CLIMATE RESILIENCE

Task Force on Climate-related Financial Disclosures (TCFD) Aligned Report 2023

A FOREWORD FROM OUR LEADERSHIP

Climate change impacts all of us, particularly the most vulnerable populations and ecosystems.

Identifying and managing climate-related risks is crucial for developing robust mitigation strategies and enhancing business resilience. Conducting a TCFD-aligned assessment ensures our People Planet Progress strategy is fit for purpose and addresses our most pressing climate-based risks and opportunities.

We are happy to issue our first TCFD-aligned report and look forward to enhancing this assessment as we continue to advance our agenda.

Manuel Kohnstamm

SVP and Chief Corporate Affairs Officer

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ABOUT THIS REPORT

This report has been prepared with reference to the framework developed by the Task Force on Climate-related Financial Disclosures (TCFD), which provides recommendations for use by companies to provide transparent disclosures about their climate-related risks and opportunities, including information on governance, strategy, and risk management practices around climate change.

All data in this report covers the period from 1 January to 31 December 2023, unless otherwise stated. We report our consolidated operations in Europe under the consumer brands Telenet in Belgium, Sunrise in Switzerland, Virgin Media in Ireland and UPC in Slovakia, as well as our centralized and corporate functions predominantly in the Netherlands, the U.K. and the US.

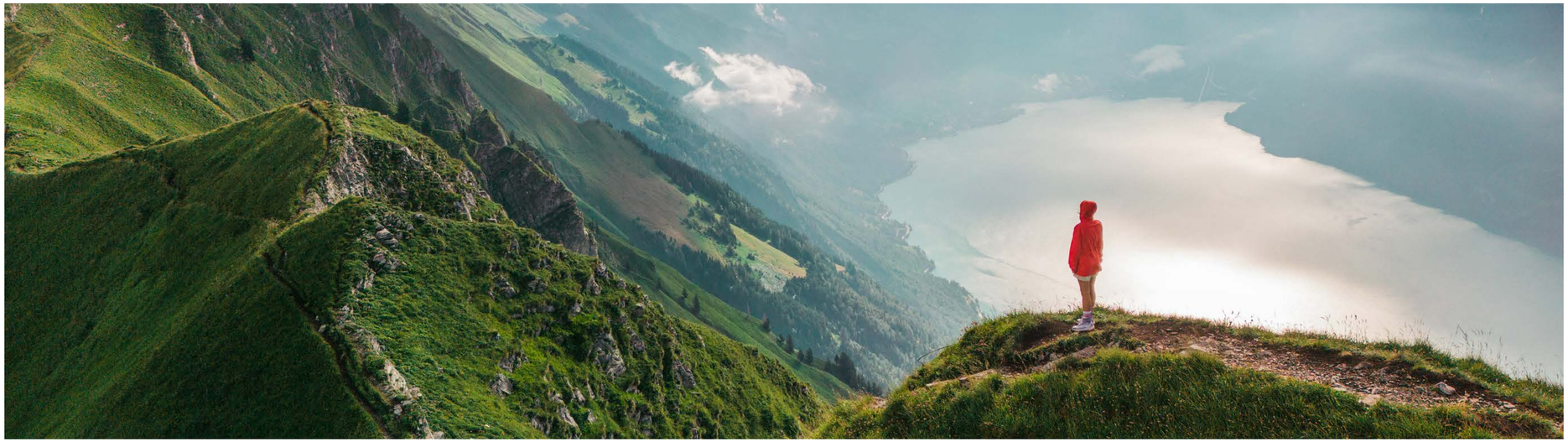
About Liberty Global

Liberty Global is a world leader in converged broadband, video and mobile communications services. We deliver next-generation products through advanced fiber and 5G networks, and currently provide over 85 million[1] connections across Europe. Our businesses operate under some of the best-known consumer brands, including Sunrise in Switzerland, Telenet in Belgium, Virgin Media in Ireland, UPC in Slovakia, Virgin Media-O2 in the U.K. and VodafoneZiggo in The Netherlands. Through our substantial scale and commitment to innovation, we are building Tomorrow's Connections Today, investing in the infrastructure and platforms that empower our customers to make the most of the digital revolution, while deploying the advanced technologies that nations and economies need to thrive. Liberty Global's consolidated businesses generate annual revenue of more than $7 billion, while the VMO2 JV and the VodafoneZiggo JV generate combined annual revenue of more than $18 billion[2].

Liberty Global Ventures, our global investment arm, has a portfolio of more than 75 companies and funds across the content, technology and infrastructure industries, including stakes in companies like ITV, Televisa Univision, Plume, AtlasEdge and the Formula E racing series.

Sunrise, Telenet, the VMO2 JV and the VodafoneZiggo JV deliver mobile services as mobile network operators. Virgin Media Ireland delivers mobile services as a mobile virtual network operator through third-party networks. UPC Slovakia delivers mobile services as a reseller of SIM cards.

Liberty Global Ltd. is listed on the Nasdaq Global Select Market under the symbols "LBTYA", "LBTYB" and "LBTYK".



1 Represents aggregate consolidated and 50% owned non-consolidated fixed and mobile subscribers. Includes wholesale mobile connections of the VMO2 JV and B2B fixed subscribers of the VodafoneZiggo JV.
2 Revenue figures above are provided based on full year 2023 Liberty Global consolidated results and the combined as reported full year 2023 results for the VodafoneZiggo JV and full year 2023 U.S. GAAP results for the VMO2 JV.

