Telenor Group's response to Carbon Disclosure Project 2014

Climate Change (Investor CDP) for the reporting year 1 January-31 December 2013

Sector: Telecommunications
Industry Group: Diversified Telecommunication Services
Sub Industry: Integrated Telecommunication Services

telenor group

CDP
DRIVING SUSTAINABLE ECONOMIES

Module: Introduction

Page: Introduction

CC0.1

Introduction
Please give a general description and introduction to your organization.

Telenor Group is an international provider of telecom, data and media communication services. Telenor Group has mobile operations in 13 markets in the Nordic region, Central and Eastern Europe and in Asia as well as a voting stake of 43% (economic stake 33%) in VimpelCom Ltd, operating in 17 markets. Headquartered in Norway, Telenor Group is one of the world's major mobile operators with 172 million mobile subscriptions in its consolidated operations, revenues of 17.7 billion USD in 2013 and a workforce of approximately 34,000 people. For more information about Telenor Group, please visit www.telenor.com.

CC0.2

Reporting Year
Please state the start and end date of the year for which you are reporting data.
The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.
We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.
Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Tue 01 Jan 2013 - Tue 31 Dec 2013

CC0.3

Country list configuration

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response.

Select country
Norway
Denmark
Sweden
Hungary
Serbia
Montenegro
Bulgaria
Thailand
Malaysia
Bangladesh
Pakistan
India

CC0.4

Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD($)

CC0.6

Modules

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors, companies in the oil and gas industry, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco sectors should complete supplementary questions in addition to the main questionnaire.
If you are in these sectors (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

Where is the highest level of direct responsibility for climate change within your organization?

Individual/Sub-set of the Board or other committee appointed by the Board

CC1.1a

Please identify the position of the individual or name of the committee with this responsibility

The individual with the highest level of direct responsibility for climate change at Telenor is Frank
Dangeard who is Chairperson of the Ethics and Sustainability Committee of the Telenor Group Board of Directors. Frank Dangeard is also Deputy Chairman of the Telenor Group Board of Directors.

CC1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator
Corporate executive team	Monetary reward	The incentivized performance indicators linked to climate change are the Group's long term carbon intensity reduction and the business units' medium term energy efficiency improvement targets. The annual performance/ bonus system for the Group Executive Management is based on achievement of company and role-specific targets and covers both financial KPIs and non-financial KPIs such as efficiency and holistic assessment based on sustainability. The Carbon intensity is measured by the amount of CO2 emissions per "value added" (expressed as EBITDA + employee costs). Telenor uses an indexed version of this climate indicator with 2008 as basis-year (= 100%).
Business unit managers	Other non-monetary reward	Group's long term Carbon intensity index and business units' medium term Energy Efficiency targets are part on the key Non-Financial KPIs throughout Telenor Group. The Carbon intensity is measured by the amount of CO2 emissions per "value added" (expressed as EBITDA + employee costs). Telenor uses an indexed version of this climate indicator with 2008 as basis-year (= 100%).
Other: Environment/sustainability managers	Monetary reward	Direct monetary rewards related to climate change initiatives and achievements in their climate change/operational efficiency programmes such as meeting emission reduction targets are provided to environmental /sustainability managers - both on Group level as well as in local business units. Group's long term Carbon intensity index and business units' medium term Energy Efficiency targets are part on the key Non-Financial KPIs throughout Telenor Group. The Carbon intensity is measured by the amount of CO2 emissions per "value added" (expressed as EBITDA + employee costs). Telenor uses an indexed version of this climate indicator with 2008 as basis-year (= 100%).
Process operation managers	Monetary reward	Direct monetary rewards related to climate change initiatives and achievements in their energy efficiency programmes such as meeting energy reduction targets are provided to operational managers - both on Group level as well as in local business units. Group's long term Carbon intensity index and business units' medium term Energy Efficiency targets are part on the key Non-Financial KPIs throughout Telenor Group. The Carbon intensity is measured by the amount of CO2 emissions per "value added" (expressed as EBITDA + employee costs). Telenor uses an indexed version of this climate indicator with 2008 as basis-year (= 100%).

Further Information

Page: CC2. Strategy

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported	Geographical areas considered	How far into the future are risks considered?	Comment
Annually	Individual/Sub-set of the Board or committee appointed by the Board	Telenor assess risks in all countries it operates. These are Norway, Sweden, Denmark, Hungary, Serbia, Montenegro, Bulgaria, Malaysia, Thailand, Bangladesh, Pakistan, India, Myanmar.	3 to 6 years	

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

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

At company 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, 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.

At 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 production site 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.

• Climate change related risks and opportunities are integrated part of this business management framework and is part of all the annual business strategy update with a 3 years rolling forecast for all business units.

CC2.1c

How do you prioritize the risks and opportunities identified?

The climate change risks and opportunity prioritization process is performed via our materiality assessment process. The materiality of the climate change risks and opportunities is assessed by estimating the probability of occurrence of an event and the expected impact of an event for Telenor or its main stakeholders. Risks/opportunities with high probability of occurrence and significant expected impact will be classified as material. The more material a risk or opportunity the higher management priority it gets.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

Telenor's business strategy is linked to emission reduction activities and climate change risk and opportunities:

The annual business strategy review process assesses current and potential future climate change opportunities and risks and implements changes to the business strategy if necessary. Improving energy efficiency and meeting emission reduction targets have become a strategic priority with high management focus in order to limit Telenor's risk exposure to climate change regulations; the business strategy is linked to energy and emission reduction targets.

i) How the strategy has been influenced:
• Since 2008, Telenor Group has established documented processes which consider climate change risks and opportunities as part of our total business environment.
• Climate change is part of the groupwide process for an annual update of our business strategy with a rolling 3 years forecast for both total energy consumption and the related CO2 emissions. In the course of the annual update process for the business strategy current and potential future climate change opportunities and risks are evaluated and the changes to the business strategy implemented if necessary.

ii) Telenor's business strategy has been influenced by these two aspects:
1) As a result of higher demand for our services, our CO2 emissions have been increasing. Given the international trend to strictly regulate CO2 emissions, our climate change risk exposure is higher the more our CO2 emissions increase. To limit Telenor's risk exposure with regards to climate change regulations, improving energy efficiency and meeting emission reduction targets have therefore become a strategic priority with high management focus.
2) The ICT sector is facing an immense business opportunity to enable GHG emissions abatement to other sectors by offering smart ICT solutions. Unleashing this opportunity of providing ICT solutions to existing and new customers which help them reduce their CO2 emissions has become a strategic focus of top management.

