Submission to CDP

Reporting period: 2018
31 December 2019

CDP Climate Change Questionnaire 2019
London Stock Exchange Group plc

C0. Introduction

C0.1

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

London Stock Exchange Group (LSE.L) is a diversified international market infrastructure and capital markets business sitting at the heart of the world's financial community. The Group can trace its history back to 1698.

The Group operates a broad range of international equity, bond and derivatives markets, including London Stock Exchange; Borsa Italiana; MTS, Europe's leading fixed income market; and Turquoise, a pan-European equities MTF. It is also home to one of the world's leading growth markets for SMEs, AIM. Through its platforms, the Group offers international business and investors unrivalled access to Europe's capital markets.

Post trade and risk management services are a significant part of the Group's business operations. In addition to majority ownership of multi-asset global CCP operator, LCH Group, LSEG operates CC&G, the Italian clearing house; and Monte Titoli, the T2S-ready European settlement business.

The Group is a global leader in indexing and analytic solutions. FTSE Russell offers thousands of indexes that measure and benchmark markets around the world. The Group also provides customers with an extensive range of real time and reference data products, including SEDOL, UnaVista, and RNS.

London Stock Exchange Group is a leading developer of high-performance trading platforms and capital markets software for customers around the world. In addition to the Group's own markets, over 35 other organisations and exchanges use the Group's MillenniumIT trading, surveillance and post trade technology.

Headquartered in the United Kingdom, with significant operations in North America, Italy, France and Sri Lanka, the Group at the end of 2018 employed approximately 4,600 people.

Further information on London Stock Exchange Group can be found at www.lseg.com.

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
Row 1	January 1, 2018	December 31, 2018	Yes	2 years

C0.3

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

France
Italy
Sri Lanka
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 consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

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)	The Group CEO is responsible for Corporate Sustainability policy execution and compliance. The CEO appoints the Chair of the Group Corporate Sustainability Committee (responsible for monitoring and approving Corporate Responsibility Strategy), as well as the Corporate Sustainability Pillar leads. These responsibilities are set out in LSEG Group Corporate Sustainability Policy, approved by LSEG Board of Directors. Climate-related issues are considered as part of our Corporate Sustainability Strategy and Policy, through 1) our Environmental governance, policy and impact captured and reported on as part of Our Communities strategic commitment; as well as in terms of 2) climate-related risk which is integrated into our Risk Management Framework, alongside other non-financial risks. Continued review of sustainability risks, including Environmental and climate-related risks is necessary in order to comply with the Groups strategic risk objective of 'maintaining stakeholder confidence'.
Chief Financial Officer (CFO)	The Group CFO has responsibility for reporting environmental and climate-related issues to the Board, and reviews and approves LSEG's climate related disclosures. These responsibilities are set out in LSEG Group Corporate Sustainability Policy, approved by LSEG Board of Directors. Climate-related issues are considered as part of our Corporate Responsibility Strategy and Policy, through 1) our Environmental governance, policy and impact captured and reported on as part of our Our Communities strategic commitment; as well as in terms of 2) climate-related risk which is integrated into our Risk Management Framework, alongside other non-financial and sustainability risks. Continued review of sustainability risks, including Environmental and climate-related risks is necessary in order to comply with the Group's strategic risk objective of 'maintaining stakeholder confidence'.

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	Please explain
Sporadic - as important matters	Monitoring implementation and	LSEG's progress against its environmental targets is regularly submitted to the LSEG Board as part of

arise	performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	annual Corporate Sustainability Reporting within the Annual Report (TCFD disclosures) and the Corporate Sustainability Report (Environmental section). The LSEG Board oversee progress against goals and targets for addressing climate-related issues, as well as performance against climate-related objectives, during these review periods. The Board's review of these matters ensures that the business keeps in mind the environmental impact of LSEG's operations.

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)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	Half-yearly
Chief Financial Officer (CFO)	Both assessing and managing climate-related risks and opportunities	Half-yearly
Chief Risks Officer (CRO)	Both assessing and managing climate-related risks and opportunities	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).

1) Chief Executive Officer (CEO)

i. The Group CEO is the highest ranking executive in the London Stock Exchange Group. The board and CEO are overseen by the Chairman.

ii. This is an executive role that connects management to Board oversight and encompasses oversight of both operational and business risks associated with climate-related issues.

iii. The Group CEO is responsible for Corporate Responsibility policy execution and compliance, including climate-related issues. The Group CEO appoints the Chair of the Group Corporate Sustainability Committee, as well as the Corporate Sustainability Pillar leads. The board-level Group Corporate Sustainability Committee is responsible for approving and monitoring our Corporate Responsibility strategy and policies.

Climate-related issues are considered as part of our Corporate Sustainability Strategy and Policy, through 1) our Environmental governance, policy and impact captured and reported on as part of Our Communities strategic commitment; as well as in terms of 2) climate-related risk which is integrated into our Risk Management Framework, alongside other non-financial and sustainability risks. Continued review of sustainability risks including Environmental risks (where we consider climate-related), as well as Social and Governance risks, is necessary in order to comply with the Group strategic risk objective of 'maintaining stakeholder confidence'.

2) Chief Financial Officer (CFO)
i. The Group Chief Financial Officer is a member of the LSEG board and Executive Committee.

ii. This is an executive role that connects management to Board oversight and encompasses oversight of both operational and business risks associated with climate-related issues.

iii. The Group CFO has responsibility for reporting environmental and climate-related issues to the Board, and reviews and approves LSEG's climate related disclosures.

3) Chief Risk Officer (CRO)
i. The Group Chief Risk Officer is a member of the Executive Committee and reports to the Group CEO. The CRO is also Chair of the Group Corporate Sustainability Committee and is the Group Our Communities pillar lead. As Chair of the Group Sustainability Committee the CRO reports to the Executive Committee.

ii. Environmental and climate-related performance is overseen by our Chief Risk Officer (in their role as the Group Our Communities pillar lead), as well as our Chief Financial Officer. The role of our Chief Risk Officer as Our Communities pillar lead, ensures Environmental (included climate-related), Social and Governance risks are fed into the LSEG Risk Management Framework.

iii. The CRO is directly responsible for providing strategic guidance for the development and implementation of the environmental action plan covering all climate-related issues. As Our Communities pillar lead, the CRO oversees the Environmental Management Group led by the Head of Group Property. The Environmental Management Committee holds responsibilities for the oversight of climate-related risks and opportunities associated with our business operations. The Environmental Management Committee is comprised of key stakeholders across the Group who are responsible for environmental impacts i.e. Property/Facilities Managers, Procurement, Data Centre Managers, Business Travel and HR and covers all the Group's geographies.
Each financial year, the Environmental Management Committee submits an environmental action plan which incorporates environment and climate-related issues to the ExCo. This focuses on our current objectives, annual environmental targets, and other CR opportunities for the Group, including a critical evaluation of our successes and our competitive position. The Environmental Management Committee is responsible for defining annual objectives, targets and programmes, as well as delivering and reviewing performance across the Group including monitoring GHG emissions, identifying improvement opportunities and reporting. The

Environmental Management Group is also responsible for monitoring climate-related risks, and reporting these to our Risk Management Framework.

C1.3

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

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).

Who is entitled to benefit from these incentives?

Management group

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

The Group Head of Property has environmental objectives, which include climate change and other environmental targets, as part of their annual business objectives, which are linked to the annual bonus programme. These objectives are cascaded to the Group Property team across our global regions. Specifically, we are seeking reduced carbon impact due to energy efficiency and enhanced business continuity capability due to adaptation measures.
Group-wide Sustainability Targets include:
Science-based target: 40% reduction of absolute global Scope 1 and 2 GHG emissions by 2030 from a 2016 baseline.
Other targets include: 20% reduction in our CO2e emissions per FTE and £m Revenue by 2020, with a 5% reduction in 2018 relative to 2017; 20% by 2020 reductions in Data Centre and Office Energy Use, Water Consumption, Waste and Business Travel (Flights), and 2% annual reductions in each of these areas for 2018.
There are also annual behaviour change related targets to increase video conferencing use by 5%, and reducing paper consumption by 5% in 2018 compared to 2017.

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Other non-monetary reward

Activity incentivized

Behavior change related indicator

Comment

In the UK we operate a cycle-to-work scheme as a form of salary sacrifice, which allows employees to reduce their gross salary in exchange for hiring a new bike and cycling accessories with savings of over 40%. At our Paternoster Square HQ in London we have increased the number of bicycle racks to support this initiative

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	1	3	
Medium-term	3	5	
Long-term	5	10	

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	Climate-related risks and opportunities are monitored continuously by our Corporate Sustainability Committee, team and Environmental Management Group. Where potential risks are identified, these are escalated to our Risk Management Framework on a quarterly basis, and these are raised to the Board as appropriate by the CFO and/or CRO. Our risk management approach considers transition risks

			(policy and legal, technology, market, reputation) and opportunities (resource efficiency, energy source, products/services, markets, resilience), and physical risks (both acute and chronic) related to climate change.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

Our risk management approach considers transition risks (policy and legal, technology, market, reputation) and opportunities (resource efficiency, energy source, products/services, markets, resilience), and physical risks (both acute and chronic) related to climate change.

We use the term "substantive financial impact" when identifying and assessing climate-related risks, and define this as a financial impact that requires factoring into our business strategy and operations, and a change in our product portfolio, client target and/or resource mix.

Understanding how climate change is, and potentially will, impact the operations of LSEG, our clients and suppliers is crucial to our business. The Executive Committee (ExCo) are accountable at both a company and asset level for risk identification, analysis, evaluation and mitigation which includes climate change risks and opportunities. We achieve this through:

i) Company Level: Climate Change transition risks and opportunities are identified analysing our product portfolio across client segments and asset classes (Product/Services and markets), whereas the risks and opportunities associated with energy sources and business resilience are assessed taking into account all of our operations. Our Corporate Sustainability strategy is aligned with our business strategy across the Group. The Corporate Sustainability Committee and Environmental Management Committee are responsible for ensuring the business annually assesses and mitigates climate change risks where appropriate and that we maximise arising opportunities.

ii) Asset Level: LSEG has offices and data centres located around the world, and we assess risks and opportunities at the facility level to understand climate related risks including flooding, long-term temperature changes and extreme weather events. We assess our facilities ability to operate, staff access, safety and wellbeing and insurance premium impacts on both a short and long-term basis. We recognise that an effective monitoring and assessment programme must consider both the global perspective and specific local needs.

These processes for identifying and assessing climate-related risks include:

- The Group leverages the expertise of FTSE Russell in the identification of climate risks and opportunities as part of their ESG assessment of global listed companies, including LSEG, and via their Green Revenues Data Model.
- LSEG closely liaises with ESG rating agencies to assess the materiality of climate related risks - both physical and transition - to its business model.
- We also rely on our participation in the Centre for the Protection of National Infrastructure (CPNI) in the UK for the identification of the severity of physical climate risks that might adversely affect our technological infrastructure.

- Stakeholder engagement is a crucial part of the risk assessment process, especially as regulatory risks are concerned.
- LSEG is involved in a number of working groups on the development of green finance regulations.
- Market risks associated with the cost of energy are monitored by our Property Department.
- Market risks associated with the regulatory disclosure requirements for our listed companies are also closely monitored.

