



Telenor Group's response to CDP 2019

Climate Change (Investor CDP) for the reporting year
1 January–31 December 2018

Sector: Telecommunications

Industry Group: Diversified Telecommunication Services

Sub Industry: Integrated Telecommunication Services



www.cdp.net



www.telenor.com

C0. Introduction

C0.1

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

Telenor, based in Norway, is a global telecom operator, with 174 million customers per year-end 2018 and strong positions in eight markets across the Nordics and Asia, leveraging on more than 160 years of proud history. Majority ownership of all core assets enables strong governance and global scale benefits. Telenor is committed to responsible business conduct, driven by its purpose to connect its customer to what matters most and by the ambition of empowering societies. In 2018, the company reported revenues of USD 13 billion (NOK 110 billion) and EBITDA before other items of USD 5.2 billion (around NOK 45 billion). Telenor is stock-listed at the Oslo Stock Exchange, and has currently a market capitalization of around USD 29 billion (NOK 250 billion).

This CDP report for 2018 does not include performance data from our Central and Eastern European (CEE) operations. On 21 March 2018, Telenor announced the signing of an agreement to sell its CCE based assets to PPF Group. The transaction included Telenor's wholly-owned mobile operations in Hungary, Bulgaria, Montenegro and Serbia and the technology service provider Telenor Common Operation. The transaction required necessary regulatory approval and the transaction was completed on 31 July 2018.

This climate related report submitted to CDP contains statements regarding the future in connection with the Telenor Group's outlook, strategies and objectives. All statements regarding the future are subject to inherent risks and uncertainties and many factors can lead to developments deviating substantially from what has been expressed or implied in such statements.

For more information about Telenor Group, please visit www.telenor.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	3 years

C0.3

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

- Bangladesh
- Denmark
- Malaysia
- Myanmar
- Norway
- Pakistan
- Sweden
- Thailand

C0.4

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

NOK

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.

Financial 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
Board-level committee	Climate-related issues are a material concern for Telenor. Reflecting this relevance, oversight is with the Sustainability and Compliance Committee of the Board of Directors. The Committee supports the Board of Directors in fulfilling the Board's responsibilities with respect to sustainability and compliance issues; specifically it addresses issues related to climate and environment, human rights, labour standards and anti-corruption.

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
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies	Group Chief Corporate Affairs Officer receives regular updates from the Group Sustainability team which include any climate-related issues of relevance to the company. Important issues are aligned with the Group Executive Management and further reported to the Board of Directors. The BoD’s Sustainability and Compliance Committee - on an annual basis - reviews climate-related status and strategies for the company. Climate-related status and progress are also reported annually through the publication of the company’s Sustainability Report which is signed off by the Board of Directors.

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
Other C-Suite Officer, please specify (The Chief Corporate Affairs Officer)	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).

- i. The Chief Corporate Affairs Officer (CCAO) is a member of the Group Executive Management (GEM) which is an advisory body to the Group’s CEO.
- ii. The CCAO has the overall responsibility for all corporate sustainability areas including climate-related issues and non-financial reporting.
- iii. The CCAO has the overall policy responsibility for climate-related issues in Telenor Group including climate ambitions, strategy, overall measures/initiatives and climate reporting. The CCAO shall safeguard climate expertise and secure support to our mobile network operations in Southeast Asia and Scandinavia where the climate-related issues and challenges are quite different.
- iv. The CCAO is regular briefed by Group Sustainability on major climate issues and internal processes . The CCAO regular briefs Sustainability Committee at Board level on major climate issues and annual status on climate ambitions, strategy and overall measures/initiatives.

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?

Corporate executive team

Types of incentives

Monetary reward

Activity incentivized

Efficiency target

Comment

The Telenor Group Executive Management (GEM) has a short-term incentive (STI) plan is designed to help drive desired leadership behaviours and deliver results in different areas of the business. It is a cashbased plan where the maximum annual earning is 50% of the annual base salary for the President and CEO and Group Executive Management. The design reflects the key priorities of Telenor Group and contains both financial, operational and responsible business conduct related performance targets, where the Responsible Business Conduct focus is to drive sustainable business operations across all markets. Responsible business conduct continues to be a key priority across the Telenor Group and the supply chain. This is embedded in the short-term incentive plan as a holistic measure for each participant, reflecting the executives' role and responsibilities in this area.

Who is entitled to benefit from these incentives?

Business unit manager

Types of incentives

Monetary reward

Activity incentivized

Efficiency target

Comment

Business unit managers have cashbased incentive plans that are designed to reflect both key priorities of Telenor Group and the local business unit. Each incentive plan contains both financial, operational and responsible business conduct related performance targets, where the Responsible Business Conduct focus is to drive sustainable business operations across all markets. All business units have a commitment towards stabilising their energy consumption by continue to drive energy efficiency initiatives across their network operations and facilities.

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	0	2	Risk management is a continuous process and an integrated part of business throughout all entities' in Telenor Group. All managers are required to assume responsibility for risk management within their areas of responsibility and ensure that risk management is embedded in day to day business processes.
Medium-term	2	3	Risk management is a continuous process and an integrated part of business throughout all entities' in Telenor Group. All managers are required to assume responsibility for risk management within their areas of responsibility and ensure that risk management is embedded in day to day business processes.
Long-term	3	10	Risk management is a continuous process and an integrated part of business throughout all entities' in Telenor Group. All managers are required to assume responsibility for risk management within their areas of responsibility and ensure that risk management is embedded in day to day business processes.

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 change is one of the most complex challenges facing people, businesses and governments. Climate related risks include potential damage to vital infrastructure and utilities through the impact of more extreme weather. The mobile industry will risk continued growth in its total energy consumption and carbon footprint as mobile operators continue to increase their coverage, acquire more customers and develop more mobile broadband services due to market needs. Changing regulations, significant reductions in renewable energy costs and concerns about energy security will impact global energy markets.

C2.2b

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

Risk management in Telenor is a continuous process and an integrated part of business throughout all entities' in Telenor Group. All managers are required to assume responsibility for risk management within their areas of responsibility and ensure that risk management is embedded in day to day business processes. Since 2008, Telenor Group has established documented processes which consider climate change risks and opportunities as part of our total business risk and opportunity management process.

How climate-related risks are identified and assessed at a company level:

- The Board of Director assesses risk thoroughly in connection with new investments, and on an ongoing basis in relation to ongoing business operations. The Group Executive Management has implemented a systematic group-wide enterprise risk management process.
- A dedicated climate organisation – as a part of our Sustainability organisation - focuses on the climate change risks and opportunities, both at group level and business unit level. The identification process is performed at regular intervals assessing potential new climate change risks and opportunities. The assessment includes regulatory, physical and reputation risks and opportunities arising from climate change. In the same process, known and existing risks and opportunities are reassessed and updates.

How climate-related risks are identified and assessed at an asset level:

- Telenor assesses climate risks at each individual country of operation. The negative impacts to the company's physical assets, i.e. the physical telecommunication infrastructure of each country are rated against the climate risks identified. Besides the physical telecommunication infrastructure, negative impacts on service delivery to customers, negative impacts to operation and management of our company and negative impacts to company finances are assessed.
- Each business unit shall make all reasonable efforts to minimize use of resources including energy, water and raw materials as well

as seek to minimize carbon emissions from all parts of the operations.

- Further, each business unit shall perform regular risk assessments for its operations focusing on extreme weather events related to climate change and use the results in planning of network expansion and protection of existing infrastructure.
- Climate change related risks and opportunities are integrated part of this business management framework and is part of all the annual business strategy update.

The process you have in place for assessing the potential size and scope of identified risks:

Risk management is a continuous process and an integrated part of business throughout all entities' in Telenor Group. All managers are required to assume responsibility for risk management within their areas of responsibility and ensure that risk management is embedded in day to day business processes. Telenor has implemented a group-wide implemented a systematic group-wide enterprise risk management process to secure regular and standardized assessment of potential size and scope of identified risks.

The process by which your organization determines the relative significance of climate-related risks in relation to other risks:

Telenor has implemented a systematic group-wide enterprise risk management process to secure regular and standardized assessment our business units determines the relative significance of climate-related risks in relation to other business risks.

The definitions of risk terminologies used (or references to existing risk classification frameworks utilized by your company):

Telenor's risk management process is broadly based on ISO 31000:2018 . The process is continuous and iterative and shall be used throughout Telenor Group. Telenor's Enterprise Risk Management (ERM) is set up to have a cross-functional and multi-disciplinary focus that recognises that risks may cut across business activities or organizational boundaries. The ERM processes shall be a continuous and iterative process.

How your organization defines substantive financial or strategic impact on your business:

Telenor's Enterprise Risk Management is set up to have a cross-functional and multi-disciplinary focus that recognises that risks may cut across business activities or organizational boundaries. The ERM processes shall be a continuous and iterative process. From the annual strategy process, Telenor's ambitions are translated into specific goals for all business units BUs. Each business units shall identify risks that may influence these goals and ambitions. The top local risks input to Telenor's group-wide risk picture which again is linked to Telenor Group's strategic ambitions. The financial impact scale for risk assessment ranges from less than 2% in revenue loss (low impact) to more than 10 % in revenue loss (very high impact). Similar financial impact scale is used for risk assessment of cost increase.

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	Relevance to Telenor: Telenor's operations are subject to requirements through sector specific laws, regulations and national licenses. Regulatory developments and regulatory uncertainty could affect the company's results and business prospects. Example of a specific risk considered: The current EU 2030 Framework for climate and energy contains a binding target to cut emissions in EU territory by at least 40% below 1990 levels by 2030. This will require renewing an EU's ageing energy systems including increased use of renewable energy soruces as well as energy efficiency initiatives which could have an financial impact to Telenor though increased capex and/or opex.
Emerging regulation	Relevant, always included	Relevance to Telenor: Telenor's operations are subject to requirements through sector specific laws, regulations and national licenses. Regulatory developments and regulatory uncertainty especially in Telenor's Asian operations (Pakistan, Bangladesh, Thailand, Malaysia and Myanmar) could affect the company's results and business prospects. Example of a specific risk considered: Climate-related regulatory risks can imply increased compliance costs related to company operations (capex and opex) , payment of fines/ tariffs and for example involvement in carbon trading schemes.