iii) The most important components of the short term (1-3 years) strategy that have been influenced by climate change:
• Telenor Group are challenged by continued growth in its total energy consumption and carbon footprint as the company continues to develop more energy-

demanding mobile broadband services. Telenor's current focus is to improve the efficiency of its networks, as this represents more than 80% of Telenor's total energy consumption.
• Telenor Group's ambition is to stabilise the network energy consumption by 2016. Telenor business units are all undertaking cost- and energy-efficiency initiatives, such as network swaps, sourcing of energy efficient technologies, infrastructure sharing, more energy-efficient data centres and energy measures related to buildings. The increased use of renewable energy sources should also contribute to the reduction of Telenor's carbon footprint.

iv) The most important components of the long term (3+ years) strategy that have been influenced by climate change:
Telenor Group has established long term strategy that focus on the following important components:
• Telenor Group will seek to reduce the carbon intensity of Telenor's global operations by 40% till 2017 compared with 2008.
• Telenor Group's ambition is to stabilise the network energy consumption beyond 2016. Telenor business units are all undertaking cost- and energy-efficiency initiatives, such as network swaps, sourcing of energy efficient technologies, infrastructure sharing, more energy-efficient data centres and energy measures related to buildings. The increased use of renewable energy sources should also contribute to the reduction of Telenor's carbon footprint.
• Telenor sees significant current and long term opportunities in helping our customers to reduce the CO2 emissions and energy costs of their operations. The strategic ambition is based on the increasingly important role of ICT in working towards the prevention of global warming due to the emission of dangerous greenhouse gases. Video conferences, smart building management, cloud computing and smart electrical grids are all examples of ICT solutions that contribute to reduced CO2 emissions.

v) How this is gaining the company strategic advantage over competitors:
• Improving our climate change and energy performance as well as developing opportunities resulting from climate change are key strategic issues for Telenor: Improving our energy and climate change performance reduces our risk exposure towards future climate change or energy regulations and helps us meeting stakeholder expectations; by developing new services which are energy efficient and climate friendly for our customers we can grow our business even further. By improving all of these areas we believe we can gain strategic advantage over our competitors.
• With regard to developing new services, the Telenor Group business strategy states that we see the potential for value-added services to support our core voice and data services, especially in the areas of Machine-to-Machine (M2M) communication which has a significant potential to contribute to the fight the negative impacts of climate change by eliminating the need for physical products or activities through smart solutions and improved efficiency for our customers. Telenor has therefore established a global-focused subsidiary, Telenor Connexion, that is developing M2M related services and business opportunities within the Group. By offering interesting solutions for M2M to our customers, Telenor is well positioned to take competitive advantage in this area.
• In addition, some Telenor Business Units have already started to market a portfolio of sustainable services that enable energy and CO2 savings for our customers, for instance telephone/video conferencing, Unified Communications, server virtualization, and more. This should further improve our strategic advantage.

vi) What have been the most substantial business decisions made:

• Many decisions related to climate change were made during 2013. These include, but are not limited to: Energy efficiency initiatives like network swaps, sourcing of energy efficient technologies, infrastructure sharing and improving the energy efficiency of our data centres & buildings.

• Most important decision in Telenor Group is related to procurement processes with focus on purchase more energy-efficient equipment, resulting in reduced CO2 emissions. Telenor Group requires that a Sustainability Criteria Checklist is used during the procurement process. The Sustainability Criteria Checklist 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.

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Direct engagement with policy makers
Trade associations
Funding research organizations

CC2.3a

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 2°C goal.

CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
GSMA	Consistent	The GSMA represents the interests of mobile operators worldwide. Spanning more than 220 countries, the GSMA unites nearly 800 of the world's mobile operators with 250 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and Internet companies, as well as organisations in industry sectors such as financial services, healthcare, media, transport and utilities. The GSMA has developed whitepapers that demonstrates how the mobile industry plans to lower its greenhouse gas emissions per connection, and the key role that mobile communications can play in lowering emissions in other sectors and industries. It also makes specific policy recommendations for governments and the United Nations Climate Change Conferences. The GSMA states that ICT can play a major role in helping governments address complex challenges such as achieving sustainable economic growth, combating climate change, improving the delivery of healthcare and providing widespread access to broadband. Realising the full potential of mobile communications to help meet societal and economic challenges requires governments and many different industries to work together, engaging in a constructive and continuous dialogue.	Mr. Jon Fredrik Baksaas is the Chairman of the GSMA. He has been President and CEO of Telenor Group since June 2002. 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.
GeSI	Consistent	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 ICT. The GeSI fosters collaborative and innovative approaches to sustainability and supports member initiatives in both developed and developing nations to quickly and effectively respond to issues such as climate change, energy efficiency, e-waste management and resource efficiency, responsible supply chain practices and human rights. GeSi encourages governments to include ICTs and related technologies as key elements of their national climate change policies, across all	Telenor Group is an active members of GeSI and Telenor representatives both participate in specific climate change related working groups as well as influence the long term strategic processes in GeSI's including long term vision and which climate change related issues should be prioritized.

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
		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.	

CC2.3d

Do you publically disclose a list of all the research organizations that you fund?

Yes

CC2.3e

Do you fund any research organizations to produce or disseminate public work on climate change?

Yes

CC2.3f

Please describe the work and how it aligns with your own strategy on climate change

The SINTEF (The Foundation for Scientific and Industrial Research), has been funded by Telenor to assess security threats related to smart meters - electrical meters that enable two-way communication between the household and the utility company.

The SINTEF researchers identified 30 threats and five different ways to attacks smart meters, and will use this information to help prevent these types of attacks in the future. Security of this strategic infrastructure is critical, as smart grids (electrical grids that use information and communication technology to gather and act on information) will play an important role in the realization of the European Union’s 2020 targets for climate and energy. In Norway, smart meters will be installed in all

households by end of 2017. As the utility industry’s key partners, mobile network operators such as Telenor are looking to better understand security and privacy requirements for smart grids (including smart meter infrastructure and smart homes), and are working with the utility industry to find ways that mobile networks can address these requirements.

CC2.3g

Please provide details of the other engagement activities that you undertake

CC2.3h

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?

• All Telenor Group's direct and indirect activities that influence policy on climate change are centrally coordinated and managed by Group Corporate Responsibilty. The process requires the approval from Group Corporate Responsibility for any activites for influencing policies.

• 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.

CC2.3i

Please explain why you do not engage with policy makers

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?

Absolute and intensity targets

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
Abs1	Scope 1+2	100%	0%	2012	1129000	2013	Telenor Group had a target for 2013 to cap the Scope 1+2 CO2 emissions at 1,129,000 tonnes. The actual result for Scope 1+2 emissions in 2013 of 1030000 tonnes CO2 is mainly a result successful energy efficiency measures in our Asian operaions.