C2.2c

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	i) Current regulation is relevant and included in our risk assessment process because we are exposed to financial and reputational risk related to the impacts of regulation, including climate-related legislation, that affects our listed companies. Such regulations include: Companies, Partnerships and Groups (Accounts and non-financial reporting) Regulations 2016 - transposition of the EU Directive 2014/95/EU on the disclosure of non-financial and diversity information (NFR Directive) and Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013. ii) We manage this risk type in our integrated risk assessment processes through keeping informed of current climate-related regulatory changes, as part of our active participation in international and domestic regulatory debates.
Emerging regulation	Relevant, always included	i) As part of our active engagement in international and domestic regulatory debate, we have understood for some time that both the UK and the EU are looking to implement the TCFD recommendations in their regulatory frameworks. This can have impact on the disclosure obligations associated with climate risks and opportunities for our listed companies. ii) We manage this risk type in our integrated risk assessment processes through monitoring emerging regulation that might change regulatory requirements for our listed companies as well as for our own business, as part of our active participation in international and domestic regulatory debates. Emerging regulation can also deliver real business opportunities for LSEG, as we look to grow our 'green' and 'sustainable' products and services in line with the expanding market that explore via our Green Revenues Data Model.
Technology	Relevant, always	i) Secure and stable high-performing technology is critical to the operation of the Group's businesses. Our Group Technology pillar

	included	aimed to ensure 99.99% uptime of the UK equity market during 2018. We continue to invest in our technology in order to maintain and enhance the quality, resilience and efficiency of our platforms. ii) We manage this risk type in our integrated risk assessment processes through monitoring of physical climate risks which could adversely affect LSEG's technological infrastructure and subsequently business continuity. Our continued programme of work to install cold aisle containment infrastructure at our data centres is helping us manage increasing cooling costs and associated emissions, as local temperatures continue increase.
Legal	Relevant, sometimes included	i) We estimate that litigation risks associated with climate-related issues for LSEG's own operations are limited. In relation to our ESG products and services, and expanding listing of green companies, we recognise the increased exposure to climate-related risks for some sectors, and therefore the risk of legal ramifications that may be associated if not now then in the near future. ii) We include this risk type in our integrated risk assessment processes.
Market	Relevant, sometimes included	i) As a diversified markets infrastructure business, we operate in a broad range of markets, servicing clients who increasingly seek global products and solutions. If the global economy under-performs, lower activity in our markets may lead to lower revenue. ii) This risk type is included in our integrated risk assessment processes, through close monitoring of LSEG's markets. LSEG has a governance structure including the Group Risk Committee and Financial Risk Committee, that evaluates scenarios related to potential market risks attributable to financial markets events.
Reputation	Relevant, sometimes included	i) We are aware of the reputational risks for LSEG associated with public opinion reactions towards the conduct and approach to climate risk disclosures of our listed companies. In particular, FTSE Russell's position as a pioneer in ESG indices could be compromised if it were seen to be supporting poor ESG performance.
Acute physical	Relevant, always included	i) Acute physical climate risks adversely affecting LSEG business continuity and technological infrastructure (eg through floods) are considered in all of our climate-related risk assessments. ii) This risk type is included in our integrated risk assessment processes, as part of our Environmental Managements Group's monitoring and assessments of physical risks at an Asset level. We also rely on our participation in the Centre for the Protection of National Infrastructure (CPNI) in the UK for the identification of the severity of physical climate risks that might adversely affect our

		technological infrastructure.
Chronic physical	Relevant, always included	i) Chronic physical risks (eg higher cooling costs for our data centres associated with rise in temperatures) are limited and mitigated through BAU activities, though always included in our climate-related risk assessments. ii) This risk type is included in our integrated risk assessment processes, as part of our Environmental Management Group's assessments of chronic physical risks at an Asset and Company level. We rely on our participation in the Centre for the Protection of National Infrastructure (CPNI) in the UK for the identification of the severity of physical climate risks that might adversely affect our technological infrastructure and operations. We also leverage the expertise of FTSE Russell's ESG assessments of global listings for longer term climate risks and opportunities.
Upstream	Relevant, always included	Upstream risks include Technology, Acute physical and Chronic physical risks. Technology i) Secure and stable high-performing technology is critical to the operation of the Group’s businesses. Our Group Technology pillar aim to ensure 99.99% uptime of the UK equity market during 2018. We continue to invest in our technology in order to maintain and enhance the quality, resilience and efficiency of our platforms. ii) We manage this risk type in our integrated risk assessment processes through monitoring of physical climate risks which could adversely affect LSEG’s technological infrastructure and subsequently business continuity. Our continued programme of work to install cold aisle containment infrastructure at our data centres is helping us manage increasing cooling costs and associated emissions, as local temperatures continue increase. Acute and Chronic Physical i) Acute and Chronic physical risks (such as increased severity of flooding or hurricanes; and longer-term shifts to higher temperature) adversely affecting LSEG business continuity and technological infrastructure. Chronic physical risks are mitigated by BAU activities but are included alongside acute risks as part of our integrated risk assessment processes. ii) These risk types are included in our integrated risk assessment processes, as part of our Environmental Managements Group's monitoring and assessments of physical risks at an Asset and Company level. We also rely on our participation in the Centre for the Protection of National Infrastructure (CPNI) in the UK for the identification of the severity of physical climate risks that might adversely affect our technological infrastructure. We leverage the

		expertise of FTSE Russell's ESG assessments of global listings for longer term climate risks and opportunities.
Downstream	Relevant, always included	This comprises "Current regulation"; "Emerging regulation" "Market", "Reputation" risk types. Current and Emerging Regulation i) Current and Emerging regulation is relevant and included in our risk assessment because we are exposed to financial and reputational risk related to the impacts of regulation, including climate-related legislation, that affects our listed companies. ii) We manage this risk type in our integrated risk assessment processes through monitoring current and emerging regulation that might change requirements for our listed companies as well as for our own business, as part of our active participation in international and domestic regulatory debates. Emerging regulation can also deliver real business opportunities for LSEG, as we look to grow our 'green' and 'sustainable' products and services in line with the expanding market we have explored in our Green Revenues Data Model. Market i) Market risks are relevant and included in our risk assessment in relation to climate related risks. ii) Our integrated risk assessment processes ensure we monitor markets continuously for all changes in performance. LSEG has a governance structure including Group Risk Committee and Financial Risk Committee, that evaluates performance related to changes in markets and downstream risks. Reputation i) We are aware of the reputational risks for LSEG associated with public opinion reactions towards the conduct and approach to climate risk disclosures of our listed companies. In particular, FTSE Russell's position as a pioneer in ESG indices could be compromised if it were seen to be supporting poor ESG performance.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

i) Our risk management approach integrates transition risks (policy and legal, technology, market, reputation) and opportunities (resource efficiency, energy source, products/services, markets, resilience), and physical risks (both acute and chronic) related to climate change. Our risk function is centralized at Group level for the consideration of climate-related risks. The Environmental Management Group, Executive Committee and Risk Committee are responsible for managing risk, with the Risk Committee ordered to define the Risk Management process and policy framework, as well as proposing the Group Risk Appetite Statement to the Board.

- LSEG's Risk Management Framework is a cyclical process.
- Business Management define Risk Governance, Strategy and Appetite.
- This is followed by Risk Identification and Assessment, which is the responsibility of the Executive Committee at a company and asset level, supported by Environmental Management Group and Corporate Sustainability Committee.
- Where risks and opportunities are considered material, these are stress tested to determine the potential impact on the financial results, strategic plans and operational resilience of LSEG and to determine whether the risk is within the Group's Risk Appetite.
- In line with our commitment to support the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), our 2018 Annual Report includes disclosures on our current alignment across the four pillars, Governance, Strategy, Risk Management and Metrics and Targets. We commit to improve our performance against the TCFD recommendations on climate-related risks and opportunities disclosure.

LSEG's Risk Management Framework to make climate-change related business decisions, operates across the group and functions, involving internal committees as appropriate. LSEG integrate climate-related risks into multi-disciplinary company-wide risk identification, assessment, and management and therefore does not separately record and risk assess projects from a sole climate-change perspective. It is therefore not possible for us to extract specific climate-change data.

We have a Corporate Sustainability committee which is now working on improving the systems, monitoring and reporting ESG (including climate-change) related data and embedding it more formally within the risk assessment process.

ii) Physical Risk: Our Environmental Management Group (EMG) identified a physical risk concerning our data centres, which in 2016 were accounting for almost 50% of our total GHG emissions. A large portion of this energy demand was in cooling to ensure the data centres were running at optimum efficiency and servicing the 99.9% uptime required of the UK equity market, during increasingly frequent, warmer than average European summers. Secure and stable high performing technology is critical to the operation of the Group's businesses, and as such the business approved the allocation of funds to improve the infrastructure of our primary UK data centres, by installing cold aisle containment (alongside decommissioning and consolidation of equipment to improve operating efficiencies). The Property team led the implementation of this work and gather data on its ROI, which is fed back to the EMG on a quarterly basis in order to inform the further roll out of these infrastructure improvements to mitigate this risk other regions. This work continues to improve the resilience and efficiencies of our critical IT infrastructure in order to mitigate risks around increasing ambient temperatures (as well as reducing our emissions).

iii) Transitional Opportunity: The transcendence of ESG issues and increasing environmental regulation have been monitored by the Group for a number of years, and has been responded to by way of launching FTSE4Good Index series, Green bonds listings, and over 100 ESG indices calculated by FTSE Russell. FTSE Russell's monitoring of the growth in these products and services, identified the risk in a shift in LSEG listed companies from those that are high carbon intensive, to low carbon intensive and potentially 'green'. This risk was assessed due to the traditional views of investors that green sector companies offered minor opportunities and focused on volatile, small cap stocks. FTSE sought to explore this perception as interest in

these ‘green’ products continued to accelerate. Through investment in R&D efforts, in 2018 FTSE Russell published their report “Investing in the global green economy: Busting common myths” which demonstrates the huge opportunity that the Green Economy offers investors in an effort to revert this risk into a significant opportunity for LSEG. The report uses data from FTSE Russell’s Green Revenues data model, which measures the percentage of revenues that come from ‘green’ products for 14,700 companies. The weight of this opportunity is now measured by the Green Revenues model, as well as delivering financial returns for LSEG.

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?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Enhanced emissions-reporting obligations

Type of financial impact

Other, please specify

Deterioration of the attractiveness of public markets

Company- specific description

Increased regulatory focus on climate change for listed companies continues to demand enhanced disclosure requirements for our listed companies. These requirements, if mandatory, will result in certain listed companies (especially smaller cap companies) to have increased operating costs (as opposed to privately held) to meet these obligations. As a result there is a small risk of companies de-listing to avoid these additional regulatory demands. There is also a risk of missed Initial Public Offerings (IPO).

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

20,000,000

Potential financial impact figure – maximum (currency)

40,000,000

Explanation of financial impact figure

The potential financial impact to LSEG of de-listing due to this risk is incredibly hard to calculate as is based on a large number of variables. The financial impact on listed companies, depends on their size, sector and the materiality of climate risk to that organisation. We do not expect that all c.2,500 of our listed companies will be affected due to their existing reporting demands, which we often see as a result of their size. The risk is potentially more prevalent for our small market cap companies, who are less able to manage these additional regulatory demand costs.
The potential financial impact range is a rudimentary estimate, based on the aggregated additional costs that some of our listings might face: ~£20,000 per company, costs for enhanced reporting requirments x 1,000 to 2,000 listed companies.

Management method

- LSEG has provided guidance to listed companies to facilitate reporting and keep reporting costs low to mitigate the impacts of this risk.

- LSEG actively engages with potential policy creation in these areas i.e. UK Streamlined Energy and Carbon Reporting Regulations to enable early action and mitigate potential arising costs.

- LSEG is a signatory of the Paris Pledge for Climate Action, the CDSB Statement on fiduciary duty and climate change disclosure. In 2016, we engaged with the European Commission and the UK and Italian governments regarding the Non-Financial Reporting Directive. In our consultation response, we acknowledge that so called 'non-financial' risks can turn into financial risks. We participated in workshops, organised bilateral meetings and joined the Commission High Level Expert Group on sustainable finance.

In June 2017, the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) released its reporting recommendations. LSEG signed the TCFD statement of support, affirming its commitment. As the Group, and FTSE Russell in particular, intends to play a critical role in enabling the flow of information envisioned by the TCFD, the recommendations were incorporated into FTSE Russell's climate-related indicators and in the Group ESG Reporting Guidance.

Management cost of £60,000 is calculated according consultancy fees required to monitor regulation and guide companies in reporting responsibilities per annum.

Cost of management

60,000

Comment

LSEG plans to invest in capacity building initiatives for its issuers to further mitigate these risks.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Market: Changing customer behavior

Type of financial impact

Re-pricing of assets (e.g., fossil fuel reserves, land valuations, securities valuations)

Company- specific description

The transition to a low carbon economy will have an impact on the value of different listed companies and the value of industries, as well as driving the emergence and growth of new industries. The risk to LSEG is ensuring that our exchanges remain attractive locations for new listings.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The volatility associated with the shifting value placed on high- and low-carbon intensive sectors and listed companies, increases trading fees. So long as LSE and BI are able to remain competitive and so not lose out to other exchanges, this risk is likely to be neutral in financial impact. This assessment is based on the similar market capitalization size of the ICB Oil and Gas sector vs. Green Economy according to FTSE Russell in December 2017 (FTSE Russell, Investing in the global green economy: busting common myths, 2018).

