current UK peak demand, while providing system access and optimisation services. This will be achieved through activities such as installing and managing technologies like battery storage, solar, Combined Heat and Power (CHP), demand-side response, peaking plants. Our performance in 2019 was on track, having delivered 2.7GW of capacity. We also provide a route-to-market for over 11GW of renewable energy assets.
3. **Reducing our own emissions in line with Paris goals -** Having moved from an asset-based business to a customer-focused company, we emit 80% less carbon than we did a decade ago. We are now focused on completing our transformation and driving efficiency within our business through technology, innovation and cultural change to be net zero by 2050. Towards this in 2019, we reduced our internal carbon footprint by 39% against our 35% reduction target for 2015-25.

We also understand the wider role we can play in mitigating climate change in supply chains and across our communities. For example, we work collaboratively with partners to raise and maintain high environmental standards in our supply chain and engage communities via dedicated projects and campaigns to help them use energy more sustainably.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2019	December 31 2019	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Belgium
Canada
Denmark
France
Germany
Hungary
India
Ireland
Israel
Italy
Mexico
Netherlands
Norway
Portugal
Singapore
Ukraine
United Kingdom of Great Britain and Northern Ireland
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

GBP

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Equity share

C-EU0.7

(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.

Row 1

Electric utilities value chain

Electricity generation

Other divisions

Smart grids / demand response
Battery storage
Micro grids
Gas extraction and production

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	Centrica's Group Chief Executive has overall responsibility for the business' climate related issues, as they are responsible for setting Group objectives and strategy to be approved by the Board, including those related to climate change. Specifically, the CEO personally sponsored the development of our 2030 Climate Change Ambitions, requesting their formulation and actively participating in their development to ensure full alignment with company strategy. Through their membership of the Board and attendance at the Board Safety, Health, Environment, Security and Ethics Committee (SHESEC), the CEO ensures that issues associated with climate change are represented consistently at the highest level. Following a detailed annual report on climate-related strategy, risks, opportunities, and overall progress against our climate change ambitions 2030, the SHESEC review performance against, and continued suitably of, the climate goals and targets. Our CEO also chairs the HSE (Health, Safety & Environment) sub-committee, which meets 4 times annually and which has delegated authority to set objectives, targets and policies for managing issues related to climate change including the design and performance against our climate change target and ambitions. Additionally, they chair the GERACCC (Group Ethics, Risk, Assurance, Control and Compliance Committee) which reports the Group Risk Profile to the joint Board Audit/SHESEC Committee to ensure Board challenge and oversight.
Director on board	The Chairman of the Board Safety, Health, Environment, Security and Ethics Committee (SHESEC) additionally has oversight for climate-related issues through their role as committee chair. The Chairman of the SHESEC is an independent Non-Executive Director and is therefore well-placed to oversee the adequacy and effectiveness of internal controls and risk management systems relating to climate change, through their leadership of the committee which scrutinises these matters. They provide board oversight and challenge on the Group Principal risks, which are reported to the SHESECC after review by the GERACC. Additionally, they receive and review an annual detailed update on climate-related strategy, risks, opportunities and overall progress against our climate change ambitions. One action taken by the chairman in 2019 was a specific request for a review of impairment risk to group assets, quantifying likelihood and impact, in a 1.5 degrees scenario.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding business plans Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	Centrica has a governance structure which follows best practice, through which the Board has group-wide oversight of climate related issues. The Board Safety, Health, Environment, Security and Ethics Committee (SHESEC), meets 4 times annually to review the effectiveness of internal controls and risk management including those relating to climate change. Progress in meeting our 2030 Climate Change Ambitions is reviewed quarterly, by SHESEC, using a dashboard of key performance indicators (KPI) relating to our near and long-term climate change targets and ambitions. The SHESEC Chairman provides a report to the Main Board following each meeting; the Board considers climate performance as necessary following each meeting, and climate strategy annually in line with the frequency at which this is discussed by SHESEC. The Board reviews the recommendations and reports provided by the SHESEC, and other Board committees, Climate Change is identified as a component risk, within the Group Enterprise Risk Management process feeding into these board meetings. Climate risks are considered, along with all business unit risks as part of the business Risk Assurance and Control Committees (RACC) four times annually to evaluate and challenge material risks, risk appetite and the adequacy of mitigating controls and assurance. The most significant and material risks which determine the Group Principal risks are then reported to the GERACCC (Group Ethics, Risk, Assurance, Control and Compliance Committee), chaired by the Group Chief Executive before submission to the joint Board Audit/SHESEC Committee to ensure Board challenge and oversight. A more detailed report is delivered to SHESEC annually by the Group Head of Environment and then reviewed by the committee providing an update on climate-related strategy, risks, opportunities and overall progress against our climate change ambitions 2030. Performance against, and continued suitably of, climate goals and targets are also reviewed. The Board & Executive have dedicated annual meetings to review and develop strategy. At the annual Board Planning Conference, the external environment and strategic plans are examined, including longer term risks relating to market, competition, technology, and policy aspects, all of which are influenced by climate change In addition to the enterprise risk management process, long-term climate risks are monitored, identified and assessed annually as emerging risks via our Board strategic planning process. At the annual Board Planning Conference the following year's Group Annual Plan is finalised and approved by the Board. Within this board meeting climate related externalities and trends, as well as the associated risks and opportunities, are considered.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (Safety, Health, Environment, Security and Ethics Committee)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (Health, Safety, Environment & Security Sub-Committee)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The Health, Safety and Environment (HSE) Committee is a sub-committee of the Centrica Executive Committee (CEC) and is chaired by the Group Chief Executive. The HSE Committee has authority delegated by the CEC to set objectives, targets and policies for managing issues related to climate change. The HSE Committee meets four times a year and at each meeting will: review and set as appropriate HSE policies, standards and governance arrangements, promote HSE performance and monitor and report on the effectiveness and operation of HSE management systems and controls, including risk and opportunity management. A report is then written, submitted to the board and presented by an appropriate member of the HSE committee.

Climate change forms part of the remit of the Environment function within the HSE department and therefore will be considered in an integrated manner through the review of these elements of HSE performance. The organisations performance on climate change is reported at each meeting including a review of progress against all climate KPI and targets including our 2030 Climate Change Ambitions. Additionally, an environmental deep-dive is undertaken with the Committee annually where greater detail is provided and reviewed and any proposals for approval or emerging issues are typically discussed.

The HSE committee membership comprises of the Group Chief Executive, Chief Executive Centrica Consumer, Chief Executive Centrica Business, Director Technology & Engineering, Group General Counsel & Company Secretary, and Group HSE Director. The Managing Director of Centrica Storage Limited, HSE Directors for the business units and relevant Group HSE functional heads will also attend as appropriate, including the Group Head of Environment. As climate-related issues have an impact across the business and all its geographies, and require relevant expertise, this committee was chosen to be responsible for climate related issues, due to its comprehensive business representation and appropriate climate expertise.

As the committee which sets the overall direction, tone from the top and performance expectations for HSE in Centrica, it is responsible for the management of issues related to climate change. As Chairman of the HSE Committee, the Group Chief Executive is ultimately accountable for ensuring that the committee is effective in discharging these duties. Chairing this committee enables the CEO to assess and monitor climate related issues in detail with relevant technical and business support as required. For example, in 2019 this committee approved changes to group climate change KPIs, in line with changes to the group asset portfolio, which had been outperformed.

Furthermore, the Executive Committee complete ad-hoc strategic reviews, looking at key topics which present opportunities or threats. Recent examples include the future of mobility which identified the growth potential of electric vehicles and led to the establishment on Centrica Mobility Ventures. Decarbonisation policy and decarbonisation of heat in the UK have also been assessed and led to the formation of a cross-business low-carbon heat working group to shape Centrica's response to this risk and opportunity.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Environment/Sustainability manager	Monetary reward	Emissions reduction target	Delivery of selected Centrica and Business Unit specific environment plans is incentivised and may include reductions in carbon emissions.
Other, please specify (UK Home Industry Development team)	Monetary reward	Efficiency project	Incentives are provided to ensure we meet our Energy Company Obligation (ECO) targets for improving domestic energy efficiency, and to ensure we do so in the most cost-effective way possible. The efficient delivery of ECO is built into the objectives for the delivery team. Success in this area, coupled with business performance, help determine the annual performance bonus for relevant employees.
Other, please specify (Power Generation operation teams)	Monetary reward	Efficiency target	Power generation incentive targets are a combination of business profit and individual performance measures. Individual performance targets are determined by employee role and may include combined-cycle gas turbine (CCGT) efficiency and compliance with the EU Emissions Trading System (EU ETS).
Facilities manager	Monetary reward	Emissions reduction target	Facility Managers are incentivised specifically for environmental targets on energy and waste.
Other, please specify (Nominated suppliers or employees)	Non-monetary reward	Supply chain engagement	EmEmployees in Centrica can nominate colleagues who have supported the responsible procurement agenda. This can be related to supporting ethical site inspections and/or contributed to closing a corrective action plan, addressing non-compliance from labour to environmental sustainability. It can also be due to supporting the supplier in completing a sustainability assessment. Recognition is given through the 'Centrica Recognition' Platform, which is visible to all employees (globally) and celebrates employees who demonstrate the Centrica Values, and/or act in support of the Responsible Business Ambitions, including our climate targets. Additionally, we have created a recognition for suppliers based on their responsible procurement credentials and the continuous improvement to the energy efficiency of the products they produce. For example, gas boiler suppliers are incentivised to continue improving the efficiency of their product to achieve recognition in their industry and maintain key supplier status with Centrica. This level of recognition is sponsored by our Chief Procurement Officer (CPO). A lack of improvement in this area, and particularly if a supplier does not complete the relevant scorecard detailing their actions, results in an escalation with the potential consequence that we cease trading with a supplier.
Other C-Suite Officer	Monetary reward	Energy reduction project	In 2019, Centrica's Consumer CEO (who oversees energy supply and services for Centrica's c.25 million domestic customer accounts, as well as Whitegate power station in Ireland.) had the delivery of an agreed Responsible Business Ambitions Plan for Centrica's Consumer division included in their objectives. A critical component of this plan is the Climate Change ambitions which include emissions reduction targets, with 2022 and 2030 milestones, for both Centrica's internal carbon footprint and our customers' carbon emissions. Their performance against this objective, including delivery of the climate change ambitions, will form part of the evidence submitted to the Remuneration Committee for consideration in determining Annual Incentive Plan awards. It will also form part of the standard performance conversations that they have with their manager (Group CEO).

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	We consider short-term risks & opportunities (R&O) to be those with the potential to be realised in the immediate term, i.e. 1-year time period. Such R&O would be considered through the monthly Business Unit performance reviews, where delivery of the Group Operating Plan is monitored. This Operating plan considers within year performance and 12 to 18-month outlook. Climate R&O over this timescale would be included in the Business unit reporting to the Group Enterprise Risk process.
Medium-term	1	3	Our Group-wide Enterprise Risk process looks over a period of up to 3 years and will include relevant climate risks as part of our assessment of principal risks that have the potential to impact our strategy. Climate R&O over this timescale are integrated into the group enterprise risk management process.
Long-term	3	20	Longer term external trends are monitored and reviewed annually as emerging risks in our Enterprise Risk process. Longer term trends and risks are also reviewed through our strategic planning processes, including our annual Board Planning Conference. Additionally, the Board explored climate-related risk and opportunity as part of our 2015 strategic review, which included market trend analysis out to 2035, including future changes in oil and gas markets and changing trends in demand and consumer behaviour, influenced by macro-trends such as decarbonisation. Additionally, following the report from the Task Force on Climate-related Financial Disclosures, we have started to undertake forward-looking scenario analyses out to 2050 to enhance our long-term planning and risk assessment on climate change. Ad-hoc reviews, looking at key topics which present risks & opportunities are also undertaken. Many of these relate to climate related topics. Recent examples include the future of mobility, decarbonisation policy in the UK, decarbonisation outlook in the US and decarbonisation of heat in the UK.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Risks are prioritised by assessing potential impacts alongside the likelihood of materialisation. A 1-6 impact and 1-8 likelihood scale is used with the overall rating (1-48) the product of impact by likelihood. The impact score is derived using several criteria including HSE, Regulatory, Reputation and Financial impact. Further statistical modelling, scenario planning and commercial analyses are carried out where applicable. Risks related to or influenced by climate change are assessed alongside other business risks and thus the significance of climate-related risks relative to other business risks are determined via this process. Substantive financial and strategic risks are also determined using this risk scoring process.

Financial impact is scored on a scale of 1-6 from minor to very high and is derived through consideration of lifetime or in-year operating cash flow impact. Likelihood is scored on a scale of 1-8 based, from 1 being highly unlikely (rarely happened in industry or sector), through, very unlikely, unlikely, moderately unlikely, likely, very likely, to highly likely (there is a history of common occurrence across the Group, sector and / or external market). Risk ratings are represented on a risk heat map and ranked as low, moderate or high according to the overall risk rating. The top risks for each BU or function are reported to Group Risk and each of these risks is allocated to one of the 18 Principal Risks. The 18 Principal Risks encompass the Group's Risk Universe and they are listed and described in the Annual Report. Each Principal Risk is then rated using the same 1-48 scoring based on the reported risks. A risk with an impact score of 6 or above for any impact criteria would automatically be categorised as a high according to the heat map and would therefore be classified as a priority, or substantive, risk. If impact score is 4 or 5 then the risk will be classified as high if the likelihood is, respectively, 6 or 5 (likely or moderately likely) or above. Additionally, if the likelihood is highly likely (8), then the risk will automatically be classified as high. The ratings of the Principal Risks are reported to the Group Ethics, Risk, Assurance, Control and Compliance Committee.

One example to scale the highest boundary for impact (6/6) would be the group wide HSE matrix's highest impact threshold. This is for a >£500m lifetime impact, or >£125m in year impact, and any risk in this bracket would be categorised as substantive. The bracket below (5/6 for impact) has a threshold of £250m--£500m lifetime impact or £60m-£125m in year impact. This would be automatically classified as substantive if the frequency was 'moderately likely' and happened more than once per year across the Group, sector and / or external market.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations
Upstream
Downstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
Climate change is included as a component risk within the Group Enterprise Risk management (ERM) processes, which addresses risks over short and medium-term horizons on a quarterly basis at the group level. Climate-related risks are also identified and assessed under other Principal Risks as appropriate across our Risk Universe, reflecting how climate change affects many aspects of our business (upstream, downstream and operational) and the external environment. Each identified risk from asset to company level, together with related controls, is consistently assessed and reported according to Our Approach to Enterprise Risk. Risks that could threaten the business under a severe but plausible scenario, undergo robust assessment and form the basis of our annual viability statement. Risks and opportunities over a long-term time horizon (including direct, upstream & downstream operations) are monitored, identified and assessed annually as emerging risks via our Board strategic planning process each year. The Board meets annually at the Board Planning Conference to review the Group's strategy and set the context for the annual plans for the following year. As our strategy is predicated on enabling the energy transition, our strategic plans are implicitly reviewed in the context of climate change and the long-term impact of climate-related risks and opportunities on the business. In recognition of the chronic, slow to emerge nature of some climate risks, we have additionally started to enhance our routine group ERM process with an annual review of emerging risks over a longer period out to 20 years. In 2019 the emerging risk identification process was completed and in 2020 we aim to complete the detailed assessment and integration of these risks into the ERM. Risks are prioritised by assessing potential impacts alongside likelihood quarterly by each business unit, before being reported to the Group Ethics, Risk, Assurance, Control and Compliance Committee (GERACCC). A 1-6 impact and 1-8 likelihood scale is used with the overall rating (1-48) their product. The impact score is derived using several criteria including HSE (Heath, Safety, Environment), Regulatory, Reputation and Financial impact. Further statistical modelling, scenario planning and commercial analyses are carried out where applicable. Risks related to or influenced by climate change are assessed alongside other business risks and thus the significance of climate-related risks relative to other business risks are determined via this process. Risk ratings are represented on a risk heat map and ranked as low, moderate or high according to the overall risk rating. The high risks (risks evaluated to have a potential substantive impact) for each BU or function are reported to Group Risk and each of these risks is allocated to one of the 18 Principal Risks. The 18 Principal Risks encompass the Group's Risk Universe and they are listed and described in the Annual Report. Each Principal Risk is rated using the same 1-48 scoring based on the reported risks, where they are determined to be 'substantive' or not at Centrica Enterprise level. The most material component risks derived through the risk assessment process are reported to the executive level GERACCC This ensures a clear understanding of our risk profile, whether the risks are within our risk appetite, the risk mitigations in place, and the related assurance activity which has taken place. The GERACCC is chaired by the Group Chief Executive, with membership comprising of the Centrica Executive Committee (CEC). Quarterly, after the CEC has considered the GRAC (Group Risk and Audit Committee) report, the principal risks are presented at either the Board Audit Committee or SHESEC (Safety, Health, Environment, Security, Ethics Committee), which are occasionally run as a joint committee. A risk with an impact score of 6 or above would automatically be categorised as high and therefore be classified as substantive. If impact score is 4 or 5 then the risk will be classified as high if the likelihood is, respectively, 6 or 5 (likely or moderately likely) or above. Additionally, if the likelihood is highly likely (8), then the risk will automatically be classified as high. The ratings of the Principal Risks are reported to the GERACCC The CEC's prioritised risks are categorised as either: risks requiring standards (RRS), risk requiring judgement (RRJ) and external risks, which determines whether a risk will be mitigated, transferred, accepted or controlled. A RRS has negative impacts that we control through Standards and Management Systems (and is either mitigated, transferred or controlled), while a RRJ is a risk that we choose to take to execute our business strategy, for example to capitalise on an identified opportunity. An external risk is a risk that requires a focus on scenario and contingency planning with little ability to reduce likelihood. The Health, Safety and Environment Committee, a sub-committee of the CEC, sets objectives, targets and policies for managing risk in relation to

HSE, which includes climate change. Risks reported to the HSE committee are monitored, discussed and agreed quarterly by SHESEC. The SHESEC is authorised by the Board to review the effectiveness of identifying and managing environmental risks that could materially affect performance and reputation A transitional risk managed through this process is mandates on and regulation of existing products and services increasing operating costs. Regulatory risks are identified at both an asset and group level through our ERM process. Failing to comply with our ECO obligations, which requires energy suppliers to reduce heating costs for low-income households is an example which was identified at the business level by UK Home. It was assigned a likelihood score of 7 and an impact score of 3, meaning it was categorised as a substantive RRS risk. Mitigating actions implemented include developing a portfolio of well-established delivery partners and engaging with industry, Government, and the regulator to develop best practice in order to increase cost effectiveness of delivery. These mitigating actions were reviewed by UK Home risk. The physical risk of potential extreme weather events such as flooding at Easington terminal for our CSL business has been identified and managed through our ERM process at the CSL business level and classified as an external risk. The potential impact of such flooding could prevent access to operational areas, which could lead to lead to the prevention of maintenance work, forcing a site shut down and loss of revenue. This was assigned a likelihood score of 1, due to the area being a '1/1000 year' flood location, and an impact score of 3, meaning it is not categorised as a substantive risk, and does not require mitigation. It therefore does not escalate to the CEC HSE sub-committee. This assessment was reviewed by Group HSE.