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions	Target year	Comment
Int1	Scope 1+2+3	100%	40%	Other: Metric tonnes CO2e per "value added"	2008	749000	2017	In 2008 Telenor announced our strategic climate ambitions on reducing the carbon intensity of our global operations with 40 per cent by 2017, compared to the 2008 level. The carbon intensity is measured by the amount of CO2 emissions per "value added" (expressed as EBITDA + employee costs). The Carbon intensity target includes all business units in Telenor Group except for the 2009-acquisition of Uninor in India. We intend to achieve this target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions	Target year	Comment
								mainly through energy efficiency measures and extended use of sustainable energy sources.

CC3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
Int1	Decrease	20	No change	0	The Carbon intensity target includes all business units in Telenor Group except for the 2009-acquisition of Uninor in India.

CC3.1d

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment
Abs1	100%	100%	Telenor Group had a target for 2013 to cap the Scope 1+2 CO2 emissions at 1,129,000 tonnes. The actual result for Scope 1+2 emissions in 2013 of 1030000 tonnes CO2 is mainly a result successful energy

ID	% complete (time)	% complete (emissions)	Comment
			efficiency measures in our Asian operaions.
Int1	56%	8%	The Carbon intensity target includes all business units in Telenor Group except for the 2009-acquisition of Uninor in India.

CC3.1e

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

CC3.2

Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

CC3.2a

Please provide details of how the use of your goods and/or services directly enable GHG emissions to be avoided by a third party

Introduction:
Telenor took part in a new ICT industry report, SMARTer 2020, which provided analysis of how smart use of communication technology in many parts of society can contribute to a 16.5% reduction in global emissions of greenhouse gases by 2020. The report demonstrates the increasingly important role of ICT in working towards the prevention of global warming due to the emission of dangerous greenhouse gases. Video conferences, smart building management, cloud computing and smart electrical grids are all examples of ICT solutions that contribute to reduced CO2 emissions. Of the many solutions Telenor can provide to its customers, below one example for smart cities is described.

Smart City example

How emissions are avoided:
The city of Oslo has adopted a smart lighting solution using mobile Machine-to-Machine communication technology from Telenor to control the city's 80,000 street lights. This will reduce the city's wasted electricity and related CO2 emissions and save up to 50% in their annual budget.

An estimate of the amount of emissions that were avoided over time:
When the street light project is fully developed, Oslo City has estimated that they will annually save 25 GWh in electricity consumption which results in a reduction in CO2 emissions by 2,700 tonnes per year.

The methodology, assumptions, emission factors and global warming potentials used for our estimations:
Methodology: We have calculated the annual electricity consumption of the street lights without Telenor's smart lighting solution, i.e. before we have implemented the the Machine-to-Machine communication technology. We then compared it with the annual electricity consumption of the street lights with Telenor's smart lighting solution implemented. The resulting difference of 25 GWh of electricity consumption was then multiplied with the emission factor for the electricity consumed by the city of Oslo.

Assumptions: The CO2 emission savings are calculated on a like-to-like comparison, i.e. we assumed that for both years (before and after the implementation of our smart lighting solution) there was the same need of lighting. No further assumptions were needed.
Emission factors: 0.108 kg CO2/kWh of electricity consumed.
Global warming potentials: GWP of CO2 = 1.

Are we considering generating CERs or ERUs within the framework of CDM or JI (UNFCCC)?
No, we are currently not considering generating CERs or ERUs (but have been in the past generated to a limited degree CERs within the framework of CDM).

CC3.3

Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and implementation phases)

Yes

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	2	0
To be implemented*	2	50000
Implementation commenced*	0	0
Implemented*	6	58550
Not to be implemented	0	0

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative, years	Comment
Transportation: use	In 2013, more than 120,000 meetings (an increase of 20% compared to 2012) were carried out in Telenor’s global organisation using video conferencing and virtual meeting solutions instead of actual travel. Scope: 3. Voluntary initiative.	950	4000000	400000	<1 year	3-5 years	
Energy efficiency: Processes	Emissions reduction activities include energy efficiency measures like new network sharing, sourcing of increased energy efficient technologies through our procurement processes as well as large-scale installation of conventional Free Cooling Units (FCU) to replace air-	57600	10000000	15000000	1-3 years	5-10 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative, years	Comment
	conditioners in base station cooling in our Asian operations.Scope: 1+2. Voluntary initiative.						

CC3.3c

What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for energy efficiency	All our business units are focusing on cost efficient choices of energy efficiency initiatives; network swaps, sourcing of energy efficient technologies, infrastructure sharing and more energy efficient data centres & buildings.
Dedicated budget for other emissions reduction activities	In addition to energy efficiency measures on existing sites, Telenor Group supports deployment of new network equipment powered by renewable energy sources. We have already rolled out more than 100 base stations that run on solar, wind or hybrid energy sources.
Internal incentives/recognition programs	Group's long term Carbon intensity index and business units' medium term Energy Efficiency targets are part on the key Non-Financial KPIs throughout Telenor Group. Direct monetary rewards related to climate change initiatives and achievements in their climate change/operational efficiency programmes could be provided to managers - both on Group level as well as in local business units.
Financial optimization calculations	Climate targets incorporated into our business strategy: Both the Group's long term Carbon intensity index as well as the business units' medium term Energy Efficiency targets are part on the key Non-Financial KPIs throughout Telenor Group.

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

Further Information

Page: CC4. Communication

CC4.1

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	Page/Section reference	Attach the document
In mainstream financial reports (complete)	pages 16, 124, 125	https://www.cdp.net/sites/2014/35/18435/Investor CDP 2014/Shared Documents/Attachments/CC4.1/Telenor-Group-Annual-Report-2013.pdf
In voluntary communications (complete)	Company web pages - sustainability reporting section (http://www.telenor.com/sustainability/reporting/key-figures/climate-change/)	https://www.cdp.net/sites/2014/35/18435/Investor CDP 2014/Shared Documents/Attachments/CC4.1/Telenor Climate Change performance figures.pdf

Further Information

For further information on Telenor's response to climate change and GHG emissions performance - please visit: http://www.telenor.com/sustainability/environment-and-climate/

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation
Risks driven by changes in physical climate parameters
Risks driven by changes in other climate-related developments

CC5.1a

Please describe your risks driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
International agreements	Telenor faces an indirect risk of tightening climate change regulations in the energy sector: International agreements try to limit Greenhouse Gases from the energy sector including electricity generation. Increased	Increased operational cost	3 to 6 years	Indirect (Supply chain)	More likely than not	Low	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 calculated our possible carbon costs exposure in	Three methods help us managing the risk of tightening international agreements on climate change: 1) Energy efficiency improvements: Telenor's key method for reducing our exposure to climate related regulatory risks is to reduce our CO2 emissions by	We estimate total management costs (including monitoring and active engagement) associated with following up climate change related regulatory risks to be annually approx. 1 million USD in the