Management method

LSEG closely monitors the transition to a low carbon economy on its markets through the FTSE Russell Green Revenue data model and wider expertise of FTSE Russell in the identification of climate risks and opportunities as part of their ESG assessment of global listed companies. The Group's overall climate-related risk exposure is validated by the FTSE Russell assessment. Stakeholder engagement is a crucial part of the risk assessment process, especially as regulatory risks are concerned. LSEG is involved in a number of working groups on the development of green finance regulations. FTSE Russell's "Investing in the global green economy" published in May 2018 is an example of LSEG's research applied to climate change risks and opportunities, that attempts to address this negative, traditional view of the Green Economy, and demonstrate the opportunities it holds.

Monitoring the transition to a low-carbon economy is part of our commercial offering (FTSE Russell Green Revenues Data Model) – therefore no additional management costs emerge for LSEG.

Cost of management

1

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Rising mean temperatures

Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

Data centres are critical to LSEG's business, with instant transactions, data and information core to operations. Increases in the average temperature will result in higher cooling requirements and costs. Planning and analysis of future temperature impacts will enable stronger long-term design and investment, ensuring business continuity, as well as the health, safety and wellbeing of staff and visitors at each of our locations. For our broader portfolio of facilities, including offices, other impacts could include dissatisfied occupants of buildings that are not fit for purpose, e.g. building occupiers experiencing flooding, inadequate drainage, lack of heating control and cooling, problems with air tightness, driving rain and winds. Existing buildings may not be well-adapted to the new climate, especially in hot summer conditions, leading to reduced value of existing buildings if they are not future climate-proofed. However, due to the long-term nature of the risk (>6 years), there will be adequate time to adapt our operations to take advantage of emerging technologies and mitigate this risk.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Due to the long-term nature of changes in average temperatures, the financial impact of this risk to LSEG is estimated to be £1 per annum as all costs and changes would be assumed within BAU practices. The cost is considered as Business as Usual as the increased cooling/heating costs, and infrastructure improvement costs are monitored on a continual basis to ensure we are responding to and managing this risk in ‘real time’.

Management method

The LSEG Corporate Sustainability Committee and Environmental Management Committee are responsible for ensuring the Group monitors the latest news, research and reports regarding the physical impacts of climate change, and for assessing the

materiality for LSEG's operations and ensuring all operations are meeting the business needs in an evolving environmental context. Where appropriate, this advice is adapted into our BAU Business Continuity Program. The Environmental Management Committee meets at least quarterly, with specialist external advice also sought where appropriate. Actions that are helping mitigate this risk include over £9m in energy efficiency and carbon reduction initiatives in our data centres and offices - which are helping reduce water and energy consumption. In 2017, we moved primary UK sites electricity to be provided by 100% renewable sources. During 2018, we continued to implement cold-aisle containment in our data centres, as well as IT efficiency, lighting and other building process efficiencies in our offices.

Cost of management is based on the £160,000 estimated spend on cold aisle containment projects in our UK data centres to date. We plan on rolling out this project to our other data centres globally.

Cost of management

160,000

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?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

The Global Commission on the Economy and Climate estimates that US$90 trillion of investment is needed by 2030 to avert more than 2 degrees of global warming. This large capital deployment provides significant opportunities for companies involved and for investors to align their portfolios. If green investment accelerates to the ~$90 trillion suggested, the Green Economy could represent similar global market capitalization to Health Care by 2030 (FTSE Russell, 2018). Analysis of the FTSE Global Equity Index Series (FTSE GEIS), shows that nearly 7.2% of the index value is derived from green revenues, compared to 8.3% from Emerging Markets.

LSEG has identified a number of product opportunities that integrate climate-related considerations
- Green Bond listings, trading and clearing
- Green Infrastructure funds
- Green equity listings and trading
- Low-carbon and green revenue equity and fixed income indexes

Current status of realising these opportunities:
- 95 Green Bonds listed on LSE in 2018 raising almost £19 billion. 18 new Green or Sustainable bonds were listed on Borsa Italiana, raising over €45 billion.
- 132 Green companies listed on LSE at year end, including SDCL Energy Efficiency Income Trust (SEEIT), London's first listed energy efficiency fund.
- A record 54 new ESG bonds listed on our markets in 2018.
- 100+ ESG indices calculated by FTSE Russell
- Data from our Green Revenues data model, confirms that more than 2,400 listed companies globally already generate some of their revenues from green products and services that enable transition to the low carbon economy.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

LSEG does not publicly report the financial performance of individual products or services, however the Group expects the following as LSEG's suite of green products and services is set to grow its contribution to the Group's revenues over the medium term.

Strategy to realize opportunity

LSEG will increase R&D in the index business area, and promotional efforts in the capital markets business to realise these climate-related opportunities.

For example, we have produced FTSE Russell's report "Investing in the global green economy" as an example of research applied to climate change risks and opportunities relevant to our market.

As part of our strategy to create a sustainable investment environment and be recognised as a global sustainability leader, during 2018 LSEG developed guidance for listed companies on the voluntary disclosure of ESG information to investors, based on UN Sustainable Stock Exchanges initiative framework.

In the short term, the Group will keep developing market leading products and services like FTSE4Good, which has made a significant impact on the behaviour of companies (i.e. requiring GHG emission and other climate change targets as part of the inclusion criteria).

The Group will keep developing products and services to provide investors with tools for benchmarking and tracking ESG-driven funds as well as continuing to develop a range of Green Revenues services. We expect to launch new services and tools for investors to model and understand the transition to a low carbon economy during 2019, which reflects substantial investment in growing our capabilities in this area.

There is no incremental cost (£1) to LSEG to manage these opportunities, as additional resources and costs are offset by increasing revenues.

Cost to realize opportunity

1

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resilience

Primary climate-related opportunity driver

Participation in renewable energy programs and adoption of energy-efficiency measures

Type of financial impact

Increased reliability of supply chain and ability to operate under various conditions

Company-specific description

It is significant for the Group that we ensure our operations and property estate are equipped to adapt to changes in climate and take advantage of the efficiency and savings that can be achieved through targeting our GHG emissions. This includes issues such as energy efficiency and pricing, through to the efficiency and physical security of our property estate. LSEG has prioritised issues like renewable energy, energy efficiency as well as virtualisation and consolidation of our data centre environments, which are building sustainability and strength into our business. Changes in temperature extremes may impact energy prices, as well as make it difficult for employees to travel between our global offices. However, the internet and video conferencing are both powerful tools which are enabling many aspects of our business to be done virtually, allowing for reductions in employee travel.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

318,500

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The Group spends over £6m on annual energy consumption - a cost we have the opportunity to reduce as we target energy reduction and invest in the future of our property estate. These measures prepare our facilities and therefore our operations, so that they are better able to operate under changing climatic conditions. A potential 5% reduction in energy costs through adapting our operations in preparation for climate change extremes would mean an £318,500 reduction in operational expenses - a small impact on total operational expenditure.

Strategy to realize opportunity

The LSEG Corporate Sustainability Committee and Environmental Management Committee are responsible for ensuring the Group monitors the latest news, research and reports regarding the physical impacts of climate change and for assessing the materiality for LSEG's operations. The Committees meet at least Quarterly, with specialist external advice also sought as appropriate.

In the last three years, LSEG has invested over £9m in energy efficiency and carbon reduction initiatives.
During 2017, we switched our UK electricity supplies to be provided by 100% renewable sources, dramatically reducing our GHG emissions.
During 2018, we continued to implement cold-aisle containment in our data centres, as well as IT efficiency, lighting and other building process efficiencies in our offices.
In 2018, 6 projects were undertaken with potential for 5,699 tCO2e reduction. We have set science-based targets to further reduce our absolute GHG Emissions - our aim is a 40% reduction by 2030 vs a 2016 baseline. LSEG reports progress against these targets and impacts of reduction initiatives.

The cost to realise this opportunity is calculated based on the £9m invested in energy efficiency and carbon reduction initiatives in our data centres and offices. There are also direct costs from engaging with policy decisions, specialist advice on regulations, compliance, and management tools to gather data and measure progress against targets (less than 0.5% of total operational spend).

Cost to realize opportunity

9,000,000

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Type of financial impact

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

Company-specific description

The political, economic, physical and social environment in which we operate is undergoing much change and the need for efficient, transparent and well-regulated

capital markets has perhaps never been greater. This macro-economic background highlights the importance of the role played by LSEG. This role includes the Group's environmental, social and governance (ESG) responsibilities and how the organisation conducts itself as a 'good' corporate citizen. Sustainability is an integral part of the Group's strategy and there are both risks and opportunities arising as a direct result of our engagement in this area. There are reputational opportunities for LSEG to attract and retain talent, as well as gain competitive advantage in the marketplace through integrating climate change factors into our business and risk management strategy. We also understand that a number of our clients are increasingly becoming invested in climate change initiatives and seek to work with companies like LSEG, who have similar goals and perspectives regarding climate change and the environment.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

LSEG does not publicly report the financial performance of individual products or services.

FTSE Russell sees a need for all asset owners and asset managers and banks to understand the impact of a transition to a low carbon economy on their portfolios and risk models. In the Capital Markets businesses there are opportunities too - for at 31 December 2018, Green ETFs on the London Stock Exchange had a total market cap of $7 billion. By enabling investors to measure and model these markets, LSEG provides critical services. Demand for these services is expected to grow over time, with minor positive impact on revenue.

Strategy to realize opportunity

LSEG's strategy to realise this opportunity includes engagement in our markets, and developing our own operational responses to climate change so that clients and employees can clearly see the link between our market commitments in renewable energy, ESG management, and our business strategy. LSEG has launched its Green

Bond segment of its fixed income markets which provides issuers with a full suite of solutions to support green bond issuance. LSE now has a total of 95 Green Bonds outstanding, raising nearly £19bn; 132 Green companies listed on LSE, including 20 green funds, 4 of which came to market in 2018 raising £242 million; and over 52 ETFs tracking ESG indexes in London.

London Stock Exchange Group is a committed supporter of green financing and we see the transition to a low carbon economy as a major industrial trend. In addition to attracting and profiling green bond and equity listings through FTSE Russell we support institutional investors in defining climate factors and integrating them into benchmarks and portfolio analytics.

Primary costs are BAU costs of achieving our carbon reduction targets i.e. less than 0.5% of operational spend on specialist advice, systems and management processes to enable an effective response. There are also marketing and cost of sales for our climate change products and services – estimated at less than 5% of our marketing budget (we do not report these individual budget lines).

Cost to realize opportunity

1

Comment

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	i) LSEG has identified climate-related risks and opportunities for our range of products and services that support our listings and exchanges transition to a low carbon and green economy: - Green Bond listings, trading and clearing - Green Infrastructure funds - Green equity listings and trading - Low-carbon and green revenue equity and fixed income indexes ii) Magnitude of impact: These identified opportunities have a low impact on the group, but have growth potential.
Supply chain and/or value chain	Impacted	i) Data centres are an important part of an exchange's value chain, and, as described in 2.3a, the Group has made energy efficiency investments and climate adaptation investments to mitigate chronic physical climate risks over the long term. These actions had the co-benefit of proactively anticipating increased environmental regulations, by reducing our emissions (which were supported by our switch to 100% renewable electricity for our UK Data Centres in 2017). During 2018 we continued to

		implement cold-aisle containment in our data centres, as well as IT efficiency, lighting and other building process efficiencies in our offices Our data centers underpin the core operations of LSEG. Our business travel partners are also significant contributors to our emissions and we are working with our primary airlines to understand what they are doing to respond to their own climate related risks, such as their impact on global GHG emissions. As an office based business we continue to explore the impact of climate related risks to the rest of our value chain, primarily suppliers of electronic equipment. ii) Magnitude of impact: Chronic physical climate-related risks have had a low impact on our value chain at present, as we have been able to react and mitigate chronic physical risks specifically at our data centres. Our business travel partners continue to manage and act on mitigating their risks, such as increased environmental legislation. We continue to explore the impact on our other value chain partners, but we anticipate this impact is also low at present due to being primarily retail and manufacturing services.
Adaptation and mitigation activities	Impacted	i) Our adaptation and mitigation activities are impacted by both physical risks and transitional risks. In terms of the impact from physical risks, the Group has a structured environmental programme to contribute to climate mitigation through its BAU operations. Mitigation activities are currently in place regarding the Group technological infrastructure, by way of cold aisle containment and decommissioning/consolidation projects; property portfolio consolidation and due diligence processes for new facilities which consider environmental aspects both current and those that might impact the facility in the near future. From a market perspective, we recognize the transitional opportunities (as well as risks) that impact our business in transitioning to a low carbon economy, and use these to adapt our services to make most benefit of the opportunities (i.e. FTSE Russell's ESG Index series) and flex our positioning and investments to mitigate against transitional risks (i.e "Investing in the global green economy: busting common myths" – published by FTSE Russell in 2018 to dispel the traditional view of investors that the growing green economy is a volatile small market cap). ii) Magnitude of impact: We consider climate-related risks and opportunities to have had a medium impact on our Adaptation and Mitigation Activities in very different parts of the organisation (both physical (acute and chronic) and market risks and opportunities). This evaluation is based on the low impact on property infrastructure and portfolio, as risks and opportunities are being actively managed and included in BAU operations; whilst a medium impact on adapting and mitigating downstream risks (market, reputation, regulation risks) by way of changing our services and products to support and complement the