FORWARD LOOKING STATEMENTS

This report may contain forward-looking statements within the meaning of the US Securities Act of 1933, as amended, the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995, including statements with respect to our plans, goals and strategies regarding Environmental, Social and Governance (ESG) matters; improvements in operating procedures and technology, and potential benefits to us therefrom; our efforts to enable our customers and vendors to achieve their own ESG goals; revenue and cost expectations; financing of operations; source and sufficiency of funds required for building new equipment and upgrading existing equipment; demand for our services; competition; government regulation; and other matters that are not historical fact. Forward-looking statements can be identified by the fact that they do not relate strictly to historical or current facts, and they often use words such as 'aim', 'anticipate', 'believe', 'budgeted', 'commit', 'continue', 'could', 'estimate', 'expect', 'goal', 'intend', 'may', 'plan', 'predict', 'potential', 'project', 'pursue', 'should', 'strategy', 'target', 'will' or 'would', or the negative thereof and other words and expressions of similar meaning. These forward-looking statements involve certain risks and uncertainties that could cause actual results to differ materially from those expressed or implied by these statements. These risks and uncertainties include events that are outside of our control, such as changes in legislation, regulation, rules, codes of practice and other governmental and non-governmental policies; our inability to reduce our environmental impact and emissions; our inability to perform at our desired standards; our inability to develop and deliver equipment, technology and software solutions to enable our customers to achieve their own ESG goals; our inability to realize intended benefits from our ESG strategies and initiatives; global economic conditions, including inflationary pressures and risks of economic downturns or recessions, environmental risks and our ability to satisfy future environmental costs; technology-related disputes; legal proceedings and actions by governmental or other regulatory agencies; public health crises, pandemics and epidemics; weather; operating costs; and other factors detailed from time to time in our filings with the US Securities and Exchange Commission, including our most recently filed Form 10-K, Form 10-K/A and Form 10-Qs. The forward-looking statements are based on certain assumptions and analyses we make in light of our experience and our perception of historical trends, current conditions, expected future developments and other factors we believe are appropriate in the circumstances. Forward-looking statements are aspirational and not guarantees or promises that goals or targets will be met. These forward-looking statements speak only as of the date of this Report. Liberty Global expressly disclaims any obligation or undertaking to disseminate any updates or revisions to any forward-looking statement contained herein to reflect any change in Liberty Global's expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

TCFD COMPLIANCE SUMMARY

The Task Force on Climate-Related Financial Disclosures (TCFD) framework helps public companies and other organizations increase transparency with regards to climate-related risks and opportunities.

Governance	Compliance	Page
a. Describe the Board's oversight of climate-related risks and opportunities	Compliant	8
b. Describe management's role in assessing and managing climate-related risks and opportunities	Compliant	8
Strategy		
a. Describe the climate-related risks and opportunities the organization has identified over the short, medium and long term	Compliant	15 - 19
b. Describe the impact of climate-related risks and opportunities on the organization's business, strategy and financial planning	Partially Compliant	20, 21
c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2° or lower scenario	Non-compliant	n/a
Risk management		
a. Describe the organization's processes for identifying and assessing climate related risks	Compliant	12-14, 25
b. Describe the organization's processes for managing climate-related risks	Partially Compliant	21
c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	Partially Compliant	21
Metrics and targets		
a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	Compliant	23
b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	Compliant	23
c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	Partially Compliant	23

GOVERNANCE

GOVERNANCE OVER CLIMATE-RELATED MATTERS

At Liberty Global, we believe good governance and business practice includes adequate oversight of climate-related matters, including their business impacts and mitigations. We have assigned responsibilities over climate-related issues at Board and Management levels, with roles and responsibilities split between several committees and management processes.

Board Committees

Liberty Global has two separate board-level bodies providing expertise and guidance for strategic issues, and oversight of climate-based risks relating to the Company.

People Planet Progress Committee

The People Planet Progress Committee of the Liberty Global board of directors provides expertise and guidance of the company's ESG (environment, social and governance) activities, including alignment of such activities with the Liberty Global's long-term business goals and stakeholder expectations. The Committee receives updates on ESG from the Chief Corporate Affairs Officer (CCAO) on a quarterly basis and provides guidance to Liberty Global's ESG and diversity, equity and inclusion councils, respectively, from time to time.

Audit Committee

The Liberty Global Audit Committee has oversight responsibility for the policies, processes, risks and internal controls and compliance related to Liberty Global's financial statements, financial reporting processes, auditing and information security and technology, including cybersecurity risk. From time to time, Liberty Global's Audit Committee, with management, identifies and reviews other areas of risks related to Liberty Global's operations and provides oversight of Liberty Global's ESG reporting. The Committee receives updates from management on a quarterly basis.

Management Oversight

With regards to climate change-related management, Liberty Global has responsibilities split between:

- Strategy development and monitoring, which sits with the CCAO,
- Strategy implementation and risk mitigation, which sits with the Business Operations, and
- Monitoring of key climate-related risks and mitigation plans which sits independently with Liberty Global's Risk & Compliance department.

People Planet Progress Council

The People Planet Progress Council, composed of executives and leaders within our organization, and led by our CEO, meets regularly throughout the year to provide direction and leadership in driving ESG efforts, and to ensure our sustainability actions align with overall business objectives, focusing on people, the planet, and social progress.

Climate strategy development and monitoring

The CCAO, a member of the Executive Leadership Team, has overall accountability for monitoring and reporting on the Liberty Global's climate change adaptation strategy and related actions within the organization. Together with the Vice President Corporate Responsibility & ESG Communications, the CCAO is responsible for developing and monitoring the execution of the sustainability and climate strategy and for providing regular updates to the People Planet Progress Committee on climate related issues and progress against the company's targets as well as updates on climate-related risks to the Audit Committee.

Climate strategy implementation

Climate-related risk and opportunity identification, as well as designing and implementing mitigation plans and adaptation strategies, lies with the Business Operations within Liberty Global. Our management team is responsible for identifying and managing risks related to our company and its significant business activities.