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	regulation in the energy sector translates into higher operational costs for companies in this sector which in the end results in higher prices for the consumer of the energy. As an ICT company, Telenor is heavily dependent on electricity; higher electricity prices as a result of increased climate change regulations in the energy sector therefore present an indirect risk to Telenor. How the risk affects Telenor specifically: Increased electricity costs due to climate change regulations will have a direct impact on Telenor's operational costs.						relation to increased climate change regulations from 2014 onwards under different carbon price scenarios (PointCarbon, OECD, DEFRA's shadow price). We have estimated these potential financial implications to be less than 1% of Telenor Group's total operational costs.	improving the energy efficiency in all our business units - such as network modernisation and integration of energy requirements in procurement processes. 2) Monitoring: Telenor is closely monitoring the policy debate concerning regulatory frameworks in the EU as well as in other parts of the world. This allows Telenor to anticipate regulatory trends which can help to reduce the magnitude of climate related regulatory risks. One example: Telenor is monitoring the policy debate concerning EU emissions trading system (EU ETS) –	years towards 2020.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	However, more than 90 % of Telenor's CO2 emissions come from our Asian operations; as the energy sectors in Asian countries have not been subject to increased climate change regulations through international agreements, the impact on Telenor will be relatively low.							this is done both with own initiatives through our Brussels' office or via initiatives from organisations like GSMA or GeSi. 3) Risk mitigation: 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. This is done both with own initiatives through our Brussels' office or via initiatives from organisations like GSMA or GeSi.	

CC5.1b

Please describe your risks that are driven by change in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Sea level rise	Description of risk: 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	Increased capital cost	>6 years	Direct	Unlikely	Medium	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 15 million USD.	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. 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	We estimate total consultant and management costs for the Climate Impact Risk Analysis to be approximately 250000 USD. Further monitoring and active management associated with the following up on climate change related to risks of increased sea levels to be annually 200000 USD in the years towards 2020.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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 is estimated to be							example in Bangladesh, Telenor (Grameenphone) operates 6600 base stations (BS) in the country and where 45 % of these BS being located between 1m and 5m above sea level. Most of the equipment rooms in the Base Stations (BS) have been built above the local highest flood level. All the BS sites have batteries with 10 hours capacity as backup, and an additional 37 % have generators with 125 hours of operation with on site fuel stock. All the antenna towers are designed to withstand wind speeds above 118 km/h at maximum loading. With the measures taken we 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.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	more than 50% of our assets in Bangladesh.								
Other physical climate drivers	Description of risk: Telenor 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. This directly translates into a higher risk for our network infrastructure and building in the Nordic countries. How the risk is affecting Telenor: In Denmark, there is likelihood of more than once every 10 years with damage to transmission towers and	Increased capital cost	>6 years	Direct	Unlikely	Low	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. This could result in financial impacts estimated to be in the order of 2 million USD.	The management method consists in risk identification whereby using the so gained knowledge for improvements in climate resiliance and for investment decisions. 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 from severe winter and related winter storms 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 reactively with regard to protecting existing infrastructure. When planning new investments in areas which are exposed to severe winters, the	We estimate total consultant and management costs for the Climate Impact Risk Analysis to be approximately 250000 USD. Further monitoring and active management associated with the following up on climate change related to risks of increased sea levels to be annually 200000 USD in the years towards 2020.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	antennas caused by heavy wind and storms due to climate change to 5-30% of Telenor's assets in the country and long-term disruptions of the service delivery. This adds up to increased costs due to damage of infrastructure triggering early renewal of infrastructure.							selection process for material applied in the network infrastructure and buildings takes into account a high degree of resilience against severe winters and winter storms. 99% of the base stations (BSs) have battery backup of 4 hours, while 1% also have generators with 96 hours of operation with on site fuel stock. Further, 99% of the antenna towers can withstand wind speeds up to 100 km/h, while the remaining cannot take more than 75 km/h. All the BSs have alarms connected to the Operational Management Centre. With the measures taken we believe we could reduce the risk by lowering the negative impacts of severe winters in exposed countries significantly. The residual risk of interruptions to our business activities due to severe winter	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								seasons over the next 10 years is very small.	

CC5.1c

Please describe your risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
Changing consumer behaviour	Description of the risk: Telenor faces the risk that consumers 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. If a company fails to demonstrate its engagement to fight the negative consequences of climate change,	Reduced demand for goods/services	>6 years	Direct	About as likely as not	Low	Telenor expects the climate change related consumer awareness will grow in the following years, and there is a risk of reduced demand for services that are not particularly climate friendly. We have estimated these potential financial implications to	To minimise our environmental impact, Telenor business units have undertaken energy-efficiency initiatives, such as network swaps, sourcing of energy efficient technologies, infrastructure sharing, more energy-efficient data centres, energy measures related to buildings and substitution to renewable energy. Large-scale network upgrades resulted in energy efficiency	We estimate the costs associated with active management of climate change related consumer trends to be annually 750000 USD in the years towards 2020.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
	consumer will punish this company by not buying its product any longer and switching to products which are more climate friendly or which are produced by a company that demonstrates a high engagement towards fighting climate change. This results directly in lower revenues. How this risk is affecting Telenor: The demands of our customers are clearly changing. They expect Telenor not only to provide highly energy efficient services and products but also to help our customers to reduce their own energy consumption and related GHG emissions. If Telenor cannot satisfy these new needs of our customers such as videoconferencing, it will result in customers turning to competitors of ours.						be less than 1% of Telenor Group's total revenues.	improvements of more than 30%. In Norway, as part of the mobile network swap, energy consumption will be reduced by around 15 GWh per annum, which is comparable to the consumption of 800 Norwegian homes. Telenor Group Asian operations carried out a large-scale installation of conventional Free Cooling Units (FCU) to replace air-conditioners in base station cooling. Approximately 16,000 FCUs have been installed in India, Pakistan, Bangladesh, Thailand and Malaysia, with annual savings of 135 GWh of electricity equalling 106,000 tCO2. Furthermore, we are monitoring climate change related consumer trends. Telenor has	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
	If Telenor does not have a strategy for energy efficiency, energy savings and if consumer's perception of our ability to reduce energy consumption and related GHG emissions in other sectors of society, this can lead to a negative image of the company; a negative image of Telenor could result in customers to switch to one of our competitors which of course affects our revenues. Additional impacts of failing the needs of our consumers demand for energy efficient products could also lead to government and NGO's questioning our policies and strategies on energy efficiency and carbon emissions. From the government side this could trigger an increase in both climate change							entered into a long-term research collaboration with SINTEF – the largest independent research organisation in Scandinavia. Identified trends in consumer changes due to climate change such as smart communication have resulted in the development of new services that enable energy and CO2 savings for their customers, for instance telephone/video conferencing, Unified Communications, server virtualization, and more. With these methods we have significantly reduced the risk of changing consumer behavior.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
	regulations and reporting needs. Increased exposure to NGOs results in higher administrative costs and could eventually result in a reputational risk if one of the NGOs is not satisfied.								