	Relevance & inclusion	Please explain
Technology	Relevant, always included	Relevance to Telenor: Telenor's revenue growth is partly dependent on the commercially successful development and deployment of new products, services and technologies. Climate-related technology risks can imply increased capex and opex costs related to cost efficient energy initiatives such as renewable energy sourcing, network swaps, sourcing of energy-efficient technologies, infrastructure-sharing and energy efficient data centres and buildings. Example of a specific risk considered: The mobile industry will risk continued growth in its total energy consumption and carbon footprint as mobile operators continue to increase their coverage, acquire more customers and develop more mobile broadband services due to market needs. The mobile industry requires significant amounts of electricity in Telenor's network operations, and most power is supplied on-grid by national power generation companies. In Telenor's Asian operations, the company also relies heavily on diesel used in its on-site generators to power infrastructure offgrid in remote locations or areas of unreliable on-grid power. Telenor's key climate measure has the last ten years been to stabilise the energy consumption in its networks while increasing market footprint, since network operations represent around 90 per cent of Telenor's total CO2 emissions. Telenor's Asian markets are very different from its European markets, both in the company's carbon footprint and the type of energy that Telenor uses for its network operations. In general, developing countries will have the opportunity to leapfrog into the renewable age, and Telenor has already, in several of its Asian operations, started to replace traditional diesel-based on-site generators with cost-efficient solar/battery renewable energy technology. Going forward, Telenor will plan for a scale-up of renewable energy combined with continued focus on energy efficiency initiatives in all of its network operations, resulting in both potential savings in operating expenses and reduced CO2 emissions.
Legal	Not relevant, explanation provided	Relevance to Telenor: Risk of climate-related litigation claims is not very likely to Telenor. Climate change is one of the most complex challenges facing people, businesses and governments – but the mobile industry's technology and smart services through the Internet of Things (IoT) is regarded as instrumental to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits.
Market	Relevant, always included	Relevance to Telenor: Telenor is a substantial purchaser of network and ICT technology and we have large power purchase agreements (grid based electricity) throughout our business footprint. In parts of Asian operations we also depend on substantial diesel consumption for our onsite energy production at the mobile network base stations . Example of a specific risk considered: The technology we use does not reflect risks related to climate change directly, but technological developments are continually improving our network energy efficiency. Carbon pricing and additional costs for energy purchasing are included in our long term risks and opportunities. Telenor's Supplier Conduct Principles ask suppliers to take a precautionary approach towards environmental challenges, undertake initiatives to promote greater environmental responsibility, and to encourage the development and diffusion of environmentally friendly technologies. Furthermore, the company expects suppliers to act in accordance with incumbent laws, and continuously improve its performance. Telenor reports that in 2018, environmental criteria was used in 82% of Telenor's procurement on contracts worth USD 250,000 or more.
Reputation	Relevant, sometimes included	Relevance to Telenor: Telenor faces the risks that climate related customer or community perceptions will impact our company's commercial development due to consumers and are increasingly aware of the climate change problematic and its negative consequences. Consumers are increasingly expecting companies to actively engage with regards to climate change. Example of a specific risk considered: Telenor faces the risk that our consumers are increasingly aware of the climate change problematic and its negative consequences. Telenor has over the years engaged with the industry organisations – such as GSMA and GeSI – and industry partners to embrace these opportunities. The SMARTer 2030 report (co-financed and supported by Telenor) identified a number of sectors where the enabling potential of ICT can deliver significant carbon emissions reduction – up to 20 per cent by 2030 and close to ten times the ICT industry's own direct emissions. This places ICT as one of the key instruments for the achievement of the climate commitments undertaken in Paris and the implementation of related national action plans.
Acute physical	Relevant, always included	Relevance to Telenor: Telenor's Nordic operations face risk to infrastructure due to increased frequency of storms and more extreme winter weather conditions. Due to climate change, the intensity and frequency of storms and extreme weather conditions is supposed to increase. Example of a specific risk considered: In Denmark, there is likelihood of more than once every 10 years with damage to transmission towers and antennas caused by heavy wind and storms due to climate change to 1-5% of Telenor's assets in Denmark and long-term disruptions of the service delivery.
Chronic physical	Relevant, always included	Relevance to Telenor: Telenor's operations and infrastructure in Asia are exposed to flooding risks and rising sea levels. Climate research predicts the sea level to rise because of melting ice and the expansion of water. The rising sea level poses a risk to all countries at very low altitudes, in particular to Bangladesh which is highly threatened by the rising sea level. Example of a specific risk considered: Flooding has the potential to damage Telenor's buildings and network infrastructure; at the same time it could also interrupt our business operations indirectly if energy supply is not guaranteed any longer. In Bangladesh, there is a risk of high damage of our electrical equipment in switches, base stations and other site buildings caused by flooding. If critical network infrastructure is damaged by the flooding we will face the risk of interruption of business operations. Likewise, the flooding could also demolish the infrastructure for electricity in Bangladesh. As Telenor is dependent of electricity supply, this could also lead to business interruptions.
Upstream	Relevant, sometimes included	Relevance to Telenor: Climate related upstream risks include risks related to Telenor's network operations through network equipment suppliers and operational service providers and could affect the company's results and business prospects. Example of a specific risk considered: Telenor's network operations are vulnerable to damage or service interruptions. Climate related risks include potential damage to vital infrastructure and utilities through the impact of more extreme weather.
Downstream	Relevant, sometimes included	Relevance to Telenor: Climate related downstream risks may be relevant for Telenor's ability to provide required quality and reliability of its services to its customers. Example of a specific risk considered: : Telenor's network operations are vulnerable to damage or service interruptions. Climate related risks include potential damage to vital infrastructure and utilities through the impact of more extreme weather.

C2.2d

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

How our organization makes decisions to mitigate, transfer, accept or control climate-related risks and to capitalize on opportunities:

Since 2008, Telenor Group has established documented processes which consider climate change risks and opportunities as part of our total business risk and opportunity management process.

At Group level:

- The Board of Director assesses risk thoroughly in connection with new investments, and on an ongoing basis in relation to existing investments. The Group Executive Management has implemented a systematic Group-wide enterprise risk management process.
- A dedicated climate organisation – as a part of our Sustainability organisation - focuses on the climate change risks and opportunities. The identification process is performed at regular intervals assessing potential new climate change risks and opportunities. The assessment includes regulatory, physical and reputation risks and opportunities arising from climate change.

At business unit level:

- Climate change related risks and opportunities are integrated part of this business unit management framework and is part of all the annual business strategy update.
- Telenor assesses climate risks at each individual country of operation. Each business unit has to predict how the climate risks will evolve in the future, rate the likelihood that the damage/risk event will happen given their climate change projections and the vulnerability of their assets.

Our process for prioritizing climate-related risks and opportunities:

The climate change risks and opportunity prioritization process is integrated within the Group's annual strategy planning process, and key risks/opportunities highlighted therein by business units are tracked through various Group review processes.

Each business unit is responsible for updating their company related level risks/opportunities on a regular basis – and align this closely with existing business and management processes. Group Strategy aggregates risks/opportunities from the business unit strategy plans, analyses other significant risks/opportunities across the group and presents Telenor's strategic risks/opportunities to the Group Executive Management and ultimately to the Board of Directors.

Example of transition risk:

Changing regulations, significant reductions in renewable energy costs and concerns about energy security will impact global energy markets. Telenor's Asian markets are very different from its European markets, both in the company's carbon footprint and the type of energy that Telenor uses for its network operations. In general, developing countries will have the opportunity to leapfrog into the renewable age, and Telenor has already, in several of its Asian operations, started to replace traditional diesel-based on-site generators with cost-efficient solar/battery renewable energy technology.

By year-end 2018, Telenor Pakistan has installed solar energy solutions for more than 850 of its base stations and is planning for an additional 160 sites in 2019. Grameenphone in Bangladesh has 1200 solar powered base stations in place, and similarly Digi in Malaysia has more than 40 base stations powered by solar solutions. Also in Myanmar, Telenor has continued its scaling up with solar/ battery technology and has by year-end 2018 more than 450 base stations in operations and plan to roll-out of solar/ battery technology to another 1,000 base stations in 2019.

Example of physical risk:

At Telenor, we have conducted a Climate Impact Risk Analysis for countries of Telenor's operations. The aim of this analysis was to identify the risks of climate induced damage such as flooding to Telenor's networks in 11 countries where we have large operations. The results from this analysis have been used proactively in planning of network expansion as well as reactively with regard to protecting existing infrastructure. The risk analysis conducted showed increased exposure to flooding as a consequence to rising sea levels in countries close to sea level such as Bangladesh. Telenor therefore reactively made its existing assets in these countries more flooding resilient wherever possible.

Example of opportunity:

Telenor has invested in technology and smart services through the Internet of Things (IoT) that have the potential to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits. In 2018, Telenor Group passed more than 13 million SIM connected devices globally on its IoT platforms. Telenor Connexion, Telenor's dedicated IoT company, designs and operates IoT solutions for the global market.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Technology: Costs to transition to lower emissions technology

Type of financial impact

Costs to adopt/deploy new practices and processes

Company- specific description

The mobile industry risks continued growth in its total energy consumption and carbon footprint as the mobile operator continue to increase their coverage, acquire more customers and develop more mobile broadband services due to market needs. Telenor's network operations require significant amounts of energy , and most power is supplied on-grid by national power generation companies. In Telenor's Asian operations, the company also relies heavily on diesel used in its on-site generators to power infrastructure offgrid in remote locations or areas of unreliable on-grid power. Climate-related technology risks can imply increased capex and opex costs related to cost efficient energy initiatives such as renewable energy sourcing, network swaps, sourcing of energy-efficient technologies, infrastructure-sharing and energy efficient data centres and buildings.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

500000000

Potential financial impact figure – maximum (currency)

1000000000

Explanation of financial impact figure

Telenor's Asian markets are very different from its European markets, both in the company's carbon footprint and the type of energy that Telenor uses for its network operations. In general, developing countries will have the opportunity to leapfrog into the renewable age, and Telenor has already, in several of its Asian operations, started to replace traditional diesel-based on-site generators with cost-efficient solar/battery renewable energy technology. Telenor has already invested in more than 2,500 solar-based base stations in its Asian network operations. Potential cumulative capex in the years to come for Telenor to continue to move from diesel generators to solar based energy production related to its network operations in Asia is estimated to be less than 1 billion NOK.