Risk & Compliance

Risk management

The senior officer of our internal audit, risk and compliance group functionally reports to the Audit Committee and provides independent assurance to the Audit Committee over the control environment and operations, as well as oversight of risk management.

STRATEGY

OUR PEOPLE PLANET PROGRESS STRATEGY

Our material issues

To create our People Planet Progress strategy, we first worked to understand the issues that were the most important to our business, stakeholders and communities by conducting a double materiality assessment in 2022. This included engaging external sustainability consultants and a range of stakeholders, including customers, suppliers, investors, employees, leaders, industry associations and non-governmental organizations (NGOs). The results of the double materiality assessment showed our most strategic priorities to be climate change management; diversity, equity and inclusion; and social impact and engagement. These topics now form the basis of our People Planet Progress strategy.

Our strategy

Launched in 2023, our People Planet Progress strategy sets out our priorities and ambitions for advancing inclusive, sustainable and responsible growth. The 'Planet' strategy is designed to support the development, monitoring and achievement of environmental goals that help Liberty Global advance its sustainability agenda and build resilience with regards to a transition to a low carbon economy, upcoming climate-related regulation, market shifts and emerging technologies, as well as preparation for physical climate-related risks and opportunities. Our 'Planet' strategy is focused on the following topics:

1. **Reducing our environmental impact** - reduce our carbon emissions company-wide, contribute to the circular economy, promote responsible products and limit e-waste
2. **Smart energy** - focus on renewable energy sources, increase energy efficiency across our networks and products, and invest in future-forward energy innovations
3. **Global green transition** - enable climate action and green strategies for industries beyond our own through digitization and global partnerships

Our 'Planet' related strategy is also linked to the following U.N. Global Compact Sustainable Development Goals (SDGs):

Affordable & clean energy - Ensure access to affordable, reliable, sustainable and modern energy for all

Industry, innovation and infrastructure - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Sustainable cities and communities - Make cities and human settlements inclusive, safe, resilient and sustainable

Responsible consumption & production - Ensure sustainable consumption and production patterns

Partnerships for the goals - Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

For more details on how our strategy contributes to the SDGs please see our 2023 People Planet Progress report

Climate change management

Conducting a TCFD-aligned climate-related risk and opportunity assessment formed part of our approach to manage climate change. We initiated our assessment in 2022 with a qualitative review of our most impactful risks and opportunities and continued the exercise in 2023 by refining it with the addition of quantitative financial impacts. The TCFD-aligned assessment confirmed that our actions already underway were aligned with the risks and opportunities identified.

Going forward we will continue to expand on the climate-related risk and opportunity assessment and reporting to include modeling the impacts of additional risks and opportunities as data becomes available. We will also adapt our strategy to address material findings resulting from this assessment to ensure that our business operations remain resilient in the short-, medium- and long-terms to the effects of climate change.

RISK MANAGEMENT

METHODOLOGY

Liberty Global has a well-established risk management framework which is subject to a company-wide, consistent standard. In order to align with the TCFD recommendations, we adapted the company standard to include the required elements of climate-related transition and physical risks, an opportunity assessment, and evaluations across different timeframes and climate scenarios. Going forward, we will integrate this methodology into our company-wide risk management framework and standard practice.

Our TCFD-aligned climate-related risk and opportunity assessment was conducted following the steps below:

1 Scope

We conducted our assessment for our consolidated operations in Europe under the consumer brands Telenet in Belgium, Sunrise in Switzerland, Virgin Media in Ireland and UPC in Slovakia, as well as our centralized and corporate functions predominantly in the Netherlands, the UK and the US, consistent with our climate-based and corporate responsibility reporting.

2 Risk and opportunity framework

Using the TCFD framework, the following climate-related risk and opportunity types were analyzed:

1. **Climate-related transition risks** which are driven by policy, regulation, technological development, reputation, and market shifts as a result of global goals to decarbonize. The analyzed risks were split into the following sub-categories:

- **Policy** – risk of existing and emerging climate-related regulations, as well as climate-related litigation claims
- **Market** – risk of shifts in supply and demand as markets respond and react to climate change
- **Technology** – risk of disruption to parts of the economic system caused by emerging technologies required to support the transition to a low-carbon economy

2. **Climate-related physical risks** which are driven by extreme weather and long-term shifts in climate patterns that have direct impacts on our business operations. The analyzed risks were split into the following sub-categories:

- **Physical Acute** – risk of increasing severity of extreme weather events
- **Physical Chronic** – risk of longer-term changes and variability in weather patterns

3. **Climate-related opportunities** which are associated with the transition to lower-carbon economies that arise from efforts to mitigate or adapt to climate change, and can lead to potential benefits to an organization, such as resource efficiencies and cost savings, adoption of low-emission energy sources, development of sustainable products and services, access to new markets and business resilience.

METHODOLOGY

3 Time horizons

Risks were assessed on three different time horizons, in accordance with EFRAG's ESRS 1 Time Horizons[3], as follows:

- **Short term:** 0-1 years
- **Medium term:** 2-5 years
- **Long term:** 5+ years up to 2050

These time horizons are aligned with Liberty Global's internal financial planning process, where the short-term horizon is aligned with the yearly budget season, the medium-term horizon corresponds to our plan of record planning process, and the long-term horizon corresponds to everything beyond the plan of record.