CC5.1d

Please explain why you do not consider your company to be exposed to risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1e

Please explain why you do not consider your company to be exposed to risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1f

Please explain why you do not consider your company to be exposed to risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

Have you identified any climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation
Opportunities driven by changes in physical climate parameters
Opportunities driven by changes in other climate-related developments

CC6.1a

Please describe your opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other regulatory drivers	The EU has set itself ambitious energy and climate change objectives for 2020. Smart meters are one	New products/business services	3 to 6 years	Direct	Very likely	Low-medium	In 2013, Telenor Group had total revenues from the M2M area of	Following methods help us manage this opportunity: 1) Telenor's research and	The cost of management in this case are our spendings for innovation. In 2013, Telenor

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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. All EU member states have produced an implementation plan and timetable for the roll-out of smart metering systems. Smart metering therefore presents a new market with both commercial and energy efficiency improvement opportunities. European						close to USD 100 million, including smart meter related network connectivity services. Telenor Connexion is a wholly owned subsidiary of the Telenor Group. The company is completely dedicated to business solutions within machine-to-machine (M2M) – and has had solid revenues past years through providing services for connection and operation of almost 1 million smart electricity metres in Sweden	innovation is focused on the optimization of the network infrastructure for machine to machine (M2M). Telenor is actively contributing to the GSMA Embedded Mobile Initiative and participating in leading international research activities within M2M. The Smart Metering market is rapidly developing into a very interesting sector of Telenor's M2M-business. We offer internationally dedicated M2M services	spent approximately 480 million USD on innovation, of which 15% were costs related to research and development. This was spent on innovation, spanning from state-of-the-art infrastructure to new and innovative services and business processes.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	utilities are deploying smart meters in order to increase operational efficiency, improve energy efficiency, and meet a range of new customer requirements and market opportunities. 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 machine to machine (M2M) connectivity . A range of assets in the possession of the mobile industry are uniquely suited to providing such platform for the Smart						since 2009.	based on industry expertise from key segments such as automotive, security, utility, asset management and consumer electronics. 2) Telenor has research collaboration with SINTEF(the largest independent research organisation in Scandinavia) and as a part of this research collaboration, Telenor has contributed to the foundation of the new The Norwegian Smartgrid Centre in Trondheim – with ambitions to strengthen Norwegian	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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 already a market leader in machine to machine (M2M) connectivity and the strategic ambition is to develop solid positions through investments in M2M service providers and to develop businesses to be core in the future. Telenor is well positioned to take a fair share							industry position within Smart Grids. In Norway, smart meters will be installed in all households by end of 2016. As the utility industry's key partners, mobile network operators such as Telenor are looking to better understand security and privacy requirements for smart grids (including smart meter infrastructure and smart homes), and are working with the utility industry to find ways that mobile networks can address these requirements.	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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 recent reports published by Berg Insight, EU28+2 has 281 million metered electricity customers and the annual demand for electricity meters for new installations and replacements is in the range of 12–17 million units. The installed base of smart electricity meters is forecasted to grow at a								

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	compound annual growth rate of 18 percent between 2013 and 2019 to reach 170 million units at the end of 2019.								

CC6.1b

Please describe the opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other physical climate opportunities	Description of opportunity: 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	Increased demand for existing products/services	3 to 6 years	Direct	More likely than not	Low	Telenor's ambition is to become a market leader in exploring how new technology trends can impact our industry and to develop business opportunities related to smart working	Following methods help us manage these opportunities: 1) 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	In 2013, Telenor spent approximately 480 million USD on innovation, of which 15% were costs related to research and development including innovation projects with Norwegian

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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. How this opportunity is affecting Telenor: With the increased likelihood of interruptions of business operations due to more frequent and more extreme weather patterns, an increasing						and smart living. Telenor revenues from these business opportunities are currently less than 1% of our total revenues, but it is expected that the percentage will increase in the coming years.	example, with cloud-based solutions, employees can access important files from any location. 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 clients. Telenor has an agreement with Microsoft that gives Telenor the right to sell licenses for Office 365 as well as the company's other services. Telenor is, therefore, one of the first telecom operators in the world to offer a telephony service within Lync Online from Microsoft Office 365. 2) Research and innovation collaboration: We create new business	University of Science and Technology, Trondheim, Norway (NTNU. Annual management cost for Telenor Group related to relevant industrial partnerships amounts to around 1 million dollars.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	number of companies is looking for services that allows their employees to work independently. This leads to an increase in the demand for alternative ICT solutions to travel and commuting traffic. Telenor is well positioned to offer green ICT services that allow people to work from anywhere which makes them less dependent from climate catastrophes. For example, during the hurricane Katrina, thousands of people could not use public infrastructure any longer. However, many							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. Telenor co-operates with Norwegian University of Science and Technology, Trondheim, Norway (NTNU) on these projects.	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	people were able to keep up with work using services such as teleworking as offered by Telenor.								

CC6.1c

Please describe the opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Changing consumer behaviour	Description of Opportunity: Both consumers and business customers have increased expectations to companies to operate in a sustainable way – and they want products and services from Telenor that help them to reduce their own energy	New products/business services	3 to 6 years	Direct	Likely	Low	Telenor revenues from these business opportunities are currently less than 1% of our total revenues, but it is expected that the percentage will increase in the coming years.	Following methods help us manage these opportunities: 1) Telenor has a long-term research collaboration with SINTEF – the largest independent research organisation in Scandinavia. Our industry and competitive	The cost of management in this case are our spendings for innovation and management cost related to developingof industrial partnerships. In 2013, Telenor spent approximately 480 million USD on innovation, of which 15% were