		increasing green economy presence in our listings.
Investment in R&D	Impacted	i) Climate related risks and opportunities, notably Market, Reputational and Regulation risk and opportunity types have impacted on our investment and topics of focus in our R&D efforts. As a result of identifying a risk in changing customer behaviours (as described in 2.3a), we invested in understanding the opportunities of the Green Economy, demonstrated through our report published in 2018, “Investing in the global green economy: busting common myths”, alongside the new FTSE Russell Green Revenues data model. We also continue to develop guidance for listed companies on disclosure of ESG information, based on the UN Sustainable Stock Exchanges initiative framework, and develop market leading products such as FTSE4Good, which has made a significant impact on the behavior of participating companies (i.e., requiring GHG emission and other climate change targets as part of the inclusion criteria). ii) Magnitude of impact: We consider climate-related risks and opportunities to have had a high impact on our investment in R&D, particularly on the focus of these efforts. For example, our investment in research into our Green Revenues model.
Operations	Impacted	i) Climate related risks and opportunities, specifically chronic and acute physical, reputational and regulatory risks and opportunities have impacted on the Operations of the Group. The need to consider environmental impacts of the business, as well as the climate-related risks that may impact the business are now considered matters for the Board and are therefore integrated into our Business Strategy and Governance. The Environmental Management Group continues to report quarterly on progress against the businesses environmental objectives, and employees have climate related incentives to encourage their engagement. As described in 2.3a, increases in operational costs are a tangible risk for most employees to understand and see the benefit from physical mitigation actions. Long term changes in temperatures, and increased frequency of extreme weather events, as well as increased environmental regulation will affect our facilities over time, but our framework for risk identification and pro-active management should mitigate the impact that these have on our operations. Examples of such mitigations include the energy efficiency investments made at our data centres, and office and staff consolidation projects which reduce our demand for energy as well as our GHG emissions. Our switch to 100% renewable electricity in our primary UK and Italian sites further mitigates us against increases in GHG emissions, as the business continues to grow. ii) Magnitude of impact: We consider climate-related risks and opportunities to have had a medium impact on our operations to date. We continue to invest in mitigating any physical climate related risks to our

		operations, and these are considered in BAU property and infrastructure management.
Other, please specify	Not evaluated	The above areas adequately address the impact of climate-related risks and opportunities on our organisation.

C2.6

(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	i) Climate-related opportunities have allowed us to develop new products and services which support a transition to a green economy, notably FTSE Russell's ESG Index Series, FTSE4Good and our new Green Revenues data model. These are already generating revenues which continue to grow. These growing revenue streams are projected as part of our financial planning process. ii) Magnitude of impact: We consider climate related risks and opportunities to have a low impact on our revenues.
Operating costs	Impacted	i) Climate-related risks and opportunities are considered in planning for operating costs - particularly those arising from impacts to energy, water and business travel. The Group has in place clear management and planning processes to identify opportunities to reduce climate-related impacts and benefit from resulting cost savings i.e. energy or water efficiency. The management of an ISO14001 certified environmental management system also has costs that are factored into the annual budget and expenditure processes. ii) Magnitude of impact: We consider physical climate-related risks and opportunities to have a low impact on our operating costs. Energy and water account for less than 5% of our operating costs. Business travel is of strategic importance to the growth of the business, but is recognized as a major contributor to our emissions – we continue to work on methods to reduce our business travel emissions, but we do not expect these to impact on our operating costs at this time.
Capital expenditures / capital allocation	Impacted	i) R&D investments in intellectual property have increased in FTSE Russell to account for the development of ESG Index series, Green Revenues data model and reports and FTSE4Good, products and services borne out of climate-related opportunities. ii) Magnitude of impact: We consider climate related risks and opportunities to have a low impact on our capital expenditure/capital allocation. This is because the technological and IP infrastructure set

		up for mainstream products can also support ESG products.
Acquisitions and divestments	Impacted	i) The Group expects to continue to identify, assess and execute organic and inorganic opportunities that enhance our existing business, or create new opportunities in complementary areas to our climate-related products and services. In 2018, FTSE Russell looked at extending its ESG capabilities to fixed income, building on the Yieldbook product offering (acquired from Citi in 2017). This resulted in the launch of FTSE Russell China Green Bond index in January 2019. In 2018 FTSE Russell established a partnership with Sustainalytics, to expand its regional ESG equity coverage. ii) Magnitude of impact: We consider climate related risks and opportunities to have a low impact on our financial planning for acquisitions and divestments in the near future as we see our ESG products and services continue to grow.
Access to capital	Not impacted	i) Climate-related issues do not have any impact on LSEG's access to capital, because the magnitude of both risks and opportunities is low.
Assets	Impacted	i) Climate-related issues do impact LSEG's financial planning process related to assets as we have an ongoing programme of energy efficiency investments in our data centres and offices. ii) Magnitude of impact: We consider climate-related risks and opportunities to have a medium impact on our financial planning for assets.
Liabilities	Not impacted	i) Climate-related issues do not have any impact on LSEG's financial planning processes related to Liabilities, because physical risks to our data centres have been mitigated through investments over the past few years.
Other	Not evaluated	The above areas adequately address the impact of climate-related risks and opportunities on our financial planning process.

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, quantitative

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

i) LSEG's business objectives and strategy is centered on the long term sustainability and profitability of the business. We recognize that climate and environmental related issues pose risks to the long term success of the business and our customers, and as such LSEG established Corporate Sustainability policies that focus on Environmental and Climate related commitments. Our Group Chief Risk Officer has responsibility for our environmental commitments. This structure ensures that our own operations use resources responsibly, and that we develop products and services that support our listed companies to make positive environmental impacts, such as the FTSE4Good index. In 2018, LSEG disclosed their alignment against the TFCD recommendations in our Annual Report, under the four headings Governance, Strategy, Risk Management and Metrics and Targets.

The physical and regulatory impacts of climate change have influenced our short term strategy. As a result our Environmental Management Committee set emissions and energy (as well as air travel, waste and water) reduction targets to reduce our environmental impacts. LSEG have invested in robust data collection and reporting tools across our property portfolio which allow the Environmental Management Committee to collate data and qualitative insights that demonstrate progress against our environmental targets. LSEG committed to an annual 5% relative GHG emissions reduction target (per full-time employee (FTE)) in 2018. LSEG use a relative target due to the the rapid growth of the business in to new regions, where its environmental ambitions may exceed local regulatory expectations. Despite this LSEG saw a 18% reduction in absolute carbon equivalent emissions in 2018, compared to 2017. Longer term targets include 20% per FTE and per £m revenue reduction by 2020 compared to 2013, and in 2017 we set a science-based absolute emissions reduction target of 40% reduction in absolute Scope 1 and 2 emissions by 2030 vs 2016.

ii) LSEG is ideally placed to help promote good practice across the industry. We joined the Sustainable Stock Exchanges initiative, backed by the United Nations. LSEG was the first global exchange group to become an official partner of the Climate Bonds initiative. In addition we are compliant with the ICMA's Green Bonds Principles and we also signatories of the Paris Pledge for Action. Engaging with ESG issues, investor-led principles such as the UN PRI and other initiatives i.e. the UN Sustainable Stock Exchange Initiative, have enabled the Group to gain early-mover strategic advantage over our competitors. LSE ranked first among large exchanges and eighth globally in a 2016 study by Aviva and Corporate Knights for the quality of ESG reporting disclosure (including carbon disclosure).

In 2018, LSEG took the decision to seize the opportunities presented by FTSE Russell's research into the climate related risks and opportunities relevant to our market. With the publication of the FTSE Russell report "Investing the global green economy" in May 2018, (https://www.ftserussell.com/sites/default/files/ftse_russell_investing_in_the_global_green_economy_busting_common_myths_may_2018.pdf) and subsequent launch of FTSE Russell's,

Green Revenues data model, designed to measure the revenue exposure of public companies engaged in the transition to the green economy.
FTSE Russell pioneered the concept of ESG indices globally with the FTSE4Good Index Series launched in 2001, which has made a significant impact on the environmental performance of participating organisations (ie. requiring GHG emissions and other climate-related targets as part of the qualifying criteria). FTSE Russell continues to evolves its offering, with the announcement its strategic partnership with Sustainalytics, a global leader in ESG and corporate governance research, ratings and analysis, in December 2018. Through this partnership, FTSE Russell will work to develop new ESG indexes using Sustainalytics Risk Ratings, that support the market transition to a low-carbon economy.

Operationally, LSEG continue to consolidate and develop shared services offices with opening of the Bucharest office in 2018 and the aggregation of sites in New York due to take place in 2019. These investments are in order to improve operating efficiencies, allowing investment into energy reduction initiatives such as the continued roll-out of LED lighting, cold aisle containment projects for LSEG data centres and continued shift of electricity to renewable sources for our primary global sites. These programmes have been implemented to support our emission reduction targets, in facilities but also to help reduce business travel emissions, through the planning around new and consolidated facility locations.

Longer term climate change risks require LSEG to actively monitor climate changes that could affect our operations, including direct impacts such as flooding and extreme weather, and indirect impacts such as increased average temperatures which could increase in cap and trade schemes, resulting in additional operating costs for our business and that of quoted companies.

C3.1d

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

Climate-related scenarios	Details
2DS	i) LSEG undertook an assessment to develop various scenarios for setting a science-based target to reduce our direct and indirect emissions. LSEG used the SBTi science-based targets tool in 2017, to calculate their target for Scope 1 and Scope 2. This tool makes use of the 2 degrees warming scenario (2DS). LSEG continue to develop a Scope 3 target, following a Scope 3 screening exercise, so that their science based target may be submitted for SBTi approval. ii) LSEG evaluated the time horizons as prescribed by CDP (5-15 years and 15+ years, respectively). We have reported a medium term target of 14 years only at this stage, in line with wider LSEG business strategy. In order to understand our Scope 3 emissions contribution (outside of those we currently report) we conducted a screening our material Scope 3 data sources.

	iii) For LSEG, the results of our scope 3 screening indicated that scope 3 emissions have the potential to account for 95% emissions. iv) The results of this scenario analysis have informed LSEG's strategy by providing the necessary data points to determine feasibility of the various potential targets. The analysis demonstrated that LSEG must conduct full detailed analysis of our Scope 3 emissions (as a result of SBTi's concerning screening results), and we expect this will focus on Business Travel, Investments and Purchased Goods and Services. Although we understand our approach to scenario analysis is limited, this process has helped us understand the physical conditions in which we will be operating between now and 2050, and how this might inform our products and services. FTSE Russell's Green Revenues Model frames our understanding of the projected accelerated Green Investment required by 2030 to avert the 2 degrees scenario (Global Commission on the Economy and Climate, 2016). v) At LSEG, Business travel, (as well as Purchased Goods and Services and Capital Goods) is critical to the corporate strategy of the globalized London Stock Exchange Group. However, the early high-level screening of our S3 emissions has indicated that this must be an area of focus for the business in order to effectively reduce our emissions through to 2030 and beyond. Our short term 2020 targets which include a target for Business Travel emission reductions has been retained for 2018, however we are planning to look more closely at this S3 category in our refresh of targets post 2020, alongside the S3 Science Based Target development. We will look to implement new targets as a result of this process that align with SBTi criteria. For example, we are evaluating the reduction in flights required per annum to meet SBTi's Scope 3 criteria within the appropriate time periods (5-15 years). At this moment in time our medium term target aligns with CDP Leadership criteria and addresses 100% of our Scope 1 and Scope 2 emissions. We consider these combined targets to be science-based, as SBTi states that per IPCC AR5 RCP 2.6, the minimum reduction required is 49% absolute emissions reduction from 2010 to 2050. This translates to a linear 1.23% reduction per year on average, which LSEG's medium term target exceeds (2.86% reduction per year).