4 Climate scenarios

Our evaluation of potential climate-related risks and opportunities utilized recognized open-source projected data, contrasting three climate scenario[4] sets. These scenarios were constructed on theoretical premises regarding international climate policy actions and socio-economic shifts, yielding diverse temperature projections. The following scenarios were used for our model:

Scenario set	Net Zero 2050 (Orderly Transition)	Delayed Policies (Disorderly Transition)	Current Policies (Hot House World)
Temperature increase outcome	1.5°C	2°C	4°C and above
Description	Net Zero 2050 limits global warming to 1.5°C through stringent climate policies and innovation, reaching global net zero CO2 emissions around 2050	Delayed Transition assumes annual emissions do not decrease until 2030. Strong policies are needed to limit warming to below 2°C. Negative emissions are limited	Current Policies assumes that only currently implemented policies are preserved, leading to high physical risks
Data sources	NGFS's Orderly Transition, Disorderly Transition and Hot House World scenarios International Energy Agency - World Energy Outlook World Bank - Commodity Markets Outlook World Bank – Carbon Pricing Dashboard IPCC - WGI Interactive Atlas		
	IPCC AR6 SSP1-1.9	IPCC's AR6 SSP1-2.6	IPCC's AR6 SSP3-7.0 – SSP5-8.5

3 The European Financial Reporting Advisory Group (EFRAG) defines time horizons in the European Sustainability Reporting Standards (ESRS) 1 as follows: Short-term – the same period adopted by the undertaking in its financial statements; Medium-term – from the end of the short-term reporting period up to five years; Long-term – more than five years

4 Climate Scenarios - Climate scenarios are hypothetical representations of the future climate. They are based on the current observed state of the Earth and different greenhouse gas emission scenarios and explore long-term effectiveness of mitigation and adaptation. In the context of TCFD, climate scenarios are a key tool for identifying and assessing how climate-related risks can affect organizations and their financial performance.

METHODOLOGY

Our TCFD-aligned methodology for assessing climate-related risks and opportunities was comprised of qualitative and quantitative assessments.

5 Qualitative risk assessment

Our qualitative risk assessment[5] identified specific risks for Liberty Global and the telecom industry based on the risk types described in Step 2 above. Based on desk research, peer review, workshops and interviews with key stakeholders of the organization, including the organization's Corporate Responsibility and Risk & Compliance Teams, a score was given to each risk based on the company's vulnerability to the risk, its likelihood, and magnitude of impact, should the risk materialize. This assessment was conducted across three time horizons and three climate change scenarios.

For more details regarding the qualitative assessment methodology, please see Appendix.

6 Quantitative risk assessment

Based on the qualitative assessment described in step 5, we selected a set of key risks for a quantitative risk assessment[6] across the three time horizons and three climate scenarios. The selection of risks for evaluation was made based on the risk rating resulting from the qualitative assessment, financial materiality and availability of data. The quantitative model used primary data from Liberty Global, as well as secondary data from accredited climate scenario providers and other desk research. The projections of future physical climate impacts and transition impacts were gathered from accredited climate scenario data providers. In case no suitable data was available, assumptions were made based on historical trends. This data was used to estimate the impact of risks on Liberty Global's operations and was monetized to capture the financial value of the impacts.

For more details regarding the quantitative assessment methodology, please see Appendix.

7 Opportunity assessment

Our TCFD-aligned methodology for assessing climate-related opportunities[7] comprised a qualitative assessment that took into consideration the following elements:

1. **Size of opportunity:** calculated based on market size, competitive environment and profitability margin

2. **Ability to execute opportunity:** estimated based on the potential novelty of the business model, alignment with brand, skillset of employees and cost

The assessment and ranking were calculated regardless of time horizons and climate scenarios, as the opportunities were considered applicable across all.

5 Qualitative risk assessment – process of evaluating risks based on their likelihood of occurrence and potential impact they have on a project or organization. This process involves the use of subjective judgement and expert knowledge and experience, rather than quantitative data.
6 Quantitative risk assessment – a process of numerically estimating the probability of a risk and its potential impact by allocating cost estimations to potential impacts.

7 Opportunity assessment – in the context of TCFD, an opportunity assessment is a process of identifying and evaluating potential positive outcomes related to climate change. These opportunities can arise from a variety of sources, such as:
- Resource Efficiency: Opportunities can come from improved resource efficiency, such as energy use, water usage, and waste reduction.
- Energy Source: Opportunities can arise from shifting energy usage to renewable sources.
- Products and Services: There can be opportunities in the development and offering of new products and services, or innovation of existing ones, that help to mitigate or adapt to climate change.
- Markets: New markets can emerge from the transition to a lower-carbon economy.
- Resilience: Opportunities can come from increased resilience to climate change-related risks.

METHODOLOGY RESULTS

By applying the qualitative risks assessment methodology described in the sections above, we identified a list of eleven potential climate-related risks and two climate-related opportunities. Three risks were further selected for a quantitative risk assessment.

Risk type	Risk title	Assessment type
Physical – Acute	Extreme weather events impacting infrastructure	Qualitative + Quantitative[8]
Physical - Acute	Extreme weather events impacting supply chain	Qualitative
Physical - Chronic	Increase in electricity outages	Qualitative
Transition - Market	Energy and fossil fuel price volatility	Qualitative + Quantitative
Transition - Market	Access to capital	Qualitative
Transition - Market	Increased prices of critical raw materials (CRMs)[9]	Qualitative + Quantitative
Transition - Market	Increase in demand for energy	Qualitative
Transition - Policy	Increased compliance requirements	Qualitative
Transition - Policy	Costs of circular economy	Qualitative
Transition - Technology	Missed targets	Qualitative
Transition - Technology	Increase in energy consumption	Qualitative

Opportunity type	Opportunity title
Transition – Resource Efficiency	Network efficiency
Transition – Products & Services	Increase in service demand

8 This risk assessment is part of a separate analysis conducted with ClimSystems .The results of this exercise will be published when available. ClimSystems is a company that specializes in climate change and adaptation software solutions

9 Critical raw materials (CRMs) are raw materials that are of high economic importance to the EU and have a high risk associated with their supply. Critical raw materials - European Commission (europa.eu)

QUALITATIVE ANALYSYS

Climate Physical Risks

We analyzed the impact of acute and chronic physical climate risks on our operations and wider value chain. Our analysis shows that as extreme weather events are likely to intensify with climate change, our organization has the potential to be impacted in the medium- and long-term, both in the operation of our networks as well as within our supply chain. Overall, the potential impact of these risks has been assessed to be moderate.

				Short term (0-1 years)			**Medium term** (2 – 5 years)			**Long term** (5+ years up to 2050)			
Risk Type	**Risk Title**	**Risk description**	**Risk driver**	Net Zero 2050	Delayed Policies	Current Policies	Net Zero 2050	Delayed Policies	Current Policies	Net Zero 2050	Delayed Policies	Current Policies	**Combined average**
Acute	**Extreme weather events impacting infrastructure**	Network infrastructure assets owned by Liberty Global are exposed to extreme weather events such as heavy precipitation, floods and storms, with the potential to disrupt service and increase costs to repair and restore.	Increased severity of extreme weather events										
Acute	**Extreme weather events impacting supply chain**	Increased severity of extreme weather events such as wildfires, storms, cyclones, hurricanes, and floods disrupting the supply chain.	Increased severity of extreme weather events										
Chronic	**Increase in electricity outages**	Increasing pressure on electricity grids can increase the chances of brownouts or blackouts compromising the electricity supply.	Heat stress										

LEGEND: Low risk · Minor risk · Moderate risk · High risk

QUALITATIVE ANALYSYS

Climate Transition Risks - Market

We analyzed the impact of market transition risks for our operations in the short-, medium- and long-term, and across all climate scenarios. Our analysis shows that our organization has the potential to be impacted by market shifts caused by global efforts in decarbonization, especially in the Net Zero 2050 scenario, and in all scenarios in the long-term. A potential key risk is identified for price increases of critical raw materials in the long-term.

				Short term (0-1 years)			**Medium term** (2 – 5 years)			**Long term** (5+ years up to 2050)			
Risk Type	**Risk Title**	**Risk description**	**Risk driver**	Net Zero 2050	Delayed Policies	Current Policies	Net Zero 2050	Delayed Policies	Current Policies	Net Zero 2050	Delayed Policies	Current Policies	**Combined average**
Market	**Energy and fossil fuel price volatility**	Liberty Global is exposed to energy and fossil fuel price volatility, which can increase operating expenditures.	Uncertainty in market signals, changes in supply and demand	Minor risk	Minor risk	Minor risk	Moderate risk	Minor risk	Minor risk	Moderate risk	Moderate risk	Moderate risk	Moderate risk
Market	**Access to capital**	Institutional and private investors may increase their thresholds for investing in climate-related activities, which can hamper the company's access to capital.	Increased market demand for sustainable products and services	Moderate risk	Minor risk	Low risk	Moderate risk	Minor risk	Low risk	Moderate risk	Moderate risk	Low risk	Moderate risk
Market	**Increased prices of critical raw materials**	Lack of availability of critical raw materials used to manufacture CPE devices and requirements for sustainable procurement can have a negative impact on costs.	Increased cost of raw materials	Moderate risk	Low risk	Low risk	Moderate risk	Low risk	Low risk	High risk	High risk	Moderate risk	Moderate risk
Market	**Increase in demand for energy**	The increases in data consumption can increase the demand for energy, which can lead to an increase in capital and operating expenditures to meet demand	Increased data consumption and demand for storage	Minor risk	Minor risk	Minor risk	Moderate risk	Minor risk	Minor risk	Moderate risk	Moderate risk	Moderate risk	Moderate risk

LEGEND: Low risk · Minor risk · Moderate risk · High risk

QUALITATIVE ANALYSYS

Climate Transition Risks - Policy & Technology

We analyzed the policy and technology transition risks in the short-, medium- and long-terms and across all climate scenarios. Our analysis shows that our organization has the potential to be impacted by policy and technology caused by global efforts in decarbonization especially in the Net Zero 2050 and Delayed Policies scenarios, in the medium- and long-term.

				Short term (0-1 years)			**Medium term** (2 – 5 years)			**Long term** (5+ years up to 2050)			
Risk Type	**Risk Title**	**Risk description**	**Risk driver**	Net Zero 2050	Delayed Policies	Current Policies	Net Zero 2050	Delayed Policies	Current Policies	Net Zero 2050	Delayed Policies	Current Policies	**Combined average**
Policy	**Increased compliance requirements**	New mandates and regulation such as obligations to increase energy efficiency of network infrastructure and substitute products and services with lower emission options can lead to an increase in capital expenditure.	Mandates on and regulation of existing products and services	Moderate risk	Minor risk	Minor risk	Moderate risk	Moderate risk	Minor risk	Moderate risk	Moderate risk	Minor risk	Moderate risk
Policy	**Costs of circular economy**	Anticipated regulation on circular economy and more stringent standards on electronics design and energy efficiency can lead to an increase in direct costs.	Mandates on and regulation of existing products and services	Minor risk	Low risk	Low risk	Moderate risk	Moderate risk	Minor risk	Moderate risk	Moderate risk	Minor risk	Moderate risk
Technology	**Missed targets**	Insufficient investment in low-carbon technologies in network, product and office facilities can lead to a failure to meet CO2 reduction targets and an increase in carbon offsetting costs.	Costs to transition to lower emissions technology	Moderate risk	Minor risk	Minor risk	Moderate risk	Minor risk	Minor risk	Moderate risk	Moderate risk	Moderate risk	Moderate risk
Technology	**Increase in energy consumption**	Increased energy consumption due to upgrade of mobile network (5G) and further deployment of fiber network while running in parallel with existing infrastructure.	Costs to transition to lower emissions technology	Moderate risk	Minor risk	Minor risk	Moderate risk	Moderate risk	Minor risk	Minor risk	Minor risk	Moderate risk	Moderate risk

LEGEND: Low risk · Minor risk · Moderate risk · High risk

CLIMATE OPPORTUNITIES

Climate opportunities

We analyzed climate-related opportunities for our organization across all time horizons and climate scenarios. Our analysis shows that our organization can potentially benefit from the use of new technologies that drive efficiencies and shifts in consumer preferences.

Opportunity type	Opportunity title	Opportunity description	Primary driver	Financial impact
Transition – Resource Efficiency	Network efficiency	Investment in new technologies for data centers and network infrastructure to store and transport data more efficiently	• Use of new technologies	• Returns on investment in low-emission technology • Increase in investments and access to capital
Transition - Products & Services	Increase in service demand	Increased trends in home/flexible working, online education and services, gaming, AI, online care and others lead to an increase in demand for Liberty Global's products and services.	• Shift in consumer preferences	• Increased revenues resulting from increased demand for products and services • Increase in customer market share

QUANTITATIVE ANALYSIS

Climate related financial impact assessment

We analyzed the potential financial impacts for a subset of risks selected based on the qualitative risk rating, materiality and availability of data. Financial impacts were calculated using internal and external data across the three time horizons and across all climate scenarios, taking into account the current cost impact, the profile of the climate-related risks faced, and the geographies and sector in which we operate.

The results of this exercise show the percentage of change in operating costs compared to a 2023 base year.

Risk Type	Risk Title	Risk description	Risk driver	Short term (0-1 years) Net Zero 2050	Short term (0-1 years) Delayed Policies	Short term (0-1 years) Current Policies	Medium term (2 – 5 years) Net Zero 2050	Medium term (2 – 5 years) Delayed Policies	Medium term (2 – 5 years) Current Policies	Long term (5+ years up to 2050) Net Zero 2050	Long term (5+ years up to 2050) Delayed Policies	Long term (5+ years up to 2050) Current Policies
Transition – Market	Energy and fossil fuel price volatility	Liberty Global is exposed to energy and fossil fuel price volatility, which can increase operating expenditures	Fuel expenditures	▼	▼	▼	▼	▼	▼	▼	▼	▼
			Electricity expenditures	▲	▲	▲	▽	▲	▲	▽	▲	▲
Transition – Market	Increased prices of critical raw materials	Lack of availability of critical raw materials (CRM) used to manufacture CPE devices and requirements for sustainable procurement can have a negative impact on costs.	Cost of CRM	▼	▼	▼	▽	▽	▽	▲	▲	▲

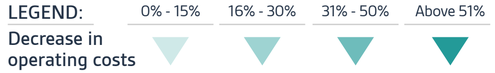
Explanations

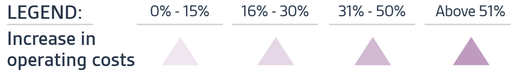
Fuel expenditures: We analyzed the cost impact of anticipated price volatility with fuels used for powering our non-electric fleet, office heating and emergency generators. Our analysis shows that fuel costs for Liberty Global are projected to decline in the short-, medium- and long-term and across all climate scenarios following the assumption that our decarbonization targets are being achieved and our fleet becoming fully electric in the medium-term. Targets are set in accordance with our People Planet Progress strategy and are monitored on a yearly basis by management.

Electricity expenditures: We analyzed the cost impact of electricity used to support our facilities, EV fleet and network infrastructure. Our analysis shows that a slight increase in prices are projected to impact the organization across all timelines, particularly in the Delayed Policies and Current Policies scenarios. In the Net Zero 2030 scenario, and in the case that stringent policies and innovation are implemented up to 2030, costs with electricity are projected to decrease. To mitigate the risk of costs being impacted by the price volatility of energy, management has implemented companywide hedging policies.

Cost of critical raw materials: We analyzed the cost impact of anticipated price increases of CRMs used in our equipment due to the negative impact of climate change and expected scarcity. Our analysis shows that the costs related to the procurement of CRMs for our products could potentially decrease in the short- and medium- terms, partly driven by our refurbishment program, where more of our newer CPE models will be re-deployed in the market after refurbishment, and fewer new products will need to be ordered for manufacturing. In the long- term, and under all scenarios, our analysis shows that the projected price increase of raw materials might negatively affect the procuring costs of our CPEs, impacted by the fact that new models will need to be manufactured. Management's initiative to minimize our products[10] to save energy and materials includes CRMs used in our equipment, which is actively being looked at in cooperation with our suppliers to improve innovation in this space.

NOTE: These assessments do not represent financial forecasts but are rather high-level financial models of what could happen in the future based on what we know now. They are based on our current assets and don't account for a changing asset portfolio or significant changes in our future business model, advancements in technology, or any mitigating actions we may take to manage the risks. We expect there to be changes over these timeframes, so we will continue to monitor market trends and regulatory changes to ensure we remain informed of any potential impacts on our business.





10 See our 2023 People Planet Progress Report, p. 24 - 25

CONCLUSION

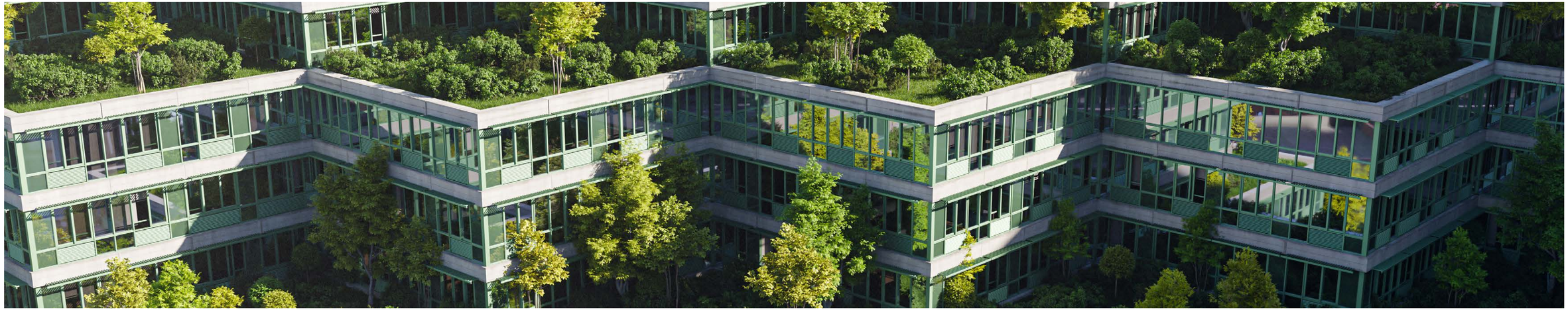
Impact of climate-related risks on the organization

Our analysis suggests that our current strategy is robust against the modelled climate-related risks, which appear unlikely to significantly affect the financial outcomes of the analyzed risks in the short- and medium-terms, and our current business plans are designed to mitigate the effects of climate change on the modelled risks in the short-and medium-term. For long-term, up to 2050, we will continue to integrate climate change resilience into our strategy to mitigate the most significant risks and underlying impacts as modelled by our analysis. We will continue enhancing this assessment by integrating more data as it becomes available, and by expanding our financial analysis to include additional risks. We will regularly assess the impact of new risks on our strategy as part of this exercise. We are committed to enhancing our methodology by integrating additional risks into our analysis, and we plan to conduct this analysis at regular intervals to ensure ongoing business resilience.

Next steps

We plan to integrate the TCFD-aligned climate-related risk assessment into Liberty Global's established risk management framework, which is subject to a company-wide, consistent standard. Our established risk management process is structured as follows:

1. Risk identification within a framework of Principal Risk categories
2. Analysis and evaluation including risk scenarios, impact and likelihood
3. Treatment - identification of existing mitigations and where further mitigation is required
4. Risk review - regular risk register refresh and updates
5. Monitoring and reporting - review by Senior Management and the Audit Committee, including tracking of mitigation plans



METRICS AND TARGETS

METRICS AND TARGETS

Metrics and targets measured under our People Planet Progress agenda, and disclosed in our People Planet Progress Report are mapped here for each of our key climate-related risks and opportunities. Further details on key performance indicators, sustainability initiatives, metrics and targets can be found on our website and in our latest People Planet Progress Report.

Risk / Opportunity type	Risk / Opportunity name	Risk / Opportunity description	Metric	Reference	Measuring and Monitoring
Market	Energy and fossil fuel price volatility	Liberty Global is exposed to energy and fossil fuel price volatility, which can increase operating expenditures.	• Non-renewable fuel consumption in Gigawatt-hours / year for fossil fuels	2023 People Planet Progress Report – p. 43 and 26	Annual reporting of consumption, with business focus and initiatives to decrease each year
Market	Access to capital	Institutional and private investors may increase their thresholds for investing in climate-related activities, which can hamper the company's access to capital.	• Sustainability linked loans linked to energy efficiency, renewable electricity and carbon emissions	2023 People Planet Progress Report – p. 48	Annual reporting of KPIs, with business focus and initiatives to improve each year
Market	Increased prices of critical raw materials	Lack of availability of critical raw materials used to manufacture CPE devices and requirements for sustainable procurement can have a negative impact on costs.	• Customer Premise Equipment (CPE) refurbishments	2023 People Planet Progress Report – p. 25	Annual reporting of refurbishments, with business focus and initiatives to improve each year
Market	Increase in demand for energy	The increases in data consumption can increase the demand for energy, which can lead to an increase in energy expenditures.	• Total non-renewable electricity purchased • Total renewable electricity purchased • Total onsite renewable electricity produced and consumed • Total electricity sold (from onsite renewables)	2023 People Planet Progress Report – p. 44 and 28	Target to reach 100% renewable electricity by 2030. In 2023, we achieved 92%
Policy	Increased compliance requirements	New mandates and regulation such as obligations to increase energy efficiency of network infrastructure and substitute products and services with lower emission options can lead to an increase in capital expenditure.	• Energy efficiency in selected networks • Product sustainability	2023 People Planet Progress Report – p. 48, 24 and 28	Annual reporting of KPIs, with business focus and initiatives to improve each year
Policy	Costs of circular economy	Anticipated regulation on circular economy and more stringent standards on electronics design and energy efficiency can lead to an increase in direct costs.	• Product sustainability	2023 People Planet Progress Report – p. 24	Target of 100% PCR[11] for all new entertainment and connectivity boxes. In 2023, all new all new entertainment and connectivity boxes are made of 100% PCR, and RCUs[12] are made of 85% PCR
Technology	Missed targets	Insufficient investment in low-carbon technologies in network, product and office facilities can lead to a failure to meet CO2 reduction targets and an increase in carbon offsetting costs.	• Scope 1 & 2 GHG emissions (market-based) • Scope 3 GHG emissions	2023 People Planet Progress Report – p. 45 and 27 Scope 3 GHG Emissions Expanded Report	50% emissions reduction in Scope 1 & 2 by 2030 from a 2019 base year. In 2023 we achieved -28% decrease in Scope 1 & 2 market-based
Technology	Increase in energy consumption	Increased energy consumption due to upgrade of mobile network (5G) and further deployment of fiber network while running in parallel with existing infrastructure.	• Renewable electricity purchased, onsite renewable electricity produced and consumed • Energy efficiency in selected networks	2023 People Planet Progress Report – p. 44, 48 and 28 - 30	• Target to reach 100% renewable electricity by 2030. In 2023, we achieved 92%. • Annual reporting of KPIs, with business focus and initiatives to improve each year • 50% intensity reduction in Scope 3 GHG emissions per homes passed by 2030 from a 2019 base year. In 2023 we achieved a 20% decreasease
Physical Acute	Extreme weather events impacting infrastructure	Network infrastructure assets owned by Liberty Global is are exposed to extreme weather events such as heavy precipitation, floods and storms, with the potential to disrupt service and increase costs of repair and restore.	• Insured assets	Not disclosed	Not disclosed
Physical Acute	Extreme weather events impacting supply chain	Increased severity of extreme weather events such as wildfires, storms, cyclones, hurricanes, and floods disrupting the supply chain.	• Strategic, preferred and critical vendors and key suppliers monitored and reported by the Liberty Global Procurement Services	LPS Supplier Assessment Procedure LPS_2023-Sustainability-Risk-Report	Annual reporting of vendors assessed, with business focus and initiatives to improve each year
Physical Chronic	Increase in electricity outages	Increasing pressure on electricity grids can increase the chances of brownouts or blackouts compromising the electricity supply.	• Total onsite renewable electricity produced and consumed • Total electricity sold (from onsite renewables)	2023 People Planet Progress Report – p. 44 and 30	Annual reporting of consumption, with business focus and initiatives to increase each year
Transition – Resource Efficiency	Network efficiency	Investment in new technologies for data centers and network infrastructure to store and transport data more efficiently.	• Energy efficiency in selected networks	2023 People Planet Progress Report – p. 48 and 28 - 30	Annual reporting of KPIs, with business focus and initiatives to improve each year
Transition - Products & Services	Increase in service demand	Increased trends in home/flexible working, online education and services, gaming, AI, online care and others lead to an increase in demand for Liberty Global's products and services.	• Revenue by major category of service	2023 Annual Report – p. II-12	Annual reporting of KPIs, with business focus and initiatives to improve each year