Management method

Three methods help us managing the risk of tightening international agreements on climate change: 1) Risk avoidance: Telenor's key method for reducing our exposure to climate related financial impacts has been to improving the energy efficiency in all our business units - such as network modernisation and integration of energy requirements in procurement processes. 2) Risk monitoring: Telenor is closely monitoring the policy debate concerning regulatory frameworks – and the different markets/countries commitment to the Paris Agreement - and where each country will need a roadmap towards 2030 for emissions reduction initiatives 3) Risk reduction: To mitigate additional risks arising from increasing emission regulations, Telenor will plan for a scale-up of renewable energy combined with continued focus on energy efficiency initiatives in all of its network operations, resulting in both potential savings in operating expenses and reduced CO2 emissions. One example: Telenor has already invested in more than 2,500 solar-based base stations in its Asian network operations (Pakistan, Bangladesh, Malaysia and Myanmar).

Cost of management

1000000

Comment

We estimate total management costs (including risk monitoring and technology development) associated with climate change related technology risks to be annually less than 1 million NOK in the years towards 2020.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

Type of financial impact

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

Company- specific description

The mobile industry may face future tax on direct and indirect emissions. Telenor is heavily dependent on electricity in its network operations; higher electricity prices as a result of increased climate change regulations in the energy sector therefore present an indirect risk to Telenor. In terms of climate-related regulatory risks, the mobile industry may face higher operational cost due to increasing carbon taxes and energy/ fuel taxes as well as higher capital cost due to a required shift towards more energy efficient technology and renewable energy solutions. However, the risk for Telenor in short to medium term is moderate due to low direct carbon emissions per customer from our operations.

Time horizon

Medium-term

Likelihood

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)

<Not Applicable>

Potential financial impact figure – minimum (currency)

100000000

Potential financial impact figure – maximum (currency)

500000000

Explanation of financial impact figure

Regulatory risks can imply increased: compliance costs related to company operations, payment of fines/ tariffs and for example involvement in carbon trading schemes. We have evaluated possible carbon costs exposure in relation to increased climate change regulations from 2018 onwards under different carbon price scenarios. Telenor has assessed different scenarios with carbon prices from 100 NOK to 500 NOK per tonne CO₂ across the different markets. With our current carbon emissions of 1.1 million tons CO₂-e this would lead to annual costs of less than 500 million NOK.

Management method

Three methods help us managing the risk of tightening international agreements on climate change: 1) Risk avoidance: Telenor's key method for reducing our exposure to climate related regulatory risks by improving the energy efficiency in all our business units - such as network modernisation and integration of energy requirements in procurement processes. 2) Risk monitoring: Telenor is closely monitoring the policy debate concerning regulatory frameworks. One example: Telenor is monitoring the policy debate concerning the wider EU 2030 commitment to reduce CO₂ emissions by 40% as part of EU's commitment to the Paris Agreement - and where each EU member state will have to follow an emissions reduction pathway. 3) Risk reduction: To mitigate additional risks arising from increasing emission regulations, Telenor is actively engaged in dialogue with policymakers in EU as well as in other parts of the world. One example; Telenor has actively been involved in several industry studies - such as the SMARTer 2030 report that demonstrates how the ICT industry towards year 2030 could abate almost 20% of the global carbon emissions and with a factor close to ten times our industry's own direct emissions. The report was used as an active dialogue tool with world-wide policymakers before and during the Paris COP21 meeting in December 2015

Cost of management

1000000

Comment

We estimate total management costs (including risk monitoring and active engagement) associated with following up climate change related risks to be annually less than 1 million NOK in the years towards 2020.

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 sea levels

Type of financial impact

Increased capital costs (e.g., damage to facilities)

Company- specific description

Telenor's operations and infrastructure in Asia are exposed to flooding risks caused rising sea levels. Climate research predicts the sea level to rise because of melting ice and the expansion of water. The rising sea level poses a risk to all countries at very low altitudes, in particular to Bangladesh which is highly threatened by the rising sea level. Flooding is a significant risk as it has the potential to damage buildings, infrastructure and to threaten energy security. How the risk is affecting Telenor: Flooding has the potential to damage our buildings and network infrastructure; at the same time it could also interrupt our business operations indirectly if energy supply is not guaranteed any longer. In Bangladesh, there is a risk of high damage of our electrical equipment in switches, base stations and other site buildings caused by flooding. If critical network infrastructure is damaged by the flooding we will face the risk of interruption of business operations. Likewise, the flooding could also demolish the infrastructure for electricity in Bangladesh. As Telenor is dependent of electricity supply, this could also lead to business interruptions. The financial risk exposure is estimated to be more than 50% of our assets in Bangladesh.

Time horizon

Long-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)

100000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

In Bangladesh, there is a risk of high damage of electrical equipment in switches, base stations and other site buildings caused by flooding - calculated that more than 50% of our infrastructure will need early renewal with a likelihood of more than once every 10 years. The resulted financial impacts is estimated to be approx. 100 million NOK.

Management method

At Telenor, we have conducted a Climate Impact Risk Analysis for countries of Telenor's operations. The aim of this analysis was to identify the risks of climate induced damage such as flooding to Telenor's networks over the years up to 2018 in 11 countries where we have large operations. The results from this analysis have been used proactively in planning of network expansion as well as reactively with regard to protecting existing infrastructure. The risk analysis conducted showed increased exposure to flooding as a consequence to rising sea levels in countries close to sea level such as Bangladesh. Telenor therefore reactively made its existing assets in these countries more flooding resilient wherever possible. For example in Bangladesh, Telenor (Grameenphone) operates thousands of base stations where almost 50% being located between 1m and 5m above sea level. Most of the equipment rooms in these base stations have been built above the local highest flood level. All the antenna towers are designed to withstand wind speeds above 118 km/h at maximum loading Further, most base stations have installed battery capacity as backup and also additional diesel generators are installed. With these measures already taken, we have reduced the risk significantly. The residual risk of interruptions to our business activities due to flooding risk over the next 10 years is fairly small.

Cost of management

1000000

Comment

We estimate total management costs (including risk monitoring and active engagement) associated with following up climate change related risks to be annually less than 1 million NOK in the years towards 2020.

C2.4

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

Yes

C2.4a

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

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

The EU has set itself ambitious energy and climate change objectives for 2020. Smart meters are one of the measures to contribute to achieving these objectives by providing real-time information on energy consumption to end-consumers. It was agreed that EU member countries are required to have smart meters across 80 per cent of their metering infrastructures by 2020. How this opportunity affects Telenor: A fundamental enabler for the Smart Grid is a widely available, secure two-way communications platforms often based on mobile based connectivity (IoT). A range of assets in the possession of the mobile industry are uniquely suited to providing such platform for the Smart Utilities, including coverage, end-to-end security, experience in managing millions of distributed objects and volumes of data, as well as financial strength and stability of the mobile ecosystem. Telenor is well positioned to take a fair share of these climate change related business opportunities both in EU member countries where we have direct mobile operations, but also in non-European countries through industry partnerships. According to reports published by Berg Insight, smart metering has reached a stage of early maturity with mass-rollouts underway in significant parts of Western Europe. Smart meters accounted for around 87 percent of the total electricity meter shipments in 2018. Approximately 44 percent of the electricity customers in EU28+2 had a smart meter at the end of 2018 and the penetration rate is expected to reach 71 percent by 2023. As a consequence, annual shipments of smart electricity meters will reach a peak of around 25 million units per year in the early 2020s.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

100000000

Potential financial impact figure – maximum (currency)

1000000000

Explanation of financial impact figure

Telenor has significant competence and experience within M2M and Internet-of-Things (IoT), primarily through our global vehicle Telenor Connexion. Our ambition is to strengthen our IoT business, both sustaining a world-leading position within connectivity, and also taking on new exciting vertical industry positions. Telenor Connexion, the dedicated Internet of Things company within Telenor, designs and operates connected business (IoT) solutions on the global market. The company has a strong position internationally within IoT and a unique position in Sweden with eight out of ten subscriptions in the market. In 2018, Telenor Group passed 13 million connected devices globally on its IoT platforms. In 2018, Telenor Group had total revenues more than 1.1 billion NOK related to network connectivity services (including smart meter services) and we have estimated revenues potentially to increase to 5 billion NOK by 2025.

Strategy to realize opportunity

Following methods help us manage these opportunities: Business innovation: Telenor has a global unit that manages Telenor's investments in the digital business space. The unit will seek to build strong positions within a selection of verticals towards 2020, combining these new verticals with the Telenor Group's already existing core services, culture and footprint. We seek opportunities in a selection of digital verticals including Internet-of-Things (IoT). Infrastructure innovation: Telenor also continued to explore and verify solutions for improved customer experience and better efficiency, through joint innovation and strategic collaborations. These included: emerging mobile technologies such as spectrum efficient mechanisms, advanced antenna/ coverage, small cell utilisation, flexible high-capacity backhaul, cloud/ virtualisation, Internet of Things, and 5G preparedness.