Value chain stage(s) covered
Direct operations
Upstream
Downstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
As discussed above in row 1 description, risks and opportunities over a long-term (3 years or more) time horizon are monitored, identified and assessed annually as emerging risks via our Board strategic planning process each year. The Board meets annually at the Board Planning Conference to review the Group's strategy and set the context for the annual plans for the following year. As our strategy is predicated on enabling the energy transition, our strategic plans are implicitly reviewed in the context of climate change and the long-term impact of climate-related risks and opportunities on the business. The Board Planning Conference informs the Group's strategy and annual plans for the following year. In addition to the annual strategic planning process, and feeding into this process, opportunities related to climate change and the energy transition are assessed regularly at the business level, at varying frequencies, all more often than annual. Our business units operate new product development processes with clearly defined governance arrangements centred around monthly product development boards. At these meetings, proposed products and services developed to meet identified opportunities, across short, medium and long-term time frames, are reviewed. Factors such as market sizing, technology pathways, competitor intelligence, capability requirements are assessed in order to evaluate the opportunity and how best to respond. Propositions are typically developed through a series of stage gates from original idea through to a viable market offering. Recent examples include responding to growing demand for renewable and green energy tariffs. These opportunities can relate to upstream, downstream, and direct operational areas.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	As an energy company, we are subject to many regulatory requirements relating to climate change, including the EU Emissions Trading Scheme (ETS), Energy Savings Opportunity Scheme (ESOS) and Energy Company Obligation (ECO). Due to the significance of such regulations to our business, we closely monitor and assess risks associated with any changes through their inclusion in our enterprise risk management (ERM) process. This would usually be raised by our Legal, Regulatory, Ethics and Compliance, Health, Safety and Environment and Corporate Affairs Functions and discussed under our "Legal, Regulatory and Ethical Standards Compliance" and 'Political and Regulatory Intervention' Principal Risks under which climate change sits. For example, current uncertainty over the ramp up of required obligations under the ECO scheme, and the costs associated with Trustmark (a Government endorsed quality standards scheme), could have negative financial implications for our business in the final year of the scheme (2021/22). Delivery costs are expected to increase by an average of £350 per measure, reflecting additional assessment, design and evaluation requirements the risk of which is that operating costs will increase. Government has tried to mitigate impact (scoring uplifts) but by their assessment, underlying prices are still expected to rise year on year throughout the scheme. Final year (phase 4: 2021/22) prices are expected to be 70% higher than phase 1 (Oct -18-Mar 19)
Emerging regulation	Relevant, always included	Due to the long-term nature of investments in the energy sector, new regulations have the potential to impact the economics of our projects and hinder investment and thus we continually monitor, review and assess proposed and incoming regulatory change as part of our ERM framework to mitigate and manage potential impacts on our business. Emerging regulation is monitored on an ongoing basis by our Legal and Regulatory, Ethics and Compliance, Health, Safety and Environment and Corporate Affairs Functions and is usually discussed under our "Political and Regulatory Intervention" Principal Risk. For example, Centrica invested £700m in our Centrica Business Solutions business over 2015-2020 and uncertainty over UK regulations, such as flexible generation incentives for distributed generation (which can encourage small scale renewables as well as enabling technology which supports intermittent centralised renewables), could potentially affect our return on that investment therefore it was vital that regulatory changes relevant to climate change and with the potential to impact this investment were identified at an early stage and the required mitigations implemented. For example, our aggregation of demand side response services for our customers benefits from appropriate flexibility incentives, If regulations changed eligibility, or removed existing incentives, for some of these customers, our revenue might decrease.
Technology	Relevant, always included	The need to develop new technologies and innovate is vital to meeting our purpose of satisfying the changing needs of our customers. Decarbonisation is a significant driver of technology development within the energy sector and vice versa, including distributed energy products and services, such as demand response and energy optimisation. New technology presents both risks and opportunities to our business and the external market is highly competitive and changing. These risks are regularly assessed through our ERM process to ensure competitive threats are identified and that we are focused on designing new product offerings which are attractive to customers. For example, our current UK energy services business revenue in Centrica Consumer relies heavily on the skills and supply chains established to maintain and install gas boilers at scale. As the UK decarbonises this sector in the decades to come, we will need to transition these skills and supply chains towards alternative technology, whether electrified or hydrogen based. We are currently launching a hybrid heat pump trial to increase our understanding of consumer behaviours around a technology we believe will play a significant role in the transition.
Legal	Relevant, always included	Failure to comply with our legal obligations in relation to climate change is a key risk to our business, as Safety, Compliance and Conduct is a core strategic priority for Centrica. There is a wide range of climate-related legislation that is applicable to the energy sector, including the EU ETS, Energy Savings Opportunity Scheme (ESOS), and ECO and the effectiveness of our processes to identify and manage compliance with this legislation is regularly assessed and reported quarterly by our Legal and Regulatory, Ethics and Compliance Function through our ERM process. This would usually be discussed under our "Legal, Regulatory and Ethical Standards Compliance" Principal Risk. For example, failure to deliver our obligations under ECO to improve domestic energy efficiency and invest in reducing heating costs for vulnerable customers could lead to enforcement action, including fines to compensate for consumer detriment. As a consequence, we delivered ECO2/2t months ahead of the September 2018 deadline to mitigate this risk. With a long scheme such as ECO3 we also ensure we phase delivery over the period.
Market	Relevant, always included	Our strategy has been informed by analysis of key market trends, which includes changing consumer behaviour due to factors such as energy efficiency and climate change, leading to reduced energy usage volumes per customer in some markets. With a significant proportion of our total revenue coming from energy supply, the risk from reduced demand is that our revenue will also reduce. Demand reduction has been driven by improved energy efficiency, achieved through successful decarbonisation initiatives, and changing customer behaviour as a result of greater environmental awareness, alongside reaction to price changes and economic downturn. Given that we have identified decarbonisation as a key market trend influencing the energy sector, this is closely monitored through our ERM process, within our "Strategy Delivery" and "External Market Environment" Principal Risks, to ensure we are successfully responding to external drivers and delivering on our strategy.
Reputation	Relevant, always included	The risk of damage to our brand, trust and reputation due to failure to manage our impact on society including climate change could have a negative impact on consumer sentiment. Our strategy is focused on satisfying the changing needs of our customers and enabling the transition to a lower carbon future and managing reputational impacts is therefore vital to the delivery of this, and is regularly assessed and reported by our Corporate Affairs Function and assessed quarterly through our ERM process, within our "Brand, Trust and Reputation" Principal Risk. Reputation is also assessed as one of the impact criteria on our Risk Assessment Matrix and so can form part of the scoring for any risk. For example, due to our joint venture Spirit Energy's 25% stake in Cuadrilla's Bowland shale gas license, which we exited in 2020, there was a risk of adverse media attention, or campaign or pressure group focus, due to stakeholder concern over the potential discordance of this activity with UK climate change targets. At the time we actively engage with climate change bodies and NGOs to offer our perspective and share our approach to being a good corporate citizen.
Acute physical	Relevant, always included	Acute climate risks, such as extreme weather events, pose a number of challenges to our operations and assets, due to the potential for disruption to critical processes and/or infrastructure, as well as the potential for increased customer demand for our services. For example, flooding, snow and ice events impact our employees' ability to travel to work safely and may drive an increased demand for domestic heating engineer callouts at the same time, placing pressure and safety risks on our workforce. This is a risk across all our operational engineering geographies, with the UK and NA the most critical due to the proportion of our workforce that need to access 'site', be that a customer's home or business, to perform their work. As a consequence, we regularly assess weather risks through our ERM process to ensure the continued resilience of our business to these events. These assessments are conducted within our "Customer Service", "Health, Safety and Environment" and "Information Systems and Security" Principal Risks and reported quarterly to the GERACCC, SHESEC and Audit Committee.
Chronic physical	Relevant, sometimes included	Long-term changes to weather patterns present both risks and opportunities for our business. Given the long-term nature of these trends and global scale of impact, such risks are considered through our annual strategic planning processes. While the possibility of milder winters could lead to a reduction in energy demand for heating, warmer summers would likely increase demand for cooling during the day and night, which could lead to significant changes in patterns of demand – both of these impacts could affect our supply revenue (in both the UK and NA) through for instance, struggling to meet the pattern of demand, or an overall reduction in supply required and a corresponding fall in supply revenue. In order to help manage this we have diversified the products and services we provide to offset the potential fall in energy consumption, we offer time-of-use tariffs, smart thermostats and other energy management tools. Changes to weather patterns causing global uncertainties are considered by our Group Fundamentals and Demand Forecasting teams and are assessed and reported as part of our "External Market Environment" Principal Risk to the GERACCC and Audit Committee.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact
Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Physical changes related to climate change could reduce the accuracy of being able to forecast grid-wide demand, creating imbalance of energy supply to the grid. Electricity cannot easily be stored easily and cheaply at scale (due to a lack of suitable pump storage locations in the UK and the current prohibitive cost of batteries globally) and in the UK, the National Grid matches generation with customer demand for each second of every day. Being able to forecast customer demand accurately is key to making the most efficient decisions. Any mismatch between customer demand and what we have bought is subject to an imbalance cost. If Centrica did not buy enough electricity to meet our customers' needs in advance, an extra cost would almost certainly be incurred based upon the last minute and short balancing actions made by National Grid. In very uncertain and volatile weather conditions and with sudden customer consumptions changes, a 10% deterioration in forecasting accuracy could be expected, even if only for a limited period. This level of deterioration in short-term demand forecasting accuracy could result in an additional £400,000 of imbalance costs annually for British Gas which would be substantive. Extreme weather and corresponding changing consumption behaviours can impact our customer demand, making it less predictable and variable and thus increasing the mismatch between generation, demand and costs. The extreme weather in March 2018 in the UK & Ireland from polar continental air mass ('Beast from the East'), caused significant variance between actual and forecast consumption, leading to significant additional costs for Centrica and ultimately consumers. This risk applies to our residential and business gas and electricity supply businesses in the UK, Ireland and North America, which must manage this risk on an ongoing basis on behalf of our customers to ensure that we procure energy cost effectively to meet the demand. As the largest energy supplier in the UK with c £3bn of gas and power commodity procured every year, the ability to use more frequent and accurate weather forecasts and the ability to better and more quickly predict changes in consumption behaviours will be vital to reduce the risk of having to incur imbalance costs. Extreme weather events pose a particular risk to our business due to the large volumes of energy we must supply.

Time horizon
Short-term

Likelihood
About as likely as not

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
0

Potential financial impact figure – maximum (currency)
400000

Explanation of financial impact figure
Currently British Gas pay approximately £4m pa of gas and power imbalance cost (most of this cost is driven by power, which is c.a. £3.5m pa) therefore a 10% deterioration in the current short-term demand forecasting accuracy could result in £400,000 of additional imbalance costs incurred by BG per year. The demand forecasts inaccuracy is mainly driven by weather forecasting and demand forecasting models errors. In very uncertain and volatile weather conditions, and with sudden customer consumptions changes, a 10% deterioration in forecasting accuracy could be expected, even if only for a limited period. The financial range provided above highlights the risks of incurring additional costs in case of a continuous deterioration of gas and power demand forecasts in short-term timeframes. The £3.5m power costs referenced here come with a Demand Forecasting accuracy, calculated in mean absolute percentage error (MAPE), of 2% for power. A 0.2% increase (equivalent to the 10% deterioration outlined) in power MAPE equates to approximately £350,000 increase in imbalance cost; adding gas deterioration we could reach £400,000 p.a. of additional imbalance costs which are paid to the system operator.

Cost of response to risk
150000

Description of response and explanation of cost calculation
Our principal response to this risk is to improve our models to better predict and enable us to manage imbalances, reducing the costs that we incur. In the UK we have engaged with the Industry to redefine a more accurate Seasonal Normal Weather series that should make our long-term forecasts more accurate. This will result in a reduced value at risk of all hedging activities carried out in the UK. In 2020 and 2021, we have planned to review the accuracy of our short-term weather forecasts and benchmark them with other market leading companies in this space. The objective is to source the best weather forecasts available on the market for short-term timeframes (0 to 14 days ahead of real time). We are currently developing a new cloud-based demand forecasting platform that will be able to receive and use weather forecasts updates every hour using APIs. Currently we receive a weather update 4 times per day. Considering the increased volatility of weather and customer demand behaviours, we believe our future frequent forecasting approach will help us reduce the forecasting error in short-term timeframes. In January 2020, we have initiated a project called SmartView. This initiative aims at increasing the short-term accuracy of our power forecast through a frequent use of British Gas smart meter data. The project is entering stage 2 in which we aim to release the first in-house power forecasting capabilities ever developed in BG. This will use machine learning methodologies on cloud computing systems. To increase the accuracy of our short-term Gas forecast, we are currently working on a machine learning model to forecast the Unidentified (UIG) Part of BG gas consumption. We plan to launch this new model second half of 2020.We also plan to review our gas and power long term forecasting processes and tools to increase automation and accuracy of our long-term forecasts. All the activities described above are ongoing or are planned for 2020 and 2021. This effort will require a funding and a strong collaboration between several teams in Centrica. The £150k cost is the estimated cost of building and maintaining new demand forecasting models and infrastructure. This breakdown approximately into £130k to run the relevant medium and small sized projects, including IT systems and infrastructure costs, as well as £20K of recurring infrastructure and support costs.

Comment
Most of the initiatives mentioned above are outside the daily running of Demand Forecasting operational activities. There are also daily processes in place that have been designed to manage and mitigate the daily forecasting risks.

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Market	Changing customer behavior

Primary potential financial impact
Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Falling energy consumption UK energy consumption has been falling since 2005, driven by improved energy efficiency and changing customer behaviour as a result of greater environmental awareness, alongside reaction to price changes and economic downturn. By using less of what we sell, this could impact our profitability. A recent study we undertook found that our Dual Fuel credit customers with smart meters reduced their consumption by around 3.7% on average (£34pa). During their smart installation, our customers also receive energy efficiency advice from our British Gas Smart Energy Experts (SEE's). This, along with our customers using their smart energy monitors and energy insights available online or via our app all help customers to make changes to become more energy efficient around the home, taking steps to support a low carbon future. Additional smart technology will further drive a reduction in the demand for energy. For a longer term expectations, National Grid's 2019 Future Energy Scenarios predict that the average home, in a 2 degrees scenario, will decrease total home energy use by 32% by 2050 The 2016 National Energy Efficiency Data-Framework (NEED) report, which studies underlying nation-wide customer consumption patterns and is commissioned by BEIS, shows that installing a new efficient condensing boiler leads to an annual median reduction in gas consumption of 8.3% while cavity wall insulation leads to a saving of 8.4%. Since 2009, British Gas customers have reduced their underlying energy consumption by approximately 6% for gas and 12% for electricity.

Time horizon
Long-term

Likelihood
Likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
2200000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The continuing reduction in gas and electricity consumption would impact Centrica's revenue and profits if we failed to adjust and reposition our business. National Grid's 2019 Future Energy Scenarios predict that the average home, in a 2 degrees scenario, will decrease total home energy use by 32% by 2050. If we extrapolate that using our current residential energy business in the UK, which had a revenue of £6.8bn in 2019, this would represent a £2.2bn loss in revenue from the sale of energy at today's prices.

Cost of response to risk
1200000000

Description of response and explanation of cost calculation
Our shift in focus towards energy services is helping to reduce our reliance on revenue from energy supply. We are focused on putting our customers in control of their energy and see this as a growth area for our business and a chance to lead the sector in giving customers what they want. We are leading the national roll-out of smart meters in GB, having installed over 7.7m in homes and businesses by the end of 2019. To further develop our leadership capabilities in cutting-edge products, we established a global Connected Homes Services business in 2015.Building on this, we also established a new global Centrica Business Solutions business in 2015, to put customers in control over their energy and reduce their use. In 2017 we acquired REstore, Europe's leading demand response aggregator to expand our capabilities and in 2018 we acquired Vista Solar, a United States based solar engineering, procurement and construction (EPC) company. These investments help Centrica pivot away from the areas that are exposed to the risk of consumption reduction, namely our supply business for both business and consumers. Instead these businesses enable us to capitalise on delivering the energy efficiency and consumption reducing technology and services that drive this trend. We invested over £1.2bn in our CHS and CBS between 2015-19, in order to shift our focus towards energy services and diversify our business. This included over £300m in M&A (purchasing businesses including Ener-G Cogen, Neas, REstore and Smart Watt), over £400m in capex and the balance in operating losses.

Comment

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Current regulation	Mandates on and regulation of existing products and services

Primary potential financial impact
Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
In the UK, there is a risk that we fail to meet our legal obligations under ECO, which requires energy suppliers to reduce heating costs for vulnerable and low-income households by funding insulation and heating measures. Targets are set in 'Lifetime Bill Savings' and energy suppliers must install or fund sufficient measures to meet their target. As the largest energy supplier, we have the biggest obligation (1.5bn 'Lifetime Bill Savings' for period Oct-18 to Mar-21). Measures typically are loft, cavity wall, sold wall and underfloor insulation; first-time central heating; and replacement of broken gas boilers. Failure to comply with ECO requirements could risk enforcement action

which can lead to fines designed to compensate for consumer detriment. For example in 2014, British Gas agreed to pay £11.1m to help vulnerable customers following failure to deliver the Carbon Emissions Reductions Target and Community Energy Saving Programme by the 2012 deadline. In addition to the risk of enforcement action, which would include an initial investigation into breach and if guilty then penalty taking into account factors such as consumer detriment, costs avoided by the company and mitigating or aggravating action. There is also the reputational damage of not meeting our target as well as the risk that forecasted costs for delivery are exceeded. The latest phase of ECO is called ECO3, which runs until March 2022. The scheme started in December 2018, 2 months late, following a regulatory hiatus. The scheme marks another step-change in ECO, being solely targeted at low income and fuel poor households with restrictions on heating measures. The supply chain took time to adapt to the new rules and industry delivery during H1 2019 was very slow. The regulations changed again in late 2019 and new requirements (Trustmark) have been brought into the scheme in 2020 which has increased costs and hit delivery again. The greatest challenge is consumer demand – finding and converting eligible households in need of low-cost insulation. BEIS is aware of the concerns and monitoring closely. Difficulty delivering ECO could have the effect of increasing bills for our customers. Investment in projects that may be cancelled or changed may also have negative financial implications for our business and make achieving our required ECO targets more difficult, with potentially increased delivery costs and a higher likelihood of failure to meet our obligations which would result in a fine.

Time horizon
Short-term

Likelihood
About as likely as not

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
15000000

Potential financial impact figure – maximum (currency)
25000000

Explanation of financial impact figure
Failure to comply with ECO requirements could risk enforcement action which can lead to fines designed to compensate for consumer detriment. For example, in 2014, British Gas agreed to pay £11.1m to help vulnerable customers following failure to deliver the Carbon Emissions Reductions Target (CERT) and Community Energy Saving Programme (CESP), by the 2012 deadline. We completed the shortfall in 2013. The financial penalty imposed on Centrica for failing to meet our targets would be a portion of the government Impact Assessment figure attributed to us. This figure represents our financial obligation under ECO, based on market share, which was ~£180m. It would likely be the financial equivalent whatever ECO measures we failed to deliver plus a fine which we would expect to be in the £15-25m range.

Cost of response to risk
3000000

Description of response and explanation of cost calculation
ECO delivery We have just started the new scheme which runs for just over 3 years We have developed a portfolio of well-established ECO partners delivering our ECO measures, this was expanded and updated in 2019. These include a wide range of bilateral partners, both large managing agents and direct smaller installers, with national coverage to effectively manage cost and delivery risk. Without having established, and continuing to expand and manage, this portfolio, guaranteeing delivery of our ECO measures would be both incredibly difficult and unpredictable. We work closely with the heating and insulation industry and with Government and the regulator to develop policy and best practice in order to increase cost effectiveness of delivery. Our directly controllable management costs relating to ECO are approximately £3m annually, with roughly half associated with commercial contract management. The remaining costs are associated with; supporting ECO innovation, technical monitoring, staff working on policy design, and processing measures, reporting and compliance checking.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
In 2019 the Transport sector accounted for 34% of all carbon dioxide emissions. Most of these emissions were from road transport resulting in a sustained effort to increase the adoption of Electric Vehicles (EVs). The UK Government has pledged to become net zero by 2050. To support this target the Government have moved forward the ban on selling diesel and petrol cars from 2040 to 2035 and widened the scope to include both plug-in hybrid and hybrid electric vehicles. There are currently over 250,000 plug-

in electric cars and 8,800 plug-in electric vans in the UK. The adoption rate of EVs in the UK continues accelerate. In 2019 more than 72,000 EV's were sold, comfortably exceeding 2018's total of 59,700. Average market share rose to 3.2% of total vehicle registrations and is expected exceed 7% in 2020. National Grid forecasts the UK stock of EV's to range from 2.7 to 10.6 million by 2030 and up to 36 million by 2040. The supporting infrastructure continues to develop as the adoption of EVs increases. As a result of sustained government and private investment, the UK network of EV charging points has increased to more than 10,500 charging locations and17,900 charging devices of which ~3,100 are rapid charging devices. Centrica is one of the largest installers of rapid chargers in the UK, has equipped over 17,000 homes with EV chargers and promotes the electrification of transport in-house having purchased over 100 all electric commercial vans for its field engineers and over 25% (over 450 vehicles) of its company cars being plug in electric. Centrica is focussing on the following three EV markets which have been identified as opportunities in this sector which our established and developing capabilities enable us to capitalise on; o Car Manufacturers & Franchised Dealer Network – supporting OEM's and dealerships with all their EV infrastructure needs, e.g., power supply upgrades, charge point installation and servicing, EV tariffs; o Fleets – supporting companies switch their fleets from petrol/diesel to EVs through integrating energy infrastructure and optimisation with their electric vehicles. This includes power supply upgrades, charge point installations, service solutions and renewable energy sources where possible, o Workplace Charging – supporting companies provide infrastructure and services for their customers and employees.