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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							environment are changing and this research collaboration means that we are renewing our approach to innovation. As a part of the SINTEF-Telenor research collaboration, Telenor are contributing to the new The Norwegian Smartgrid Centre in Trondheim – with ambitions to strengthen Norwegian industry position within Smart Grids through “lighthouse” projects with international visibility. In addition, Telenor is also contributing to GSMA’s cross-industry initiative on Connected Living with one of the work-streams focusing on Smart	costs related to research and development. Annual management cost for Telenor Group related to the Norwegian Smartgrid Centre and GSMA’s cross-industry initiative on Connected Living amounts to less than 100,000 USD.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	can possibly win new clients and make sure the existing client base is satisfied. As shown in the GeSI SMARTer 2020-report (2012) the ICT sector is facing an immense business opportunity to enable GHG emissions abatement to other sectors by offering smart ICT solutions. The SMARTer 2020-report estimates that the ICT industry could contribute to reduce global emissions of GHG by as much as 16 % by 2020. Video conferences, smart building management, cloud computing and smart electrical grids are all examples of ICT solutions							Cities/Smart Grids. 2) Machine-to-Machine (M2M) technology is at the heart of green communication technology, as smart systems can enable energy-efficiency and thereby reduce GHG emissions in energy grids, traffic management, buildings and logistics. Telenor's research and innovation is focused on the optimization of the network infrastructure for M2M.	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	from Telenor that contribute to reduced carbon emissions. The changing consumer behavior is requesting new services from ICT companies that allow the consumers to reduce their GHG emissions, this includes smart services but also machine-to-machine innovations.								

CC6.1d

Please explain why you do not consider your company to be exposed to opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e

Please explain why you do not consider your company to be exposed to opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1f

Please explain why you do not consider your company to be exposed to opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Tue 01 Jan 2008 - Wed 31 Dec 2008	160000	572000

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference

CC7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference

Further Information

Page: CC8. Emissions Data - (1 Jan 2013 - 31 Dec 2013)

CC8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Financial control

CC8.2

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e

296017

CC8.3

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e

721240

CC8.4

Are there are 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

CC8.4a

Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of Scope 2 emissions excluded from this source	Explain why the source is excluded

CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data

Scope 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data
More than 5% but less than or equal to 10%	Assumptions Metering/ Measurement Constraints Data Management	Use of data sources/data quality/calculation methods for basic input data (diesel consumption/fuel consumption etc) are main sources of uncertainties.	More than 2% but less than or equal to 5%	Assumptions Metering/ Measurement Constraints Data Management	High number of data sources with variable data quality (electricity consumption) is the main source of uncertainty

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

Third party verification or assurance complete

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2014/35/18435/Investor CDP 2014/Shared Documents/Attachments/CC8.6a/Annex C_cdp-verification-Telenor 2014_verification statement_20140619.pdf	Pages 1, 2, 3	ISO14064-3	100

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission

CC8.7

Please indicate the verification/assurance status that applies to your reported Scope 2 emissions

Third party verification or assurance complete

CC8.7a

Please provide further details of the verification/assurance undertaken for your Scope 2 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 2 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2014/35/18435/Investor CDP 2014/Shared Documents/Attachments/CC8.7a/Annex C_cdp-verification-Telenor 2014_verification statement_20140619.pdf	Pages 1, 2, 3	ISO14064-3	100

CC8.8

Please identify if any data points other than emissions figures have been verified as part of the third party verification work undertaken

Additional data points verified	Comment
No additional data verified	

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2013 - 31 Dec 2013)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
Norway	10194
Denmark	1355
Sweden	767
Hungary	1428
Serbia	1611
Montenegro	242
Bulgaria	1430
Thailand	4667
Malaysia	19576
Bangladesh	27276
Pakistan	110574
India	116897

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By activity

CC9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)

CC9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude

CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)

CC9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)
Networks	248468
Buildings	15197
Transport	32352

CC9.2e

Please break down your total gross global Scope 1 emissions by legal structure

Legal structure	Scope 1 emissions (metric tonnes CO2e)

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2013 - 31 Dec 2013)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted for CC8.3 (MWh)
Norway	7694	420630	0
Denmark	26432	69270	0
Sweden	4828	274470	69800
Hungary	15035	56130	10000
Serbia	27189	36390	0
Montenegro	2631	6940	0
Bulgaria	14078	26340	0
Thailand	164936	318620	210
Malaysia	104586	158950	490
Bangladesh	95226	165060	2000
Pakistan	71009	160690	0
India	187596	205960	0

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By activity

CC10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 emissions (metric tonnes CO2e)

CC10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2 emissions (metric tonnes CO2e)

CC10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2 emissions (metric tonnes CO2e)
Networks	683899

Activity	Scope 2 emissions (metric tonnes CO2e)
Buildings	37341
Transport	0

CC10.2d

Please break down your total gross global Scope 2 emissions by legal structure

Legal structure	Scope 2 emissions (metric tonnes CO2e)

Further Information

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

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

CC11.2

Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Fuel	1315000

Energy type	MWh
Electricity	1851030
Heat	28240
Steam	0
Cooling	20180

CC11.3

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Diesel/Gas oil	1059000
Natural gas	152000
Other: Petrol	25000
Aviation gasoline	70000
Biogasoline	8000
Biodiesels	1000

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the Scope 2 figure reported in CC8.3

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment
Tracking instruments, Guarantees of Origin	69800	Certified electricity purchase from Affärsverken in Sweden.

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment
Tracking instruments, Guarantees of Origin	10000	Certified renewable energy purchase in Hungary
Non-grid connected low carbon electricity generation owned by company, no instruments created	210	Company-owned solar-based electricity production in Thailand.
Non-grid connected low carbon electricity generation owned by company, no instruments created	490	Company-owned solar-based electricity production in Malaysia.
Non-grid connected low carbon electricity generation owned by company, no instruments created	2000	Company-owned solar-based electricity production in Bangladesh.

Further Information

Page: CC12. Emissions Performance

CC12.1

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

Decreased

CC12.1a

Please 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

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	5.1	Decrease	Emissions reduction activities include energy efficiency measures like network sharing, sourcing of energy efficient technologies through our procurement processes as well as the additional use of renewable energy sources like national electricity purchase with certicicate and local off-grid electricity production by solar-panels. solar

Reason	Emissions value (percentage)	Direction of change	Comment
Divestment			
Acquisitions	1.5	Increase	Telenor Group acquired in August 2013 the mobile operator Globul in Bulgaria.
Mergers			
Change in output	5.0	Decrease	Telenor's operation in India was scaled down during 2013 from 9 to 6 geographical telecom circles.
Change in methodology			
Change in boundary			
Change in physical operating conditions			
Unidentified			
Other			

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.000057	metric tonnes CO2e	unit total revenue	9.8	Decrease	The decrease in this intensity figure is a result of our emission reduction activities, a reduction in output and an increase in revenues. The intensity figure is measured in metric tonnes of CO2 per unit total revenue in USD. The total revenues has changed from 17.5 billion USD in 2012 to 17.7 billion USD in 2013 (negative impact bu currency fluctuations). The Scope 1 and 2 emissions decreased by 9.9 % to 1.017 million tonnes in 2013 due to the combined reasons given in the table in Question 12.1.a.