Cost to realize opportunity

5000000

Comment

The cost of management in this case are our spendings for innovation and management cost related to developing of industrial partnerships . During 2018, Telenor's research unit continued to provide new knowledge and build deep competences in areas such as digital customer behaviour, new network and Internet technologies, artificial intelligence, advanced analytics, business models, organisational solutions, competition and business environment. Telenor spent a total of NOK 1.8 billion on innovation, of which NOK 545 million were costs related to R&D. Annual management cost for Telenor Group related to relevant industrial partnerships is estimated to around 5 million NOK.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resilience

Primary climate-related opportunity driver

Other

Type of financial impact

Increased revenue through new products and services related to ensuring resiliency

Company-specific description

Extreme weather patterns as a result from climate change signify a major risk to human lives. Flooding, frequent storms or extreme precipitation patterns can cause major damages to infrastructure and hinder people to live and work as they usually do. The opportunity is to provide services for these situations which allow people to continue with their daily lives even though they cannot use demolished infrastructure such as flooded streets or destroyed production sites. With the increased likelihood of interruptions of business operations due to more frequent and more extreme weather patterns, an increasing number of companies is looking for services that allow their employees to work independently. This leads to an increase in the demand for alternative ICT solutions to support efficient travel and commuting traffic. Telenor is well positioned to offer ICT services that allow people to work from anywhere which makes them less dependent from climate catastrophes.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

100000000

Potential financial impact figure – maximum (currency)

1000000000

Explanation of financial impact figure

To deliver on Telenor Group's ambitions of growth and value creation, we will take the position as our customers' favorite partner in digital life. We will be delivering a broad range of relevant, personalized and engaging digital services. These include connectivity and communications services, selected internet services within for example storage and communication, and selected stand-alone digital verticals such as current digital verticals (such as IoT based services and financial Services), and in other new digital verticals. In 2018, Telenor Group passed 13 million connected devices globally on its IoT platforms. In 2018, Telenor Group had total revenues more than 1.1 billion NOK related to network connectivity services (including smart meter services) and we have estimated revenues potentially to increase to 5 billion NOK by 2025.

Strategy to realize opportunity

Industry partnerships: Using ICT-based solutions for teleworking, video conferencing and cloud computing could minimize the impact of many types of natural disasters triggered by climate change. For example, Telenor is actively innovating on this front,

exploring business opportunities for resilient out of office working environments were business customers' employees can access important documents from any location through cloud-based solutions. Whether the customer's office building is damaged, shut down for the day or for many weeks, employees can still access documents to keep serving their own clients. Research and innovation collaboration: We create new business opportunities such as mobile financial services and the Internet of Things. Telenor is also exploring new technology trends to predict the impact they can have on the industry, business and the way customers consume the services. Further, Telenor is also exploring how new ecosystems are being established in the telecommunication industry. Telenor's research assesses how technology may drive changes within these eco-systems.

Cost to realize opportunity

5000000

Comment

The cost of management in this case are our spendings for innovation and management cost related to developing of industrial partnerships . During 2018, Telenor's research unit continued to provide new knowledge and build deep competences in areas such as digital customer behaviour, new network and Internet technologies, artificial intelligence, advanced analytics, business models, organisational solutions, competition and business environment. Telenor spent a total of NOK 1.8 billion on innovation, of which NOK 545 million were costs related to R&D. Annual management cost for Telenor Group related to relevant industrial partnerships is estimated to around 5 million NOK.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Type of financial impact

Increased revenue through new solutions to adaptation needs (e.g., insurance risk transfer products and services)

Company-specific description

Both consumers and business customers have increased expectations to companies to operate in a sustainable way. This is more of a business opportunity for Telenor's Nordic operations compared to our operations in Central Eastern Europe and especially in Asia. In our Nordic region but also to some degree for the rest of our European operations, customers expect us to be proactive in our work and that we have solutions that can we offer to help them to reduce their own energy consumption and related GHG emissions How this opportunity affects Telenor: Telenor offers products and services that meet the needs of the changing consumer behavior due to climate change. Telenor offers both, energy-efficient services and services that allow our customers to reduce their energy consumption and related GHG emissions such as smart meeting, smart working and smart computing. By offering these services we can satisfy the need of consumers that are aware of climate change. Therefore, we can possibly win new clients and make sure the existing client base is satisfied. The SMARTer 2030 report (the study supported by Telenor) has recently been launched with a key message that the ICT industry towards year 2030 could abate almost 20% of the global carbon emissions and with a factor close to ten times our industry's own direct emissions. In SMARTer 2030 report we argue that the scene is set for ICT to be deployed to fully decouple economic growth from carbon intensity and resource use by 2030 and to deliver genuinely sustainable development in a range of sectors and countries across the world. The SMARTer 2030 report has shown that ICT can decouple economic growth from carbon intensity, but the evidence of the past underlines the need for a strong global target regime to keep emissions in check, to incentivize the decarbonization of economic growth and to provide certainty to investors.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

100000000

Potential financial impact figure – maximum (currency)

1000000000

Explanation of financial impact figure

Telenor has significant competence and experience within Internet-of-Things (IoT), primarily through our global vehicle Telenor Connexion as well as in Telenor Norway. Our ambition is to strengthen our IoT business, both sustaining a world-leading position within connectivity, and also taking on new exciting vertical industry positions. Telenor Connexion, the dedicated Internet of Things company within Telenor, designs and operates connected business (IoT) solutions on the global market. The company has a strong position internationally within IoT. Telenor is number 8 in the world and we have a unique position in Sweden with eight out of ten subscriptions in the market. In 2018, Telenor Group passed 13 million connected devices globally on its IoT platforms. In 2018, Telenor Group had total revenues more than 1.1 billion NOK related to network connectivity services (including smart meter services) and we have estimated revenues potentially to increase to 5 billion NOK by 2025.

Strategy to realize opportunity

Following methods help us manage these opportunities: Business innovation: Telenor has a global unit that manages Telenor's investments in the digital business space. The unit will seek to build strong positions within a selection of verticals towards 2020, combining these new verticals with the Telenor Group's already existing core services, culture and footprint. We seek opportunities in a selection of digital verticals including Internet-of-Things (IoT). Infrastructure innovation: Telenor also continued to explore and verify solutions for improved customer experience and better efficiency, through joint innovation and strategic collaborations. These included: emerging mobile technologies such as spectrum efficient mechanisms, advanced antenna/ coverage, small cell utilisation, flexible high-capacity backhaul, cloud/ virtualisation, Internet of Things, and 5G preparedness.

Cost to realize opportunity

5000000

Comment

The cost of management in this case are our spendings for innovation and management cost related to developing of industrial partnerships. During 2018, Telenor's research unit continued to provide new knowledge and build deep competences in areas such as digital customer behaviour, new network and Internet technologies, artificial intelligence, advanced analytics, business models, organisational solutions, competition and business environment. Telenor spent a total of NOK 1.8 billion on innovation, of which NOK 545 million were costs related to R&D. Annual management cost for Telenor Group related to relevant industrial partnerships is estimated to around 5 million NOK.

C2.5

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

	Impact	Description
Products and services	Impacted for some suppliers, facilities, or product lines	The ICT industry's technology and smart services through the Internet of Things (IoT) have the potential to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits. In 2018, Telenor secured its position as a leading provider of Internet of Things connectivity in Europe. In 2018, Telenor Group passed more than 13 million SIM connected devices globally on its IoT platforms. Telenor Connexion (Telenor's dedicated IoT company) designs and operates global IoT solutions for the global market and Telenor Norway has taken a leading position within selected a IoT areas.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	In Telenor's Asian network operations, the company with its supply chain has have continued to convert traditional diesel-based on-site generators to renewable energy with cost-efficient solar/battery technology. In 2018, our Asian operations consumed around 70 million litres of diesel to power base stations in off-grid areas or areas with unreliable on-grid power. Telenor Pakistan needs to replace 20 million litres of diesel and has by year-end 2018 installed solar energy solutions for more than 850 of its base stations and is planning for additional 160 sites in 2019 (representing 10 % of total base stations in operations).. Grameenphone in Bangladesh needs to replace 14 million litres of diesel and has already 1200 solar powered base stations in place (representing 10 % of total base stations in operations). In Myanmar, Telenor needs to replace 36 million litres of diesel and has by year-end 2018 more than 450 solar-based base stations in operations and plan to roll-out to another 1,000 base stations in 2019 (representing 15 % of total base stations in operations).
Adaptation and mitigation activities	Impacted for some suppliers, facilities, or product lines	Telenor's operations and infrastructure in Asia are exposed to flooding risks caused rising sea levels. Climate research predicts the sea level to rise because of melting ice and the expansion of water. The rising sea level poses a risk to all countries at very low altitudes, in particular to Bangladesh which is highly threatened by the rising sea level. At Telenor, we have conducted a Climate Impact Risk Analysis for countries of Telenor's operations. The aim of this analysis was to identify the risks of climate induced damage such as flooding to Telenor's networks over the years up to 2018 in 11 countries where we have large operations. The results from this analysis are used proactively in planning of network expansion as well as reactively with regard to protecting existing infrastructure. In Bangladesh, there is a risk of high damage of electrical equipment in switches, base stations and other site buildings caused by flooding - calculated that more than 50% of our infrastructure will need early renewal with a likelihood of more than once every 10 years. This could result in financial impacts estimated to be in the order of 100 million NOK.
Investment in R&D	Impacted for some suppliers, facilities, or product lines	The ICT industry's technology and smart services through the Internet of Things (IoT) have the potential to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits. Telenor continues to engage with the industry organisations – such as GSMA and GeSI – and industry partners to embrace these opportunities. During 2018, Telenor's research unit continued to provide new knowledge and build deep competences in areas such as digital customer behaviour, new network and Internet technologies, artificial intelligence, advanced analytics, business models, organisational solutions, competition and business environment. Telenor spent a total of NOK 1.8 billion on innovation, of which NOK 545 million were costs related to R&D. Annual management cost for Telenor Group related to relevant industrial partnerships is estimated to around 5 million NOK.
Operations	Impacted for some suppliers, facilities, or product lines	Telenor's business units are focusing on costefficient energy initiatives: network swaps, sourcing of energy-efficient technologies, infrastructure-sharing and energy efficient data centres and buildings. Changing regulations, significant reductions in renewable energy costs and concerns about energy security will impact global energy markets. Telenor's Asian markets are very different from its European markets, both in the company's carbon footprint and the type of energy that Telenor uses for its network operations. In general, developing countries will have the opportunity to leapfrog into the renewable age, and Telenor has already, in several of its Asian operations, started to replace traditional diesel-based on-site generators with cost-efficient solar/battery renewable energy technology. Going forward, Telenor will plan for a scale-up of renewable energy combined with continued focus on energy efficiency initiatives in all of its network operations, resulting in both savings in operating expenses and reduced CO2 emissions. This could result in financial impacts estimated to be increased capex over the next years of several hundreds of million NOK.
Other, please specify	Please select	