Time horizon
Short-term

Likelihood
More likely than not

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
100000

Potential financial impact figure – maximum (currency)
1000000000

Explanation of financial impact figure
Our internal market sizing and forecasting predict that EV sales are set to increase by 250% between 2024 and 2030, and the UK EV market gross margin is estimated to be between £500m to £1bn in gross margin annually in 2030. Centrica is well positioned to capture a material share of the EV products and services market given its scale and ability to integrate energy supply, energy services and technology, however the precise proportion is uncertain.

Cost to realize opportunity
15000000

Strategy to realize opportunity and explanation of cost calculation
Since 2013 Centrica has invested >£15m in operating costs to build capability across the EV value chain. Partnerships with organisations such as Driivz enables smart charging, dynamic load balancing, driver payments and development of fleet specific solutions. Centrica Business Solutions provides distributed energy & power solutions (e.g. solar & battery storage) complementing EV charging solutions for workplaces and locations that need additional capacity to support EV infrastructure. British Gas installs home EV chargers & created EV tariffs that allow customers to take advantage of cheaper charging costs at times when there is less demand on the power grid. Through the Centrica Mobility Ventures team, Centrica is able to assess, evaluate & deliver on a wide range of opportunities across the EV value chain. This includes the installation of EV infrastructure, the connecting of the customer's car & home under an intuitive, seamless user experience, all the way through to researching & delivering technologies for the future as we move towards a zero carbon transport network. Also, the installing of joined up technologies such as at the EV charging hub in Dundee City Council with connected solar canopies, battery storage system & rapid EV chargers. Partnerships with other organisations enable us to deliver against the identified opportunities. The following are examples Centrica's EV charging partnerships in 2019: •Ionity – a joint venture by Daimler, BMW, Ford & Volkswagen Group to build a high-power charging network for EVs across Europe. Centrica signed & delivered a contract to design and install the first two 350kW high power charging sites in the UK for Ionity •NCP – a collaboration intended to make inner city EV charging in public places more convenient •VW & Ford – Centrica signed partnership agreements with Ford & VW to provide EV charging solutions and aftersales service to customers and dealerships •Stagecoach – a multi-million-pound project for buses, chargers and operating system. The project will trial 32 battery-electric double-deck buses based at its Manchester depot. Subject to findings, the trial could extend to 100 buses in subsequent years. It is estimated that more than 1m litres of diesel and 2,400 tonnes of CO_2 will be saved each year by replacing existing Euro 3 & 4 buses Centrica will continue to invest in EV activities with sustainability and decarbonisation central tenets of Centrica's strategy and customer offer.

Comment

Identifier
Opp2

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of supportive policy incentives

Primary potential financial impact
Returns on investment in low-emission technology

Company-specific description
Policy & legislation to provide financial support for microgeneration & distributed energy solutions, coupled with a reduction in technology costs, have helped grow a substantial market for distributed energy technologies across Centrica Business Solutions (CBS) & Centrica Home Solutions geographies, which include UK, NA, several countries in Europe. Decentralised technology, using a combination of embedded generation, storage, energy efficiency & demand side response measures, will play a key role in helping the UK keep energy affordable & secure while meeting carbon reduction commitments. Through regulatory support there are some accessible incentives and subsidies available. These help encourage decentralised energy and better management of the grid, providing opportunities for our CBS business, our customers and wider society. The opportunities for CBS are that sales of their technology will likely increase with market incentives providing increased revenue opportunities for our customers. A core example is the sale of low-carbon & high efficiency Combined Heat & Power units, which currently provide over half of CBS' revenue. The business case for CHPs benefit from policies which supports revenue creation from participation in energy markets & grid service contracts , this strengthens the commercial proposition from the customer perspective. The subsidy regime for micro-generation tech has changed since 2015. For solar, although Feed-in-Tariffs (FIT) have been substantially reduced & withdrawn, we still believe there are opportunities, particularly for industrial and commercial customers. The Smart export SEG (supplier export guarantee) will be introduced at the beginning of 2020 as a replacement for FIT, with our policy team engaging & preparing the businesses' propositions in line throughout 2019. The

Renewable Heat Incentive (RHI) supports renewable heat technology, such as biomass heating which CBS can provide, for domestic & non-domestic markets. Though the changes proposed are likely to create a contraction in the biomass market due to reductions in the level of subsidy available, there will still be possible opportunities, on which we could seek to capitalise. Smart meters, whose roll out is mandated in several markets such as the UK, also provide potential commercial opportunities. They enable the creation of new smart-enabled propositions, increase customer satisfaction & provide opportunities for engagement on efficiency services.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
1000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
We said at our Prelim presentations in February 2020 that we are targeting £1bn of revenue for our Centrica Business Solutions business by 2022, therefore the potential financial impact provided represents this total revenue, which we believe is our most substantive opportunity with respect to investment in new technology. We continue to target EBITDA break-even by 2021, and revenue of around £150m-200m by 2022 in Home Solutions, although this will increasingly be integrated with our other Consumer activities in the UK.

Cost to realize opportunity
90000000

Strategy to realize opportunity and explanation of cost calculation
Our global CBS business is revolutionising the traditional centralised way of generating and supplying energy and was founded to capitalise on this opportunity, delivering the new energy technology such incentives aim to support. We aim to test and improve products to reduce costs which increase potential market adoption and carbon savings. We also investigate and invest in emerging products such as battery storage and integrated solutions platforms. Towards this in 2017, we acquired REstore, a leading demand response aggregator and Neas Energy, a leader of energy management and revenue optimisation services for decentralised third-party owned assets and in 2018 we acquired Vista Solar, a United States based solar engineering, procurement and construction (EPC) company. These acquisitions have helped develop our capabilities in the decentralised energy space, enabling us to progress delivery of our climate change responsible business ambitions. One of these ambitions is to deliver 7GW of flexible, distributed and low carbon technologies by 2030. By the end of 2019, British Gas led the industry on smart meter deployment, having installed over 7.7m in homes and businesses. In North America using smart meters, we created Time of Use (TOU) products and reward customers in Texas who reduce energy use during peak periods. The £90m cost represents the sum of capital investments made in 2019 to support our growth in the CBS and CHS businesses. The two largest component part of this capital investment were software and product development in CHS and the delivery of CBS' power generation infrastructure.

Comment

Identifier
Opp3

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Shift in consumer preferences

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Changing consumer behaviour is an increasing factor in the market for low carbon products and services. Concern about climate change and rising energy costs in the UK has focused attention on reducing energy consumption while weather events across the US have raised awareness for consumers and businesses around their energy use and environmental impacts. Our global CHS and CBS businesses are striving to give customers what they want – more control, choice and the ability to lower their energy bills and carbon emissions. Additionally, for businesses energy resilience is of growing concern as they face increased uncertainty due to extreme weather events. In the UK, smart meters and smart-enabled propositions are influencing consumer behaviour. A recent sample of customers with smart meters found customers reduced their dual fuel consumption by around 3.1% on average. We expect this figure to rise to ~5% with information available through apps & online, which provide smart meter customers useful insights into their energy consumption. Our leadership position in the mandated smart meter roll-out is helping enhance customer experience and retention, with 7/10 customers with smart meters more satisfied than with their previous standard meters. Increasing the customer benefits from smart-enabled propositions will lead to increased revenue for our Consumer and Business divisions through increased product sales both in the UK and globally. In North America, we have created new product offerings by combining energy supply with smart thermostats that provide customers with the ability to control and learn about their energy usage. We also continue to expand the range of smart-enabled products, such as TOU tariffs, which improve customer retention while reducing demand on the grid during peak periods. In 2019 we expanded the Hive family of products to include Hive Radiator Valves. Through our CBS business, we are giving large-scale energy users the opportunity to operate, monitor and optimise their energy. CBS has over 6100 contracted sites in 13 countries across insight, optimisation and solutions. The use of distributed generation and storage technologies is set to grow substantially, with forecasts suggesting that distributed generation could grow from a 2% global market share to 12% during 2014-30.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
1000000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
In February 2020 at our Prelim announcement we announced that we are still targeting £1bn of revenue for our Centrica Business Solutions business by 2022, therefore the potential financial impact provided represents this total revenue, which we believe is our most substantive opportunity with respect to investment in new technology. We continue to target EBITDA break-even by 2021, and revenue of around £150m-200m by 2022 in Home Solutions, although this will increasingly be integrated with our other Consumer activities in the UK.

Cost to realize opportunity
1200000000

Strategy to realize opportunity and explanation of cost calculation
In 2015, Centrica reshaped its business to build new capabilities and deliver on these opportunities by establishing global CHS and CBS businesses. . As part of our CBS business in 2016, we expanded our capabilities by acquiring ENER-G, an established supplier and operator of CHP solutions and Neas Energy, a provider of enhanced energy optimisation for decentralised assets. In 2017 we also acquired REstore for £59m, Europe's leading demand response aggregator and in 2018 we acquired Vista Solar, a United States based solar engineering, procurement and construction (EPC) company. We expect to invest £1.2bn during 2015-20 in our CHS and CBS businesses to develop our product and service offerings for customers. These acquisitions, and the wider investment in these two businesses, help increase our capability in delivering the cutting-edge products and services that satisfy the changing needs of our customers, and capitalise on this opportunity. By the end of 2019, we had installed over 7.7m smart meters in GB through our metering business, this is helping to drive demand in products providing more control to the customer. In the US, we offer TOU products to incentivise consumers to shift usage to off-peak periods and we bundle our energy with control-based tools including smart thermostats, that enable customers to reduce energy use by around 10%. Around 1.8m customers now use our Hive connected home solutions which provide greater control over their energy with just a tap on the app – from smart thermostats, plugs lights and cameras, to contact and motion sensors. In 2019, we completed solar installations totalling over 58 MWp mainly for large scale businesses. These examples stand among many other activities which all act to help us achieve our 'Responsible Business Ambitions' (RBAs). Launched in 2019, our Climate Change Ambitions within the RBAs set ourselves the challenge of 'enabling all our customers to use energy more sustainably'. To deliver on that mission, we have 3 focus areas; helping our customers reduce their emissions, enabling the wider energy system to decarbonise and reducing our own emissions"

Comment
The annual component of this £1.2bn figure will vary across the 2015-2020 period.

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?
Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?
Yes, qualitative and quantitative

C3.1b

(C3.1b) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
Other, please specify (National Grid Future Energy Scenarios, Centrica central case drawing from IEA)	At the global level we use long-term macro-trends across scenarios in our strategic planning. Numerous variables are influenced by climate change, such as commodity demand or the cost of carbon. Our strategic review in 2015 covering all our businesses involved market trend analysis out to 2035, including future changes in global oil and gas markets and changing trends in demand and customer behaviour. We created our own central case to best reflect our diverse portfolio and markets but relevant sources such as the IEA were used for inputs such as primary energy demand, power market evolution, the demand for energy services and the impact of connected devices and the 'internet of things'. We ran 20-year scenarios (out to 2035) for all parts of the business as this provides the optimal balance between the desire to assess long term risks and opportunities and the precision of forecasts. The results were communicated to our shareholders and the markets in July 2015. High level conclusions included continued growth in primary energy demand, with the fastest growing contribution coming from renewables, nuclear and gas. Whilst we recognise that fossil fuels have a role in the near-term, we concluded that climate policies and advances in technology will be effective in decoupling energy growth from carbon emissions. The exact timing of this trend will vary by region but is underway today in some markets and will materialise globally over the next 30 years. We also anticipate a growth in the demand for low-carbon energy solutions including distributed energy, energy services and connected devices which will disrupt many energy markets. For example, the use of distributed generation and storage technologies is set to grow substantially, with forecasts suggesting that distributed generation could grow from a 2% global market share to 12% during 2014-30. The results greatly influenced our strategy and led to our Board overseeing a fundamental transformation of Centrica and all its businesses. We subsequently divested or de-commissioned the majority of our centralised power generating assets and placed our oil and gas E&P assets into a joint venture. We are now recycling over £1bn investment from these asset businesses into establishing market-leading customer facing businesses, such as Centrica Business Solutions and Home solutions. These will play a significant role in decarbonising the energy sector in an increasingly decentralised, democratised and digitised energy system." In 2019 we updated our Purpose as an organisation, bringing in explicit reference to enabling the transition to a lower carbon future. This shift in purpose and strategy reflects our belief that the energy system is in transition, increasingly due to societies response to climate change.
Other, please specify (National Grid Future Energy Scenarios, ENA, Navigant, Committee on Climate Change,)	Aligned with the TCFD recommendations, we have completed forward-looking scenario analyses out to 2050 to enhance our long-term planning on climate change. We initially completed a detailed analysis of our UK business against four different scenarios including 2 degrees, using National Grid's Future Energy Scenarios these being the most relevant to our sector and primary market. This enabled us to stress test the resilience of our strategic planning and business objectives under varying scenarios and provided valuable insights into the range of risks and impacts associated with the energy transition on Centrica's UK businesses whilst highlighting the significant opportunities and potential growth areas in which Centrica is strategically engaged. e concluded that our targeted growth businesses Centrica Business Solutions and Centrica Home Solutions are resilient and indeed advantaged in a 2-degree scenario against our central case due to increased demand for storage, demand-side response, smart technologies, time-of-use tariffs and low-carbon mobility. These insights led to further, more details strategic analysis in critical areas such as de-carbonising heat in the UK, the results of which are being used in the development of our business plans and strategic response. In 2019, following the UK commitment to achieve net zero by 2050, we created a detailed low carbon transition model exploring four viable pathways to achieving net zero in the UK. The model and our inputs and assumptions have been peer review by third parties including the Committee on Climate Change. Key conclusions include the rapid build out of wind during the next decade and then solar out to 2050 in the power sector, electric vehicles dominating mobility by the 2040's and heat decarbonised through predominately electrification to 2035 then increasingly hydrogen out to 2050. This analysis has subsequently informed our strategic and financial planning during the next 5 years on how we can enable our customers towards net zero, what investments we should make and role we should take, in the value chains of power, heat and mobility. For example, we recently announced a £1m trial into the de-carbonisation of heat within UK homes exploring the retro-fitting of hybrid heat-pumps into on-grid homes. We continue to extend this analysis to our next key market, North America, assessing how climate change and societies response is influencing attributes such as customers' needs, competitor offerings and emerging business models.

C3.1d

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Decarbonisation is driving significant change for the energy sector to 2050 and beyond. We have identified risks and opportunities relating to these trends which have influenced our products and services strategy out to 2025. Falling energy consumption due to increased energy efficiency and changing consumer behaviour could impact the profitability of our energy supply business and is considered a principal risk. We have responded by placing 'enabling the transition to a lower carbon future' at the heart of our purpose and strategy. We are seizing the opportunity to provide new products and services to meet these changing needs, having identified distributed energy, connected home products and services and risk management services for renewables as focus areas for long-term growth. This directly led to the creation of our Centrica Home Solutions and Centrica Business Solutions businesses and an investment of £1bn over 2015-2020 to respond to these changes and ensure we are meeting emerging customer needs to better control their energy usage. We expect these businesses to be a significant source of growth. Examples of products and services we have developed include solar, battery, demand side response and smart connected energy management solutions such as Hive Active Heating and Mixergy hot water tanks. In 2019 we acquired SmartWatt, a leading U.S. energy services and solutions company with capabilities in energy efficiency, lighting retrofits, HVAC, building automation and solar power. To support the renewable sector, we acquired Neas Energy, a provider of enhanced energy optimisation for decentralised energy assets. We now have over 11GW of renewable assets under management providing crucial route to market and corporate renewable PPA services. We subsequently enhanced our renewable offer to businesses and the public sector through the acquisition of Vista Solar, a leading Californian solar company. Further, we acquired a 50% stake in Barrow Green Gas, the UK's largest biomethane supplier providing almost half of the green gas used in Britain. We also created a Mobility Ventures team to develop global low carbon mobility solutions for consumers and businesses. All of these investments are key growth areas for Centrica and demonstrate how climate-related risks and opportunities have influenced our product and services objectives and strategy.
Supply chain and/or value chain	Yes	Research indicates that energy efficiency is a priority for business and that concern on climate change is changing individuals' values and actions. Responding to these opportunities, we introduced our Climate Change Ambitions in 2019 setting ourselves the challenge of 'enabling all our customers to use energy more sustainably'. We have several focus areas across our value chain including helping our customers reduce their emissions and enabling the wider energy system to decarbonise. We have committed to helping our customers reduce their emissions by 25% by 2030. We aim to do this partly through providing customers with energy insights and advice, energy optimisation services and low carbon & flexible solutions. For example, Centrica Business Solutions has created an integrated solutions platform which helps business customers better manage their energy use, through insights, using Panoramic Power sensors, optimisation through our demand side response platform and generation or storage with solar or battery, effectively creating 'virtual power plants' reducing the need for fossil-fuelled back-up power plants. We have also developed a suite of home energy management tools which allow customers to take control of their energy like never before. One example is our remote heating control Hive Active Heating, which enables up to 12% reduction in energy usage through greater control. Around 1.8m customers use our Hive connected home solutions which provide greater control over their energy with just a tap on the app. We are increasingly working with car manufacturers to support their customers and dealership networks on EV readiness, providing a one stop shop for charging solutions including charger infrastructure, energy management, financing, and optimisation. In 2019 we announced new partnerships with Ford to offer a dedicated home charging installation service and EV tariffs and Lotus to develop a new model for EV ownership that fully integrates future mobility and energy through connected vehicles, connected homes and connected customers. We are also enabling the decarbonisation of the wider electricity system and increasingly the gas system, by providing distributed, flexible and low-carbon solutions such as CHP, Batteries, Solar, DSR and bio-gas. We are targeting to have delivered at least 7GW of flexible, distributed and low-carbon technologies by 2030
Investment in R&D	Yes	Our 2015 strategic review identified a significant need for innovation & technology advancement to drive de-carbonisation across the energy sector out to 2035. In response, we established Centrica Innovations in 2017, with £100m funding to identify, incubate & accelerate technologies that can help deliver products & services that meet our customers' needs that's are changing due to climate change and that enable the low carbon transition. Key investments included: • Driivz, an Israeli start-up that offers end-to-end software solutions for electric vehicle charging • Mainspring, a California based start-up developing a Linear Generator that aims to offer businesses clean and flexible onsite power. • Greencom, the developer of a platform which integrates distributed energy resources to create clean virtual power plants, a key technology to optimise energy use in homes and businesses. • Mixergy, developer of a smart water tank that efficiently heats and stores hot water providing energy savings. • Omnidian, a solar performance guarantee business in the US, which aims to boost solar energy performance Another key example of low-carbon R&D is our continued work with over 200 homes and businesses in our £19m local energy market trial in Cornwall, which is testing how flexible demand, generation and storage can reduce pressure on the electricity grid, enable the growth of renewables and avoid expensive network upgrades We are also working on all-electric, net zero carbon emission technology packages for new home designs with the start-up SNRG. The packages include heat pumps, hot water tanks, mechanical ventilation with heat recovery, solar panels, batteries and EV chargers. In addition to Centrica Innovations we have established the Energy for Tomorrow programme, to invest ~£1.5m over 3yrs to provide grants for energy entrepreneurs with a social mission. The fund has 3 objectives: • Educating consumers to reduce their carbon footprint through advice on energy efficiency and renewables; • Innovation, technology progression and science through research in low carbon or renewable technology; and • Social value. Our long-term strategy to R&D is currently under review but will remain focused on accessing technologies that will drive the energy transition
Operations	Yes	Risks and opportunities influenced by climate change have the potential to impact our operations in a number of ways, including physical risks related to extreme weather and transitional risks related to adapting our operations to deliver lower-carbon solutions for our customers For our power generation and exploration and production assets, we have identified risks relating to the increasing frequency and intensity of extreme weather events, such as flooding. Whilst these risks currently remain unlikely, the impacts of such events can be significant. For example, in 2008 our Brigg power station was closed for a short duration due to flooding leading to reduced output and impacting profitability. The time horizon for these risks relate primarily to the individual asset life and is most relevant for Centrica out to the mid 2030's. To mitigate these risks, flood and extreme weather risks assessments are undertaken to ensure preparedness for such events.More strategically, we have identified that decarbonisation of the power sector will reduce the need for centralised, gas-fired power generation in our key markets which led to the decision that Central Power Generation (CPG) is no longer core to our strategy. We have subsequently divested or decommissioned the majority of our centralised power generating assets and placed our oil and gas E&P assets into a joint venture driving down risk and the costs associated with implementing mitigation measures. Transitional risks and opportunities have also influenced our operational strategy. We have identified a need to re-train sections of our customer facing engineer workforce in order to deliver technology that we believe will play a key role in the energy transition. This initially involved training engineers to install smart meters and more recently electric vehicle charge points. We are now exploring the need to re-train engineers to install and service low carbon heating technologies such as heat pumps and are calling on the UK government to support the installation of 1m heat pumps by 2025. Finally, having reduced our global carbon emissions by over 80% in the past decade, we set a target to reduce our 'Internal Carbon Footprint' by 35% by 2025, from 2015. This, along with our on-going shift in investment focus, will ensure our global scope 1 and 2 emissions decline in line with Paris and reach net zero by 2050.