CC12.3

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
29.9	metric tonnes CO2e	FTE employee	11.7	Decrease	The decrease in this intensity figure is a result of our emission reduction activities, a reduction in output and an increase in FTE.The intensity figure is measured in metric tonnes of CO2 per number of FTE.The number of FTE changed from 32,900 in 2012 to 34,000 in 2013. The Scope 1 and 2 emissions decreased by 9.9 % to 1.017 million tonnes in 2013 due to the combined reasons given in the table in Question 12.1.a.

CC12.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.006128	metric tonnes CO2e	Other: Customer	18.7	Decrease	The decrease in this intensity figure is a result of our emission reduction activities, a reduction in output and an increase in the number of customers.The intensity figure is measured in metric tonnes of CO2 per number of customers.The number of customers changed from 148 million in 2012 to 166 million in 2013. The Scope 1 and 2 emissions decreased by 9.9 % to 1.017 million tonnes in 2013 due to the combined reasons given in the table in Question 12.1.a.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

No, and we do not currently anticipate doing so in the next 2 years

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership

CC13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

CC13.2

Has your organization originated any project-based carbon credits or purchased any within the reporting period?

No

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using primary data	Explanation
Purchased goods and services	Relevant, not yet calculated				
Capital goods	Relevant, not yet calculated				
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, not yet calculated				

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using primary data	Explanation
Upstream transportation and distribution	Relevant, calculated	6589	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; petrol, diesel, LPG etc.		
Waste generated in operations	Relevant, not yet calculated				
Business travel	Relevant, calculated	11606	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.		
Employee commuting	Relevant, not yet calculated				
Upstream leased assets	Not relevant, explanation provided				Any upstream leased assets are already included in our scope 1 or scope 2 inventory.
Downstream transportation and distribution	Not relevant, explanation provided				It does not contribute significantly to Telenor's anticipated scope 3 emissions, since Telenor in general has limited transportation of sold products to retailers and end consumers.
Processing of sold products	Not relevant, explanation provided				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	Relevant, not yet calculated				
End of life treatment of sold	Relevant, calculated	226	The calculated emissions only include GHG emissions in relation to the mobile phones recollected via our initiative.		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using primary data	Explanation
products			The figure does not represent the entire scope of all our sold products yet. In 2013, 226,000 customer mobile phones and batteries were collected by Telenor for recycling or reuse. Calculation methodology: Using conversion factor of 1 kg CO2e per mobile phone/battery for scope 3 emissions related to "End of life treatment".		
Downstream leased assets	Not relevant, explanation provided				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	Not relevant, explanation provided				Any franchise is included in a our scope 1 or scope 2 inventory.
Investments	Not relevant, explanation provided				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)					
Other (downstream)					

CC14.2

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

Third party verification or assurance complete

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2014/35/18435/Investor CDP 2014/Shared Documents/Attachments/CC14.2a/Annex C_cdp-verification-Telenor 2014_verification statement_20140619.pdf	pages 1, 2, 3	ISO14064-3	100

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Business travel	Acquisitions	16	Increase	More travel needed due to increased business management follow-up of operational and strategic issues, including Strategic issues related to our Indian operations and our acquisitions in Myanmar and Bulgaria.
Business travel	Emissions reduction activities	8.8	Decrease	In 2013, more than 120,000 Meetings (20% more compared to 2012)were carried out in Telenor's global organisation using video conferencing and virtual meeting solutions instead of actual travel.
Upstream transportation & distribution	Emissions reduction activities	10.2	Decrease	More efficient use of on ground vehicles; better transportation systems and more carbon effective vehicles.
End-of-life treatment of sold products	Change in output	30	Decrease	The calculated emissions only include GHG emissions in relation to the mobile phones recollected via our initiative. The figure does not represent the entire scope of all our sold products yet. Telenor has ongoing mobile recycling initiatives running in nine of 12 mobile operations; Telenor Hungary, Telenor Serbia, Telenor Montenegro, Globul in Bulgaria, DiGi in Malaysia, dtac in Thailand, Telenor Sweden, Telenor Denmark and Telenor Norway. In 2012, Telenor recycled 323,000 mobile handsets/batteries compared to 226,000 mobile handsets/batteries in 2013.

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, our suppliers

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

Methods in use to engage with the value chain:
Telenor Group's ambition is to stabilise the network energy consumption by 2015. Telenor business units have undertaken cost- and energy-efficiency initiatives,

such as network swaps, sourcing of energy efficient technologies, infrastructure sharing, more energy-efficient data centres and energy measures related to buildings. The increased use of renewable energy sources should also contribute to the reduction of Telenor's carbon footprint. Telenor's key environmental focus related to procurement processes is to purchase more energy efficient equipment resulting in reduced CO2 emission. But we also have focus on other environmental aspects like waste management and hazardous substances in purchased goods.

Strategy for prioritizing engagements and how success is measured:
In all procurement processes in Telenor Group where the signed contract is above 250.000 USD of total value, a specified sustainability criteria checklist shall be in use:
• The total checklist includes the involvement of Environment Coordinator during the Telenor Sourcing Process and the evaluation of Vendors' potential sustainability issues related to Environmental Management System, Energy Efficiency, Waste management and Hazardous substances.
• Potential suppliers shall describe if their services/products is compliant with relevant eco-labels or energy efficiency standards and energy cost as a part of Total Cost of Ownership analysis (TCO).

How success is measured:
Telenor Group requires that a Sustainability Criteria Checklist is used during the procurement process. The Sustainability Criteria Checklist 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. We report on the proportion of all signed contracts above a total value of USD 250,000 – where a specified set of sustainability criteria during the procurement process has been checked out.

In 2013, the sustainability criteria were used in 53% procurement processes throughout the business units in Telenor Group.

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend	Comment
100	50%	During 2013, in 138 of 264 signed contracts with contract value larger than 250,000 USD a specified set of sustainability criteria have been used during the sourcing process. This scale of engagement involves roughly 100 of our suppliers and reflects about 50 % of our total spend. The Sustainability Criteria Checklist 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

CC14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details
Stimulating innovation of new products	Telenor's key climate focus is to stabilize our energy consumption by improving the energy efficiency of our networks, as these represent around 80% of our total energy consumption and close to 90% of our total carbon emissions. Our main ambition related the procurement processes is to purchase more energy-efficient equipment, and we are stimulating our suppliers' innovation processes related to energy-efficiency of their products and cost-effective use of renewable energy sources.

CC14.4d

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Jon Erik Haug	Executive Vice President and member of Telenor Group Executive Management	Board/Executive board

Further Information

Module: ICT

Page: ICT1. Data center activities

ICT0.1a

Please identify whether "data centers" comprise a significant component of your business within your reporting boundary

ICT1.1

Please provide a description of the parts of your business that fall under “data centers”

ICT1.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the data centers component of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method

ICT1.3

What percentage of your ICT population sits in data centers where Power Usage Effectiveness (PUE) is measured on a regular basis?

Percentage	Comment

ICT1.4

Please provide a Power Usage Effectiveness (PUE) value for your data center(s). You can provide this information as (a) an average, (b) a range or (c) by individual data center - please tick the data you wish to provide (tick all that apply)

ICT1.4a

Please provide your average PUE across your data centers

Number of data centers	Average PUE	% change from previous year	Direction of change	Comment

ICT1.4b

Please provide the range of PUE values across your data centers

Number of data centers	PUE Minimum Value	% change of PUE Minimum Value from previous year	PUE Maximum Value	% change of PUE Maximum Value from previous year	Direction of change	Comment

ICT1.4c

Please provide your PUE values of all your data centers

Data center reference	PUE value	% change from previous year	Direction of change	Comment

ICT1.5

Please provide details of how you have calculated your PUE value

ICT1.6

Do you use any alternative intensity metrics to assess the energy or emissions performance of your data center(s)?

ICT1.6a

Please provide details on the alternative intensity metrics you use to assess the energy or the emissions performance of your data center(s)

ICT1.7

Please identify the measures you are planning or have undertaken in the reporting year to increase the energy efficiency of your data center(s)

Status in reporting year	Energy efficiency measure	Comment

ICT1.8

Do you participate in any other data center efficiency schemes or have buildings that are sustainably certified or rated?

ICT1.8a

Please provide details on the data center efficiency schemes you participate in or the buildings that are sustainably certified or rated

Scheme name	Level/certification (or equivalent) achieved in the reporting year	Percentage of your overall facilities to which the scheme applies

ICT1.9

Do you measure the utilization rate of your data center(s)?

ICT1.9a

What methodology do you use to calculate the utilization rate of your data center(s)?

ICT1.10

Do you provide carbon emissions data to your clients regarding the data center services they procure?

ICT1.10a

How do you provide carbon emissions data to your clients regarding the data center services they procure?

ICT1.11

Please describe any efforts you have made to incorporate renewable energy into the electricity supply to your data center(s) or to re-use waste heat

Further Information

Page: ICT2. Provision of network/connectivity services

ICT0.1b

Please identify whether "provision of network/connectivity services" comprises a significant component of your business within your reporting boundary

ICT2.1

Please provide a description of the parts of your business that fall under "provision of network/connectivity services"

ICT2.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the provision of network/connectivity services component of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method

ICT2.3

Please describe your gross combined Scope 1 and 2 emissions or electricity use for the provision of network/connectivity services component of your business as an intensity metric

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change

ICT2.4

Please explain how you calculated the intensity figures given in response to Question ICT2.3

ICT2.5

Do you provide carbon emissions data to your clients regarding the network/connectivity services they procure?

ICT2.5a

How do you provide carbon emissions data to your clients regarding the network/connectivity services they procure?

Further Information

Page: ICT3. Manufacture or assembly of hardware/components

ICT0.1c

Please identify whether "manufacture or assembly of hardware/components" comprises a significant part of your business within your reporting boundary

ICT3.1

Please provide a description of the parts of your business that fall under "manufacture or assembly of hardware/components"

ICT3.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the manufacture or assembly of hardware/components part of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method

ICT3.3

Please identify the percentage of your products meeting recognized energy efficiency standards/specifications by sales weighted volume (full product range)

Product type	Standard (sleep mode)	Percentage of products meeting the standard by sales volume (sleep mode)	Standard (standby mode)	Percentage of products meeting the standard by sales volume (standby mode)	Standard (in use mode)	Percentage of products meeting the standard by sales volume (in use mode)	Comment

ICT3.4

Of the new products released in the reporting year, please identify the percentage (as a percentage of all new products in that product type category) that meet recognized energy efficiency standards/specifications

Product type	Standard (sleep mode)	Percentage of new products meeting the standard (sleep mode)	Standard (standby mode)	Percentage of new products meeting the standard (standby mode)	Standard (in use mode)	Percentage of new products meeting the standard (in use mode)	Comment

ICT3.5

Please describe the efforts your organization has made to improve the energy efficiency of your products

ICT3.6

Please describe the GHG emissions abatement measures you have employed specifically in your ICT manufacturing operations

ICT3.7

Do you provide carbon emissions data to your clients regarding the hardware/component products they procure?

ICT3.7a

How do you provide carbon emissions data to your clients regarding the hardware/component products they procure?

Further Information

Page: ICT4. Manufacture of software

ICT0.1d

Please identify whether "manufacture of software" comprises a significant component of your business within your reporting boundary

ICT4.1

Please provide a description of the parts of your business that fall under "manufacture of software"

ICT4.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the software manufacture component of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method

ICT4.3

Please describe your gross combined Scope 1 and 2 emissions for the software manufacture component of your business in metric tonnes CO2e per unit of production

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change

ICT4.4

What percentage of your software sales (by volume) is in an electronic format?

ICT4.5

Do you provide carbon emissions data to your clients regarding the software products they procure?

ICT4.5a

How do you provide carbon emissions data to your clients regarding the software products they procure?

Further Information

Page: ICT5. Business services (office based activities)

ICT0.1e

Please identify whether "business services (office based activities)" comprise a significant component of your business within your reporting boundary

ICT5.1

Please provide a description of the parts of your business that fall under "business services (office based activities)"

ICT5.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the business services (office based activities) component of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method

ICT5.3

Please describe your gross combined Scope 1 and 2 emissions for the business services (office based activities) component of your business in metric tonnes per square meter

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change

ICT5.4

Please describe your electricity use for the provision of business services (office based activities) component of your business in MWh per square meter

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change

Further Information

Page: ICT6. Other activities

ICT0.1f

Please identify whether "other activities" comprise a significant component of your business within your reporting boundary

ICT6.1

Please provide a description of the parts of your business that fall under "other"

ICT6.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the identified other activity component of your business

Activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method

ICT6.3

Please describe your gross combined Scope 1 and 2 emissions for your defined additional activity using an appropriate activity based intensity metric

Activity	Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change

ICT6.4

If appropriate, please describe your electricity use for your defined additional activity using an appropriate activity based intensity metric

Activity	Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change

Further Information

CDP 2014 Investor CDP 2014 Information Request