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	The ICT industry's technology and smart services through the Internet of Things (IoT) have the potential to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits. Telenor is a leading provider of Internet of Things connectivity in Europe. In 2018, Telenor Group passed 13 million connected devices globally on its IoT platforms. In 2018, Telenor Group had total revenues more than 1.1 billion NOK related to network connectivity services (including smart meter services) and we have estimated revenues potentially to increase to 5 billion NOK by 2025.
Operating costs	Impacted	The mobile industry requires significant amounts of electricity in Telenor's network operations, and most power is supplied on-grid by national power generation companies. In Telenor's Asian operations, the company also relies heavily on diesel used in its on-site generators to power infrastructure offgrid in remote locations or areas of unreliable on-grid power. Telenor's key focus has therefore been to stabilise energy consumption by improving the energy efficiency of its networks, as these represent around 80 per cent of the total energy consumption. The business units are focusing on costefficient energy initiatives: network swaps, sourcing of energy-efficient technologies, infrastructure-sharing and energy efficient data centres and buildings. In 2018, Telenor's direct energy cost were more than 2 billion NOK.
Capital expenditures / capital allocation	Impacted for some suppliers, facilities, or product lines	Telenor's Asian markets are very different from its European markets, both in the company's carbon footprint and the type of energy that Telenor uses for its network operations. In general, developing countries will have the opportunity to leapfrog into the renewable age, and Telenor has already, in several of its Asian operations, started to replace traditional diesel-based on-site generators with cost-efficient solar/battery renewable energy technology. Going forward, Telenor will plan for a scale-up of renewable energy combined with continued focus on energy efficiency initiatives in all of its network operations, resulting in both savings in operating expenses and reduced CO2 emissions. Per year-end 2018, Telenor has invested in cost-efficient solar/battery renewable energy technology in more than 2500 base stations in our Asian operations with a cumulative capex of more than 500 million NOK.
Acquisitions and divestments	Not yet impacted	Telenor has only in a very limited way experienced actual and potential impacts of climate-related risks and opportunities in the organization's decision processes related to acquisitions and divestments. Looking forward, we assume there to be low potential impacts on a qualitative scale in this risk/opportunity area from climate-related risks and opportunities in a medium term timescale of 2-5 years.
Access to capital	Not yet impacted	Telenor has only in a very limited way experienced actual and potential impacts of climate-related risks and opportunities in the organization's process to positioning its need for either human or financial capital to increase its business value. Looking forward, we assume there to be low potential impacts on a qualitative scale in this risk/opportunity area from climate-related risks and opportunities in a medium term timescale of 2-5 years.
Assets	Not yet impacted	Telenor has not yet experienced actual and potential impacts of climate-related risks and opportunities in the organization's economic benefits or losses from the use or ownership of its assets. Looking forward, we assume there to be low potential impacts on a qualitative scale in this risk/opportunity area from climate-related risks and opportunities in a medium term timescale of 2-5 years.
Liabilities	Not yet impacted	Telenor has to a limited degree experienced direct actual impacts of climate-related risks and opportunities related the organization's liabilities to its contracted business partners. Looking forward, we assume there to be low potential impacts on a qualitative scale in this risk/opportunity area from climate-related risks and opportunities in a medium term timescale of 2-5 years.
Other	Please select	

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?

No, but we anticipate doing so in the next two years

C3.1c

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

i. Influenced by climate-related issues:

Telenor's business units operate with the policy of making all reasonable efforts to minimise use of natural resources including energy, water and raw materials. Since 2008, Telenor Group has established documented processes which consider climate change related risks and opportunities as part of our total business environment. All our business units shall adhere to local and internationally recognized environmental and energy efficiency standards. The business units shall have an updated risk assessment for its operations focusing on extreme weather events related to climate change. All business units shall investigate potential business initiatives and partnerships for offering such eco-efficient solutions.

ii. Linking to an emissions reductions or energy reduction target:

Telenor will risk continued growth in our total energy consumption and carbon footprint as we continue to increase our coverage, acquire more customers and develop more mobile broadband services due to market needs. Our key climate initiatives have therefore been to stabilise our energy consumption by improving the energy efficiency of our network operations, as these represent around 80 per cent of our total energy consumption.

iii. Most substantial business decision:

The ICT industry's technology and smart services through the Internet of Things (IoT) have the potential to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits. Most significant business decision last year was probably to continue developing our digital business vertical within IoT.

C3.1g

(C3.1g) Why does your organization not use climate-related scenario analysis to inform your business strategy?

i. Why climate-related scenario analysis is not used to inform your business strategy:

Telenor has been for the last ten years committed to minimising its environmental impact. Telenor's business units operate with the policy of making all reasonable efforts to minimise use of natural resources including energy, water and raw materials. Since 2008, Telenor Group has established documented processes which consider climate change related risks and opportunities as part of our total business environment. All Telenor Group's business units shall adhere to local and internationally recognized environmental and energy efficiency standards, as adhered to by Telenor Group. The business units shall have an updated risk assessment for its operations focusing on extreme weather events related to climate change. All business units shall investigate potential business initiatives and partnerships for offering such eco-efficient solutions.

At Telenor, we have conducted a Climate Impact Risk Analysis for countries of Telenor's operations. The aim of this analysis was to identify the risks of climate induced damage such as flooding to Telenor's networks in all countries where we have large infrastructure based operations. The results from this analysis have been used proactively in planning of network expansion as well as reactively with regard to protecting existing infrastructure.

The ICT industry's technology and smart services through the Internet of Things (IoT) have the potential to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits. Telenor has over recent years been engaged with the industry organisations – such as GSMA and GeSI – and also leading research institutions to embrace these opportunities.

The use of scenarios in assessing climate-related issues and their potential financial implications is relatively new and hopefully

practices will evolve over time – but Telenor believes such analysis is important for improving the disclosure of climate-related financial information. In the next few years, Telenor sees the need to update its risk and opportunity assessment in a more systematic way. Telenor will look into the resilience of our total organization's strategy, taking into consideration different climate-related scenarios. Telenor will disclose how our strategy might need to change to address potential climate-related risks and opportunities.

Telenor will also need to formulate new strategic climate ambitions for Telenor Group with localised climate roadmaps towards 2030 that are aligned with the overall Paris Climate Agreement. Telenor will be aiming to develop an climate roadmap across its business units which can be aligned with the future business strategy processes. These climate roadmap should drive renewable energy ambitions and related priorities at group level and on specific business unit levels. There is a need to have a clear understanding of bottom-up and top-down perspectives in each market in order to drive decision making. A unified approach and templates are needed to collect and structure the right data and insights across each business unit. Relevant conditions per business unit include current energy performance, climate legislations, the nationally determined contributions to the Paris Agreement (NDCs), future infrastructure developments etc.

ii. Whether you expect it to be in the future

Telenor believes that global sustainability issues are solved through joint efforts and collaboration – within industry sectors, across the value chain or not at least through public-private partnerships. Telenor is currently working together with the world's largest mobile operators with a common ambition to sign up to an industry-wide plan to achieve net-zero greenhouse gas (GHG) emissions by 2050 in line with the Paris climate agreement. This industry commitment will reflect the urgent need for the world to accelerate action to limit global warming to 1.5°C by 2050, demonstrating how the private sector can show leadership and responsibility in addressing the potentially devastating effects of climate change on our planet.

Telenor will in the next few years update its risk and opportunity assessment in a more systematic way. Telenor will look into the resilience of our total organization's strategy, taking into consideration different climate-related scenarios. Telenor will disclose how our strategy might need to change to address potential climate-related risks and opportunities.

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

% emissions in Scope

100

Targeted % reduction from base year

0

Base year

2013

Start year

2013

Base year emissions covered by target (metric tons CO2e)

296000

Target year

2018

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

100

Target status

Achieved

Please explain

Telenor Group has had a target to cap the Scope 1 emissions at the same level as for year 2013 mainly by reducing the diesel consumption in the off-grid areas and in electricity unstable regions of our Asian operations and energy efficiency measures in the same countries. The total result for Scope 1 emissions in 2018 was estimated to 219,105 tonnes CO2 (mainly due to 70 million litres of diesel used in our Asian network operations). The scope 1 emissions in 2018 is 26 % lower than for base year 2013. The reduced Scope 1 emissions is a combined result from successful energy efficiency measures in our Asian operations and scaling up transformation from diesel generators to solar energy especially in our business operations in Bangladesh, Pakistan and Myanmar. In the period from 2013 to 2018, we have started up a new business operation in Myanmar in 2014 but also sold our business operations in India in 2017.