11 Post Consumer recycled material
12 Remote Control Units

APPENDIX

RISK ASSESSMENT METHODOLOGY – DETAILS

Qualitative risk assessment

The following steps were completed for our qualitative risk assessment:

1. **Risk mapping** – Based on the risk framework described in the body of this report, detailed risks for Liberty Global and the telecommunications industry were formulated for each category of risks and opportunities.
2. **Risk scoring** – Based on desk research, peer review, workshops and interviews with key stakeholders of the organization, including the organization's Corporate Responsibility and Risk & Compliance teams, a score was given to each risk based on the company's vulnerability to the risk, likelihood of the impact, and the magnitude of impact, should it materialize.
   - **Vulnerability:** Each risk was assessed in terms of 'exposure' (exposed / not exposed), 'sensitivity', where the risk was ranked from 1 (very low sensitivity to exposure) and 5 (very high sensitivity to exposure) and 'adaptive capacity' of the organization to the risk, rated from 1 (very high capacity to adapt) to 5 (very low capacity to adapt). The vulnerability score was then calculated as ('sensitivity' + 'adaptive capacity') x 'exposure' and was ranked from 1 to 5.
   - **Likelihood:** Each risk was rated from 1 (very low potential to materialize, the equivalent of 0% - 10%) to 5 (very high potential (90% - 100%).
   - **Magnitude:** Each risk was rated from 1 (very low impact) to 5 (very high impact) in terms of effects on the organization should the risk materialize.
3. **Risk rating** – Based on the scores mentioned above, each risk was rated based on a combined 'vulnerability' x ' likelihood' x 'magnitude' and rated with a score between 1 and 125. This assessment was conducted across three time horizons and three climate scenarios.
4. **Risk ranking** – An average risk rating was calculated for each time horizon given the three climate scenarios, and the combined average risk rating across all three time horizons was calculated as the final risk rating. Risks with scores between 1 – 6 points were ranked 'low', 7 – 22 points were rated 'minor', 23 – 51 points were rated 'moderate' and 52 – 125' points were rated 'major' risks.
5. **Key risks** – The risk ranking results showed that none of the risks were rated above 52 points, therefore, no major risk was identified. All risks rated between 23 and 51 points (minor) were considered key risks and were selected for reporting.

Quantitative risk assessment

In 2023 we improved our TCFD aligned risk assessment with a quantitative risk analysis that included the following steps:

1. **Risk selection:** From the key risks identified, we selected a set of top risks for quantitative financial modelling based on their ranking, availability of data, the organization's capacity to influence the outcome, and urgency.
2. **Impact estimation:** The selected risks were then modelled across the three time horizons and three climate scenarios. The model used primary data from Liberty Global, as well as secondary data from accredited climate scenario providers and other desk research. The projections of future physical climate impacts (e.g., heavy precipitation) and transition impacts (e.g., energy prices) were gathered from several accredited climate scenario data providers, such as:
   - Network for Greening the Financial System (NGFS)
   - International Energy Agency - World Energy Outlook
   - World Bank - Commodity Markets Outlook
   - World Bank – Carbon Pricing Dashboard
   - IPCC - WGI Interactive Atlas and
   - Climate Analytics - Climate Impact Explorer.
3. **Assumptions and estimations:** Where suitable data was not available, assumptions were made based on historical data. This data was used to estimate the impact of risks on Liberty Global's operations and was monetized to capture the financial value of the impacts.