C4. Targets and performance

C4.1

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

Both absolute and intensity targets

C4.1a

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

Target reference number

Abs 1

Scope

Scope 1 +2 (market-based)

% emissions in Scope

100

Targeted % reduction from base year

40

Base year

2016

Start year

2017

Base year emissions covered by target (metric tons CO2e)

23,259

Target year

2030

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

% of target achieved

100

Target status

Achieved

Please explain

This target was reported as ‘Abs 1’ in our 2018 response. We exceeded this long-term target in 2017 due primarily to a switch to 100% renewable electricity for our owned and operated UK and Italian facilities, which includes a significant percentage of our data centre consumption.

This target reflects an annual 2.86% emissions reduction from our base year, with a medium-term time frame for the target of 14 years in accordance with CDP criteria. In 2018, LSEG reduced its absolute Scope 1 + Scope 2 (market-based) emissions by 62% compared to 2016 base year (31% average annual reduction).

We consider this to be a science-based target as SBTi states that per IPCC AR5 RCP 2.6 the minimum reduction required is 49% absolute reduction from 2010 to 2050. This translates to a linear 1.23% reduction per year on average, which LSEG’s target exceeds.

This target has been reviewed by the Science Based Targets Initiative in 2017, however is awaiting formal approval status on completion of a Scope 3 target.

Though this target was exceeded in the previous reporting year, we maintain it as a medium-term absolute reduction target which will become more challenging to achieve as the business grows.

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Scope

Scope 1+2 (market-based) +3 (upstream)

% emissions in Scope

100

Targeted % reduction from base year

20

Metric

Metric tons CO2e per unit revenue

Base year

2013

Start year

2014

Normalized base year emissions covered by target (metric tons CO2e)

0.0000278

Target year

2020

Is this a science-based target?

No, but we are reporting another target that is science-based

% of target achieved

100

Target status

Achieved

Please explain

This target was reported as ‘Int 1’ in our 2018 response and covers Group Emissions from Scope 1, 2 and 3 (including Air Travel, Rail Travel, Water and Waste).

We exceeded this long-term target in 2017 due primarily to a switch to 100% renewable electricity for our owned and operated UK and Italian facilities, which includes a proportion of our data centre consumption. In addition, we have made improvements in the energy efficiency of our offices and data centres since 2013.

This target continued to be exceeded in the reporting year, with a reduction of 70% tCO2e per £ Revenue in 2018 vs 2013 base year.

As a result of meeting this target, we anticipate our absolute Scope 1, 2 and 3 emissions to increase by 101% by 2020 compared to 2013.

We maintain this target in 2018, whilst we continue to develop our SBTi approved science-based target. A new medium term, long term and incremental annual rolling targets will be developed that complement our science-based target.

% change anticipated in absolute Scope 1+2 emissions

101

% change anticipated in absolute Scope 3 emissions

101

Target reference number

Int 2

Scope

Scope 1+2 (market-based) +3 (upstream)

% emissions in Scope

100

Targeted % reduction from base year

20

Metric

Metric tons CO2e per unit FTE employee

Base year

2013

Start year

2014

Normalized base year emissions covered by target (metric tons CO2e)

9.04

Target year

2020

Is this a science-based target?

No, but we are reporting another target that is science-based

% of target achieved

100

Target status

Achieved

Please explain

This target was reported as ‘Int 2’ in our 2018 response and covers Group Emissions from Scope 1, 2 and 3 (including Air Travel, Rail Travel, Water and Waste).

We exceeded this long-term target in 2017 due primarily to a switch to 100% renewable electricity for our owned and operated UK and Italian locations, together with other significant improvements in energy efficiency since 2013.

This target continued to be exceeded in the reporting year (-63% tCO2e per FTE in 2018 vs base year).

As a result of meeting this target, we anticipate our absolute Scope 1, 2 and 3 emissions to increase by 54% by 2020.
We maintain this target in 2018, whilst we continue to develop our SBTi approved science-based target. A new medium term, long term and incremental annual rolling targets will be developed that complement our science-based target.

% change anticipated in absolute Scope 1+2 emissions

54

% change anticipated in absolute Scope 3 emissions

54

Target reference number

Int 3

Scope

Scope 1+2 (market-based) +3 (upstream)

% emissions in Scope

100

Targeted % reduction from base year

5

Metric

Metric tons CO2e per unit revenue

Base year

2017

Start year

2017

Normalized base year emissions covered by target (metric tons CO2e)

0.0000112

Target year

2018

Is this a science-based target?

No, but we are reporting another target that is science-based

% of target achieved

100

Target status

Achieved

Please explain

Target covers Total Group Emissions from Scope 1, 2 and 3 (including Air Travel, Rail Travel, Water and Waste).

We exceeded this annual target in 2018 due primarily to a switch to, 100% renewable electricity for some of our UK and Italian locations. This switch began in 2017, however we continued to benefit from reductions in H1 of 2018.

Additional energy and emissions reduction initiatives such as the continuation of the cold aisle containment projects at our Croydon site, and roll out of LED lighting replacements have also contributed to this reduction.

This target was exceeded in the reporting year (-26% tCO2e per £ Revenue in 2018 vs 2017).

As a result of meeting this target, we anticipate a 4% increase in absolute S1, S2 + S3 emissions This is calculated based on the growth in revenue in 2018 compared to 2017 (9.7%).

The switch to renewable energy and other energy efficiency measures has allowed a 37% reduction in absolute Scope 1 & 2 emissions vs 2017, while our Scope 3 emissions have increased.

% change anticipated in absolute Scope 1+2 emissions

4

% change anticipated in absolute Scope 3 emissions

4

Target reference number

Int 4

Scope

Scope 1+2 (market-based) +3 (upstream)

% emissions in Scope

100

Targeted % reduction from base year

2

Metric

Metric tons CO2e per unit FTE employee

Base year

2017

Start year

2017

Normalized base year emissions covered by target (metric tons CO2e)

3.98

Target year

2018

Is this a science-based target?

No, but we are reporting another target that is science-based

% of target achieved

100

Target status

Achieved

Please explain

Target covers Total Group Emissions from Scope 1, 2 and 3 (including Air Travel, Rail Travel, Water and Waste).

We exceeded this annual target in 2018 due primarily to a switch to, 100% renewable electricity for our some UK and Italian locations. This switch begun in 2017, were we saw significant reductions, but 2018 saw the close out of the first 12 months shift to renewable electricity at these sites.
Additional energy and emissions reduction initiatives such as the continuation of the cold aisle containment projects at our Croydon site, and roll out of LED lighting replacements have also contributed to this reduction.

This target was exceeded in the reporting year (-16% tCO2e per FTE employee in 2018

vs 2017).

As a result of meeting this target, we anticipate a 8% decrease in absolute S1, S2 + S3 emissions This is calculated based on the static headcount in 2018 compared to 2017.

The switch to renewable energy and other energy efficiency measures has allowed a 37% reduction in absolute Scope 1 & 2 emissions vs 2017, while our Scope 3 emissions have increased.

% change anticipated in absolute Scope 1+2 emissions

-8

% change anticipated in absolute Scope 3 emissions

-8

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

Target

Waste

KPI – Metric numerator

metric tonnes total waste

KPI – Metric denominator (intensity targets only)

£m revenue

Base year

2013

Start year

2014

Target year

2020

KPI in baseline year

1.56

KPI in target year

1.248

% achieved in reporting year

100

Target Status

Achieved

Please explain

LSEG set a target to complement Int1, for a 20% reduction target in waste (tonnes) per £m revenue by 2020, compared to 2013.
Total waste produced per £m revenue has reduced by 74% in 2018 compared to the base year 2013.
This is largely driven by improvements in the waste management process in the UK including introduction of a baler and new food waste processes – adding to an innovative food waste solution in Italy. LSEG continues to achieve 99% landfill avoidance.

Although we are yet to set an approved S3 SBT, we include waste as a material category in our development of this initiative.

Part of emissions target

Int1

Is this target part of an overarching initiative?

Science-based targets initiative

Target

Other, please specify

Air Travel

KPI – Metric numerator

tCO2e from Air Travel

KPI – Metric denominator (intensity targets only)

£m Revenue

Base year

2013

Start year

2014

Target year

2020

KPI in baseline year

4.85

KPI in target year

3.88

% achieved in reporting year

90

Target Status

Underway

Please explain

LSEG set a target to complement Int 1, for a 20% reduction in tCO2e per £m revenue from Air Travel by 2020, compared to 2013.

Air travel emissions per £m revenue reduced by 18% in the reporting year (2018) compared to 2013 base year.

LSEG continues to review and extend the use and availability of video conferencing (VC) facilities, and to encourage the use of VC in place of air travel. Train travel is the preferred option between a number of major European hubs. Over the last year, we significantly exceeded our target of a 10% increase in VC call hours (49%).

Although we are yet to set an approved S3 SBT, we include Business Travel as a material category in our development of this initiative.

Part of emissions target

Int1

Is this target part of an overarching initiative?

Science-based targets initiative

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	16	347
To be implemented*	1	18
Implementation commenced*	2	13
Implemented*	4	5,673
Not to be implemented	0	0

C4.3b

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

Initiative type

Low-carbon energy purchase

Description of initiative

Other, please specify

100% Natural Renewable Energy Purchase

Estimated annual CO2e savings (metric tonnes CO2e)

4,253

Scope

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

0

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

15,000

Payback period

1-3 years

Estimated lifetime of the initiative

>30 years

Comment

In May 2017, we switched 64% of the Group's electricity to be sourced from 100% natural, renewable sources. This energy is backed by a Renewable Electricity Commitment Certificate in the UK and Guarantees of Origins in Italy and is expected to be a long term commitment.

Initiative type

Energy efficiency: Processes

Description of initiative

Cooling technology

Estimated annual CO2e savings (metric tonnes CO2e)

49

Scope

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

21,500

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

160,000

Payback period

4 - 10 years

Estimated lifetime of the initiative

6-10 years

Comment

In 2018 we completed the data centre cold aisle containment project at our Croydon data centre. The supply of cold air to the inlets of these devices is much more efficient as a result. The servers themselves are also working less hard as the pressure of the cold air at inlet will be higher, so the internal fans will not have to turn as fast to pull in the cold air.

Reductions were achieved in Scope 1 & 2 (energy, and cooling) and Scope 3 (water). Scope 1 emissions are included here due to the requirement to run diesel generators tests at our data centres, as part of business continuity strategy.

Initiative type

Energy efficiency: Building services

Description of initiative

Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

32

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

14,090

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

45,860

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

During 2018 we implemented a large part of our LED replacement project in our London Paternoster Square Office. We have calculated savings of 37,124 watts based on the replacement of 1870 lamps with 1468 higher efficiency lamps. Reductions were achieved in Scope 2 energy.

Initiative type

Energy efficiency: Processes

Description of initiative

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

1,340

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

201,000

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

0

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

Emissions reduction activities in 2018 included cold-aisle containment and LED lighting, as above, but also included server efficiency replacements in data centres, and office consolidation projects in our UK offices particularly. Changes to paper and card board waste management processes in the UK resulted in further Scope 3 reductions.

Reductions were achieved in Scope 1 & 2 (energy, cooling and heating) and Scope 3 (water and waste). Investment in these reduction activities is now considered BAU, so no further investment is required.

C4.3c

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

Method	Comment

Compliance with regulatory requirements/standards	LSEG are driving investment in further energy efficiency and GHG emissions reduction initiatives through participation in the UK CRC Energy Efficiency Scheme (where we are financially penalized for our energy consumption). Our compliance with ESOS supports our investment decisions by providing a suggested, costed priority list for energy efficiency measures and we use this to build the business case for such activities. Our proactive engagement with mandatory and voluntary emissions reporting schemes ensures that our progress in emissions reductions initiatives and our resulting progress on targets are visible publicly.
Employee engagement	The small decisions we each make help us become more aware of our strategic role in building a sustainable economy and business, through investment and engagement. Because of this, we believe that the investment with the highest return for the environment is behaviour change. This year, we continued to engage staff through sustainability communications, regular reporting of performance against targets on our intranet and other initiatives.
Financial optimization calculations	LSEG have employed the services of energy efficiency specialists where appropriate to quantify, analyse and prioritise financial investment in building fabric, services and process efficiencies, including as part of the ESOS process. These projects will simultaneously reduce LSEG's GHG emissions and energy costs.

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?

No

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, 2016

Base year end

December 31, 2016

Base year emissions (metric tons CO2e)

1,583

Comment

Scope 2 (location-based)

Base year start

January 1, 2016

Base year end

December 31, 2016

Base year emissions (metric tons CO2e)

23,120

Comment

2016 figures have been updated on receipt of annual emissions factor guidance and/or actual data from suppliers.

Scope 2 (market-based)

Base year start

January 1, 2016

Base year end

December 31, 2016

Base year emissions (metric tons CO2e)

21,676

Comment

2016 figures have been updated on receipt of annual emissions factor guidance and/or actual data from suppliers.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

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)

1,414

Start date

January 1, 2018

End date

December 31, 2018

Comment

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

1,919

Start date

January 1, 2017

End date

December 31, 2017

Comment

2017 values have been updated on receipt of annual emissions factor guidance and actual data from suppliers.

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

1,583

Start date

January 1, 2016

End date

December 31, 2016

Comment

2016 figures have been updated on receipt of annual emissions factor guidance and actual data from suppliers.

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

C6.3

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

Reporting year

Scope 2, location-based

19,169

Scope 2, market-based (if applicable)

7,132

Start date

January 1, 2018

End date

December 31, 2018

Comment

Past year 1

Scope 2, location-based

21,850

Scope 2, market-based (if applicable)

11,694

Start date

January 1, 2017

End date

December 31, 2017

Comment

2017 figures have been updated on receipt of annual emissions factor guidance and actual data from suppliers.

Past year 2

Scope 2, location-based

23,010

Scope 2, market-based (if applicable)

21,676

Start date

January 1, 2016

End date

December 31, 2016

Comment

2016 figures have been updated on receipt of annual emissions factor guidance and actual data from suppliers.

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?

No

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

400,526

Emissions calculation methodology

This figure has been calculated based on the Science Based Target pre-screen calculation in 2017. As part of this process we estimated that our Purchased Goods and Services may account for 87.81% of our total emissions as a business. This figure was calculated using high level analysis of 2016 spend data. We have held the same proportion for each scope category for 2018, as we do not expect any material change to these figures since 2017.

Using Scope 1 emissions as a benchmark (0.31% of total emissions in 2017) we estimated total emissions for the business: (1414/0.31)*100 = 456,129 tCO2e. This total emission value is multiplied by the estimated proportion allocated to Purchased Goods and Services in 2017: 456,129*0.8781 = 400,526 tCO2e.

We have stated this is based on 0% of data from suppliers or value chain partners for 2018, as the spend data was collected outside of the reporting year.

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

0

Explanation

We have established that PG&S are a relevant Scope 3 category for LSEG, as part of our S3 science based targets prescreening process. We have estimated that Purchased Goods and Services may account for 87.81% of our total emissions as a business.

As an office based financial services organisation we are reviewing available data and calculation methodologies to identify the most appropriate and meaningful method to most accurately calculate, disclose and manage these emissions in future.

This information is not yet included in our emissions reporting as part of our Annual Report or Sustainability report and is not verified.

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO2e

19,568

Emissions calculation methodology

This figure has been calculated based on the Science Based Target pre-screen calculation in 2017. As part of this process we estimated that our Capital Goods may account for 4.29% of our total emissions as a business. This figure was calculated using high level analysis of 2016 spend data. We have held the same proportion for each scope category for 2018, as we do not expect any material change to these figures since 2017.

Using Scope 1 emissions as a benchmark (0.31% of total emissions in 2017) we estimated total emissions for the business: (1414/0.31)*100 = 456,129 tCO2e.
This total emission value is multiplied by the estimated proportion allocated to Capital Goods in 2017: 456,129*0.0429 = 19,568 tCO2e.

We have stated this is based on 0% of data from suppliers or value chain partners for 2018, as the spend data was collected outside of the reporting year.

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

0

Explanation

We have established that Capital Goods are a relevant scope 3 category for LSEG, as part of our S3 science based targets prescreening process. We have estimated that Capital Goods may account for 4.29% of our total emissions as a business.

As an office based financial services firm, capital goods are likely to include IT hardware in our offices and data centres. We are reviewing available data and calculation methodologies to identify the most appropriate and meaningful method to most accurately calculate, disclose and manage these emissions.

This information is not yet included in our emissions reporting as part of our Annual Report or Sustainability report and is not verified.

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

Evaluation status

Relevant, calculated

Metric tonnes CO2e

527

Emissions calculation methodology

Data is calculated using primary data from building metering and is cross-checked against supplier invoices and externally verified. Extrapolation based on FTE headcount has been used where limited data is available due to landlord data restrictions in serviced office space.

Emissions associated with Purchased Electricity are 18.35% extrapolated.

T&D losses from electricity are calculated using 2018 or the latest available conversion factors and associated GWP from each of the following sources: United Kingdom: DEFRA UK Government GHG 2018 Conversion Factors; Global (non-extrapolated): GHG Protocol: http://www.ghgprotocol.org/calculation-tools/all-tools Extrapolated: DEFRA UK Government GHG 2018 Conversion Factors.

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

81.65

Explanation

Emissions calculated are for Transmission and distribution (T&D) losses (generation of electricity).

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Explanation

As an office based financial services firm, our operations do not currently include any upstream transportation or distribution other than that which would be directly included in our purchased goods and services or capital goods and services.

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

234

Emissions calculation methodology

Emissions from waste are calculated based on total waste (kg) including waste to energy, waste to landfill and waste recycled (including glass, paper, cardboard, plastics, food and drink, and mixed recycling). Emissions are calculated from primary supplier data in the UK and Italy and extrapolation based on FTE has been used where primary data is not available across the rest of the world.

Emissions from waste are 4.94% extrapolated.

Emissions from waste generated in operations are calculated using 2018 or the latest available conversion factors and associated GWP from each of the following sources: United Kingdom: DEFRA UK Government GHG 2018 Conversion Factors; Global (non-extrapolated): DEFRA UK GHG 2018 Government Conversion Factors (as no GHG protocol factor for waste); Extrapolated: DEFRA UK Government 2018 GHG Conversion Factors.

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

95.06

Explanation

We currently measure and monitor all of our global waste streams and thus are able to calculate the emissions directly arising from this aspect of our operations in the UK and Italy. We are constantly working with suppliers to increase the availability of primary data rather than using extrapolation.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

8,523

Emissions calculation methodology

Emissions are 100% calculated based on air travel and rail travel miles supplied and confirmed by our travel booking partner.

Air Travel data calculated from mileage from travel bookings provider except Asia partner bookings which are based on Origin / Destination airport codes and Via Michelen mileage data. Rail travel is calculated using origin and destination city pairs, and Via Michelen mileage data. Emissions are calculated based on Distance i.e. International, Long Haul, Short Haul, Domestic and class i.e. Economy, Premium Economy, Business Class, First Class. Rail travel uses Eurostar/National Rail factors. All factors are from 2018 DEFRA UK Government GHG Conversion Factors.

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

100

Explanation

Air travel forms the most significant aspect of our business travel footprint.

Employee commuting

Evaluation status

Relevant, not yet calculated

Explanation

We are reviewing the potential of undertaking a travel plan for our global offices to understand our employee commuting footprint and any potential methods to influence or reduce this footprint. The central city location of most of our offices means the majority of our commuting footprint is likely to be public transport based.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

All upstream emissions from leased assets are already included within our reported Scope 1 and Scope 2 emissions.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Explanation

As an office based financial services firm, our operations do not currently include any downstream transportation or distribution.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Explanation

As an office based financial services firm, our operations do not currently include any sold physical products.

Use of sold products

Evaluation status

Not relevant, explanation provided

Explanation

As an office based financial services firm, our operations do not currently include any sold physical products. All emissions from our services are calculated and included within our Scope 1 and 2 reported emissions.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Explanation

As an office based financial services firm, our operations do not currently include any sold physical products.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

All investments are currently under our operational control. We use the operational control method for our reporting scope, and all investment emissions as lessor of office space have been included in our Scope 1 and 2 reported emissions.

Franchises

Evaluation status

Not relevant, explanation provided

Explanation

We do not currently have any franchise operations.

Investments

Evaluation status

Not relevant, explanation provided

Explanation

All investments are currently under our operational control. We use the operational control method for our reporting scope, and all investment emissions as lessor of office space have been included in our Scope 1 and 2 reported emissions.

Other (upstream)

Evaluation status

Relevant, calculated

Metric tonnes CO2e

34.7

Emissions calculation methodology

Water consumption data is calculated using primary data from building metering in UK, Italy and Sri Lanka and is cross-checked against supplier invoices and externally verified. Extrapolation based on FTE headcount has been used where limited data available due to landlord data restrictions or slow availability of landlord data in serviced office space for the Rest of the World.

Emissions from water are calculated based on municipal water consumption in tCO2e per litre. Emissions associated with water are 8.51% extrapolated.

Emissions from water consumption are calculated using 2018 or the latest available conversion factors and associated GWP from each of the following sources: United Kingdom: DEFRA UK Government GHG 2018 Conversion Factors: Global (non-extrapolated): DEFRA UK GHG 2018 Government Conversion Factors (as no GHG protocol factor for water): Extrapolated: DEFRA UK Government 2018 GHG Conversion Factors.

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

91.49

Explanation

We currently measure and monitor all of our global water consumption using primary supplier data wherever available and thus are able to calculate the emissions directly arising from this aspect of our operations in the UK, Italy, Sri Lanka. We are constantly working with suppliers to increase the availability of primary data rather than using extrapolation.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Explanation

LSEG do not consider any Other (downstream) emissions relevant to their business operations.

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

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

0.000004003

Metric numerator (Gross global combined Scope 1 and 2 emissions)

8,546

Metric denominator

unit total revenue

Metric denominator: Unit total

2,135,000,000

Scope 2 figure used

Market-based

% change from previous year

42.78

Direction of change

Decreased

Reason for change

Revenue increased by 9.7% during the reporting period compared to 2017, while gross Scope 1 & 2 market-based emissions decreased by 37.2% due primarily due to a combination of a switch to 100% renewable energy in the UK from 1 May 2017, emissions reduction activities (such as cold-aisle containment and other energy efficiency projects such as LED lighting replacement) and emissions factor changes. Therefore emissions per unit total revenue have decreased by 42.78%.

Intensity figure

1.608204742

Metric numerator (Gross global combined Scope 1 and 2 emissions)

8,546

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

5,314

Scope 2 figure used

Market-based

% change from previous year

35.13

Direction of change

Decreased

Reason for change

Full time equivalent employee headcount remained static during the reporting period, while gross Scope 1 & 2 emissions decreased by 37.2% due primarily to a combination of a switch to 100% renewable energy in the UK from 1 May 2017, emissions reduction

activities (such as cold-aisle containment and other energy efficiency projects such as LED lighting replacement) and emissions factor changes. Therefore Scope 1 and 2 emissions per FTE have decreased by 35.13%.

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	434.48	IPCC Fourth Assessment Report (AR4 - 100 year) 💬[1]
CO2	977.68	IPCC Fifth Assessment Report (AR5 – 100 year) 💬[2]
CH4	0.45	IPCC Fourth Assessment Report (AR4 - 100 year) 💬[3]
CH4	0.09	IPCC Fifth Assessment Report (AR5 – 100 year) 💬[4]
N2O	0.89	IPCC Fourth Assessment Report (AR4 - 100 year) 💬[5]
N2O	0	IPCC Fifth Assessment Report (AR5 – 100 year) 💬[6]

💬[1] Defra's 2018 Conversion Factors for Scope 1 emissions use IPCCAR4. We apply the Defra emission factors to our UK and extrapolated data. Our other Scope 1 emissions from operations in Sri Lanka and Italy, are calculated based on GHG Protocol approved emission factors, which use IPCCAR5 as of March 2015. This use of regional emission factors results in the need to breakout in this manner.

[2]Defra's 2018 Conversion Factors for Scope 1 emissions use IPCCAR4. We apply the Defra emission factors to our UK and extrapolated data. Our other Scope 1 emissions from operations in Sri Lanka and Italy, are calculated based on GHG Protocol approved emission factors, which use IPCCAR5 as of March 2015. This use of regional emission factors results in the need to breakout in this manner.

[3]Defra's 2018 Conversion Factors for Scope 1 emissions use IPCCAR4. We apply the Defra emission factors to our UK and extrapolated data. Our other Scope 1 emissions from operations in Sri Lanka and Italy, are calculated based on GHG Protocol approved emission factors, which use IPCCAR5 as of March 2015. This use of regional emission factors results in the need to breakout in this manner.

[4]Defra's 2018 Conversion Factors for Scope 1 emissions use IPCCAR4. We apply the Defra emission factors to our UK and extrapolated data. Our other Scope 1 emissions from operations in Sri Lanka and Italy, are calculated based on GHG Protocol approved emission factors, which use IPCCAR5 as of March 2015. This use of regional emission factors results in the need to breakout in this manner.

[5]Defra's 2018 Conversion Factors for Scope 1 emissions use IPCCAR4. We apply the Defra emission factors to our UK and extrapolated data. Our other Scope 1 emissions from operations in Sri Lanka and Italy, are calculated based on GHG Protocol approved emission factors, which use IPCCAR5 as of March 2015. This use of regional emission factors results in the need to breakout in this manner.

[6]Defra's 2018 Conversion Factors for Scope 1 emissions use IPCCAR4. We apply the Defra emission factors to our UK and extrapolated data. Our other Scope 1 emissions from operations in Sri Lanka and Italy, are calculated based on GHG Protocol approved emission factors, which use IPCCAR5 as of March 2015. This use of regional emission factors results in the need to breakout in this manner.

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	398.67
Italy	852.38
Sri Lanka	126.24
United States of America	0
France	0
Other, please specify Rest of the World	37.08

C7.3

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

By activity

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Natural Gas	1,133.84
Diesel	149.41
LPG	28.46
Road Fuel	54.15
Fugitive Emissions	48.52

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 in market-based approach (MWh)
United Kingdom of Great Britain and Northern Ireland	13,965.9	3,356	48,533.51	37,482.36
Italy	1,524.1	98.1	4,592.16	4,296.74
Sri Lanka	2,181.24	2,181.24	3,577.31	0
United States of America	48.7	48.7	229.96	0
France	73.7	73.7	1,399.99	0
China, Hong Kong Special Administrative Region	90.1	90.1	122.13	0
Other, please specify Rest of World	1,285	1,285	4,538.56	0

C7.6

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

By activity

C7.6c

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

Activity	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Data Centre Purchased Electricity	10,867	2,915
Office Space Purchased Electricity	7,484.84	4,217
Tenants Purchased Electricity	816.9	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?

Decreased

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	4,253	Decreased	31.24	31.24% of the change in emissions is due to the switch to 100% renewable energy for primary sites in the UK and Italy (which commenced in May 2017). 2018 saw the first full 12 month period where these UK and Italian sites benefited from the reduction in market-based emissions as a result of the Renewable Energy Certificates purchased, and Guarantees of Origin received from suppliers. In 2017, S2 Market emissions from the switched meters were 4253 tCO2e. In 2018 the same meters emissions were 0 tCO2e. This results in a reduction of 4253 tCO2e Scope 2 emissions as a result of change to renewable energy consumption in 2018. 0 tCO2e reductions in Scope 1 emissions.

				2017 gross Scope 1 & 2 market-based emissions were 13,613 tCO2e. The calculation for the emissions value % is therefore (-4253/13613)*100 = -31.24% ie a 31.24% decrease in emissions
Other emissions reduction activities	308	Decreased	2.27	Emissions reduction activities in 2018 included cold-aisle containment and server efficiency replacements in data centres, and office consolidation and LED lighting replacement in offices. Based on activities at Croydon Data Centre (Cold Aisle Containment), Paternoster Square and Italian offices (LED replacements) It is estimated that these emissions reduction activities resulted in reductions S2 emissions of 308.90 tCO2e. 2017 gross Scope 1 & 2 market-based emissions were 13613 tCO2e. The calculation for the emissions value % is therefore (-308.90/13613)*100 = -2.27%. ie a 2.27% decrease in emissions
Divestment	0	No change	0	There have been no material divestments during the reporting period.
Acquisitions	0	No change	0	There have been no material acquisitions during the reporting period.
Mergers	0	No change	0	There have been no material mergers during the reporting period.
Change in output	0	No change	0	There have been no material changes in output during the reporting period.
Change in methodology	0	No change	0	There have been no changes to methodology during the report period, other than annual updates to emission conversion factors according to Defra 2018 and GHG Protocol guidance.
Change in boundary	0	No change	0	There have been no boundary changes during the reporting period.
Change in physical operating conditions	0	No change	0	There have been no material changes in physical operating conditions during the reporting period.

Unidentified	431.1	Decreased	3.17	Our gross Scope 1 & 2 market-based emissions decreased by 37%, or 5067 TCO2e in 2018 compared to 2017. Subtracting the total 4,635.9 TCO2e emissions reductions associated with change in renewable energy consumption; other energy reduction initiatives and; reduced use of diesel generators at our data centres, the residual decrease in emissions were 431.1 TCO2e since 2017. This reduction is expected to be due to minor changes in emission factors published by Defra and GHG Protocol partners (ie. IEA), and other energy reduction initiatives including behavioral change undertaken during the reporting year. 3.17% was calculated based on (-431.1/13613)*100= -3.17). ie. a 3.17% decrease in emissions.
Other	74	Decreased	0.54	Scope 1 energy consumption from Diesel generators used at LSEG data centres reduced by 74 tCO2e in 2018 compared to 2017. In 2017 the diesel generators were running more regularly to provide power to the data centres during infrastructure upgrades. 2017 gross Scope 1 & 2 market-based emissions were 13,613 tCO2e. The calculation for the emissions value % is (-74/13613)*100 = -0.54%. ie. a 0.54% decrease in emissions

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?

Market-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 undertakes this energy-related activity
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 MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	6,499.63	6,449.63
Consumption of purchased or acquired electricity		41,779.1	21,214.52	62,993.62
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		41,779.1	27,714.15	69,493.25

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	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

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

5,773.78

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

595.15

MWh fuel consumed for self-generation of electricity

540.95

MWh fuel consumed for self-generation of heat

0

Comment

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

130.7

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Diesel

Emission factor

0.00265

Unit

metric tons CO2e per liter

Emission factor source

UK and Rest of World: 2018 UK Government GHG Conversion Factors for Company Reporting: Fuels, Diesel (average biofuel blend), litres - 2.62694
Italy: GHG Protocol 2009-2017: Fuels, ES Diesel , litres -2.676875 kgCO2e
Sri Lanka: GHG Protocol 2009-2017: Fuels, Diesel (Retail) , litres - 2.676875 kgCO2e

Comment

Weighted average emissions factor.

Liquefied Petroleum Gas (LPG)

Emission factor

2.98487

Unit

metric tons CO2e per metric ton

Emission factor source

Sri Lanka: GHG Protocol 2009-2017: Fuels, LPG , tonne - 2.98487

Comment

Natural Gas

Emission factor

0.19641

Unit

metric tons CO2e per MWh

Emission factor source

UK and Rest of World: 2018 UK Government GHG Conversion Factors for Company Reporting: Fuels, Natural Gas kWh (Gross CV) - 0.18396
Italy & Sri Lanka : GHG Protocol 2015-2017: Fuels, ES Natural Gas kWh - 0.201962

Comment

Weighted average emissions factor.

C8.2e

(C8.2e) 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	541.3	541.3	0	0
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C8.2f

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

Basis for applying a low-carbon emission factor

Energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Solar PV
Wind
Hydropower

Region of consumption of low-carbon electricity, heat, steam or cooling

Europe

MWh consumed associated with low-carbon electricity, heat, steam or cooling

37,482.36

Emission factor (in units of metric tons CO2e per MWh)

0

Comment

Our primary UK sites have purchased RECs, that match every MWh of electricity supplied with a UK-recognised origin certificate. RECs are provided by SmartestEnergy, who are certified by the Carbon Trust Certification as compliant with GHG Protocol Scope 2 Guidance so that LSEG can report zero carbon emissions for purchased electricity when reporting using the market-based method.

Basis for applying a low-carbon emission factor

Energy attribute certificates, Guarantees of Origin

Low-carbon technology type

Solar PV
Wind
Hydropower
Biomass (including biogas)

Region of consumption of low-carbon electricity, heat, steam or cooling

Europe

MWh consumed associated with low-carbon electricity, heat, steam or cooling

4,296.74

Emission factor (in units of metric tons CO2e per MWh)

0

Comment

Renewable electricity in Italy is now provided by A2A and Enel Energia SpA, and according to their contract includes hydro, solar, wind, geothermal and biomass renewable mix.

C9. Additional metrics

C9.1

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

Description

Waste

Metric value

0.16

Metric numerator

metric tonnes waste

Metric denominator (intensity metric only)

Full Time Employee (FTE)

% change from previous year

4.65

Direction of change

Decreased

Please explain

LSEG continues to achieve 99% landfill avoidance. Total waste produced per FTE has reduced by 4.65%. This is largely driven by improvements in the waste management process in the UK including introduction of a baler and new food waste processes – adding to an innovative food waste solution in Italy.

Description

Other, please specify

Air Travel

Metric value

3.98

Metric numerator

tCO2e from Air Travel

Metric denominator (intensity metric only)

£m Revenue

% change from previous year

9.94

Direction of change

Increased

Please explain

LSEG continues to review and extend the use and availability of video conferencing (VC) facilities, and to encourage the use of VC in place of air travel. Train travel is the preferred option between a number of major European hubs. Over the last year, we significantly exceeded our target of a 10% increase in VC call hours (49%).

We did not make our internal target for 2018 of a 2% reduction in emissions from air travel per £m Revenue. On investigation we found the primary reason for this increase was due to an increase in international event attendance, mostly due to internal LSEG face to face meetings (ie. Dublin conference, Finance Training in London with Sri Lankan colleagues attending, Board meeting in New York). There was also the opening of the Bucharest site in October 2018, which involved increased travel for recruitment and training. We are conducting a review of our Air Travel policies in 2019, in an effort to manage this going forward.

Description

Other, please specify

Paper Consumption

Metric value

1,928

Metric numerator

Sheets of A4 Paper

Metric denominator (intensity metric only)

Full Time Employee (FTE)

% change from previous year

6.63

Direction of change

Decreased

Please explain

In our third year of setting a paper reduction target, we achieved a 6.63% reduction in A4 sheets per FTE. In 2018 we ramped up our ongoing push towards paperless processes, after a lower 2% reduction in 2017 compared to 2016. This was supported by our new print management system roll out.

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 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 1

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

VSCCP6405 ISO 14064-1 Verification Statement LSEG 2018.pdf

Page/ section reference

Pages 1-4.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope

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

VSCCP6405 ISO 14064-1 Verification Statement LSEG 2018.pdf

Page/ section reference

Pages 1-4.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope

Scope 2 market-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

VSCCP6405 ISO 14064-1 Verification Statement LSEG 2018.pdf

Page/ section reference

Pages 1-4.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1b

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

Scope

Scope 3- at least one applicable category

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

VSCCP6405 ISO 14064-1 Verification Statement LSEG 2018.pdf

Page/section reference

Pages 1-4.

This verification statement cover all Scope 3 emissions categories reported in our Annual Report, Sustainability Report and on our website – Business Travel (Air and Rail), Water, Waste Generation, Electricity distribution and transmission (Fuel-and-energy-related-activities)..

Other categories reported as “Relevant and Calculated” in C6.5 – “Purchased Goods and Services” & “Capital Goods” are not included in our annual reporting disclosures and therefore not verified.

Relevant standard

ISO14064-3

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?

No, we do not verify any other climate-related information reported in our CDP disclosure

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.

Other carbon tax, please specify

UK Carbon Reduction Commitment (CRC) for UK operations

C11.1c

(C11.1c) Complete the following table for each of the tax systems in which you participate.

Other carbon tax, please specify

Period start date

January 1, 2018

Period end date

December 31, 2018

% of emissions covered by tax

36

Total cost of tax paid

224,500.2

Comment

The cost of CRC allowances paid by LSEG for qualifying UK sites is included here for the reporting year 2018. As the CRC scheme year runs April to March, this value has been calculated using the proportional cost of allowances for CRC scheme year 2017/18 and 2018/19 for the 12 month period reporting period (01/01/2018-31/12/2018) only.

The % of emissions covered by CRC is calculated using the total CRC qualifying TCO2e/total S1, S2 (Location based), S3 emissions.

Location based Scope 2 emissions are used as the denominator inline with the CRC emission factors which do not adjust for 100% renewable sources.

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

i) LSEG employ specialist third party support for compliance with our Carbon Reduction Commitment (CRC) obligation in the UK. Our wider global efforts to increase energy efficiency and reduce energy consumption in our sites are aligned to our strategy for CRC - to reduce emissions and as a result reduce the fees due in CRC allowances. The fees due as a result of our CRC obligation help us build the business case for energy efficiency measures in key participating sites.

ii) For example, the costs of CRC allowances due at Paternoster Square and Earl Street have been factored into the business case proposition the lighting upgrade programme at Paternoster Square and the ongoing equipment consolidation projects at both sites.

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?

No, and we do not currently anticipate doing so in the next two years

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

C12.1a

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

Type of engagement

Compliance & onboarding

Details of engagement

Code of conduct featuring climate change KPIs

% of suppliers by number

12

% total procurement spend (direct and indirect)

51

% Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

We engage with our suppliers to understand their approach to environmental management including their carbon and climate change practices. We use this information to help inform and prioritise our supply chain selection, and to help

understand our wider procurement impacts.