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 (location-based)

% emissions in Scope

100

Targeted % reduction from base year

0

Metric

Metric tons CO2e per unit of service provided

Base year

2016

Start year

2018

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

1330569

Target year

2018

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

97.5

Target status

New

Please explain

"Metric tons CO2e per unit of service provided" - where unit of service provided is defined as a "full year of mobile services per customer". The Telenor Group has set up a target to cap the company's Scope 1+2 emissions per customer per year at the same level as for year 2016. Telenor has experience a continued increase of total energy consumption and carbon footprint as the company continue to expand our business coverage, acquire more customers and develop more mobile broadband services due to market needs. This requires significant amounts of electricity in the operators' network operation which normally is supplied on-grid by national power generation companies plus diesel consumption in the off-grid areas and in electricity unstable regions of our Asian operations. In 2016, the total data traffic volume in Telenor's mobile network was 1389 petabyte - an increase of 72 per cent from 2015. In 2016, Telenor's total energy consumption was approximately 4000 GWh - an increase of around 20 per cent from 2015 due to the dramatic increase in data traffic. In 2018, the total data traffic volume in Telenor's mobile network was approximately 3,700 petabytes - an increase of more than 40 per cent from 2017 and representing 80 per cent average annual growth rate since 2013. In 2018, Telenor's total energy consumption was approximately 3,300 GWh – an increase of 11 per cent from 2017 when comparing without our CEE operations. In the period 2016-2018, Telenor's CO2 emissions per end customer increased by around 3 per cent due to the significant increase in data traffic volume – still representing only approximately 6.5 kg of CO2 per customer per year in 2018.

% change anticipated in absolute Scope 1+2 emissions

-16.5

% change anticipated in absolute Scope 3 emissions

0

C4.2

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

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	3	32000
To be implemented*	1	5500
Implementation commenced*	0	0
Implemented*	1	5700
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 installation

Description of initiative

Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)

5700

Scope

Scope 1

Voluntary/Mandatory

Voluntary

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

18150000

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

82500000

Payback period

4 - 10 years

Estimated lifetime of the initiative

16-20 years

Comment

We have in 2018 implemented a renewable energy project involving installation of more than 550 new solar powered base stations in Pakistan and Myanmar. This has resulted in a reduction in consumption of approximately 2.2 million liters of diesel with an estimated reduction in carbon emissions of approx 5,700 tonnes CO2.

C4.3c

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

Method	Comment
Dedicated budget for energy efficiency	All Telenor's business units are mandated to choose cost-efficient energy-efficiency initiatives: network swaps, the sourcing of energy-efficient technologies, infrastructure-sharing and more energy-efficient data centres and buildings.
Dedicated budget for other emissions reduction activities	Several of Telenor's Asian operations has for a few years started to replace traditional diesel-based on-site generators with cost-efficient solar/battery renewable energy technology.
Dedicated budget for low-carbon product R&D	The ICT industry's technology and smart services through the Internet of Things (IoT) have the potential to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits. Telenor continues to engage with the industry organisations – such as GSMA and GeSI – and industry partners to embrace these opportunities. During 2018, Telenor's research unit continued to provide new knowledge and build deep competences in areas such as digital customer behaviour, new network and Internet technologies, artificial intelligence, advanced analytics, business models, organisational solutions, competition and business environment.

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

Yes

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

Group of products

Description of product/Group of products

The ICT industry's technology and smart services through the Internet of Things (IoT) have the potential to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits. In 2018, Telenor secured its position as a leading provider of Internet of Things connectivity in Europe. In 2018, Telenor Group passed more than 13 million SIM connected devices globally on its IoT platforms. Telenor Connexion (Telenor's dedicated IoT company, designs and operates global IoT solutions for the global market) shipped more than 3 million SIMs, and Telenor Norway has taken a leading position within selected IoT areas.

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

Avoided emissions

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

Evaluating the carbon-reducing impacts of ICT

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

1

Comment

The SMARTer 2030 report (co-financed and supported by Telenor) identified a number of sectors where the enabling potential of ICT can deliver significant carbon emissions reduction – up to 20 per cent by 2030 and close to ten times the ICT industry's own direct emissions. This places ICT as one of the key instruments for the achievement of the climate commitments undertaken in Paris and the implementation of related national action plans.

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 2008

Base year end

December 31 2008

Base year emissions (metric tons CO2e)

160000

Comment

Scope 2 (location-based)

Base year start

January 1 2008

Base year end

December 31 2008

Base year emissions (metric tons CO2e)

572000

Comment

Scope 2 (market-based)

Base year start

January 1 2008

Base year end

December 31 2008

Base year emissions (metric tons CO2e)

572000

Comment

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)

219105

Start date

January 1 2018

End date

December 31 2018

Comment

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

224906

Start date

January 1 2017

End date

December 31 2017

Comment

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

378231

Start date

January 1 2016

End date

December 31 2016

Comment

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)

308994

Start date

January 1 2015

End date

December 31 2015

Comment

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

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

Reporting year

Scope 2, location-based

891598

Scope 2, market-based (if applicable)

1084604

Start date

January 1 2018

End date

December 31 2018

Comment

Past year 1

Scope 2, location-based

818899

Scope 2, market-based (if applicable)

1008203

Start date

January 1 2017

End date

December 31 2017

Comment

Past year 2

Scope 2, location-based

952338

Scope 2, market-based (if applicable)

1161833

Start date

January 1 2016

End date

December 31 2016

Comment

Past year 3

Scope 2, location-based

798405

Scope 2, market-based (if applicable)

Start date

January 1 2015

End date

December 31 2015

Comment

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, not yet calculated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Capital goods

Evaluation status

Relevant, not yet calculated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

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

Evaluation status

Relevant, not yet calculated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

8591

Emissions calculation methodology

Includes downstream transportation and distribution. Road transportation; mainly involving vehicles used for maintenance and support services. Fuel-based method; which involves fuels consumed by these vehicles owned or long-term leased by Telenor and applying the appropriate fuel emission factors for the different kinds of fuel used; motor gasoline, diesel, LPG etc.

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

100

Explanation

Waste generated in operations

Evaluation status

Relevant, not yet calculated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

9039

Emissions calculation methodology

Scope: Only business flights were accounted for. Methodology: Distance-based-method, using the following conversion factors for CO2 emissions: 0.12 kg CO2e per passenger kilometer.

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

Explanation

Employee commuting

Evaluation status

Relevant, not yet calculated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Upstream leased assets are already included in our scope 1 or scope 2 inventory.

Downstream transportation and distribution

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

0

Emissions calculation methodology

Road transportation; mainly involving vehicles used for support and marketing services. Fuel-based method; which involves fuels consumed by these vehicles owned or long-term leased by Telenor and applying the appropriate fuel emission factors for the different kinds of fuel used; motor gasoline, diesel, LPG etc.

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

100

Explanation

Emissions from downstream transportation and distribution are included in upstream transportation and distribution.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

It does not contribute significantly to Telenor's anticipated scope 3 emissions, since Telenor in general has limited processing of sold intermediate products by manufacturers subsequent to sale.

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

It does not contribute significantly to Telenor's anticipated scope 3 emissions, since Telenor in general has limited processing of sold intermediate products by manufacturers subsequent to sale.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

315

Emissions calculation methodology

The figure does not represent the entire scope of all our sold products yet. In 2018, 315,000 customer mobile phones and batteries were collected by Telenor for recycling or reuse. Calculation methodology: Using conversion factor of 1 kg CO2e per mobilephone/battery for scope 3 emissions related to "End of life treatment".

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

100

Explanation

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

It does not contribute significantly to Telenor's anticipated scope 3 emissions, since Telenor in general has limited operation of assets that are leased to other business entities.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Franchises are already included in our scope 1 or scope 2 inventory .

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

It does not contribute significantly to Telenor's anticipated scope 3 emissions since equity investments in subsidiaries (more than 50 percent ownership) are included in Telenor's scope 1 or scope 2 inventory.

Other (upstream)

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Other (downstream)

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

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

0.00001097

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

1110703

Metric denominator

unit total revenue

Metric denominator: Unit total

110000000000

Scope 2 figure used

Location-based

% change from previous year

21

Direction of change

Increased

Reason for change

The intensity figure for Scope 1 and 2 emissions per total revenue increased with 21 % from 2017 to 2018 due to the combined fact that total revenues decreased by 12 % (from 124.8 billion NOK in 2017 to 110 billion NOK in 2018) as well as the Scope 1 and 2 emissions increased by 6 % from 1.044 million tonnes CO2 in 2017 to 1.111 million tonnes CO2 in 2018 due to the combined reasons of divestments (Telenor sold all its assets and operations in Central and Eastern Europe), change in output (40 % increase data traffic volume from 2017 to 2018) as well as energy efficiency measures (sourcing of energy-efficient technologies and increased use of infrastructure-sharing).

C7. Emissions breakdowns

C7.1

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

No

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Norway	7579
Sweden	557
Denmark	681
Thailand	8012
Malaysia	26946
Myanmar	94305
Bangladesh	21150
Pakistan	59875

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)
Network operations	184409
Building operations	8924
Transportation	25772

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)
Norway	4660	182358	268130	0
Sweden	414	700	140630	118850
Denmark	11329	26351	55230	0
Thailand	422915	422915	832510	0
Malaysia	153776	153776	229860	0
Myanmar	25644	25644	82190	0
Bangladesh	163232	163232	288400	0
Pakistan	109628	109628	274070	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)
Network operations	874635	1041904
Building operations	16963	42700
Transportation	0	0

C7.9

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

Increased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	5700	Decreased	0.5	We have during 2018 completed renewable energy projects involving installation of more than 500 new solar powered base stations in Pakistan and Myanmar. This has resulted in a reduction in consumption of approximately 2 million liters of diesel with an estimated reduction in carbon emissions of approx 5,000 tonnes CO2.
Other emissions reduction activities		<Not Applicable>		
Divestment	92000	Decreased	8.8	In 2018, Telenor Group sold all its assets and operations Central and Eastern Europe (CEE) to PPF Group.
Acquisitions		<Not Applicable>		
Mergers		<Not Applicable>		
Change in output	164000	Increased	15.7	In 2018, the total data traffic volume in Telenor's mobile network was approximately 3700 petabytes – an increase of more than 40% from 2017.
Change in methodology		<Not Applicable>		
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