C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Capital expenditures Capital allocation Acquisitions and divestments Assets	In responding to the macro-trends driving the energy transition, including risks & opportunities (R&O) relating to climate change, we are fundamentally repositioning our business. Specifically, we expect significant growth in low carbon energy sources, with an attendant reduction in demand for fossil-based energy over the coming decades. In turn this is driving significant opportunity in decentralised and low carbon energy solutions. In response, we are shifting capital expenditures from our asset businesses, Central Power Generation and Exploration and Production (E&P), to our customer-facing businesses, including Centrica Business Solutions and Centrica Home Solutions. From 2015-2022, we are redirecting over £1 billion of operating and capital resources to our growth areas and reducing our resource allocation to our asset portfolio by about the same amount. As part of this we have materially repositioned our portfolio through divestments and acquisitions. Examples include the acquisition of Restore, Europe's leading demand response aggregator, helping energy markets become more flexible and efficient and the acquisition of Vista Solar, a US based solar engineering company. We acquired Neas Energy, a provider of enhanced energy optimisation for decentralised energy assets and SmartWatt, a leading US energy services and solutions company. Moreover, we have divested all our centralised gas fired power assets in NA and UK. Our portfolio now comprises almost entirely of small, peaking plants. Additionally, we divested 31% of our E&P business and placed our remaining 69% into the joint venture Spirit Energy and announced our intention to divest the remaining 69% in 2020/21. Climate-related R&O have the potential to impact our revenues in the near and long term. Decreased revenues may occur due to reduced energy demand, driven by improved efficiency and changing consumer behaviour; customers in the UK with smart meters reduce their consumption by 3% on average. Conversely increased revenues may be realised from our focus growth areas in distributed energy and connected home solutions. Direct costs can increase, including through reduced accuracy of energy demand forecasting, due to increased weather and climate variability. Demand prediction and management is estimated to cost our business over £100K per year.

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

The implications of climate change are far-reaching, and the energy sector is at the forefront of the need to respond. In 2015, we announced a new strategy focused on 'satisfying the changing needs of our customers' through energy supply and services. Our strategy is based on a world moving towards a low carbon future and positions us to play a key role in enabling the energy transition. In 2019, we reviewed our company Purpose and added emphasis to reflect our role in 'satisfying the changing needs of our customers, enabling the transition to a lower carbon future'.

From our analysis of long-term trends and scenarios, we believe decarbonisation of the energy system will be driven by three major trends; decentralisation, digitisation and increased customer control in how energy is generated, managed and used.

To enhance our resilience and competitiveness in this low carbon transition, we are investing £1bn to 2022, in establishing market-leading Centrica Business Solutions and Centrica Home Solutions. We also established Centrica Innovations, our £100m start-up investment incubator, to develop the energy solutions of tomorrow. Beyond 2022 we intend to grow these businesses and use our Innovations team to identify, incubate and launch new customer-focussed technologies that keep us at the forefront of technology advancements powering the energy transition.

Building on this, in 2019 we introduced our Climate Change Ambitions setting ourselves the challenge of 'enabling all our customers to use energy more sustainably'. To deliver on that mission, we have 3 focus areas; helping our customers reduce their emissions, enabling the wider energy system to decarbonise and reducing our own emissions.

We have set targets and ambitions out to 2030 in each of these focus areas, aligned to the objectives of the Paris Agreement.

We have committed to helping our customers reduce their emissions by 25% by 2030 (from 2015). We do not act in isolation and we cannot drive the required reductions alone, however we do act in three key ways; for example through direct action providing customers with energy insights and advice, energy optimisation services and low-carbon & flexible solutions. In 2019 we had delivered 3.9% points of the challenge through these means.

For example, Centrica Business Solutions has created an integrated solutions platform which helps business customers better manage their energy use, through insights, using Panoramic Power sensors, optimisation through our demand side response (DSR) platform and generation or storage with solar or battery, effectively creating 'virtual power plants' reducing the need for fossil-fuelled back-up power plants.

For domestic customers, we have developed a suite of home energy management tools which allow them to take control of their energy like never before. A good example is our remote heating control Hive Active Heating, which enables up to 12% reduction in energy usage simply through greater control. Around 1.8m customers use our Hive connected home solutions which provide greater control over their energy with just a tap on the app – from smart thermostats, plugs lights and cameras, to contact and motion sensors

We have also created a Mobility Ventures team to develop global low carbon mobility solutions for consumers and businesses. We are working with car manufacturers to support their customers and dealership networks on EV readiness, providing a one stop shop for charging solutions including charger infrastructure, energy management, financing, and optimisation. In 2019 we announced new partnerships with Ford to offer a dedicated home charging installation service and EV tariffs from British Gas and Bord Gáis Energy and Lotus to develop a new model for electric vehicle ownership that fully integrates future mobility and energy through connected vehicles, connected homes and connected customers.

We will deliver further reductions through helping customers indirectly by enabling the wider energy system to decarbonise, which in turn lowers the carbon intensity of the energy they consume. We also use our influence in engaging with government and policy makers to help establish the conditions required for de-carbonisation.

Secondly, if renewables are going to thrive then the ability to store and balance energy is vital. We are enabling the de-carbonisation of the wider electricity system and increasingly the gas system, by providing distributed, flexible and low-carbon solutions such as CHP, Batteries, Solar, DSR. We are targeting to have delivered at least 7GW of flexible, distributed and low-carbon technologies by 2030.

Additionally, as subsidies for renewables are phased out, Centrica provides the necessary financial structuring and route to market services for renewable asset owners and mid to long-term renewable Power Purchase Agreements for electro-intensive sectors. We currently have 11GW of renewable energy assets under management.

We are also conscious that gas will only continue to have a role if it can decarbonise. In 2018 we acquired a 50% stake in Barrow Green Gas, which is the UK's largest supplier of biomethane.

Finally, having reduced our global carbon emissions by over 80% in the past decade, we have increased our efficiency target to reduce our 'Internal Carbon Footprint' by 35% by 2025, from 2015. This, along with our on-going shift in investment focus, will ensure our global scope 1 and 2 emissions decline in line with Paris by 2030. We also recognise the IPCC 1.5°C special report and the imperative to reach net zero emissions by 2050. Therefore, we have committed to reach net zero by 2050.

These Climate Ambitions 2030 form part of our performance objectives for our low carbon transition plan, designed to ensure we are not only resilient to, but can thrive in a decarbonised world.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?
Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number
Abs 1

Year target was set
2016

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Other, please specify (Other: Scope 1+2 (location-based) + 3 (business travel))

Full other field: Scope 1+2 (location-based) + 3 (business travel)

Base year
2015

Covered emissions in base year (metric tons CO2e)
90541

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
2

Target year
2025

Targeted reduction from base year (%)
35

Covered emissions in target year (metric tons CO2e) [auto-calculated]
58851.65

Covered emissions in reporting year (metric tons CO2e)
55144

% of target achieved [auto-calculated]
111.699987535244

Target status in reporting year
Underway

Is this a science-based target?
No, but we are reporting another target that is science-based

Please explain (including target coverage)
The target encompasses the internal carbon footprint of Centrica's core property, fleet and travel, spanning all brands and subsidiaries globally. It is a sub-target of our global target detailed in Abs 2 and 3, and concentrates on areas where our employees have the greatest ability to influence a decline in emissions. This enables us to drive engagement on carbon reduction and benchmark operational performance against a wider range of businesses with similar impacts. Although the percentage of emissions from our internal carbon footprint is immaterial compared to our total footprint, and is therefore not consistent with science-based targets, the management of these impacts remain important. The target empowers us to innovate and trial new technologies that aid our ability to provide market-leading services and solutions for customers, while engaging employees to improve understanding and stimulate action to reduce adverse environmental impact. The majority of carbon savings will come from reducing our property scope 1 and 2 emissions through energy efficiency measures, solar, distributed generation, storage and LED installations alongside business efficiencies. We will also target a reduction in scope 1 emissions from across our fleet and company cars via take-up of more efficient or electric/hybrid models as part of our ambition for our entire fleet to be electric by 2030. In 2019, we publicly signed up to the EV100 initiative to demonstrate leadership in the electric vehicle transition and in 2020, placed an order for a thousand electric vehicles with Vauxhall which is the largest commercial EV order in the UK and will save over 2,300tCO2e annually.

Target reference number
Abs 2

Year target was set
2019

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (location-based)

Base year
2015

Covered emissions in base year (metric tons CO2e)
2083227

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2030

Targeted reduction from base year (%)
28

Covered emissions in target year (metric tons CO2e) [auto-calculated]
1499923.44

Covered emissions in reporting year (metric tons CO2e)
1931297

% of target achieved [auto-calculated]
26.0464722690875

Target status in reporting year
New

Is this a science-based target?
Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)
As part of our Responsible Business Ambitions, we have committed to reduce our global carbon emissions in line with Paris and achieve net zero by 2050. This target represents our medium term 2030 milestone which is 15 years on from the 2015 base year. It encompasses 100% of our global scope 1 and 2 emissions (normalised for divestment & acquisitions) and we consider the target to be science-based, given it meets the CDP 2.1% year-on-year reduction criteria. The reduction in our global emissions will be achieved through our continued shift away from carbon-intensive assets, and towards providing customer-facing services and solutions that enable the transition to a lower carbon world. We will also continue to drive efficiencies across our operations including asset and customer-focused businesses. Further savings will be delivered by reducing our property emissions via energy efficiency and low carbon measures which include solar, distributed generation, storage and LED installations, alongside wider business efficiencies. An additional focus on driving down emissions from employee travel and across our fleet will also be maintained and delivered through initiatives such as our ambition to convert all our fleet to electric by 2030, as well as encouraging employees into lower carbon company cars and utilising alternatives to travel with technology like video conferencing. The target embodies our transition to a lower carbon enterprise and empowers us to innovate and trial new technologies that aid our ability to provide market-leading services and solutions for customers, while engaging colleagues on understanding and mitigating environmental impact.

Target reference number
Abs 3

Year target was set
2019

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (location-based)

Base year
2015

Covered emissions in base year (metric tons CO2e)
2083227

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2050

Targeted reduction from base year (%)
96

Covered emissions in target year (metric tons CO2e) [auto-calculated]
83329.08

Covered emissions in reporting year (metric tons CO2e)
1931297

% of target achieved [auto-calculated]
7.59688774515051

Target status in reporting year
New

Is this a science-based target?
Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)
With the introduction of our Responsible Business Ambitions, we have committed to reduce our global carbon emissions in line with Paris goals and achieve net zero by 2050. This target represents our long-term target, 35 years from the 2015 base year. The target encompasses 100% of our global scope 1 and 2 emissions (normalised for divestment & acquisitions) and we consider it to be science-based, as it meets the CDP 2.1% year-on-year reduction criteria and fundamentally aims to achieve net zero by mid-century which we consider to be best practice and is in line with a 1.5°C target (the remaining 4% of emissions will be offset/removed by 2050 if we are unable to eliminate them). We have been open and transparent that we do not yet have firm and grounded plans to deliver all of the emission reductions to achieve net zero, although we have committed to develop and publish our plans by no later than 2030. We know, however, that the vast majority of our net zero ambition will be achieved through a

continued shift in investment away from carbon-intensive assets towards lower carbon decentralised assets, coupled with an increasing focus on energy management services and solutions, delivered through integrated platforms and enabled by digitalisation. We will also continue to focus on operational efficiency through innovation, technology and behavioural change.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number
Oth 1

Year target was set
2019

Target coverage
Company-wide

Target type: absolute or intensity
Absolute

Target type: category & Metric (target numerator if reporting an intensity target)
Please select

Target denominator (intensity targets only)
<Not Applicable>

Base year
2015

Figure or percentage in base year
0

Target year
2030

Figure or percentage in target year
7

Figure or percentage in reporting year
2.7

% of target achieved [auto-calculated]
38.5714285714286

Target status in reporting year
Underway

Is this target part of an emissions target?
No, this target does not relate to emissions targets reported in C4.1a or C4.1b

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Please explain (including target coverage)
Our ability to store and balance energy is vital to decarbonising the energy system by maximising renewable and low carbon energy. That's why we have set a global Responsible Business Ambition to enable the energy system transition, by targeting 7GW of flexible, distributed and low carbon technology by 2030. This will be delivered by providing technologies and services such as solar, batteries, demand-side response and Combined Heat and Power (CHP). Our 7GW ambition is equivalent to over 10% of current UK peak demand.

Target reference number
Oth 2

Year target was set
2019

Target coverage
Company-wide

Target type: absolute or intensity
Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Other, please specify	Other, please specify (% reduction in average customers energy carbon footprint)

Target denominator (intensity targets only)

Other, please specify (% reduction in average customers energy carbon footprint)

Base year
2015

Figure or percentage in base year
0

Target year
2030

Figure or percentage in target year
3

Figure or percentage in reporting year
3.9

% of target achieved [auto-calculated]
130

Target status in reporting year
Underway

Is this target part of an emissions target?
No, this target does not relate to emissions targets reported in C4.1a or C4.1b

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Please explain (including target coverage)
Centrica was one of the first companies to report its global scope 3 emissions and we have now entered a new phase, where we have set a target to reduce our customers' emissions. As part of our Responsible Business Ambitions, we want to help our customers reduce emissions by 25% by 2030 and towards this global goal, we will directly target a 3% reduction by providing services and solutions that enable them to use energy more sustainably. This target therefore represents the direct portion of our delivery and will specifically be achieved through offerings such as energy insights from smart meters and remote sensors, optimisation services via technology like smart home heating controls and demand-side response, alongside low carbon solutions including solar, batteries, heat pumps, CHP and electric vehicle charging. We will aim to deliver much of the remaining portion of the 25% ambition through indirect initiatives. This involves enabling the wider energy system to decarbonise by delivering 7GW of flexible, distributed and low carbon technologies, while influencing policy makers to create the conditions required for decarbonisation.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	2	89
To be implemented*	12	1679484
Implementation commenced*	8	3791
Implemented*	8	198063
Not to be implemented	2	62

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in buildings	Other, please specify (Insulation and upgrade of heating measures)

Estimated annual CO2e savings (metric tonnes CO2e)
10000

Scope(s)
Scope 3

Voluntary/Mandatory
Mandatory

Annual monetary savings (unit currency – as specified in C0.4)
4000000

Investment required (unit currency – as specified in C0.4)

67000000

Payback period
16-20 years

Estimated lifetime of the initiative
>30 years

Comment
Energy Company Obligation (ECO) In 2013, the UK Government introduced ECO which requires major energy suppliers to fund the installation of energy efficiency products, such as insulation and boilers, in order to reduce residential energy use and carbon emissions. In the 2018-22 obligation phase, measures will be directed towards fuel poor homes with more expensive measures and less carbon savings compared to the former obligation phase. Payback will be over 10-20 years depending on measures employed. In 2019, we invested £67m and installed more than 40,000 measures which we estimate will deliver total lifetime savings of around 0.3mtCO2e**, equating to an annual saving of around 10,000tCO2e**. *Costs include administration fees. **Carbon savings include the following ECO components: CERO and the Heating Cost Reduction Obligation (HHCRO). HHCRO is reported to Ofgem in lifetime heating bill savings which is not reflective of actual bill saving for the customer on a number of measures types. This is a modelled figure removing policy incentive adjustments.

Initiative category & Initiative type

Energy efficiency in buildings	Other, please specify (Smart home solutions)

Estimated annual CO2e savings (metric tonnes CO2e)
132821

Scope(s)
Scope 3

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
52463157

Investment required (unit currency – as specified in C0.4)
344000000

Payback period
1-3 years

Estimated lifetime of the initiative
Ongoing

Comment
Connected and smart products Home solutions like smart meters* and the Hive Active Heating, can generate carbon savings by giving customers greater understanding and control over their energy. In 2019, we installed around 1.1m smart meters in homes and businesses as part of the mandated smart meter roll-out. These installs are estimated to save around 106,778tCO2e by giving customers greater insight into their energy consumption and costs, enabling them to take action to reduce their energy use. By the end of 2019, we had installed over 7.7m smart meters since 2009, which is more than any other energy supplier in the UK. Around 1.8m customers use our Hive connected home solutions which provide greater control over their energy with just a tap on the app – from smart thermostats, plugs lights and cameras, to contact and motion sensors. In particular, customers never have to heat an empty home or room with our Hive Active Heating smart thermostats as well as our Hive Radiator Valves. Products like these make our customers' lives simpler and more sustainable, with Hive Active Heating projected to save customers around 26,043tCO2e a year. *While the smart meter roll-out is a supplier mandated initiative, 'voluntary' has been selected for the overall row response. This is because smart meters are only one aspect of our offering, coupled with the continued focus for growth on providing voluntary Connected Home products.

Initiative category & Initiative type

Low-carbon energy generation	Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)
39656

Scope(s)
Scope 3

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
4862613

Investment required (unit currency – as specified in C0.4)
35800000

Payback period
4-10 years

Estimated lifetime of the initiative
16-20 years

Comment
Solar products As part of our Distributed Energy and Power offering, we completed solar installations that totalled 58MWp in 2019. We estimate that by providing solar to customers, we can help them save around 39,656tCO2e and £4.9m annually. The majority of installs were delivered to large scale businesses and are a key part of helping them deliver targeted carbon and cost savings to make them more resilient, competitive and sustainable.

Initiative category & Initiative type

Energy efficiency in production processes	Combined heat and power (cogeneration)

Estimated annual CO2e savings (metric tonnes CO2e)
8497

Scope(s)
Scope 3

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
8366437

Investment required (unit currency – as specified in C0.4)
149000000

Payback period
4-10 years

Estimated lifetime of the initiative
11-15 years

Comment
Combined Heat and Power (CHP) generators In 2019, we installed over 130 CHP generators. CHPs can cut carbon emissions by up to 25% and we calculate that during 2019, our installations reduced customer emissions by around 8,497tCO2e. We estimate the CHPs will also save nearly £8.4m on energy bills for our commercial customers.

Initiative category & Initiative type

Transportation	Other, please specify (Company fleet efficiency, replacement and travel policy)

Estimated annual CO2e savings (metric tonnes CO2e)
5881

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
3078077

Investment required (unit currency – as specified in C0.4)
1200000

Payback period
<1 year

Estimated lifetime of the initiative
6-10 years

Comment
Fleet and company cars We continued to implement our global low carbon fleet roadmap in 2019, resulting in a 14% reduction that saved 5,881tCO2e. This was in part driven by a 13.6% reduction in UK commercial fleet emissions. Savings were primarily made by replacing 745 vehicles with more efficient models, improving our first-time fix rates when servicing customers, and reducing the number of vehicles required to serve customers by 9%. Use of electric and hybrid vehicles have also helped lower emissions and we continued to progress towards our ambition for a 100% zero carbon British Gas fleet by 2030. And in 2020, we took meaningful steps towards this ambition by ordering a thousand new electric-powered vans with Vauxhall, which is the largest commercial EV order ever made in the UK and will save over 2,300tCO2e annually. Efforts like these have saved around £3.1m during 2019, based on the ratio of petrol and diesel used alongside the litres of fuel saved, and applied the average price per litre for the fuel type. We also encourage employees to take up low emission company cars and have nearly 460 colleagues now driving electric and hybrid options. This has led to our average tailpipe emissions reducing by 2% in 2019 to 92gCO2/km.

Initiative category & Initiative type

Energy efficiency in buildings	Other, please specify (Lighting and HVAC)

Estimated annual CO2e savings (metric tonnes CO2e)
104

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
42401

Investment required (unit currency – as specified in C0.4)
637190

Payback period
11-15 years

Estimated lifetime of the initiative
16-20 years

Comment
Centrica property – Building Services projects including AC replacement and LED lighting In pursuit of our internal carbon footprint target, we install energy efficient lighting and monitoring devices at key sites. In the UK, LED lighting and air conditioning upgrades as well as a range of other initiatives were delivered at offices across the UK which included Stockport, Coventry, Windsor, Leicester and Leeds amongst others. These improvements have resulted in an annual reduction of 104tCO2e and a saving of more than £42,000.

Initiative category & Initiative type

Low-carbon energy consumption	Low-carbon electricity mix

Estimated annual CO2e savings (metric tonnes CO2e)
756

Scope(s)
Scope 1
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
3000

Payback period
No payback

Estimated lifetime of the initiative
1-2 years

Comment
Low carbon energy supply in Ireland In 2019, we focused on greening our energy supply at our Dublin office to reduce our internal carbon footprint. This primarily involved switching our electricity load from fossil fuels to certified green energy, as well as our gas load to biomethane. We intend to purchase green certificates annually.

Initiative category & Initiative type

Low-carbon energy generation	Other, please specify (Solar PV and storage)

Estimated annual CO2e savings (metric tonnes CO2e)
348

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
23850

Investment required (unit currency – as specified in C0.4)
597882

Payback period
>25 years

Estimated lifetime of the initiative
16-20 years

Comment
Low carbon generation and storage at our sites As part of our efforts to become a net zero company, we are focused on reducing the carbon footprint of our property portfolio which includes our offices. A number of methods will help us on this journey, including installing low carbon generation and battery storage on site. In North America during 2019 for example, our New Jersey office benefitted from solar PV alongside a 400kWh battery storage unit, which helps the building generate and use energy more sustainably. Cumulatively, these technologies will help save 348tCO2e and around £24,000.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	Mandatory schemes We and many of our customers are required to comply with regulations such as ECO, the Energy Savings Opportunity Scheme (ESOS) and the EU Emissions Trading Scheme. We have used the platforms provided by legislation to underpin the strategic shift in our business towards becoming an energy services company, in addition to focusing on energy efficiency within our own operations.
Other (Corporate Strategy)	Corporate strategy Core to our customer-facing business is our strategy to provide energy services and solutions that satisfy the changing needs of our customers and enable the transition to a lower carbon future. The business model for our residential customers is focused on providing energy supply alongside in-home services and home solutions, that make our customers' lives easier and more sustainable. Likewise, our strategy for business and large-scale energy users is built around energy supply and energy optimisation as well as business services and solutions, to enable our customers to take control of their energy and manage it more efficiently. All of this is delivered through strong customer-facing brands such as British Gas, Hive, Bord Gais Energy, Direct Energy and Centrica Business Solutions. Our commitment to satisfy the changing needs of our customers and enable the transition to a low carbon future is backed by an investment of more than £1bn to grow our Centrica Home Solutions and Centrica Business Solutions business during 2015-20.
Dedicated budget for low-carbon product R&D	Dedicated budgets for technology and innovation R&D In 2015, we created a new global connected home business in which we will invest around £500m during 2015-20. This investment will enable us to continue to develop innovative services and solutions that connect customers with their entire homes and help them manage their energy more sustainably. Our connected home brand, Hive, was created in 2013 and has a dedicated R&D budget to expand its family of products which include smart thermostats, radiator valves, plugs lights and cameras, as well as window, door and motion sensors. We also set up a £100m Centrica Innovations fund, to identify new opportunities and technologies that enable us to be at the forefront of providing offerings that satisfy the changing needs of our customers and enable the transition to a lower carbon future. And in 2019, the fund invested in a range of services and solutions – from a smart hot water system to electric vehicle solutions. In 2020, we additionally launched a not-for-profit social impact grant scheme, Energy for Tomorrow, which will offer grants of between £100,000 and £500,000 to 6-10 organisation with innovative ideas that will help make people's lives easier and more sustainable.
Dedicated budget for other emissions reduction activities	Dedicated budgets for low carbon technologies Our UK Home Industry Development team is responsible for fulfilling two key mandatory obligations placed on major UK energy suppliers - that of upgrading our customers to smart meters and delivering energy efficiency improvements under ECO, both of which help reduce our scope 3 customer emissions. Our budget enables us to deliver energy efficiency obligations on time and in the most cost-effective way so that we can minimise the cost per lifetime bill savings which often correlates with carbon savings
Dedicated budget for energy efficiency	Internal carbon emission reduction targets Setting and publishing carbon reduction targets that have executive and Board support, has stimulated our investment and focus on delivering low carbon technologies that reduce our internal carbon footprint and will help us become a net zero company by 2050 – from transitioning our fleet to be fully electric, to installing energy efficient and low carbon products across our property portfolio.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

Energy efficiency measures As part of our mandated delivery of the Energy Company Obligation (ECO), we delivered a variety of energy efficiency measures to reduce energy costs and lower emissions (scope 3). Core measures delivered include wall insulation, loft/room/roof insulation, underfloor insulation and energy efficient boilers.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Conversion from Lifetime bill savings deemed scores (based on Reduced data Standard Assessment Procedure (RdSAP) methodology) as set in ECO, with in-use factor overlay and reductions to account for ECO uplift incentives)

% revenue from low carbon product(s) in the reporting year

0

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

The ECO scheme commenced in April 2013 and has been extended in recent years, with the current scheme period running from December 2018 to March 2022. Under the new scheme, heating measures are now restricted but still make up a significant proportion of the scheme while the measures in scope are more expensive and has led to fewer installs overall. We closed our delivery business in favour of using a third party model to fulfil our ongoing obligation and in 2019, around 40,000 measures were installed which we estimate will deliver annual savings of around 10,000tCO2e. While ECO enables valuable cost and carbon savings for the community, we do not currently generate revenue from the activity.

Level of aggregation

Group of products

Description of product/Group of products

Connected and smart products Centrica Home Solutions provides smart products that can reduce energy's impact on the environment by giving customers greater control over their entire home (customers' scope 1 and 2). From smart thermostats, radiator valves, lights, plugs and cameras, to smart window, door and motion sensors, our Hive ecosystem of services and solutions can be controlled conveniently with just a few taps on the app, meaning customers never have to heat an empty home or light an empty room. Smart meters support the connected home and help customers cut their carbon emissions by providing increased visibility over how much energy is being used and its costs in real-time through the smart energy monitor or via the British Gas app. This empowers customers to take control of their energy and identify ways to reduce consumption (customers' scope 1 and 2).

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Refer to comment box)

% revenue from low carbon product(s) in the reporting year
1.15

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
Around 1.8 million customers are experiencing the benefits of our Hive smart home solutions. This includes over 100,000 customers using Hive Radiator Valves following the product launch in 2019, enabling customers to manage the temperature in individual rooms which saves energy and improves comfort. This latest offering builds on our inaugural Hive Active Heating smart thermostat that helps customers control their heating and hot water at anytime from anywhere, and can save customers up to £120 a year as well as 20% of their carbon emissions by never having to heat an empty home. We calculate that this is equivalent to saving 26,043tCO2e per annum. To further grow our capabilities in this area, we are investing around £500m between 2015-20 in our Centrica Home Solutions business. Our leadership of the UK's smart meter roll-out was maintained in 2019, with cumulative installs totalling over 7.7m across homes and businesses, improving energy management and bill accuracy. Over 1.1m smart meters were installed in 2019 and we estimate this will save around 106,778tCO2e annually. Our analysis of smart meter consumption is based on a sample of British Gas customers with smart meters and compares consumption before and after installation with comparable British Gas customers who have standard meters. In a sample of our residential customers with smart meters, we found credit customers had reduced their dual fuel consumption by around 3.7%, saving £34 on average per annum across gas and electricity. Methodology - Avoided emissions for Connected Home products are calculated based on the volume of energy saved and its associated emissions, using recognised global standards. Smart meters savings are based on British Gas methodology approved by the Department for Business, Energy and Industrial Strategy (BEIS).

Level of aggregation
Group of products

Description of product/Group of products
Green tariffs We want to offer customers different types of tariffs and agreements that meet their different needs, as well as provide them with peace of mind that they are making a positive contribution towards tackling climate change. Towards this, we have introduced a range of green tariffs and bespoke energy deals for residential and business customers (customers' scope 2). In 2018 for example, British Gas became the largest supplier to gain independent certification for its 100% renewable electricity tariff from the Carbon Trust, allowing customers to confidently report zero carbon emissions per kWh of electricity used. And in 2020, British Gas introduced its new fully-certified Green Future renewable energy residential tariff which was developed with sustainability experts, Climate Care, and is one of the greenest tariffs on the market offering customers green gas and renewable electricity. Through the tariff, customers can also support carbon cutting projects at home and abroad including helping UK woodlands and supporting projects that reduce carbon emissions in the Amazon.

Are these low-carbon product(s) or do they enable avoided emissions?
Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Refer to comment box)

% revenue from low carbon product(s) in the reporting year
2.56

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
As a leading supplier of energy and services, we have a huge opportunity to provide our customers with cleaner, greener energy tariffs. And in 2019, around 550,000 customers were on green tariffs and we offered SMEs the opportunity to benefit from our 100% renewable electricity tariff at no extra cost when they sign up to a new fixed term contract. We calculate that the electricity sold through our green tariffs saved customers around 743,300tCO2e during 2019. We also have a range of green energy plans in North America for homes, business and communities including the Lancaster Community Aggregation Plan which is playing a key role in helping California consume low carbon energy to meet its low carbon commitments. And from 2020, we look forward to helping customers in their homes live more sustainably through our new Green Future tariff. On top of providing green tariffs, Centrica also signed a number of green deals with business customers including one of the UK's largest combined green energy contracts with the Catholic Church to supply over 4,500 Catholic schools and churches, while Direct Energy partnered with Budweiser Canada to provide 100% certified renewable power to brew beer from zero carbon sources. Methodology - Green tariffs provide customers with electricity that is backed by Renewable Energy Guarantees of Origin (REGO), Guarantees of Origin (GoO), or Renewable Energy Certificates (REC) that guarantee that an equivalent amount of electricity originated from a renewable source. The carbon savings associated with the renewable electricity are calculated based on the emissions associated with the equivalent electricity consumption if it was grid average power. The green gas tariff is a combination of Renewable Gas Guarantee of Origin (RGGO) backed biogas and offsets through Certified Emission Reduction (CER) or Voluntary Emission Reduction (VER) projects. Biogas is zero emissions. The emissions associated with the non-renewable gas are offset through CERs or VERs that support natural carbon sinks in the form of forests and woodlands.

Level of aggregation
Group of products

Description of product/Group of products
Time-of-use (TOU) and prepaid tariffs For many years, Direct Energy has offered TOU products that incentivise customers to cut energy demand at peak times. This reduces strain on the grid and the need to turn on additional power stations to meet demand, avoiding associated carbon emissions from power generation (customers' scope 2). Similarly, prepayment tariffs have also shown a reduction in electricity consumption (customers' scope 1 and 2). In the UK, we also provide our Electric Drivers Energy Plan TOU tariff for residential customers (customers' scope 1 and 2). Backed by renewable electricity, the tariff gives users reduced costs for energy used during the night which is enough for a full or significant charge. We also offset the gas carbon footprint created from the gas used on this duel fuel tariff.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (North America EPA emission factors, Grid average DEFRA emission factor)

% revenue from low carbon product(s) in the reporting year
0.58

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
We see our Direct Energy customers on the Free Saturdays/Sundays/Weekends/Evenings plans, shift 15% of their energy use each year to the free off-peak period when generation is typically lower carbon in order to reduce emissions. Direct Energy's prepay tariff in Texas has additionally demonstrated a reduction in electricity consumption by an average of 9.6%, equating to a drop in demand of more than 100,000MWhs per year. We calculate that customers with prepayment plans in North America, could save around 1,269tCO2e each year. We believe our British Gas tariff will save customers around 915tCO2e a year.

Level of aggregation
Product

Description of product/Group of products
Solar We help customers reduce reliance on fossil fuels by investing in alternative renewable energy sources, such as solar energy (customers' scope 1 and 2). In the UK and North America, we offered solar panels to commercial, industrial and public sector customers via our DE&P business, helping large-scale energy users generate and manage their energy more intelligently.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Refer to comment box)

% revenue from low carbon product(s) in the reporting year
0.1

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
Installing solar is one of the ways we're creating a cleaner energy system that enhances grid flexibility, supports renewables and reduces reliance on fossil fuels. In 2019, we delivered solar to customers that totalled 58MWp, with the majority taking place in North America. We estimate that this will save around 39,656tCO2e annually. These savings include partnerships like the one we have with the Royal Devon and Exeter NHS Foundation Trust which in 2019, benefitted from state-of-the-art energy technology delivered across healthcare sites and included the installation of solar alongside a range of measures such as a 1.5MW CHP, LEDs and more efficient boilers, which are projected to save 2,200tCO2e and £800,000 a year. Methodology - UK: Internal calculation method using average irradiance of 900kWh/kWp and using BRE Standard Assessment Procedure (SAP 2012) CO2 emissions factor for grid electricity of 0.2556 kg/kWh. 1.2 kgCO2e/£ used for savings. North America: Carbon savings calculated using average annual productivity 1,577kWh/kWp and Environment Protection Agency (EPA) emission factors.

Level of aggregation
Product

Description of product/Group of products
Panoramic Power Our global Panoramic Power offering brings together wireless sensor technology and cloud-based analytics, to give businesses actionable insights into energy use. This intelligence helps optimise performance, deal with potential equipment failures before they happen and reduce energy inefficiencies which reduces costs and carbon emissions.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Avoided emissions are calculated on the volume of energy saved and its associated emissions, using recognised global standards.)

% revenue from low carbon product(s) in the reporting year
0.01

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
Around 20,000 Panoramic Power sensors were deployed in 2019. This brings our total to more than 90,000 sensors, monitoring approximately 5,000 sites spread across 65 countries worldwide. Together, the sensors collect around 50m data points per day that can empower insight to deliver efficiencies. And on average, we see Panoramic Power customers save around 10-20% on energy bills by reducing usage which can also lower emissions (customers' scope 1 and 2) as well as energy costs.

Level of aggregation
Product

Description of product/Group of products
Combined Heat and Power (CHP) generators CHP enables the energy demands of commercial properties to be met in an efficient manner (customers' scope 1 and 2). The units generate electricity on site while capturing usable heat produced in the process, rather than drawing electricity off the grid and using a traditional gas boiler for the equivalent heat. This process can be significantly more efficient than most grids, and therefore comes with an associated carbon saving. CHP's also remove transition and distribution loses and can enable flexible grid services, supporting the transition to a low carbon energy mix.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Avoided emissions are calculated by the difference between the direct emissions from the CHP units and the emissions associated with the use of electricity and gas required to produce an equivalent amount of energy using the replaced technologies.)

% revenue from low carbon product(s) in the reporting year
0.16

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
In 2019, we installed 131 CHP units worldwide. The majority of these were in the UK, with additional activity in Ireland, Belgium, Netherlands, Italy, Hungary, Romania and North America. We also have equity in and/or maintain over 1,100 units worldwide. This included our completion of one of the largest CHP and Waste Heat Boiler projects we have ever done for Arlo Foods UK in Leeds. The generators are capable of cutting carbon emissions by up to 25% when compared to grid and boiler heat generation. We calculate that the CHPs we installed in 2019, delivered in year savings of around 8,500tCO2e.

Level of aggregation
Group of products

Description of product/Group of products
Energy Performance Contracts (EPC) / Optimisation Services We provide bespoke advice, product installations and operational assistance that enhances the energy efficiency and control of large-scale energy users, which reduces costs and carbon emissions (customers' scope 1 and 2). Improvements typically involve replacing industrial-sized boilers with more efficient versions and upgrading to LED lighting.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Refer to comment box)

% revenue from low carbon product(s) in the reporting year
0.09

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
We guarantee customers with a certain level of financial and/or carbon savings over the length of the contracts which generally span up to 15 years. In the UK during 2019, our EPCs created annual savings of 4,469tCO2e. Methodology- Energy saving calculations vary depending on the technology and are calculated in kWh in the first instance. Financial savings are calculated using rates agreed in each contract and may include a price escalator/degradation. Carbon savings are calculated using agreed carbon rates, usually employing values published by DEFRA at the time of writing the Investment Grade Audit.

Level of aggregation
Product

Description of product/Group of products
Demand-side response We control 1,005MW of flexible power under demand-side response contracts. Under these contracts, we manage the energy use of energy intensive customers by curtailing unnecessary usage at peak times and/or exporting electricity to the grid when its needed. This acts as a low-to-zero carbon frequency response mechanism and avoids having to start-up or ramp-up a marginal unit generator (typically gas fired turbine), which would be far more carbon intensive.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Refer to comment box)

% revenue from low carbon product(s) in the reporting year
0.12

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
The 1,005MW of flexible power under management is spread across customers located in the UK, France, Germany and Belgium. The flexible power we had under management has increased by around 300MW over the last two years and demonstrates our growing focus in enabling grid flexibility. We are undertaking work to quantify the carbon savings associated with flexible capacity under management. Methodology - GHG Project protocol. Involves comparing the intensity of the DSR flexible response offered by calculating the build and operating margins against equivalent services. This provides the carbon benefit to the wider 'system/grid' and not for each individual customer.

Level of aggregation
Product

Description of product/Group of products
Electric Vehicle (EV) charging points To build the infrastructure needed to support the mass adoption of lower carbon transport, we have chosen to become a lead installer and service solution provider for EV charge points in the UK (customers' scope 1). Installations are concentrated in locations where vehicles can maximise use of the charge points, such as at destinations, car parks, travel hubs, commercial properties, motorway service stations and car manufacturers.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Avoided emissions are calculated by comparing the carbon associated with the electricity used to charge a vehicle for a given distance, with the

emissions associated with a similar class of petrol or diesel vehicle for the same distance.)

% revenue from low carbon product(s) in the reporting year
0.01

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
We have installed over 17,200 EV charge points across the UK since 2013. In recent years, we have moved away from installing smaller charge points to focus on larger installations that can service more cars. To support EV take-up, Centrica Business Solutions and UK Home have also introduced tariffs for EVs that give customers a cheaper and greener way to charge their vehicle during off peak hours and by 2022, the tariff is projected to save 16,972tCO2e. We have also created partnerships with leading manufacturers such as Volkswagen, Ford and Lotus, to deliver charge points and EV tariffs at scale. With the UK's Road Zero strategy proposing a ban on the sale of petrol and diesel vehicles by 2035, EV-enablement is a growing focus for the UK and our business. To further maximise the adoption of EVs, Centrica Mobility Ventures tests and runs pilots of new products and services that can support EVs becoming more mainstream. For example, we are working to address the challenge of charging in areas where there is no private parking for residents, via our role as a supporting partner for a mobile charging study funded by Innovate UK.

C-EU4.6

(C-EU4.6) Describe your organization's efforts to reduce methane emissions from your activities.

Reducing methane emissions is an important part of how we manage our energy assets. In doing so, we can not only reduce the impact on climate change but also ensure the safety of our people and assets.

Power Generation: Centrica's power stations have bespoke management systems in place with procedures for operation and maintenance which comprehensively incorporates hydrocarbon leak prevention, detection and mitigation. All power stations operate under a 14001:2015 certified management systems and have an accurate understanding of their aspects, impacts and the necessary requirements to monitor and prevent methane emissions. In addition to this, any locations where a leak is considered higher risk, we employ an autonomous, high accuracy methane leak detection system. When triggered, the system is set up to notify the control room immediately, so that the relevant area can be isolated, and the leak stopped as soon as possible. Leaks can typically occur in the gas Above Ground Installation and gas turbines and in 2019, no leaks were detected at any of our power stations. And during maintenance activities, the methane emissions from the gas engines were re-tested on the Distributed Gas Engines to ensure that they met the permitted requirements.

Exploration & Production and Storage: We have hydrocarbon reduction measures at all installations which we actively manage through a process safety framework. These measures include monitoring the integrity of subsea wells as well as active inspection and management of process equipment at offshore installations as well as onshore terminals. We focus efforts on improving Asset Integrity and incorporating management of small bore tubing, flexible hoses and bolted joints which are higher risk areas for leaks. Measuring methane release volumes is particularly difficult for fugitive emissions given their size and consequently, it is difficult to quantify improvements although we believe we are making continued progress in controlling emissions due the robust processes we have in operation. Although there are no regulations in place on this issue, Spirit Energy participated in an industry-wide initiative in the Netherlands during 2019 to identify practical and economic ways of reducing methane emissions from the Dutch oil and gas producers and off the back of that, our Dutch assets have reviewed quantification methodologies of methane released, identified potential methane sources and we are currently using this information and learning from the initiative, to develop a best-in-class methane reduction plan co-ordinated by an internal working group with a focus on monitoring and measurement, to be implemented in 2020.

At our Centrica Storage Easington site, optical leak surveys using infra-red cameras, have been conducted. This enables us to visualise and pinpoint potential sources of fugitive emissions and guard against leaks. During 2019, a gas management improvement plan was submitted to the Environment Agency as an Improvement Condition of the current permit and as part of the Humber Gathering System Project permit variation. The plan identifies and implements opportunities to further reduce the amount of gas flared and vented, as well as further recovery of primary gas product.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
January 1 2015

Base year end
December 31 2015

Base year emissions (metric tons CO2e)
1955400.039

Comment
This has been updated from previous years. The value better reflects acqusitions and divestments but to enable this we have had to bring the baseline year forward from 2008

Scope 2 (location-based)

Base year start
January 1 2015

Base year end
December 31 2015

Base year emissions (metric tons CO2e)
56108

Comment
This has been updated from previous years. The value better reflects acqusitions and divestments but to enable this we have had to bring the baseline year forward from 2008

Scope 2 (market-based)

Base year start
January 1 2015

Base year end
December 31 2015

Base year emissions (metric tons CO2e)
56108

Comment
Market Based Scope 2 not calculated so Location based used as a proxy

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
Defra Voluntary 2017 Reporting Guidelines
European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
IPIECA's Petroleum Industry Guidelines for reporting GHG emissions, 2nd edition, 2011
ISO 14064-1
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
2243847.439

Start date
<Not Applicable>

End date
<Not Applicable>

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment
Our default reporting is location-based; however, we also calculate the market-based figure.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
37347

Scope 2, market-based (if applicable)
41001

Start date
<Not Applicable>

End date
<Not Applicable>

Comment
In 2019 we consumed green tariff electricity in our UK and Ireland central estate where we have operational control, including CSL terminal but excluding the power stations. This has the scope 2 emissions at these sites to zero, however this has been countered by the need to use residual emissions elsewhere, including in our non operational assets and power stations. Overall the difference is an increase, using the market-based methodology

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?
Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source
Fugitive and venting emissions from non-operated offshore assets (we collect them for our operated offshore assets). These emissions will include small quantities of natural gas that mainly consists of methane.

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
No emissions from this source

Relevance of market-based Scope 2 emissions from this source (if applicable)
No emissions from this source

Explain why this source is excluded
We do not collect fugitive and venting emissions from our UK offshore assets (gas and oil platforms) where we have an equity share, but are not the operator. This approach reflects the difficulty in obtaining this data and the immateriality of the data. We have previously estimated that excluded emissions are 0.1% of Centrica's scope 1 emissions and hence considered 'Not Relevant' The non operated offshore assets do not import electricity and hence the selection of 'No emissions from this source'

Source
Our oil and gas exploration and production business became an independent joint venture (Spirit Energy) at the beginning of 2018. As such, we no longer require them to report the immaterial emissions associated with their offices and fleet vehicles

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are not relevant

Explain why this source is excluded
The office and fleet emissions for Spirit Energy are immaterial (and therefore not relevant) in comparison to the terminal and platform emissions. By excluding the requirement for Spirit Energy to report these emissions, we have reduced the reporting burden of the independent company, whilst not changing the emissions materially. Based on 2019 total emissions the exclusion equates to an estimated 0.07% of Centrica's footprint

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C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Metric tonnes CO2e
2766725

Emissions calculation methodology
The Purchased Goods and Services emissions have been calculated to be approx. 2.08% of our scope 3 emissions, using the online Quantis Scope 3 Evaluator tool. The tool calculates the emissions associated with scope 3 categories using spend data and category types, these equate to 2,776,725 tCO2e

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We do not currently collect emissions data from suppliers.

Capital goods

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Centrica did not undertake any capital projects in 2019 of a magnitude that we believe would generate emissions that were relevant considering the potential emissions and stakeholder interest

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Metric tonnes CO2e
59258598

Emissions calculation methodology
This relates to power purchased for resale to customers, but excludes traded power. The activity data is power purchased for sale (MWh) and the associated carbon is based on site specific emissions where we have site specific contracts and grid averages for electricity purchased on the open market in the UK and Ireland. In North America, the carbon emissions are calculated using national emission factors. Together, these total 55,531,494.4 tCO2e. Additionally, the Transmission and Distribution (T&D) losses of the power we consume and the power we purchase equate to 3,158,092.2 tCO2e. Note: Where relevant, the scope 2 location-based approach has been used. Lastly the scope 3 emissions associated with our power and fuel consumption are calculated based on our scope 1 and 2 emissions. These equate to 569,011.2 tCO2e.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Centrica does not generate all the power that our customers require and hence, we purchase power from third parties and resell it to our customers. This is one of our main sources of scope 3 emissions and therefore very relevant to the company. The T&D losses are from both the power we resell and the power we consume at our own assets. The scope 3 fuel and energy related activities emissions associated with our scope 1 and 2 are also estimated using the Quantis Scope 3 Evaluator tool. In total, these equate to 46.8% or our scope 3 emissions.

Upstream transportation and distribution

Evaluation status
Not relevant, calculated

Metric tonnes CO2e
5194.187

Emissions calculation methodology
These emissions are from our offshore support providers, including supply and safety ships. The emissions are calculated by multiplying the fuel use activity data by DEFRA emission factors.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
These emissions typically equate to 0.004% of our scope 3 emissions and therefore are not relevant in terms of magnitude. Our influence over the emissions is limited and they are not deemed an area that exposes us to risk.

Waste generated in operations

Evaluation status
Not relevant, calculated

Metric tonnes CO2e
3301

Emissions calculation methodology
Emissions from waste have been calculated from our spend on waste services using the online Quantis Scope 3 Evaluator too. This equates to 3,301 tonnes

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Carbon emissions associated with waste in our operations are not considered relevant from a materiality perspective (equating to 0.002%), relative to other scope 3 emissions. However, they have been calculated using the Quantis Scope 3 Evaluator tool based on spend.

Business travel

Evaluation status
Relevant, calculated

Metric tonnes CO2e
9260.41

Emissions calculation methodology
Business travel emissions include those arising from business flight and rail use, employees using their own vehicles for business purposes and helicopter flights for personnel to offshore assets. The flights (7,896 tCO2e) and rail (179tCO2e) are calculated based on journey distance provided by our travel provider, multiplied by DEFRA emission factors. Emissions from employees using their own vehicles for business purposes (947tCO2e) are based on expense claims, using a generic emission factor for car mileage. Helicopter flights (239tCO2e) are based on fuel consumption multiplied by DEFRA emission factors. In total these equate to 9,260 tCO2e. These volumes are not material, however, business travel (exclusing Helicopter flights) are included in our Internal Carbon Footprint Target and are an area we can drive change, hence we consider it relevant

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
While this is only a small component of our scope 3 emissions (0.01%), it is an area that we can partly influence. Rail and flights and grey fleet are therefore part of our internal carbon footprint target.

Employee commuting

Evaluation status
Not relevant, calculated

Metric tonnes CO2e
20400

Emissions calculation methodology
Calculated using Quantis Scope 3 Evaluator tool from spend and employee number data

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This is an immaterial (0.02%) component of our scope 3 emissions and we have limited ability to influence the emissions. However, emissions have been calculated using the Quantis Scope 3 Evaluator tool.

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Our reporting approach includes upstream leased assets in our scope 1 and 2 emissions. Therefore, this field is not relevant.

Downstream transportation and distribution

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
The majority of our emissions associated with the transportation and distribution of our products are included within the following source of scope 3 emissions: Fuel-and-energy-related activities (not included in scope 1 or 2). This is because these emissions relate to T&D losses from power and gas distribution. We have immaterial other downstream transportation and distribution emissions

Processing of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As Centrica's primary products are electricity and gas that are used as end products, the emissions from the processing of sold intermediate products is not relevant.

Use of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
70745701

Emissions calculation methodology
Emissions are calculated based on the quantity of gas sold to residential and business customers (energy units), multiplied by the emission factor for natural gas. This totals 64,590,853 tC02e. Crude oil production emission calculations are based on the CDP scope 3 Oil and Gas Guidance generic conversion and emission factors. This results in 6,154,848 tC02e. In total this equates to 70,745,701 tCO2e of emissions.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This is a relevant component of our scope 3 emissions in respect to its size (53% of our scope 3) and is relevant to the sector.

End of life treatment of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We sell negligible volumes of product that requires end of life treatment, relative to the quantity of gas, electricity and services that we supply. These emissions are therefore not relevant.

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Centrica only leases a few properties. The emissions have previously been calculated to be immaterial at approximately 0.00004% They, do not expose the organisation to risk and hence, are not considered relevant.

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Centrica operates a Franchise in the UK, the Dyno Franchise. We do not track franchisee carbon emissions; however, previously these calculated emissions equated to less than 0.001% of our scope 3

Investments

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Centrica is not a financial organisation.

Other (upstream)

Evaluation status
Not evaluated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
N/A

Other (downstream)

Evaluation status
Not evaluated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
N/A

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	14586	This includes the emissions associated with the biofuel component of forecourt fuel, biomass and biofuel in our offices, as well as landfill gas use in plant

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.0001013

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
2281194

Metric denominator
unit total revenue

Metric denominator: Unit total
22519000000

Scope 2 figure used
Location-based

% change from previous year
38

Direction of change
Increased

Reason for change
The increase in our carbon intensity is largely due to an increase in emissions (+34%). Our 2018 emissions were abnormally low due to plant outages, with 2019 being more representative of the norm. In addition our revenue was down slightly (-3%). Overall resulting in a 38% increase in carbon intensity.

Intensity figure
0.0924

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
954371

Metric denominator
megawatt hour generated (MWh)

Metric denominator: Unit total
10324347.53

Scope 2 figure used
Location-based

% change from previous year
133

Direction of change
Increased

Reason for change
The 2019 Central Power Generation carbon intensity figure is 0.09 based on the Scope 1 and 2 emissions emitted from power generating activities. This is a 133% increase on 2018's intensity of 0.04. This is mainly due our largest gas-fired power station generating at full capaciy in 2019, compared to a reduced capacity in 2018 due to extended outages. This has increased its generation by 35%. Meanwhile our nuclear interests reduced their output by 33% in 2019 due to outages. As a result the overal carbon intensity of our power has increased 133%

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	2191185.1	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	49759	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	2903	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	0	IPCC Fourth Assessment Report (AR4 - 100 year)
PFCs	0	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	0	IPCC Fourth Assessment Report (AR4 - 100 year)
NF3	0	IPCC Fourth Assessment Report (AR4 - 100 year)

C-EU7.1b

(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Total gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	0	14	0	349.2	These emissions relate to fugitive emissions from the gas turbines (unburnt hydrocarbons in turbine exhaust)
Combustion (Electric utilities)	1116738.33	58.5	0	1118200.935	The methane and carbon dioxide from the combustion of gas and diesel at our power stations
Combustion (Gas utilities)	0	0	0	0	
Combustion (Other)	0	0	0	0	
Emissions not elsewhere classified	0	0	0	1494.47	The other emissions cannot be categorised as CH4, SF6 or C02 as relate to N2O.

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United Kingdom of Great Britain and Northern Ireland	954143
North America	9767
Ireland	925696
Norway	270456
Other, please specify (Rest of World)	83786

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
UK Home	36904
Bord Gais Energy	925694
North America Home	10692
Centrica Home Solutions	84
Centrica Business Solutions	373992
Energy Marketing & Trading	155
Spirit Energy	734002
Centrica Storage	152612
Central Functions	911
UK Business	211
NA Business	88
Nuclear	8502

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	1120045	<Not Applicable>	We do not have any credits for indirect savings. As such our gross and net are the same
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
United Kingdom of Great Britain and Northern Ireland	31881	35304	124359	31865
North America	3772	3772	8255	0
Ireland	1453	1354	3823	1709
Other, please specify (Rest of World)	242	572	1280	0

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
UK Home	4498	1201
Ireland	1451	1351
North America Home	3003	3003
Centrica Home Solutions	283	421
Centrica Business Solutions	6982	8080
Energy Marketing & Trading	558	650
Spirit Energy	9344	13927
Centrica Storage	1737	20
Central Function	483	128
Nuclear	7617	11353
NA Business	867	867
UK Business	523	0

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Increased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	442	Decreased	0.03	A 1728 MW increase in onsite renewable power and heat has reduced our emissions by 0.026% of 2018's Scope 1 & 2 emissions of 1,703,601 TCO2e [(442/1703601)*100= 0.03%]. We have increased our purchased renewable electricity consumption but because we report on Location based Scope 2, this is not shown
Other emissions reduction activities	7627	Decreased	0.45	We have a target to reduce our internal carbon footprint by 35% by 2025 (based on 2015) through carbon reduction activities. In 2019 we reduced the targeted emissions by 0.45% of 2018's Scope 1 & 2 emissions of 1,703,601 TCO2e [(7627/1703601)*100 = 0.45%] through such activities as office consolidation; improved building energy management; low carbon company car policy and through efficiencies in our commercial fleet.
Divestment	3442	Decreased	0.2	In H1 2019 we divested our Clockwork operations in N America resulting in a 0.2% reduction of 2018's Scope 1 & 2 emissions of 1,703,601 TCO2e [(3442/1703601)*100 = 0.2%]
Acquisitions	598.5	Increased	0.04	Mid 2019 Centrica acquired SmartWatt in N America, which includes 19 properties, these equate to 599 TCO2e of the 1703601 TCO2e footprint in 2018 [(599/1703601)*100 = 0.035%]
Mergers	0	No change	0	
Change in output	590667	Increased	34.7	2018 had outages at a number of our higher emitting businesses, including Whitegate power station, CSL and Spirit Energy. These sites were back in full production in 2019 and hence their emissions have risen by 590,667 TCO2e of 2018's Scope 1 & 2 emissions of 1,703,601 TCO2e (34.7%). This also includes, Kings Lynn power station which re-started generating in 2019 after an extended redevelopment [(590667/1703601)*100 = 34.7%]
Change in methodology	0	No change		
Change in boundary	0	No change		
Change in physical operating conditions	0	No change		
Unidentified	1108	Increased	0.07	There was an additional 0.07% increase of 2018's Scope 1 & 2 emissions of 1,703,601 TCO2e that can not be attributed to a specific reason [(1108/1703601)*100 = 0.07%]
Other	4103	Increased	0.24	Barry Power station was closed and demolished in 2019, reducing Y-o-Y emissions by 0.2% of 2018's Scope 1 & 2 emissions of 1,703,601 TCO2e [(4103/1703601)*100 = 0.2%]

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	49902.22	9907553.14	9957455.36
Consumption of purchased or acquired electricity	<Not Applicable>	33574.6	104143	137718
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	8159	<Not Applicable>	8159
Total energy consumption	<Not Applicable>	91635.82	10011696.14	10103332.36

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	Yes
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)
Natural Gas

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
9642851.4

MWh fuel consumed for self-generation of electricity
7112420.09

MWh fuel consumed for self-generation of heat
2525630

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
3782

MWh fuel consumed for self-cogeneration or self-trigeneration
1019

Emission factor
0.18443

Unit
kg CO2 per KWh

Emissions factor source
UK Government GHG Conversion Factors for Company Reporting 2019

Comment
The gas used in CHP's are for co-generation. The CSL and Spirit Energy gas consumed is categorised as heat because it is mainly used in compressors as opposed to for elec generation We use site specific EFs for our upstream plant gas consumption based on analysis of calorific value. However the downstream gas consumption EF is based on the HHV

Fuels (excluding feedstocks)
Other, please specify (Shipping Fuel)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
22818

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
22818

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
0

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
3165.36

Unit
kg CO2e per metric ton

Emissions factor source
UK Government GHG Conversion Factors for Company Reporting 2019

Comment
Support and supply ships for CSL platform

Fuels (excluding feedstocks)
Wood Chips

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
575

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
575

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
0

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
59.02902

Unit
kg CO2e per metric ton

Emissions factor source
UK Government GHG Conversion Factors for Company Reporting 2019

Comment
onsite biomass boilers

Fuels (excluding feedstocks)
Motor Gasoline

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
45359

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
45359

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
0

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.20904

Unit
kg CO2e per liter

Emissions factor source
UK Government GHG Conversion Factors for Company Reporting 2019

Comment

Fleet vehicle fuel (forecourt petrol)

Fuels (excluding feedstocks)
Biodiesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
49327

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
49327

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
0

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
0.03178

Unit
kg CO2e per liter

Emissions factor source
UK Government GHG Conversion Factors for Company Reporting 2019

Comment
includes biodiesel component of forecourt fuel

Fuels (excluding feedstocks)
Diesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
196070

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
196070

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
0

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.59411

Unit
kg CO2e per liter

Emissions factor source
UK Government GHG Conversion Factors for Company Reporting 2019

Comment
Excludes biodiesel component of forecourt fuel

Fuels (excluding feedstocks)
Gas Oil

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
455

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
455

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling
0

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.75821

Unit
kg CO2e per liter

Emissions factor source
UK Government GHG Conversion Factors for Company Reporting 2019

Comment
Used as back-up fuel at some sites

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity				
Heat				
Steam				
Cooling				

C-EU8.2d

(C-EU8.2d) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.

Coal – hard

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment
We do not generate power from coal

Lignite

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment
we do not generate power from lignite

Oil

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment
we do not generate power from oil

Gas

Nameplate capacity (MW)
1117

Gross electricity generation (GWh)
2938

Net electricity generation (GWh)
2478

Absolute scope 1 emissions (metric tons CO2e)
949886

Scope 1 emissions intensity (metric tons CO2e per GWh)
383

Comment
Slight reduction in carbon intensity compared to 2018 (389)

Biomass

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment

Waste (non-biomass)

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment

Nuclear

Nameplate capacity (MW)
1784

Gross electricity generation (GWh)
7846

Net electricity generation (GWh)
7846

Absolute scope 1 emissions (metric tons CO2e)
4484

Scope 1 emissions intensity (metric tons CO2e per GWh)
0.57

Comment
As a non-operated asset we do not receive gross generation data so have used net for gross as well. Figures are provided on the basis of our 20% equity stake.

Fossil-fuel plants fitted with CCS

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment

Geothermal

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment

Hydropower

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment

Wind

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment

Solar

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment

Marine

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment

Other renewable

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment

Other non-renewable

Nameplate capacity (MW)
0

Gross electricity generation (GWh)
0

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment

Total

Nameplate capacity (MW)
2901

Gross electricity generation (GWh)
10784

Net electricity generation (GWh)
10324

Absolute scope 1 emissions (metric tons CO2e)
954371

Scope 1 emissions intensity (metric tons CO2e per GWh)
92

Comment
In 2019 our largest gas power station ran at near full capacity whilst our nuclear plants had extended outages (opposite to 2018), the CI of our power generation has increased from 53 to 92. (All values based on equity)

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.

C-EU8.4

(C-EU8.4) Does your electric utility organization have a transmission and distribution business?
No

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description
Other, please specify (Water)

Metric value
76527

Metric numerator
m3

Metric denominator (intensity metric only)
N/A

% change from previous year
0.12

Direction of change
Decreased

Please explain
An annual target is set for office water in our main UK offices. The reduction of water consumption reduces the use of water resources, but also reduces the emissions associated with water management and treatment.

Description
Waste

Metric value
686

Metric numerator
Tonnes

Metric denominator (intensity metric only)
N/A

% change from previous year
6.3

Direction of change
Decreased

Please explain
Annual targets are set for our UK office and learning centre waste. A 6.3% reduction compared to the previous year was achieved. The reduction in waste equates to reduced resource consumption and reduced emissions associated with production and waste disposal

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C-EU9.5a

(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Gas	0	0	2020	There are currently no plans for Centrica to invest in merchant power generation. Within our Centrica Business Solutions arm, we offer financing solutions to our customers to allow them flexibility when purchasing solutions from us. This includes power generation from CHPs and Solar. Therefore, we may fund the project up front, or part of it, and collect the payment over time. Although this may be accounted for as capex, this is commercially a means to grow revenue, not grow a power generation portfolio within Centrica.

C-EU9.5b

(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Other, please specify (remaining Capex)	We have announced that we will spend around £600m capex in 2020, of which Oil and Gas will be no more than £400m. The remaining Capex will be split across all other business areas including our CBS and CHS businesses.	200000000	33	2020

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

C-CO9.6a/C-EU9.6a/C-OG9.6a

(C-CO9.6a/C-EU9.6a/C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Other, please specify (Smart Systems)	Large scale commercial deployment	≤20%		Centrica Home Solutions (CHS) made an operating loss of £84m in 2019 and a further £31m capitalised investment in our CHS business which supplies new technologies and energy efficient solutions to residential customers. Hive products, including the smart thermostat, allow customers to better understand and manage their energy usage.
Distributed energy resources	Large scale commercial deployment	≤20%		Our Centrica Business Solutions (CBS) business made an operating loss of £68m in 2019 and a further £83m capitalised investment (including acquisitions) in CBS which supplies new technologies, flexible generation and energy efficient solutions to commercial and industrial customers.
Digital technology	Small scale commercial deployment	≤20%		• In 2017, Centrica announced the creation of a new venture 'Centrica Innovations' (CI) to identify, incubate and accelerate new technologies and innovations, with £100m dedicated to the fund over five years. To date, Centrica has invested in nine projects, including: - o 7 Companies in the distributed/ decentralised energy system space. These include; a) a blockchain solution that standardises electric grid data and provides software tools so utilities can run local energy markets b) Linear Generator provider that offers businesses affordable flexible and reliable clean power from natural gas o 5 companies in the connected world space. These include; a) technology specialists in industrial cyber security b) Cutting-edge in-home monitoring and fall detection, empowering people to live independently for longer o 1 company in the electric vehicle space, which is an end-to-end software solutions provider for electric vehicle charging

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Assurance-Statement-2019.pdf

Page/ section reference
1

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Assurance-Statement-2019.pdf

Page/ section reference
1

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3: Business travel

Verification or assurance cycle in place
Triennial process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Assurance-Statement-2019.pdf

Page/section reference
1. Note this is a component of our ‘internal carbon footprint’, in which we assure business travel

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
95

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C4. Targets and performance	Progress against emissions reduction target	ISAE3410	We have a target for the reduction of our Internal Carbon Footprint emissions (offices, fleet & business travel) by 20% by 2025 (subsequently increased to 35%) from a 2015 baseline. Progress against target was assured in 2020 and is in a triennial program. Assurance Statement: Page 1 Basis of reporting: page: Page 6 Annual Report: page 227 Assurance-Statement-2019.pdf Basis-of-reporting-2019.pdf annual-report-and-accounts-2019.pdf
C4. Targets and performance	Other, please specify (Progress against delivery of 7GW of flexible, distributed and low carbon technologies as well as provide system access and optimisation services)	ISAE3410	Our ability to store and balance energy is vital to decarbonising the energy system by maximising renewable and low carbon energy. That's why we have set a global Responsible Business Ambition to enable the energy system transition, by targeting 7GW of flexible, distributed and low carbon technology by 2030. This will be delivered by providing technologies and services such as solar, batteries, demand-side response and Combined Heat and Power (CHP). Our 7GW ambition is equivalent to over 10% of current UK peak demand. Progress against this target was assured in 2020 and is in a triennial program. Assurance Statement: Page 1 Basis of reporting: page: Page 11 Annual Report: page 227 Assurance-Statement-2019.pdf Basis-of-reporting-2019.pdf annual-report-and-accounts-2019.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

70.8

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

578034

Allowances purchased

1015859

Verified Scope 1 emissions in metric tons CO2e

2243847

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

The verified emissions are the sum of Centrica's EU ETS data from all relevant countries including; UK, Ireland, Norway and Netherlands. However, the '% of scope 1 emissions covered by the ETS' is slightly higher as our scope 1 emissions include non-operated assets that operate under other companies' ETS

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

EU Emissions Trading System (EU ETS)

The cost of carbon has become an important factor in all investment decisions taken by Centrica in the power and gas markets. We actively use all available methods to manage our exposure to the risk of rising carbon costs through abatement and emissions trading. Centrica has been actively trading in the EU Emissions Trading market for over ten years and has also been active in the international carbon credit market. We aim to meet the cost of our carbon emissions in the most economical manner for our customers and shareholders. Centrica believes that flexibility is important to help installations manage their carbon exposure. We are constantly looking to manage our carbon position using both abatement and carbon credits. Using the trading markets enables us to effectively manage cost exposures arising with regards to carbon pricing through the EU ETS. We also have in place robust procedures to ensure verification of our emissions and subsequent surrender of sufficient emissions allowances is carried out in line with the scheme requirements.

An example of our strategy for complying with EU ETS is our Merchant Power business, which factors in a carbon escalator price (based on the EU ETS price) into the investment case for fossil fuelled assets to test the viability in gaining future market contracts. All Centrica's power stations are certified to ISO14001, the international standard for environmental management systems and are regularly audited by external specialists from an independent accredited certification body. The system for managing EU-ETS uses a two-stage process comprising a portfolio level Standard that sets out the minimum requirements to be met across the portfolio for compliance with the EU-ETS regulations and the associated guidelines. This specifies the overarching requirements for compliance at installation level including the contents of the monitoring and reporting plan, the identification of emission sources, categorisation of tiers, uncertainty requirements, sampling plan requirements, data management/ control/ CO2 calculation requirements, risk assessment processes and training/ competency needs. This is then enacted by site level procedures that set out the details of the individual site processes used to satisfy the company Standard including the roles and responsibilities and the data flow activities. The two-stage process ensures a uniformity of approach for Centrica and optimum use of resources for ensuring compliance.

The EU-ETS has an annual regulatory compliance cycle with defined dates for submission to the regulator of an annual emission report that quantifies emissions for the calendar year. The emission statement has to be subjected to independent verification by an approved external verifier prior to submission. Following completion of verification and the submission to the regulator the final task associated with compliance for the calendar year is surrender of emission allowances to match the actual installation emissions. This is completed via the EU registry. Centrica was fully compliant across all relevant power station with the above in 2019.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price
Navigate GHG regulations
Stakeholder expectations
Change internal behavior
Stress test investments

GHG Scope
Scope 1

Application
We produce a carbon pricing forecast for the EU ETS and UK carbon price floor to 2040. Our forecast is informed by the ETS price, policy and third-party forecasts. These projections are primarily used within our power generation and oil & gas asset businesses for near-term forecasts of business performance and longer-term forecasts which are factored into new capital investment decisions. The carbon price is also utilised by the UK downstream businesses for near term hedging, where it constitutes approximately 12% of the wholesale power price. Internal forecasts of carbon prices are integrated in to our short to long term projections of power prices and ancillary market returns. These projections in turn are used to develop our view of the future financial performance of the company and what strategic decisions we need to take, for example where to invest and when.

Actual price(s) used (Currency /metric ton)
40

Variance of price(s) used
N/A

Type of internal carbon price
Shadow price

Impact & implication
Our power generation operations in the UK and Republic of Ireland together with some of our oil and gas assets in the North Sea and Netherlands, are currently subject to the EU Emission Trading System (EU ETS) carbon price and/or the UK carbon price floor, which are set at an EU and UK level respectively. In 2019, the combined impact of EU ETS carbon price and UK carbon price floor was around £40/tCO2e. The costs mostly apply to our scope 1 emissions from gas fired power generation and are reflected in the traded price of electricity. Utilising an internal carbon price enables us to better predict the long-term impacts of regulations, such as the UK carbon price floor and EU ETS, on our business and communicate this information to interested stakeholders such as politicians and investment analysts as appropriate, to better understand our business and inform their decision-making. As an example of how these prices are used, in 2019 internal carbon pricing was utilised to determine the price point we would bid in energy market auctions for potential future generation asset developments. We support the use of carbon prices as a mechanism for incentivising decarbonisation. This is because we believe that if carbon pricing mechanisms continue over the long term, it will impact attractiveness of investment opportunities by providing financial incentives to grow lower carbon generation. For example, following a previously volatile EU ETS carbon price, we forecast an upward trajectory in carbon prices in the future which will impact the viability of high carbon power investments such as coal versus lower carbon power investments in gas, nuclear and renewable energy. This in-turn gives confidence in our strategic direction of focusing on lower carbon generation and the grid flexibility required for higher levels of renewable generation

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Compliance & onboarding

Details of engagement
Included climate change in supplier selection / management mechanism
Code of conduct featuring climate change KPIs
Climate change is integrated into supplier evaluation processes

% of suppliers by number
100

% total procurement spend (direct and indirect)
100

% of supplier-related Scope 3 emissions as reported in C6.5
100

Rationale for the coverage of your engagement
We want to use our purchasing power as a force for good which is why we strive to ensure that all of our supply chain is sustainable. As part of this, it's important to have a strong foundation so we focus on embedding Corporate Responsibility (CR) clauses in supplier contracts and ensuring that suppliers commit to uphold our CR Policy for Suppliers which includes environmental safeguards. This applies to all suppliers wherever they are based in the world or whatever our spend with them is, because it's a core part of our onboarding process.

Impact of engagement, including measures of success
We use our purchasing power to embed high social, ethical and environmental standards across our global supply chain. A key way we measure success is by ensuring that all of our suppliers a) sign-up to our CR clauses in contracts which encompasses environmental safeguards and b) comply with our Procurement and CR Policy for Suppliers which contains the commitment to protect the environment. In 2019, all suppliers committed to uphold high environmental standards. They either accepted our CR policy and clauses, or, we agreed that their policies equalled our own and further alignment was unnecessary. Through these actions, we set out the clear expectation to tackle climate change and protect the environment from the very outset of our relationship, which provides a sound foundation for doing business responsibly and helps reduce risk as well as GHG emissions across our supply chain.

Comment
In addition to onboarding and compliance, we also target deeper engagement with higher risk suppliers as set out below.

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Other, please specify (Corrective action plan collaboration)

% of suppliers by number
0.4

% total procurement spend (direct and indirect)
31

% of supplier-related Scope 3 emissions as reported in C6.5
0.4

Rationale for the coverage of your engagement
Beyond compliance and onboarding, we focus further engagement efforts on higher risk suppliers so that we can target action to where we can make the greatest difference. To identify higher risk suppliers, we risk-rate them using a third-party engagement tool that determines risk around the following key areas: country, sector, spend and product or service. Suppliers identified as high risk, are subject to an enhanced assessment and remedial action where necessary.

Impact of engagement, including measures of success
We want our supply chain to be increasingly sustainable. We can play an important role in making this happen through embedding proactive monitoring, managing and engagement. One of the ways we measure our success is by maintaining continuous improvement in our supply chain sustainability risk score within the 'low risk' category when benchmarked against industry averages. Having a low risk score demonstrates that we have effective engagements in place to maintain or raise standards that reduce the impact of climate change and cuts risk across our supply chain. In 2019, we assessed a further 52 strategic and higher risk suppliers via a third-party risk assessment tool. This resulted in a sustainability risk score of 59 which maintains our 'low risk' rating and is better than the multi-industry average of 45 (medium risk), which shows that our suppliers are committed to upholding and improving their climate change and wider sustainability resilience. If a supplier receives a medium or high risk rating, we work with them to create corrective action plans that build their capability. We do this by drawing on our expertise and knowledge acquired via collaboration with the Responsible Sourcing Council (RSC) and through on-the-ground site inspections, which gives us greater insight into issues and helps us tailor support so that we can raise standards collaboratively. In 2019, we undertook nine site inspections in the UK, China, Italy and Turkey, one of which included a significant improvement in a supplier's audit score following the completion of a corrective action plan. As a result of our corrective action plan alongside our ongoing support, the supplier based in Turkey was able to move to a more progressive energy and water reduction strategy, following the strengthening of their reporting policies and mechanisms which has enabled them to identify and deliver targeted energy efficiency savings. Within Centrica, we have also created a network of responsible procurement champions to proactively cascade and embed the importance of sustainability with suppliers. During 2019, our 'Every Visit Counts' programme continued to ensure category managers took every opportunity, when visiting suppliers, to assess practices and improve standards relating to the environment.

Comment
While we work hard to raise standards across our supply chain, we also look to help other companies raise standards in theirs. Through our ongoing membership of the RSC, we attended all of their events in 2019 and hosted the first meeting of the year whereby we shared our responsible procurement achievements to help others learn from our experience, and collaborated to find solutions to some of our challenges.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement
Education/information sharing

Details of engagement
Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number
100

% of customer - related Scope 3 emissions as reported in C6.5
97.9

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
With over 90% of our carbon emissions arising from our customers, its vital that we enable all of our customers to manage their energy more sustainably. Core to achieving this is to engage our customers through focused campaigns and wider targeted communications mainly in the UK, North America and Ireland, where the majority of our customers are based. In doing so, we can educate and inform customers in reducing their footprint and cutting costs, while driving sales and achieving our purpose to enable the transition to a lower carbon future. A good example of engagement is through our support of the sector-led campaign by Smart Energy GB. The campaign uses marketing, events, partnerships and media to encourage customers to adopt smart meters, enabling more people to benefit from greater insight that can be used to reduce energy use. Direct communication with customers through letters and engineer visits, also help drive awareness and installation. We additionally seek out certifications and partnerships that boost credibility and take-up of energy saving products that can enhance communications across media and sales channels. We were the first UK energy supplier to achieve accreditation from the Carbon Trust for our renewable energy tariff for business customers and we launched a Green Future renewable energy tariff which was developed with Climate care, both of which secured strong press coverage and amplified the offering for customers. Centrica Business Solutions undertook a Powering Britain report series alongside other consumer insight reports, to illustrate the economic and environmental benefits distributed energy solutions can have if adopted by key sectors. Findings were shared via targeted media, events and advertising as well as in proactive customer engagements. We also ran and supported campaigns focused on raising awareness about national schemes that reward companies for undertaking carbon reduction activities. These include the Renewable Heat Incentive (RHI) which gives companies a subsidy for each kWh generated by renewable products and Energy Performance Contracts (EPC) that guarantee customers carbon and cost savings.

Impact of engagement, including measures of success
We want to help customers manage their energy more sustainably. Success is measured with the delivery against our Responsible Business Ambition to help customers reduce their carbon emissions 25% by 2030; 3% of which will be directly targeted via our services and solutions. In 2019 we were on track with this goal delivering a 3.9% reduction - equivalent to the annual emissions of 900k homes. This is a direct result of raising awareness and encouraging customers to use lower carbon services and solutions. Specific examples contributing to this include our smart meter campaign, which raised awareness of the savings smart meters create and enabled the installation of more than 1m additional devices in 2019, saving over 100,000tCO2e annually. External advertising campaigns demonstrating greater control and comfort with Centrica Home Solutions led to a 10% increase in revenue with our Hive smart thermostat saving around 26,000tCO2e annually. Meanwhile, Centrica Business Solutions campaigns encouraged large-scale energy users to take up offerings that can help them realise their carbon and cost ambitions. For instance, our Powering Britain report showed that if just 50% of the UK's Industry, Healthcare and Hospitality & Leisure sectors took up distributed energy solutions, they could save ~11% on their carbon footprint. Off the back of this, we engaged new and existing customers on the findings, including the NHS, so that money saved from energy can be redirected towards being more competitive or extending essential public services. We now provide energy solutions to over 1,300 NHS providers while 10% of their estate switched to renewable energy. Moreover, following our Distributed Energy Future Trends report which tracks the rising appetite of businesses to amplify social and environmental impact, we enhanced services to kick-start their sustainability journey to turn energy into an opportunity rather than just being a business cost. And by the end of 2019, this contributed to Centrica Business Solutions' order book increasing by 19% while revenue was up 36%. Additional efforts relating to the RHI and other government efficiency schemes has enabled a steady take-up, further feeding the installation of low carbon services and solutions. This can be illustrated with the continued delivery of EPC's in 2019 which reduced in-year emissions by 5,000tCO2e.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

It's essential that we work in partnership with wider stakeholders across the value chain to develop and deliver new energy services and solutions that help us decarbonise key sectors including power, heat, transport and the gas network. By pooling our expertise and collaborating with partners such as start-ups, established car manufacturers, competitors and local authorities, we can deliver energy solutions that work for our customers and wider society. Our engagement strategy is focused in areas of significant risk or opportunity as we transition to a lower carbon world, and where we feel we have the capabilities and commercial drive to make a significant contribution – from providing new smart home products and developing better homes, to delivering electric vehicle (EV) charging solutions and investing in the development of new energy systems.

Through the Centrica Mobility Ventures team, we are able to assess, evaluate and deliver a wide range of initiatives across the EV value chain to maximise EV take-up. We are working with car manufacturers to support their customers and dealership networks on EV readiness, providing a one-stop-shop for charging solutions including the charging infrastructure, energy management, financing, and optimisation. Towards this in 2019, we announced new partnerships with Ford and Volkswagen to offer a dedicated home charging installation service and EV tariffs, while in 2020, we partnered with Lotus to develop a new model for EV ownership that fully integrates future mobility and energy through connected vehicles, connected homes and connected customers. We have additionally formed a partnership with the NCP with the purpose of making inner city charging in public places more convenient, as well as Dundee City Council to deliver a flagship charging hub with partners, that introduces rapid EV changing with on-site storage and renewable generation. The success of all of these initiatives is initially focused on rates of take-up and customer experience, with feedback to be used to help refine offerings.

We are partnering with energy experts to decarbonise the energy system by pioneering new ways to generate, manage and consume energy. We have formed a consortium with some of the largest businesses in the UK's Humber region so that we can be part of the world's first zero-carbon industrial cluster, by developing a carbon capture and storage (CCS) and hydrogen production facility. We believe that CCS and hydrogen must play a significant role in decarbonisation so it's vital for the broad range of skills and experience to come together from partners including Phillips 66, Uniper, VPI Immingham, Drax, Equinor, National Grid, SSE Thermal and others, and deliver this project which has the potential to capture and store 10% of the UK's carbon emissions each year. Success will be measured with carbon emissions saved when fully operational while in the short term, success can be judged with the effectiveness of each key milestone in the build up to the industrial hub being ready by 2040, with proposals to build a demonstration hydrogen production facility by 2025 and install carbon capture equipment on one of the biomass units at Drax's power station by 2027. Funded by the European Regional Development Fund, the University of Exeter and ourselves, we are also testing how flexible demand, generation and storage can support the grid during peak times and help stimulate the growth of renewables through the Cornwall Local Energy Market trial. Technologies like solar and battery storage together with a virtual marketplace enabled by blockchain technology has been rolled out to over 200 homes and businesses and we will analyse the findings of the trial to measure its success, which will focus on proving the value of flexibility for SME business and homeowners.

We have partnered with a range of third parties to create lower carbon homes. For example, though our £100 million Centrica Innovations fund, we have partnered with start-ups to develop and deliver new offerings which includes investment in Mixergy. Mixergy is a smart hot water system that only heats the amount of water required by adjusting to household routines while storing excess renewable energy from the grid which improves flexibility and reduces energy use from heat losses by up to 40% a year. We have also worked with local authorities to host developer days and regularly engage major manufacturers (OEMs) on shaping lower carbon homes. Success will be measured against our ambition to help customers reduce emissions by 25% through direct and indirect action by 2030 and towards this in 2019, we were on track having enabled our customers to reduce emissions by 3.9%.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Trade associations
Funding research organizations
Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify (Renewable Heat Incentive (RHI))	Support with minor exceptions	Renewable Heat Incentive (RHI) - In response to the sector specific decarbonisation requirements under the UK's fifth carbon budget, we believe the design and function of the RHI needs to be revisited for domestic households to support a step change in heat decarbonisation. We have worked with a leading economic consultancy (Vivid Economics) and leveraged our own internal research to identify shortcomings associated with the RHI, notably long pay-back periods for customers and a limited range of qualifying technologies. Our work has focused on the role a re-purposed RHI could play in tackling the early stages of heat decarbonisation. We have begun engaging Government bodies and other stakeholders on changes that could be made to the scheme, such as responding to various calls for evidence on heat decarbonisation. Our work has focused on the role a re-purposed RHI could play in tackling the early stages of heat decarbonisation. We have begun engaging Government bodies and other stakeholders on changes that could be made to the scheme, such as responding to various calls for evidence on heat decarbonisation.	In 2020, it was announced that the RHI would be extended by a year to end in 2022 and that it would be succeeded with a 'Low Carbon Heat Support Scheme', which we will work with Government to shape through consultation. We have advocated for improvements to the RHI over the years and compared to the RHI, we believe the new scheme should benefit from: a) a re-design of assignment of rights to allow third parties to provide domestic customers with up-front subsidy for technologies and active consideration of transitioning from a Feed-in-Tariff (FiT) model to a capital grant model, which will both improve scheme cost effectiveness and demand, b) some form of ring-fencing of funding to ensure the domestic sector secures a higher overall proportion of funding given the progress that needs to be made in particular in decarbonising, and c) expanding the scope of low carbon technologies to products such as Gas Absorption Heat Pumps (GAHP) as well as hybrids and Combined Heat and Power (CHP), as is the case in other countries such as Germany. For example, the Committee on Climate Change (CCC) has recommended that 10m hybrid gas heat pumps should be installed by 2030. Customers will need to be incentivised to purchase the heating systems, given the higher cost compared to conventional gas boilers. To support decarbonising of heat, we have established our own fund to trial hybrid heat pumps in homes and we will share our findings with government which will inform future policy positions.

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Energy efficiency	Support	Energy efficiency in homes and businesses Energy Company Obligation (ECO) - ECO is a government energy efficiency scheme aimed at domestic premises administered by Ofgem and delivered by large energy suppliers. ECO was introduced in 2013, with the latest phase running from December 2018 to March 2022. Energy efficiency in homes remains a key way to reduce energy bills, cut carbon emissions and tackle fuel poverty. We are playing our part in this important scheme and continue to work with third parties to deliver the obligation. In the Clean Growth Strategy, Government committed to "extend support for home energy efficiency improvements until 2028 at the current level of ECO funding". We believe that now is the right time to engage policy makers and revisit the design of the scheme as well as the role of energy suppliers who deliver it. Businesses and public sector - While energy efficiency in homes has steadily improved since the mid-1990s, the energy efficiency of non-domestic stock has improved little in recent years. We have conducted and published research that demonstrates the value of decentralised energy and optimisation solutions for large-scale energy users. Our Powering Britain report series identified potential energy savings that would reduce annual carbon footprint by 11% if just 50% of Industrial, Health and Hospitality & Leisure sectors took up these solutions. We have used the report extensively with stakeholders, including Government and policy makers, to raise awareness of energy saving opportunities and inform future policy decisions.	ECO - ECO3 regulations were altered slightly in 2019 to incorporate new standards. We will continue to encourage Government to ensure that whilst an obligation on energy suppliers is in place, all suppliers should have to play their part, not just the larger ones as the current small firm exemption has led to distortions in the market. We also believe that ECO should be transitioned back to a fabric focused scheme, widening allowable measures to maximise savings for customers and better support the transition to a lower carbon future. Businesses - To drive energy efficiency uptake with businesses, we recommend that a range of approaches must be considered which reflects the different energy demands, fuel types and uses - from public sector and manufacturing to offices and community centres. The UK Government is consulting on the potential for an energy efficiency scheme for SMEs, as a way to achieve the carbon reduction targets for SMEs set out in the Clean Growth Strategy. We are engaging with Government on this issue and whilst we agree with the goal, we are keen to ensure that this consultation does not result in an overly complex scheme that ultimately increases energy bills for SMEs. Specifically, we would like legislation bought forward to deliver an auction model for SME energy efficiency with the first taking place H1 2021, and for businesses investing in energy efficiency to benefit from reduced business rates.
Energy efficiency	Support with minor exceptions	Future Homes Standard - The UK Government proposed a Future Homes Standard in the Autumn 2018 Budget, for introduction in 2025. It will set minimum environmental standards for all new housing, including a commitment to removing traditional fossil fuel heating systems. We support making new build homes zero carbon and believe it is one of the most economic segments to decarbonise.	We believe the Future Homes Standard could be brought forward from 2025 to 2021, given the industry had already prepared for the introduction of a zero carbon homes standard in 2016 which was subsequently abandoned. The time is right to drive momentum into the low carbon heating market to deliver cost savings and provide job opportunities to build back better from Covid-19. With around 200,000 new homes built each year in the UK and around 85% of UK homes having a gas boiler, there is a big opportunity to accelerate the deployment of low carbon home solutions.
Other, please specify (Smart Meters)	Support	UK - Centrica has always been a strong advocate of the smart meter roll-out because we understand the positive impact they can have on helping people better understand, control and reduce their energy usage. We have been working towards meeting the Government's mandated deadline to offer all customers smart meters by the end of 2020, which was extended to 2024 in 2019 and in 2020, was further extended by six months to June 2025 to allow for disruption caused by Covid-19. By the end of 2019, we had installed over 7.7m smart meters in homes and businesses since 2009 and have installed more smart meters than any other supplier. To support this, we've invested in training over 2,000 British Gas Smart Energy Experts which has enabled us to install smart meters in homes at a rate of one every 21 seconds. To ensure effective take-up, we have shared learning about our roll-out at industry working groups, consultations and regular meetings with Government alongside other stakeholders. Topics discussed include customer engagement, handling of consumer data and maximising benefits from different consumer types including vulnerable customers. North America - Direct Energy continued to share learning and customer insights from our innovative, smart-enabled products through major industry conferences as well as at meetings with regulators and legislators across states and legislative bodies in 2019. This has enabled us to highlight the positive impacts of load-shifting to off-peak periods and show how increased energy awareness helps customers reduce consumption. Direct Energy is also working with policy makers in many jurisdictions to address key regulatory barriers. These include smart meter deployment, data quality, access to smart meter data, the billing relationship and privacy concerns around customer data.	UK - We are supportive of smart meters and continue to work with both the Government and industry, to ensure that as many of our customers as possible, are able to benefit from their installation. This includes collaboration with Smart Energy GB, an independent organisation enlisted by Government to champion and communicate the switch to smart meters with the public. Given the programme was designed over a decade ago and is currently impacted by the introduction of price caps, we believe there are opportunities to amplify smart meter benefits, reduce programme costs and measure installs more effectively. In particular, we would encourage government to actively consider a range of incentives to encourage households and SMEs to get a smart meter installed. North America - We believe it is critical that smart meter data be timely, accurate and consistent. This will enable retail energy providers to offer innovative products using 15-minute interval usage data that will empower the introduction of energy saving products and applications for customers. In addition, we encourage utilities to increase service levels as smart meter deployment completes to ensure optimal availability and quality of associated data. Towards this, we funded a project in Texas to streamline and simplify the process for customers, enabling them to share their data with energy service providers. We are additionally supportive of legislation that balances the protection of privacy interests with provision of innovative new energy products and applications.
Other, please specify (Net Zero Emissions legislation)	Support	Net zero emissions legislation - Based on the analysis published by the CCC, we support the introduction of a 2050 net zero emission target which would end the UK's contribution to global warming within 30 years. As a supporter of the Paris Agreement and having set our own ambition to become net zero by 2050, we welcome the UK's commitment and believe it is achievable. We had lent our support to a number of bodies, including the CBI, who had written to Government requesting that the implementation of legislation be brought forward.	We advocated for the legislation to be implemented as soon as possible and at the end of June 2019, the UK Government made the committed to become the first major economy to pass net zero emissions into law. As we come out of Covid-19, we have a unique opportunity to re-boot our economy in line with our net zero emissions commitment to both stimulate the economy and save customers money. We believe a range of policy decisions should be bought forward across power, heat, transport and the gas network, including legislating to phase out the combustion engine by 2030 in 2020.
Carbon tax	Support	UK Carbon Price Floor Support Mechanism (CPF) - Although Centrica is shifting its focus away from centralised power generation, we remain a major investor in gas fired generation and nuclear. We have two gas fired power stations, two rapid response plants and a 20% equity stake in the UK's existing nuclear power plants. We believe domestic carbon price support has an important role to play in delivering cost-effective decarbonisation. Since its introduction in 2013, the domestic carbon price policy alongside other environmental policy, has had a material impact in reducing UK carbon emissions. For example, it's estimated that UK carbon emissions have fallen by nearly 14% over this period while there's been a significant switch from coal to gas. Investors in generation, such as Centrica, rely on certainty in the investment framework to commit expenditure for the long term. Domestic carbon price policy is one important part of wider mechanisms which determine investment in generation. The announcement of a reformed capacity market and clarity over the transition from coal to gas and nuclear, are also components which build investor confidence.	We welcomed confirmation in the March 2019 budget that the Government will continue to hold the CPS rate at £18/tonne CO2 for 2020/21, The Government also stated that after the Brexit transition, the UK will continue to apply an ambitious carbon price to support progress towards reaching net zero – either through a UK Emissions Trading System that could be linked to the EU ETS, or a carbon emissions tax as an alternative carbon pricing policy. We are supportive of a robust carbon price and welcome greater clarity around longer-term rates as well as the structure of the CPF going forwards. We have participated in the Government consultation on this during Spring 2020.
Carbon tax	Support	EU Emissions Trading Scheme (EU ETS) - In light of the benefits of international carbon markets for cost-efficient emission reductions, we support the continued participation of the UK in the EU ETS following Brexit. We believe the European approach reduces costs, thereby making decarbonisation both cheaper and faster. A robust EU ETS that delivers a level-playing field, could reduce the need for a separate CPF in the UK over the longer term. We have actively supported within the EU and with other stakeholders, proposals that will lead to the strengthening of the EU ETS including a) doubling the annual rate of allowances (to 24%) taken out of the market and placed in the Market Stability Reserve (MSR) and b) introducing a process whereby future imbalances caused by policy decisions can be corrected – for example, if energy efficiency targets reduced demand.	As part of Brexit, Government will need to determine what arrangements are necessary under the Great Repeal Bill process to preserve participation in the current phase III of the EU ETS, and what separate legislation/arrangements will be necessary to preserve membership post phase III, or to create a standalone scheme (as set out in carbon tax section above). We support the Government's proposals to link to the EU ETS and have provided a response to their consultation in 2020, setting out how best we believe this can be achieved. We note that a number of other EU member states are also introducing domestic floor price policies for carbon to bolster the EU ETS. We believe that the UK should do similar, through repurposing the current carbon price support mechanism to provide an escalating carbon price with a clear forward trajectory

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association
Energy UK

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
Energy UK is the trade association for the energy industry. It represents over 80 members made up of generators, gas and electricity suppliers as well as other businesses operating in the energy industry. Energy UK and its members are committed to driving the sustainability agenda forward by reducing the sector's environmental impact. This is reflected in Energy UK's vision for the UK to have, 'a more decarbonised energy supply and one that is secure, diverse and affordable with greater local heat and power'. The association has a range of initiatives underway to make these ambitions a reality, which will ensure the industry makes a positive contribution to society, economy and the environment.

How have you influenced, or are you attempting to influence their position?
Centrica is represented on Energy UK's Board and chairs the Heat Decarbonisation, New Energy and Electric Vehicles, alongside Services and Flexibility working groups. We are also active members of working groups that for example, focus on power generation and environmental policy. While views held within Energy UK on climate change related issues are predominantly consistent with our own, there are occasional divergences between members, such as over how best to deliver the smart meter roll-out. As leaders in the UK's mandatory smart meter deployment and a firm believer in the value they can create in giving customers greater control and understanding over their energy consumption and costs, we aim to influence and increase awareness of smart meter benefits with members throughout the association.

Trade association
Heating and Hot Water Industry Council (HHIC)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
HHIC is committed to driving, supporting and promoting the sustained growth of the UK's residential heating and hot water industry. The HHIC informs and advises on these issues to tackle challenges and influence Government on how best to meet the 2020 and 2050 carbon targets. Membership is made up of heating manufacturers together with new renewable entrants to the market

How have you influenced, or are you attempting to influence their position?
We are a proactive member of HHIC, participating in the Low Carbon Technology, Micro CHP, Hybrid and Boiler technical and policy working groups that help inform and shape Council positions. Through participation on these working groups, we can also contribute to industry responses, standards and consultations from Government and regulators while developing initiatives that support the introduction of innovative renewable and low carbon heating technologies in the UK.

Trade association
Energy Manager Association (EMA)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
EMA was established to bring cohesion to the energy management profession in order to help the UK meet its energy obligations, which include those relating to carbon reduction. To accomplish this, the EMA aims to establish a best practice approach to energy management that will improve the standing of the profession and drive it into the heart of British businesses. The EMA works closely with energy managers across the UK to influence future policy development so that it functions at optimal levels for practitioners. Engagement largely focuses on Government departments such as BEIS and the Department for Environment, Food and Rural Affairs (DEFRA).

How have you influenced, or are you attempting to influence their position?
Centrica is represented on various advisory boards within the EMA and provides input on carbon reporting, training standards, behaviour change and industry standards. We have used our involvement in the Association to influence and increase awareness of best practice Energy Performance Contract policy development.

Trade association
Association for Decentralised Energy (ADE)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
ADE is an advocate of an integrated approach to delivering energy locally, designed around the needs of the user. As an industry leader, the ADE brings together interested parties from across the sector to develop a sustainable environment for combined heat and power, district heating and cooling technologies as well as demand-side energy services. Being an advocate for the proliferation of decentralised energy generation, our views are consistent with those of the ADE.

How have you influenced, or are you attempting to influence their position?
We are a member of ADE and are represented on the board. We work with them to promote decentralised energy services and solutions, including CHP and demand-side response, and aim to create the policy environment to encourage growth in the sector.

Trade association
Confederation of British Industry (CBI)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
CBI represents large sections of British business. The CBI recognises that climate change is a real threat and is committed to identifying cost effective policies to tackle the risks. They also help identify and support the prospects for growth and wealth creation through the development of the low carbon economy.

How have you influenced, or are you attempting to influence their position?
We are a full member of the CBI and sit on their Energy and Climate Change working groups as well as the board. We share industry insight and data where appropriate to help inform CBI policy positioning on key issues such as carbon pricing and UK carbon budgets. We played an instrumental role in helping develop the CBI's 2030 Vision and focused on the policy choices relating to UK decarbonisation while during 2019-20, we collaborated to produce a report focused on progressing the decarbonisation of heat.

Trade association
Advanced Energy Economy (AEE)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
AEE is a national association of business leaders in North America who are focused on making the global energy system more secure, clean and affordable. To secure this vision, the AEE encompass a broad range of products and services for meeting immediate and future energy needs which we generally support and includes energy efficiency, demand-side response, energy storage, natural gas electric generation, solar, wind, hydro, nuclear, electric vehicles, biofuels and smart grid. AEE's State Policy Program seeks to maintain this momentum by working with their coalition of State and Regional Partners as well as business members to promote advanced energy legislation in statehouses around the nation. AEE's Federal Policy Program develops and advocates for federal policies that create market opportunities for advanced energy companies. Central to this work is promoting legislation and regulation that seek to remove market barriers for advanced energy technologies.

How have you influenced, or are you attempting to influence their position?
Centrica has a seat on AEE's board. We share our learning with the group on how we can build a more sustainable energy system and influence their State and Federal Policy programmes

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?
No

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

Having a regular and meaningful engagement strategy enables us to better understand and manage issues that are important to our stakeholders and our business. By involving stakeholders in how we do business, we can demonstrate our accountability and increase understanding of the impact we have in society which helps us identify opportunities and manage risks. Interactions are conducted through a variety of methods - from one-to-one meetings to formal committees and workshops - and span a spectrum of topics including shaping a lower carbon future.

Government - We engage Government via direct meetings and consultations relating to evolving energy policy, in order to enable a more cost-effective lower carbon future. Discussions with the UK Government included issues such as carbon pricing, heat decarbonisation, the transition to electric vehicles, the capacity market, as well as the decentralisation of energy systems and increasing grid flexibility. We also continued to engage Government on the Powering Britain report series which illustrates the economic and environmental benefits distributed energy solutions can create if adopted by key sectors, to support positive policy development in this area.

Customers - We actively seek feedback from a variety of consumers and consumer organisations to better understand their needs and support the expansion of innovative services and solutions. All significant initiatives, such as new proposition launches, are underpinned by robust research and analysis, to ensure we deliver for the changing needs of our customers while enabling them to manage energy more sustainably. Towards this, we have committed a £100m via our Centrica Innovations fund to accelerate new technologies and ideas that transform the way we live, work and move, and become more sustainable. Our Smart and Connected Home teams also run engagement surveys to learn how we can increase take-up and enhance offerings. We additionally carry out consumer campaigns that enable customers as well as the general public, to understand the benefits of the connected home and wider energy efficient products first-hand.

Investors – In 2019, we continued our dialogue by holding sessions with institutional investors about our approach to climate change. Amongst a wide range of topics, we discussed our low carbon transition plan including relevant targets and performance, our strategic resilience to climate change, our governance arrangements and plans to align with the TCFD recommendations. We also hosted a roundtable with a large coalition of institutional investors focused specifically on climate change, in which our CEO led an open and detailed discussion on our role and vision for the energy transition, our thoughts on decarbonisation pathways for the UK and US, as well as our approach to managing the pace of activity and investment in low carbon solutions.

NGOs & think tanks - In 2019, we maintained relationships with many key environmental NGOs and think tanks in the UK and North America. This helps improve understanding of their concerns on issues such as climate change while exploring common goals so that we can collaborate to drive progress. These interactions form a valuable part of our engagement programme and informs our thinking on addressing the challenge of climate change as we develop a path to net zero.

Communities – By engaging our communities, we can create stronger communities together and deliver positive impact over the long term. In DE&P, project managers and issue specialists engage key stakeholders to ensure each project fully assesses, understands and has plans in place to manage potential impacts - from the start of the approval process to the end of a project's lifecycle. These engagements include collaboration with environmental NGOs and local interest groups on issues like decommissioning power plants, the growth of distributed energy and the potential positive impact this could have in keeping carbon emissions and energy costs as low as possible. We also collaborate with communities to explore the potential of local energy markets. In 2019 for example, we continued working with over 200 homes and businesses as part of our £19m local energy market trial in Cornwall, which tests how flexible demand, generation and storage can reduce pressure on the electricity grid, enable the growth of renewables and avoid expensive network upgrades. At the same time, we engaged the public sector to take-up low carbon distributed energy products that enable cost savings to be redirected towards providing vital community services. This led to our partnering with 1,300 NHS providers to overhaul their energy systems and switch 10% of their estate to 100% renewable electricity. And as part of our commitment to support those in need, we helped 24,200 people with energy advice and grants to reduce use and debt via the British Gas Energy Trust.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

To better manage risks and opportunities related to climate change, Centrica actively contributes to the development of public policy by engaging key stakeholders which include government and regulators in the UK, Republic of Ireland, EU, US, Canada and Norway. We ensure our engagements on policy across the business are consistent with our overall approach to climate change and Group strategy by having dedicated policy groups that develop detailed policy positions which are fed into the Centrica Executive Committee (CEC) for review and approval. The CEC therefore has ultimate ownership and sets the company's position on public policy for key issues like climate change which is filtered out into the business, and ensures we have a consistent and established policy position on climate change across our global geographies.

Crucial to this process is our dedicated policy groups which includes our centralised Centrica Policy Group (CPG) that was established in 2017 and has senior level representation from across all business units. The CPG has continued to meet regularly since then and in 2019, considered strategic policy issues that cut across the business and ensured we take a consistent position on issues such as decarbonisation, air quality and the future of the energy market. We also maintain a central policy risk register which is regularly reviewed by the CPG and appropriate action taken. Other subject specific working level policy and regulatory groups exist alongside the CPG – ranging from a group focused solely on the green recovery and how we can build back better from Covid-19, to a steering group that considers ways to strengthen access to energy efficiency products and practices for vulnerable customers. Outcomes of policy groups and any new approaches to public policy, are shared with the CEC.

Underpinning all of this is our Political Involvement Policy, which supports Our Code, and sets out the expectation that the business acts as one in observing and upholding our position on political involvement.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In mainstream reports

Status
Complete

Attach the document
annual-report-and-accounts-2019.pdf

Page/Section reference
● Pages 4-5, 10-11, 14, 16-17, 25-26, 37-39, 46-48, 50-51, 80-81 and 225

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment
Climate change related information is integrated throughout the Annual Report and Accounts 2019 – from a statement of commitment in the Chairman's and Chief Executive introduction at the start of the book, to our carbon performance in the Strategic Report and wider KPI disclosure that closes the filing. The Report also sets out our vision for a pathway to net zero with key policy recommendations for the UK Government and others to achieve a lower carbon world together, as well as our commitment and disclosure on the Task Force on Climate-related Financial Disclosures.

Publication
In voluntary sustainability report

Status
Please select

Attach the document
Responsible-Business-Ambitions-Brochure-2019.pdf

Page/Section reference
Pages 1-2, 5-8 and 13-14

Content elements
Strategy
Emissions figures
Emission targets

Comment
The Brochure provides year one progress against our 2030 Responsible Business Ambitions - a set of 15 global goals that contribute to a more sustainable world. As part of our Ambitions, we have set long term goals that will enable the transition to a lower carbon future by enabling our customers, the energy system and our business to manage energy more sustainably. We also report how our Ambitions support and contribute to the Sustainable Development Goals.

Publication
In voluntary communications

Status
Complete

Attach the document
Data-Centre-2019.xlsx

Page/Section reference
● 'Environment' tab

Content elements
Emissions figures
Emission targets
Other metrics

Comment
The data centre contains over 100 metrics and forms part of our wider reporting suite. It enables us to transparently report our wider non-financial impact and show trends over time. The metrics span all of our impact areas – from safety and customer satisfaction to carbon and community investment.

Publication
In voluntary communications

Status
Complete

Attach the document
Our Code 2020.pdf

Page/Section reference
● Page 30

Content elements
Governance

Comment
Our Code sets out the minimum expectations for how we go about our business and guides us to make good choices. It includes a commitment to safeguard the environment and applies to everyone who works for us, with us or alongside us. Our Code forms the foundation of being a responsible business and represents a high-level summary of the key areas of Centrica's Policies and Standards.

Publication
In voluntary communications

Status
Complete

Attach the document
powering_sustainability_report_final_1.pdf

Page/Section reference
● Full document

Content elements
Please select

Comment
Throughout 2017 and 2018, we produced a Powering Britain report series that demonstrates the carbon and cost savings that could be generated if key sectors adopted distributed energy solutions. We continue to use the reports to engage key stakeholders on the benefits of distributed energy solutions in order to drive take-up, promote positive policy development and ultimately, enable the transition to a lower carbon world.

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Executive Officer	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission
I am submitting my response	Investors	Public

Please state the main reason why you are declining to respond to your Customers

Prefer to work directly with customer, not through a third party

Please confirm below

I have read and accept the applicable Terms