As a baseline, in signing up to our Supplier Code of Conduct we require our suppliers sign up to support our environmental KPIs. Approximately 12% (5% in 2015) of our total supply base has so far committed to comply with the Code, equivalent to more than 51% of our annual third party spend.

Impact of engagement, including measures of success

The Group introduced a new Procurement Policy and Supplier Code of Conduct in October 2014. Climate change and wider environmental considerations are incorporated into the Supplier Due Diligence Framework which was launched alongside the Code. The Code of Conduct ascribed to at onboarding, facilitates our engagement with key suppliers when required on specific environmental issues. For example, we will be looking at key suppliers to support us with our Science Based Target setting process, as we continue to develop our Scope 3 target.

Procurement continues to drive adoption and agreement to the Code, and we currently use this as our measure of success. Approximately 12% (5% in 2015) of our total supply base has so far committed to comply with the Code, equivalent to more than 51% of our annual third party spend.

Comment

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

30

% Scope 3 emissions as reported in C6.5

Please explain the rationale for selecting this group of customers and scope of engagement

Listed companies, and issuers more broadly, are a client segment highly impacted by the integration of climate change consideration into investment decisions.

It is important issuers understand the implications that climate-related investment decisions have on their market valuation and their investor base. For this reason, LSEG ESG guidance was targeted at our top 50 asset managers and owners (approximately 30% of our client base). Our high-profile ESG events – including the 2018 LSEG Stewardship Summit in London and the 2nd Italian Sustainability Day, were designed to further educate this client group and facilitate dialogue with investors on ESG topics.

Impact of engagement, including measures of success

The 2018 edition of LSEG ESG Guidance is available online to issuers globally, and was sent to more than 2,700 companies that have securities listed on LSEG's UK and Italian markets with a combined market capitalisation of more than £5 trillion.

We have engaged companies of all sizes listed on London Stock Exchange and Borsa Italiana, and FTSE Russell has consulted asset owners and asset managers to understand key ESG reporting challenges. The guidance is integrated into LSEG's Issuer Services portal. The launch of the Guidance leverages the central role LSEG plays in capital markets and supports improvements in reporting, dialogue and data flows along the investment chain. The launch event was attended by over 800 market participants globally, both in presence and remotely.

Our overall measure of success of this guidance is to increase the number of companies listed on our markets, that are providing high quality ESG information and engaging on these topics with investors. In 2018, FTSE Russell contributed to the UN SSE "2018 Report on Progress" which tracks how issuer disclosure over time is improving across different markets. Among large stock exchanges (those with at least 100 listed companies with over $1 billion in sales) the London Stock Exchange had the highest disclosure rate for greenhouse gas (GHG) emissions, with a near-perfect 97% disclosure rate for its listed companies. Overall, Borsa Italiana also performed well achieving the 6th position globally for disclosure, while London Stock Exchange ranked 14th.

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

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
Climate	Sup	The Network of Financial	A common language is key if green and sustainable

finance	port	Centres for Sustainability (FC4S) held its inaugural meeting in April 2018. The FC4S Network is a partnership between financial centres and the United Nations Environment Programme with the objective of exchanging experience and taking common action to accelerate the expansion of green and sustainable finance. Borsa Italiana attended as an active participant, who co-chair the working group of the Italian Centre for Sustainability which is backed by the Italian Ministry for Environment.	finance is to develop in a trusted and dynamic fashion across the world. We continue to work with the network on the joint five-point action plan: -Strengthen links among members, including regional hubs such as that just launched for Europe in partnership with Climate-KIC - Develop robust benchmarking and assessment tool to enable evaluation of financial centres progress - Develop joint statement on importance of effective taxnomoes for green and sustainable finance - Share experience on green digital finance - Gather experience in the development of the green bond market, for briefing paper
Climate finance	Sup port	Our Group Head of Sustainable Business was appointed a member of the European Commission High-Level Expert Group on Sustainable Finance, and contributes to developing recommendations for a comprehensive EU strategy on sustainable finance as part of the Capital Markets Union. The Commission will draw on these recommendations to determine how to integrate sustainability considerations into the EU's rules for the financial sector. This marks an important step in the follow-up to the EU's 2030 Agenda for Sustainable Development as well as the Paris Agreement on climate change.	LSEG is a member of the Technical Expert Group on Sustainable Finance (TEG), through Borsa Italiana. The TEG have been appointed by the Commission to action the following: - Development of an EU classification system of sustainable economic activities - Development of the minimum standards for a harmonized methodology for low-carbon and positive carbon impact benchmarks. - Development of an EU Green Bond standard. - Updating the Non-Binding Guidelines (supporting Non-Financial Reporting Directive) with focus on climate-related disclosures and incorporating the recommendations from TCFD.
Other, please specify	Sup port	Developed by a working group of nearly 70 capital market stakeholders, London	As part of LSEG’s engagement with regulators on sustainable finance, London Stock Exchange and Borsa Italiana were signatories to a letter to the

Environmental disclosure		Stock Exchange Group contributed to the 2018 UN SSE Initiative report “How securities regulators can support the SDGs”. The report shares experiences and outlines an action plan for regulators wishing to support SDGs.	International Organization of Securities Commissions (IOSCO) calling to endorse the Sustainable Stock Exchanges Model Guidance on Reporting ESG Information to Investors. The letter also sought IOSCO’s endorsement of the Financial Stability Board’s TCFD recommendations as a means for a deeper examination of climate-related disclosures.
Other, please specify Environmental disclosure	Support	London Stock Exchange Group was part of the UK Green Finance Taskforce that in March 2018 published its recommendations on green finance to the UK Government.	The recommendations supported adoption of TCFD disclosures in the UK, through adoption via UK regulatory standards on a comply or explain basis. See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/703816/green-finance-taskforce-accelerating-green-finance-report.pdf The TCFD focused report can be accessed here: http://greenfinanceinitiative.org/wp-content/uploads/2018/04/Data-Risk-and-Disclosure-Paper.pdf
Climate finance	Support	LSEG took part in the FCA consultation on its discussion paper on Climate Change and Green Finance published in October 2018: https://www.fca.org.uk/publications/discussion-papers/dp18-8-climate-change-and-green-finance	LSEG commented on the FCA proposal for implementing TCFD in the UK for both companies and investment firms, which put forward a comply or explain approach to the implementation of the TCFD framework.
Climate finance	Support	LSEG gave evidence to the Environmental Audit Committee as part of its 2018 Green Finance Inquiry, both verbally and in writing. UK Parliament – Environmental Audit Committee Green Finance Inquiry https://www.parliament.uk/business/committees/committees-a-z/commons-select/environmental-audit-committee/inquiries/parliament-2017/green-finance-17-1	LSEG confirmed its support for TCFD proposals in the UK for both companies and investment firms which put forward a comply or explain approach to implementation of the TCFD framework.

		9/	
Mandatory carbon reporting	Support	LSEG contributed to the consultation on Streamlined Energy Efficiency and Carbon Reporting (SECR) which came into force in 2018, introducing mandatory energy efficiency reporting for listed and certain private companies.	LSEG welcomed the legislative solution involving privately held companies in the disclosure of GHG emissions and energy energy information.

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

UKSIF (UK Sustainable Investment & Finance Association)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

UKSIF advances its mission and delivers value for its members by: Acting as a voice for the sustainable and responsible finance industry in the UK, convening its members to understand, educate and influence governments, nongovernmental organisations, regulators, companies, professional advisers, the general public and other stakeholders. As the industry matures and access to and information about companies becomes easier to obtain, UKSIF's role in support of dialogue with governments and regulators in the UK and potentially elsewhere has become a more significant part of its role. Their support for UK leadership in advancing sustainable development through investment and finance includes: Accelerating green finance and impact investing. In partnership with others, we support the creation of the UK Green Investment Bank and influencing corporate sustainability reporting requirements such as carbon emissions and regulatory approaches to social impact investment. Assisting members to develop their practices. Their analyst seminar programme catalyses debate on emerging environmental (including climate change), social and governance issues and assists our members to develop their practices. Other activities include the annual Extel SRI & Sustainability Survey, the UKSIF Annual Lecture and their support for the City of London's Sustainable City Awards.

How have you influenced, or are you attempting to influence their position?

LSEG influences the UKSIF position through being member of the Board.

Trade association

UN Sustainable Stock Exchanges Initiative

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The SSE Initiative aims to explore how exchanges can work together with investors, regulators and companies to enhance corporate transparency and ultimately performance on ESG issues and to encourage responsible long-term approaches to investment. Currently over 87 exchanges from around the world are partner exchanges to the SSE Initiative.

How have you influenced, or are you attempting to influence their position?

Our Group Head of Sustainable Business is a member of the UN SSE Consultative Group and chaired the Working Group that in 2015 developed the Model Guidance for Exchange on ESG disclosure. LSEG launched in 2017 it's own Guidance for issuers on the integration of ESG into investor reporting and communication, based on the model guidance.

Trade association

Climate Bonds Partnership Programme

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Climate Bonds Initiative is the only organisation in the world working solely to mobilize the largest capital market of all, the $100 trillion bond market, for climate change solutions

How have you influenced, or are you attempting to influence their position?

London Stock Exchange Group (LSEG) become the first global exchange to join the Climate Bonds Partnership Program.

Trade association

Green Bond Pinciples

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Green Bond Principles are coordinated by the ICMA.

How have you influenced, or are you attempting to influence their position?

LSEG is an official observer.

Trade association

TCFD - Financial Stability Board Task Force on Climate-Related Financial Disclosures

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Task Force on Climate-related Financial Disclosures (TCFD) will develop voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders. The Task Force will consider the physical, liability and transition risks associated with climate change and what constitutes effective financial disclosures across industries. The work and recommendations of the Task Force will help firms understand what financial markets want from disclosure in order to measure and respond to climate change risks, and encourage firms to align their disclosures with investors' needs.

How have you influenced, or are you attempting to influence their position?

LSEG took part in the Phase I consultation, responded to the subsequent "Recommendations" report, participated in various events serving to raise awareness and engaged in discussions with members of the Task Force. Mary Shapiro, Non-Executive Director to LSEG Board has been a secretary to the Task Force.

Trade association

UK Green Finance Institute Advisory Board

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The GFI has the objective to scale-up green finance in the UK and internationally, through public policy advocacy, capacity building, and fostering innovation and collaboration in the green finance sector.

How have you influenced, or are you attempting to influence their position?

LSEG is a member of the Advisory Board of the Green Finance Institute founded and funded by BEIS in response to the UK Green Finance Taskforce Recommendations.

Trade association

FCA/PRA Climate Risk Forum

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The FCA/PRA Risk forum was set up by the FCA and the Bank of England to embed consideration of climate-related risks and opportunities in the UK financial systems through four work streams: Innovation, Disclosures, Scenarios, Risk Management.

How have you influenced, or are you attempting to influence their position?

LSEG is a member of the newly established FCA/PRA Climate Forum – with particular focus on the Innovation Working Group.

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?

LSEG has a transparent approach to lobbying. All our consultation papers are published on our website. We are also registered in the EU's Transparency Register.

The Group CS Committee coordinates activities across the Group, partnering with all business areas to ensure consistency of engagement and approach with both internal and external stakeholders. The CS Committee also ensure coordination with the Group Regulatory Strategy and Government Relations team, who were represented on the Committee via the relevant Executive Committee member, the CEO of LSE plc, also in charge of the global Regulatory Strategy function.

All Government Relations and policy initiatives involve the development of position papers which are submitted to the Corporate Responsibility Committee. CR Committee members provide their input whenever they see the topic has possible areas of overlap with sustainability and climate change issues to ensure these are consistent with the Group's overall climate change strategy.

All LSEG responses to consultations (all topics including climate-related) are publicly available at https://www.lseg.com/about-london-stock-exchange-group/regulatory-strategy.

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, incorporating the TCFD recommendations

Status

Complete

Attach the document

LSEG Annual Report 31 December 2018.pdf

Page/Section reference

P. 37 Non-financial statement under the Non-financial Reporting Directive (“Our Wider Responsibility”) – a clearly signposted TCFD section is available
P 17 Market Trends and Our Response

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

LSEG Corporate Sustainability Report 31 December 2018.pdf

Page/Section reference

P 31 – 34 Environment
P 10 - 16 Our Markets/Our Services

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

C14. 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.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Financial Officer	Chief Financial Officer (CFO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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

Please confirm below