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	Yes
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	Yes
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)	LHV (lower heating value)	0	906449	906449
Consumption of purchased or acquired electricity	<Not Applicable>	118850	2149140	2267990
Consumption of purchased or acquired heat	<Not Applicable>	0	6400	6400
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	0	720	720
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	16950	<Not Applicable>	16950
Total energy consumption	<Not Applicable>	135800	3062709	3198509

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

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	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)**

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

825317

MWh fuel consumed for self-generation of electricity

764511

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

42993

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

37179

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Comment

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

33277

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Comment

Fuels (excluding feedstocks)

Biogasoline

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

4803

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Comment

Fuels (excluding feedstocks)

Biodiesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

59

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Comment

C8.2d

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

Biodiesel

Emission factor

1.43

Unit

kg CO2 per liter

Emission factor source

Malasia market data

Comment

Biogasoline

Emission factor

2.15

Unit

kg CO2 per liter

Emission factor source

Thailand market data

Comment

Diesel

Emission factor

2.584

Unit

kg CO2e per liter

Emission factor source

Defra (The UK Departement for Environment, Food & Rural Affairs)

Comment

Motor Gasoline

Emission factor

2.194

Unit

kg CO2 per liter

Emission factor source

Defra (The UK Departement for Environment, Food & Rural Affairs)

Comment

Natural Gas

Emission factor

2.0332

Unit

kg CO2 per m3

Emission factor source

Defra (The UK Departement for Environment, Food & Rural Affairs)

Comment

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	16950	16950	16950	16950
Heat	37179	37179	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, Guarantees of Origin

Low-carbon technology type

Hydropower

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

Europe

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

118850

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

0

Comment

C9. Additional metrics

C9.1

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

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

CDP-Telenor _verification statement_2019_Final.pdf

Page/ section reference

Three pages verification letter of limited third-party verification by DNV GL Business Assurance Norway AS commissioned by Telenor ASA.

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

CDP-Telenor _verification statement_2019_Final.pdf

Page/ section reference

Three pages verification letter of limited third-party verification by DNV GL Business Assurance Norway AS commissioned by Telenor ASA.

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

CDP-Telenor _verification statement_2019_Final.pdf

Page/ section reference

Three pages verification letter of limited third-party verification by DNV GL Business Assurance Norway AS commissioned by Telenor ASA.

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

CDP-Telenor _verification statement_2019_Final.pdf

Page/section reference

Three pages verification letter of limited third-party verification by DNV GL Business Assurance Norway AS commissioned by Telenor ASA.

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 are waiting for more mature verification standards and/or processes

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)?

No, and we do not anticipate being regulated in the next three years

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, other partners in the value chain

C12.1a

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

Type of engagement

Compliance & onboarding

Details of engagement

Code of conduct featuring climate change KPIs

Climate change is integrated into supplier evaluation processes

% of suppliers by number

2

% total procurement spend (direct and indirect)

80

% Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

Our sourcing processes uses sustainability criteria to reduce our supply chain carbon footprint through selection of suppliers with more energy efficient products.

Impact of engagement, including measures of success

During 2018, in 120 of 146 signed contracts with contract value larger than 1.5 million NOK (250,000 USD) a specified set of sustainability criteria have been used during the sourcing process. This scale of engagement reflects about 80 % of our total spend. Our sustainability criteria checklist (with a main focus on energy efficiency) requests the sourcing team to consider involving local environment experts in the procurement process as well as to check out possible suppliers for issues relating to their sustainability, such as their environmental management system, energy efficiency, waste management and hazardous substances. suppliers for issues relating to their sustainability, such as their environmental management system, energy efficiency, waste management and hazardous substances.

Comment

C12.1c

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

The ICT industry's technology and smart services through the Internet of Things (IoT) have the potential to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits. Telenor continues to engage with the industry organisations and also leading research institutions to embrace these opportunities.

In a broad sense, artificial intelligence can be defined as the science of making machines smart. Machine learning (ML) is a subfield of AI that allows computers to learn directly from examples, data and experience without being explicitly programmed. ML allows computers to learn patterns, find correlations and identify anomalies from large amounts of data (aka "Big Data"). With more and better data, the model gets better and delivers more reliable results. These insights can be used for making predictions and drive automation, which will permeate every aspect of running business in the future – from personalized marketing campaigns, through predictive maintenance of electrical grids to self-driving cars.

Telenor intends to become a data-driven company, where AI/ML capabilities will be an asset, and ultimately, create a competitive advantage. AI could be used for optimizing network operations, automating customer interactions, personalizing marketing and sales campaigns. This is a change of focus that our company must embrace, which also requires a fundamentally new approach to Data Management. Our ambition is to strengthen AI and advanced data analysis both in core business and by taking new positions, such as within IoT where there are considerable growth opportunities and the global giants are not dominant. Our AI competence lies in the research department, the global marketing department and in our operations, especially Norway, Sweden, Thailand and Pakistan.

In 2017, Telenor continued to build relationships with leading research institutions in Norway and internationally. In collaboration with the Norwegian University of Science and Technology (NTNU), the Telenor-NTNU AI-Lab within Artificial Intelligence (AI) and Big Data was opened. Telenor rolled out an IoT pilot network in three cities in Norway, and launched the Start IoT offering for entrepreneurs, start-ups and students. Telenor will fund with NOK 40 million professorships, post-doctoral positions and master/PhD scholarships as well as hardware and software for the lab. An additional NOK 10 million will be dedicated to building an IoT innovation network which will provide an important source of data for the lab's research work.

Telenor has contributed with several studies to prepare for tomorrow's communication market. Scientists have worked on how AI, machine learning and advanced analytics can be used in improving core telco operations and services, including mobility data for new digital services. The future business models, competitive landscape and business environment have been studied, also including long term trends that have implications for Telenor's business.

Telenor Group also supports EU efforts to create an AI strategy for Europe and mobilise national research, innovation and business communities in AI/ML and Big Data. Building strong AI innovation ecosystems is important for boosting competitiveness and sustainable development in Europe. A special emphasis should be placed on *access and sharing of large volumes of data* within and across industry verticals and national borders in Europe and Asia to enable scalable AI.

In August 2018, Telenor's Thailand operations, dtac, started up an artificial intelligence laboratory in partnership with Thammasat University's Sirindhorn International Institute of Technology (SIIT) in Bangkok. The lab connects data scientists and leading professors with real-world business cases provided by dtac, supporting the company's AI strategy and ambition to train a new generation of digital talents for Thailand. One example of a specific use case due to this partnership is an AI-driven ID verification system that would increase security while speeding up the process of SIM registration verification. The investment is worth approximately NOK 4 million over the course of two years.

C12.3

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

- Direct engagement with policy makers
- Trade associations
- Funding research organizations

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
Carbon tax	Support	Engaged with policymakers on various levels to communicate that a clear and transparent price on carbon emissions is at the core of a cost-effective and pro-business policy framework for climate change.	Our proposed solution is that policy-makers should make carbon pricing a central part of national policy responses by working towards the long term objective of a carbon price throughout the global economy and setting sufficient ambition through internationally agreed targets to drive change at a pace commensurate with the climate goals as agreed upon in Paris climate agreement in December

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

The GSMA represents the interests of mobile operators worldwide, uniting nearly 750 operators with over 350 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors.

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The GSMA is working with participating mobile operators and will be partnering with the international community, climate experts and third-party organisations to advance mobile industry progress, establish best practices, and support disclosure and carbon target setting through CDP. This industry commitment reflects the urgent need for the world to accelerate action to limit global warming to 1.5°C by 2050, demonstrating how the private sector can show leadership and responsibility in addressing the potentially devastating effects of climate change on our planet. The GSMA initiative also includes the development of a decarbonisation pathway for the mobile industry aligned with the Science Based Targets initiative (SBTi), to be in place by February 2020. The industry is also committed to advancing mobile technology innovations in areas such as big data and IoT that can enable energy efficient and environmental solutions across multiple sectors, including transport, manufacturing, agriculture, building, energy.

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

Mr. Sigve Brekke is board member of the GSMA. He has been President and CEO of Telenor Group since August 2015. Telenor representatives are participating in different committees and working Groups in GSMA. Through these individuals, Telenor actively engages in the climate change positioning process of the GSMA.

Trade association

The Global e-Sustainability Initiative (GeSI) is a leading source of impartial information, resources and best practices for achieving integrated social and environmental sustainability through Information and Communication Technology (ICT). Their mandate is to contribute to a sustainable future, communicate the ICT industry's efforts, and drive the sustainability agenda from an environmental and social responsibility perspective. GeSI is representing around 40 of the world's leading ICT companies. GeSI has also partnered with over 12 global business and international organisations to share and develop ideas, launch joint initiatives – such as WBCSD, UNFCCC, WRFA, ITU, UNEP and EICC.

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

GeSi encourages governments to include ICTs and related technologies as key elements of their national climate change policies, across all industry sectors. By bolstering collaboration on these main objectives, GeSI seeks to synergize the messages being expressed by actors in the ICT field; the message that ICTs can enable low-carbon economies, and that 21st century governments, regulators and businesses cannot afford to exclude ICTs from policy or business initiatives to green our global economy.

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

Telenor Group has for many years been an active members of GeSI and Telenor representatives have participated in specific climate change related working groups as well as influenced the long term strategic processes in GeSI's including long term vision and which climate change related issues should be prioritized.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

No

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?

- Direct and indirect activities across Telenor Group that influence policy on climate change are centrally coordinated and managed by Group Sustainability.
- The Group's Climate Change director is responsible for coordinating engagement activities around climate change across business units and geographies to ensure that we have a common approach that is consistent with Telenor Group's strategy on climate change.

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 voluntary sustainability report

Status

Complete

Attach the document

Sustainability-Report-2018-Telenpor Group FINAL.pdf

Page/Section reference

Telenor Sustainability Report 2018 - Pages 21-23.

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

Telenor-GRI-Sustainability-Standards-Report-2018.pdf

Page/Section reference

Telenor Group GRI Report 2018 - Pages 7-10

Content elements

Emissions figures
Emission targets
Other metrics

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

Telenor_UNGC_COP_2018.pdf

Page/Section reference

Telenor Group's Communication On Progress (COP) Report for 2018 to UN Global Compact. Page 3

Content elements

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.

Telenor, based in Norway, is a global telecom operator, with 174 million customers per year-end 2018 and strong positions in eight markets across the Nordics and Asia, leveraging on more than 160 years of proud history. Majority ownership of all core assets enables strong governance and global scale benefits. Telenor is committed to responsible business conduct, driven by its purpose to connect its customer to what matters most and by the ambition of empowering societies. In 2018, the company reported revenues of USD 13 billion (NOK 110 billion) and EBITDA before other items of USD 5.2 billion (around NOK 45 billion). Telenor is stock-listed at the Oslo Stock Exchange, and has currently a market capitalization of around USD 29 billion (NOK 250 billion).

This CDP report for 2018 does not include performance data from our Central and Eastern European (CEE) operations. On 21 March 2018, Telenor announced the signing of an agreement to sell its CCE based assets to PPF Group. The transaction included Telenor's wholly-owned mobile operations in Hungary, Bulgaria, Montenegro and Serbia and the technology service provider Telenor Common Operation. The transaction required necessary regulatory approval and the transaction was completed on 31 July 2018.

This climate related report submitted to CDP contains statements regarding the future in connection with the Telenor Group's outlook, strategies and objectives. All statements regarding the future are subject to inherent risks and uncertainties and many factors can lead to developments deviating substantially from what has been expressed or implied in such statements.

For more information about Telenor Group, please visit www.telenor.com.

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	Head of Group Sustainability	Chief Sustainability Officer (CSO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

Climate change is one of the most complex challenges facing people, businesses and governments. Climate related risks include potential damages to vital infrastructure and utilities through the impact of more extreme weather events. At the same time the ICT industry's technology and smart services have the potential to cut global carbon emissions, reduce resource intensity, stimulate economic growth and deliver substantial social benefits. Sustainability is not only the most important question of our time; it is also the largest business opportunity today. Smart technology – such as Internet of Things (IoT) – is finally here to help. By adding connectivity and intelligence to our everyday objects we can all vastly increase resource efficiency, reduce waste, reduce CO2 emissions, keep people healthier and make our societies safer.

Telenor Group is a leading telecommunications company across Scandinavia and Asia with 178 million customers and annual sales of around USD 13 billion (2018). We hold #1 or #2 positions in most of our markets. We are committed to responsible business conduct and driven by the ambition of empowering societies.

Telenor is committed to protecting the environment and contributing to the prevention of climate change. We shall comply with local laws and internationally recognized environmental standards. We support environmentally friendly and energy efficient technologies, and we seek to minimize carbon emissions from all parts of our operations. We also recognize that offering eco-efficient solutions can create business opportunities.

Telenor will risk continued growth in our absolute energy consumption and carbon footprint as we continue to increase our coverage, acquire more customers and develop more mobile broadband services due to market needs. Our key climate initiatives have therefore been to stabilise our energy consumption by improving the energy efficiency of our network operations, as these represent around 80 per cent of our total energy consumption.

In 2018, Telenor's total energy consumption was approximately 3,300 GWh. The associated emissions of greenhouse gases has been estimated to be a total of around 1.1 million tonnes of CO2. In 2018, we purchased 70 million litres of diesel in Asia to power base stations in off-grid areas or areas with unreliable on-grid power constitutes 16% of our total CO2 emissions. We continuously strive to replace diesel with solar energy in our operations, where applicable.

By year-end 2018, Telenor Pakistan has installed solar energy solutions for more than 850 of its base stations and is planning for additional sites in 2019. Grameenphone in Bangladesh has already 1200 solar powered base stations in place. In Myanmar, Telenor continues to scale up with solar/ battery technology and has by year-end 2018 more than 450 base stations in operations and plan to roll-out to another 1,000 base stations in 2019.

However, the main source of CO2 emissions in Telenor's footprint is on-grid electricity purchased in Pakistan, Bangladesh, Thailand, Malaysia and Myanmar, which constitutes 78% of our total emissions. Solving this long term climate challenge is dependent on making the energy sector in these countries renewable.

Telenor believes that global sustainability issues are solved through joint efforts and collaboration – within industry sectors, across the value chain or not at least through public-private partnerships. Telenor is currently working together with the world's largest mobile operators with a common ambition so sign up to an industry-wide plan to achieve net-zero greenhouse gas (GHG) emissions by 2050 in line with the Paris climate agreement. This industry commitment will reflect the urgent need for the world to accelerate action to limit global warming to 1.5°C by 2050, demonstrating how the private sector can show leadership and responsibility in addressing the potentially devastating effects of climate change on our planet.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	110000000000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	NO	0010063308

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

BT Group

Scope of emissions

Scope 1

Allocation level

Business unit (subsidiary company)

Allocation level detail

Nordic business region of the requesting member.

Emissions in metric tonnes of CO₂e

0.5

Uncertainty (±%)

10

Major sources of emissions

Ground transportation.

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The reported CO₂ emissions are based on GHG emissions reported from relevant business units that Telenor Group has financial

control over.

Requesting member

BT Group

Scope of emissions

Scope 2

Allocation level

Business unit (subsidiary company)

Allocation level detail

Nordic business region of the requesting member.

Emissions in metric tonnes of CO2e

0.4

Uncertainty (±%)

10

Major sources of emissions

Grid electricity for network operations.

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The reported CO2 emissions are based on GHG emissions reported from relevant business units that Telenor Group has financial control over.

Requesting member

BT Group

Scope of emissions

Scope 3

Allocation level

Business unit (subsidiary company)

Allocation level detail

Nordic business region of the requesting member.

Emissions in metric tonnes of CO2e

0.8

Uncertainty (±%)

10

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The reported CO2 emissions are based on GHG emissions reported from relevant business units that Telenor Group has financial control over.

Requesting member

Accenture

Scope of emissions

Scope 1

Allocation level

Business unit (subsidiary company)

Allocation level detail

Nordic business region of the requesting member.

Emissions in metric tonnes of CO2e

1.7

Uncertainty (±%)

10

Major sources of emissions

Ground transportation

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The reported CO2 emissions are based on GHG emissions reported from relevant business units that Telenor Group has financial control over.

Requesting member

Accenture

Scope of emissions

Scope 2

Allocation level

Business unit (subsidiary company)

Allocation level detail

Nordic business region of the requesting member.

Emissions in metric tonnes of CO2e

1.1

Uncertainty (±%)

10

Major sources of emissions

Grid electricity for network operations

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The reported CO2 emissions are based on GHG emissions reported from relevant business units that Telenor Group has financial control over.

Requesting member

Accenture

Scope of emissions

Scope 3

Allocation level

Business unit (subsidiary company)

Allocation level detail

Nordic business region of the requesting member.

Emissions in metric tonnes of CO2e

0.9

Uncertainty (±%)

10

Major sources of emissions

Business flights / travel

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The reported CO2 emissions are based on GHG emissions reported from relevant business units that Telenor Group has financial control over.

Requesting member

Microsoft Corporation

Scope of emissions

Scope 1

Allocation level

Business unit (subsidiary company)

Allocation level detail

Emissions in metric tonnes of CO2e

0

Uncertainty (±%)

0

Major sources of emissions

Ground transportation

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

We have not received any relevant supply data from the CDP Supply Chain team in Microsoft.

Requesting member

Microsoft Corporation

Scope of emissions

Scope 2

Allocation level

Business unit (subsidiary company)

Allocation level detail

Emissions in metric tonnes of CO2e

0

Uncertainty (±%)

0

Major sources of emissions

Grid electricity for network operations

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

We have not received any relevant supply data from the CDP Supply Chain team in Microsoft.

Requesting member

Microsoft Corporation

Scope of emissions

Scope 3

Allocation level

Business unit (subsidiary company)

Allocation level detail

Emissions in metric tonnes of CO2e

0

Uncertainty (±%)

0

Major sources of emissions

Business travel / flights

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

We have not received any relevant supply data from the CDP Supply Chain team in Microsoft.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Customer base is too large and diverse to accurately track emissions to the customer level	
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

No

SC1.4b

(SC1.4b) Explain why you do not plan to develop capabilities to allocate emissions to your customers.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

Requesting member

BT Group

Group type of project

New product or service

Type of project

New product or service that reduces customers products / services operational emissions

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings

Estimated payback

Please select

Details of proposal

Technology and smart services have the potential to impact global carbon emissions. Our industry is well positioned to make the world more sustainable by connecting sensor-based data with analytical capacity to improve people's lives and increase resource efficiency in diverse areas such as smart homes, smart cities, smart energy or smart mobility. Telenor is therefore searching for new innovative ideas using the Internet of Things (IoT) to help businesses become more efficient and people's lives smarter.

Requesting member

Accenture

Group type of project

New product or service

Type of project

New product or service that reduces customers products / services operational emissions

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings

Estimated payback

Please select

Details of proposal

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Requesting member

Microsoft Corporation

Group type of project

New product or service

Type of project

New product or service that reduces customers products / services operational emissions

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

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Estimated lifetime CO2e savings

Estimated payback

Please select

Details of proposal

Technology and smart services have the potential to impact global carbon emissions. Our industry is well positioned to make the world more sustainable by connecting sensor-based data with analytical capacity to improve people's lives and increase resource efficiency in diverse areas such as smart homes, smart cities, smart energy or smart mobility. Telenor is therefore searching for new innovative ideas using the Internet of Things (IoT) to help businesses become more efficient and people's lives smarter.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC3.1

(SC3.1) Do you want to enroll in the 2019-2020 CDP Action Exchange initiative?

No

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2018-2019 Action Exchange initiative?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

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	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Public	Investors Customers	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms