Ernst & Young LLP
P.O. Box 751
99 Wood Avenue
Iselin, NJ 08830-0471

Tel: +1 732 516 4200
Fax: +1 732 516 4429
ey.com

Building a better working world

Independent Accountants' Review Report

Management of Verizon Communications Inc.

We have reviewed Verizon Communications Inc.'s (Verizon) accompanying schedules of environmental indicators (the "Subject Matter") included in Appendix A for the reporting periods indicated in the table below based on the criteria also set forth in Appendix A (the "Criteria"). Verizon's management is responsible for the Subject Matter in accordance with the Criteria. Our responsibility is to express a conclusion on the Subject Matter based on our review.

Subject Matter	**Reporting Period**
Schedule of Select Environmental Metrics	For the year ended December 31, 2023
Schedule of Scope 3 Emissions	For the base year ended December 31, 2019 (as amended) and for the year ended December 31, 2023

Our review was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA) AT-C section 105, *Concepts Common to All Attestation Engagements*, and AT-C section 210, *Review Engagements*. Those standards require that we plan and perform our review to obtain limited assurance about whether any material modifications should be made to the Subject Matter in order for it to be based on the Criteria. The procedures performed in a review vary in nature and timing from and are substantially less in extent than, an examination, the objective of which is to obtain reasonable assurance about whether the Subject Matter is based on the Criteria, in all material respects, in order to express an opinion. Accordingly, we do not express such an opinion. Because of the limited nature of the engagement, the level of assurance obtained in a review is substantially lower than the assurance that would have been obtained had an examination been performed. As such, a review does not provide assurance that we became aware of all significant matters that would be disclosed in an examination. We believe that the review evidence obtained is sufficient and appropriate to provide a reasonable basis for our conclusion.

We are required to be independent of Verizon and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements related to our review engagement. Additionally, we have complied with the other ethical requirements set forth in the Code of Professional Conduct and applied the Statements on Quality Control Standards established by the AICPA.

The procedures we performed were based on our professional judgment. Our review consisted principally of applying analytical procedures, making inquiries of persons responsible for the subject matter, obtaining an understanding of the data management systems and processes used to generate, aggregate and report the Subject Matter and performing such other procedures as we considered necessary in the circumstances.

As described in Appendix A, the Subject Matter is subject to measurement uncertainties resulting from limitations inherent in the nature and the methods used for determining such data. Furthermore, Scope 3 emissions are calculated based on a significant number of estimations and management assumptions due to the inherent nature of the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard criteria as well as the Technical Guidance for Calculating Scope 3 Emissions criteria. The selection of different but acceptable measurement techniques can result in materially different measurements. The precision of different measurement techniques may also vary.

The information included in Verizon's Environmental, Social and Governance (ESG) Report, other than the Subject Matter, has not been subjected to the procedures applied in our review and, accordingly, we express no conclusion on it.

Based on our review, we are not aware of any material modifications that should be made to the accompanying schedules of environmental indicators included in Appendix A for the reporting periods as indicated in the table above, in order for the schedules to be based on the Criteria.

Ernst & Young LLP

May 31, 2024

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Appendix A

Verizon Communications Inc.

Schedules of environmental indicators

Subject Matter

Schedule of select environmental metrics
For the year ended December 31, 2023

Indicator Name	Unit	Amount
Total energy consumed	Gigajoules (GJ)	39,759,403
Percentage grid electricity	%	88.7%
Percentage renewable energy (of total energy consumed)	%	30.6%
Percentage renewable energy (of total electricity consumed)	%	34.4%
Scope 1 greenhouse gas (GHG) emissions	Metric tons of CO_2 equivalent (MT CO_2e)[1]	269,333
Scope 2 GHG emissions (location-based)	MT CO_2e[1]	3,511,076
Scope 2 GHG emissions (market-based)	MT CO_2e[1]	2,195,515
Scope 3 GHG emissions	MT CO_2e[1]	15,124,184
Scope 3 GHG emissions – Upstream	MT CO_2e[1]	13,412,213
Scope 3 GHG emissions – Downstream	MT CO_2e[1]	1,711,971
Network traffic	Petabytes	156,385
Water withdrawal	Billions of gallons	1.96
Operational emissions[2] per terabyte (TB) of data[6] (location based)[5]	MT CO_2e[1] per terabyte of data	0.02361
Operational emissions[2] per TB of data[6] (market based)[5]	MT CO_2e[1] per TB of data	0.01539
Operational[3] + upstream value chain emissions[3] per TB of data[6] (location based)[5]	MT CO_2e[1] per TB of data	0.10736
Operational[3] + upstream value chain emissions[3] per TB of data[7] (market based)[5]	MT CO_2e[1] per TB of data	0.09915
Operational emissions[2] per $ of revenue[4] (location based)[5]	MT CO_2e[1] per $	0.00003
Operational emissions[2] per $ of revenue[4] (market based)[5]	MT CO_2e[1] per $	0.00002
Operational emissions[2] + upstream value chain emissions[3] per $ of revenue[4] (location based)[5]	MT CO_2e[1] per $	0.00013
Operational emissions[2] + upstream value chain emissions[3] per $ of revenue[4] (market based)[5]	MT CO_2e[1] per $	0.00012

Note 1: Verizon's GHG emissions are reported in CO_2e and are substantially comprised of CO_2.

Note 2: Operational emissions include Scope 1 and 2 GHG emissions.

Note 3: Upstream value chain emissions refer to Scope 3 upstream emissions as defined by the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard, namely Categories 1 to 8.

Note 4: Revenue refers to "Total Operating Revenue" of $133,974 (dollars in millions) as reported in the Verizon 2023 10-K.

Note 5: The intensity metrics are calculated based on Global Reporting Initiative (GRI) Standard 305-4 GHG emissions intensity.

Note 6: Terabyte of data refers to Verizon's network traffic reported above converted from petabytes using the binary conversion 1 PB = 1,024 TB.

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Schedule of Scope 3 emissions

For the base year ended December 31, 2019 (as amended) and for the year ended December 31, 2023

Scope 3 emissions (MT CO_2e[1])	December 31, 2019[2] (as amended)	December 31, 2023
1 – Purchased goods & services	15,545,157	12,150,133
2 – Capital goods		
3 – Fuel and energy related activities	1,021,844	921,537
4 – Upstream transportation and distribution	64,752	111,616
5 – Waste in operations	39,320	16,998
6 – Business travel	175,135	48,951
7 – Employee commuting	514,180	162,978
8 – Upstream leased assets	Not Applicable	Not Applicable
9 – Downstream transportation and distribution	60,003	14,213
10 – Processing of sold products	Not Applicable	Not Applicable
11 – Use of sold products	1,557,137	1,696,335
12 – End of life of sold products	2,220	1,423
13 – Downstream leased assets	Not Applicable	Not Applicable
14 – Franchises	Not Applicable	Not Applicable
15 – Investments	Not Calculated	Not Calculated

Note 1: Verizon's GHG emissions are reported in CO_2e and are substantially comprised of CO_2.

Note 2: In 2023, Verizon made adjustments in the calculation of the 2019 Scope 3 baseline to reflect the following: the acquisition of TracFone Wireless, Inc., application of the environmentally-extended input-output (EEIO) emissions factors developed by Carbon Trust to relevant categories and calculation of well-to-tank emissions to relevant categories in alignment with the 2023 calculation methodology. These updates resulted in an increase to the Scope 3 base year emissions from 16,954,198 MT CO_2e to 18,979,748 MT CO_2e or an approximately 12% increase. The impact of the acquisition of TracFone Wireless, Inc. on Verizon's base year Scope 1 and Scope 2 emissions was determined to be de minimis and therefore, have not been updated.

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Criteria

Reporting Boundaries

Verizon has selected an organizational boundary based on operational control for all reported metrics. The approach covers Verizon's global operations. Where available, energy, GHG emissions and water withdrawal are calculated for the fiscal year ended on the basis of actual (e.g., metered) data received as of January of the following year. In certain instances where actual data is not available, Verizon estimates usage data based on estimation methodologies defined in the Greenhouse Gas Protocol.

Verizon works to capture all of its GHG emissions. However, it is not always possible to obtain all of the necessary information to complete all segments of the inventory. When information cannot be obtained in a timely manner, Verizon uses extrapolations to provide the most complete inventory possible.

Energy

Total energy consumed is calculated based on Sustainability Accounting Standards Board (SASB) Standard for Telecommunications TC-TL-130a.1 for emissions sources included in Scope 1 and 2 GHG emissions, namely natural gas, gasoline, diesel, jet fuel, propane, kerosene, compressed natural gas, B02, B05, B11, B20, E85, methanol, ethanol, electricity, steam and chilled water.

Percentage grid electricity is calculated based on SASB TC-TL-130a.1 as total electricity consumed as purchased from the grid (and reported for Scope 2 GHG emissions) divided by total energy consumed.

Percentage renewable energy (of total energy consumed) is calculated based on SASB TC-TL-130a.1 as total renewable electricity generated on-site or purchased in the form of energy attribute certificates divided by total energy consumed.

Percentage renewable energy (of total electricity consumed) is calculated based on the total renewable electricity generated on-site or purchased in the form of energy attribute certificates divided by the total electricity consumed.

Emissions Reporting Standards

Verizon calculates Scope 1, 2 (LBM and MBM) and 3 GHG based on the following standards:

- The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard Revised Edition by the World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD)
- GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard by WRI
- The Corporate Value Chain (Scope 3) Accounting and Reporting Standard: Supplement to the GHG Protocol Corporate Accounting Standard, by the WRI/WBCSD
- The Greenhouse Gas Protocol Scope 3 Technical Guidance
- Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (2007)
- The Climate Registry General Reporting Protocol, Version 3.0, May 2019

Base Year Emissions Recalculation Policy

Verizon has elected 2019 as the base year in setting up its Science Based Targets Initiative (SBTi) approved emission reduction targets. Verizon has developed a policy for the recalculation of base year emissions as defined by the Greenhouse Gas Protocol Corporate Standard and the Greenhouse Gas Protocol Scope 3

Value Chain Reporting Standard to maintain consistency when comparing base year emissions to current and future reporting periods. Recalculation for the base year emissions is triggered by structural changes (i.e., mergers, acquisitions, divestments, outsourcing, and insourcing), changes in calculation methodology, improvements in data accuracy, or discovery of significant errors that have a significant impact on the base year emissions data. In accordance with the Greenhouse Gas Protocol, Verizon reports structural changes under the "year-after" method and recalculates the base year to reflect the full structural changes up to one-year after the structural changes occurred. When there is a triggering event that may require Verizon to re-baseline, a significance threshold of five percent of Scope 1 and Scope 2 emissions combined and five percent of all Scope 3 categories combined is set as the quantitative threshold for assessing whether the impact of such event warrants the recalculation of base year emissions for Scope 1 and Scope 2 (operational) emissions, and Scope 3 (value chain) emissions. In addition to the quantitative threshold mentioned above, qualitative considerations are additionally assessed to determine whether to recalculate base year emissions.

Scope 1 GHG emissions

Scope 1 emissions reported include direct emissions from stationary and mobile fuel combustion from the following sources and are calculated on the basis of actual (e.g., metered) and estimated data:

- Natural gas
- Gasoline
- Diesel
- Jet fuel
- Propane
- Kerosene
- Compressed natural gas
- B02
- B05
- B11
- B20
- E85
- Methanol
- Ethanol

Fugitive emissions are currently excluded from the inventory as representative data is limited, and estimates do not properly reflect our operations and including resulting data would be misleading.

Business-related fuel consumption from vehicles provided through enterprise sales compensation packages is deemed to be de minimis and therefore excluded from Scope 1 emissions.

Emissions factors used

- US EPA 2016 Revisions to the Greenhouse Gas Reporting Rule: 40 CFR Part 98 Subpart C (released November 29, 2013, amended December 9, 2016)
- WRI GHG Protocol Emission Factor from Cross Sector Tools (March 2017) Stationary Combustion

Scope 2 GHG emissions

Scope 2 emissions reported on the location-based and market-based method[l] include indirect emissions from the following sources and are calculated on the basis of actual (e.g., metered) and estimated data. The effect of renewable energy certificates purchased by Verizon through virtual power purchase agreements are accounted for in the market-based method.

- Electricity
- Steam

Emissions from chilled water are excluded.

[l] Verizon's Scope 2 electricity emissions and contractual instruments are primarily in the US market.

Emissions factors used[II]

- US EPA eGRID emissions factors are obtained from 2021 eGRID (released January 2023)
- International Energy Agency (IEA) 2021 CO_2 Emissions from Fuel Combustion Highlights Report, "CO_2 emissions per kWh from electricity generation" Table (released 2023)
- US Energy Information Agency (EIA) Voluntary Reporting of Greenhouse Gases Form EIA-1605(b), Appendix N: Emission Factors for Steam and Chilled/Hot Water (2010)

Scope 3 GHG emissions

Category	Methodology	Emissions factors
1 – Purchased goods & services 2 – Capital goods	Spend-based and supplier-specific: • Approximately 77% of emissions were calculated using an economic input-output (EIO) model, which accounts for the average GHG emissions per US dollar of economic value generated by major sectors of the US economy. Emissions are calculated by collecting Verizon's spend data with suppliers on a cash basis (i.e., the economic value received by the reporting company), associating spend with product categories defined as of year-end and matching them against sectors covered by the EIO model. • Approximately 16% of emissions were calculated using a lifecycle assessment approach (LCA) which applies a product specific emissions factor, including the embodied emissions for specific devices, to the number of units purchased. • Approximately 7% of emissions were calculated by applying a supplier-specific spend-based emission factor (reported for fiscal year 2022) to Verizon's 2023 spend data with suppliers on a cash basis.	• This EIO model uses emissions factors developed by Carbon Trust (environmentally-extended input-output (EEIO) emissions factors).[III] • LCA factors obtained from IVL[IV] or suppliers based on representative devices. • CDP supplier-specific spend-based emissions factors were calculated by using the supplier's scope 1, 2 and relevant scope 3 upstream emissions, obtained from CDP data, and dividing it by total revenue.
3 – Fuel and energy related activities	Emissions from fuel and energy related activities not included in Scope 1 or 2 are calculated by using the fuel and electricity consumption figures reported for Scope 1 and 2, with the relevant scope 3 well-to-tank and transmission and distribution emissions factors applied to each of those energy sources.	• IEA Life Cycle Upstream Emission Factors[V] • UK Department for Business, Energy & Industrial Strategy (BEIS) GHG conversion factors for company reporting[VI]

[II] Residual mix emissions factors adjusted to account for voluntary purchases are not available for electricity consumption outside of Europe.
[III] The Environmentally Extended Input-Output (EEIO) factors are developed by Carbon Trust using national statistics collected by the Organization for Economic Co-operation and Development and other national statistical agencies, historical make and use tables, and the World Economic Outlook from the International Monetary Fund. The make and use tables are extrapolation based on the correlation between industry output and gross domestic product growth.
[IV] IVL Swedish Environmental Research Institute from www.ivl.se/vart-erbjudande/forskning.html).
[V] IEA Life Cycle Upstream Emissions Factors 2023 (pilot edition), "Fuel-cycle greenhouse emissions per kwh of electricity" and "Life cycle greenhouse emissions associated with transmission and distribution losses per kwh of electricity" tables emissions factors are obtained from 2021 IEA (released 2023).
[VI] UK BEIS GHG conversion factors for company reporting are obtained from 2023 BEIS (released June 2023)

Category	Methodology	Emissions factors
4 – Upstream transportation and distribution	Upstream transport and distribution emissions (including well-to-tank) are calculated using individual shipment routes to the US International cross-border, and intra-EU. The data for each route includes the transport mode, number of shipments, total weight of shipments, and distance. Where shipment data is not available, the number of shipments was estimated based on average shipments per MT for similar transport modes.	• UK BEIS GHG conversion factors for company reporting[VI]
5 – Waste in operations	Emissions from waste generated in Verizon's operations are calculated using weight of waste for lead acid batteries, other batteries, paper/cardboard, telecom equipment, municipal recycling, chemicals and landfill. Emissions factors used account for the end-of-life treatment of the waste, as well as the waste category.	• UK BEIS GHG conversion factors for company reporting[VI]
6 – Business travel	Emissions (including well-to-tank) from business travel are calculated as follows: • Air and rail travel emissions are calculated using miles traveled based on reports from third -party travel agencies. Rail ticket mileage is estimated by using the year-over-year changes for air travel based on the number of tickets. • Ground transportation, hotel and lodging emissions are calculated based on car rental and car service spend using the EIO model.	• UK BEIS GHG conversion factors for company reporting[VI] • EEIO emissions factors[IV]
7 – Employee commuting	For 2023, emissions from employee commuting (including well-to-tank) are based on actual days reporting to the office for the week/quarter with the balance determined as working from home. Each quarter data is multiplied to determine total number of days commuting vs total number of days Work From Home (WFH) for each quarter and all 4 quarters are added together to determine the totals for the year. The commuting days are multiplied by the average commuting km per day for the country, region, or state to determine total miles. Teleworking emissions are calculated based on the WFH days.	• UK BEIS GHG conversion factors for company reporting[VI] • IEA CO_2 Emissions from Fuel Combustion Highlights Report[VII] • "Carbon Trust: Homeworking Report" (released June 2021) • Anthesis "Estimating Energy Consumption & GHG Emissions for Remote Workers" White Paper (released February 2021)
8 – Upstream leased assets	Verizon has no upstream leased assets. All material emissions associated with leased assets within our business are accounted for within our Scope 1 and 2 emissions.	
9 – Downstream transportation and distribution	Downstream transport and distribution emissions (including well-to-tank) are calculated using individual shipment routes to the US, International cross-border, and intra-EU. The data for each route includes the transport mode, number of shipments, total weight of shipments, and distance. Where shipment data is not available, the number of shipments was estimated based on average shipments per MT for similar transport modes.	• UK BEIS GHG conversion factors for company reporting[VI]
10 – Processing of sold products	Verizon purchases finished goods for use within our operations and sales to customers. No further processing of products is routinely required throughout our operations.	
11 – Use of sold products	Emissions from use of sold products are calculated for Verizon's wireless and network products sold to customers. Products are grouped into categories	• US EPA eGRID[VIII]and adjusted eGRID factors over the lifetime of the product

[VII] International Energy Agency (IEA) 2021 CO2 Emissions from Fuel Combustion Highlights Report, "CO2 emissions per kWh from electricity generation" Table (released 2023)
[VIII] US EPA eGRID emissions factors are obtained from 2022 eGRID (released January 2024)

Category	Methodology	Emissions factors
	and the lifetime energy consumption of each category was calculated based on one of two methodologies: 1. The energy consumption was calculated using the battery capacity for a representative device and lifetime. 2. Power consumption per day, which is based on information available or assumptions about the average usage profile of devices throughout a day and energy consumption figures for different modes, as well as lifetime. For the top three emitting product categories (approximately 73%), power consumption was obtained from product specifications. The choice of applicable methodology is based on available information.	
12 – End of life of sold products	End-of-life emissions from sold products are calculated for all of Verizon's wireless and network products sold to customers. Products were grouped into categories and a representative weight per product is identified, which is multiplied by the total number of products sold to give a total weight per product type. The total weight was then multiplied by an end-of-life emissions factor for all devices, which was based on an average breakdown of waste type and waste disposal method for Verizon's products.	• UK BEIS GHG conversion factors for company reporting[VI]
13 – Downstream leased assets	Verizon has no downstream leased assets. All leased assets within our business are accounted for within our Scope 1 and 2 emissions.	
14 – Franchises	Franchises are not part of Verizon's business model and therefore this category is not relevant. Verizon does not have any arrangements that are determined franchises, or which may be construed as a franchise such as our indirect agent arrangements. Verizon's indirect agent arrangements are independent from Verizon's operations and are not operated in a manner of a franchise. Emissions related to our indirect agent arrangements are captured within our Scope 3 value chain primarily within categories 1, 2 and 9.	
15 – Investments	Any owned properties/assets are tracked as part of our overall portfolio and emissions activities are tracked directly. Emissions from additional investment activity is deemed immaterial.	

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Network traffic

Network traffic is calculated with respect to SASB TC-TL-000.D in petabytes and the estimation methodologies in Table 1. Where possible, Verizon uses actual network data volume; in the event that actual data is unavailable, some network data might be extrapolated based on historical data, seasonality, expected growth or other business changes.

Table 1 - Terabytes of data traffic estimation methodologies by network

Network segment	Methodology[IX]
Customer Wave Services – Trunk Inventory Record Keeping System (TIRKS): These are dedicated, private line, high capacity point to point customer circuits. TIRKS is the legacy inventory and provisioning platform was used to create a virtual record for fiber path within the In-Franchise Verizon Telecom (VZT) footprint.	Total circuits are multiplied by capacity per circuit to arrive at total capacity. A 10% usage estimate is applied to calculate estimated usage on the circuit inventory.
Customer Wave Services – Broadband Gateway BGW: These are dedicated, private, high-capacity point to point customer circuits. BGW is the legacy inventory and provisioning platform was used to create a virtual record for fiber path within the Out-of-Franchise Verizon Business (VZB) footprint.	Total circuits are multiplied by capacity per circuit to arrive at total capacity. A 10% usage estimate is applied to calculate estimated usage on the circuit inventory.
Customer Wave Services – Nautilus Intelligent Edge Network (Nautilus): These are dedicated, private, high-capacity point to point customer circuits. Nautilus is Verizon's unified inventory and provisioning platform used to create a virtual record for fiber circuit path.	Total circuits are multiplied by capacity per circuit to arrive at total capacity. A 10% usage estimate is applied to calculate estimated usage on the circuit inventory.

[IX] Traffic data is converted from the source data units of measure to petabytes (PB) using binary conversion 1PB – 1,024^5 bytes.

Network segment	Methodology[IX]
Public IP: This network supports FiOS, DSL, Verizon Wireless, Peering, Enterprise, and other services that require internet connectivity. Includes international and domestic traffic.	Data traffic is measured as the daily average of ingress and egress from backbone to edge routers domestically (US) and internationally (Latin America, Asia, Europe, Canada and Mexico). Data traffic is collected daily by sample polling the interface from backbone to edge routers every five minutes. Daily usage average for a month is multiplied by the number of days in the month to calculate monthly usage. Verizon Wireless (VZW) Public IP download traffic is subtracted from this amount as it is reported in the RAN segment.
Wireless Radio Access Network (RAN): This network transmits Data, Voice, SMS, and MMS services.	Data traffic is measured for downlink (forward) and uplink (reverse) data traffic across Verizon's 4G LTE, 5G mmW, 5G C-Band, and 5G Nationwide RAN technologies.
Switched Ethernet Service (SES): This network provides business services for connectivity between customer offices.	Data traffic is measured for all egress (output) data transferred from aggregation switches (AS) to edge switches (ES), aggregation switches to OLT-SNI (Optical line termination – service node interface) ports and aggregation switches to customer circuits (CC). Data traffic is collected daily.
Private Internet Protocol (PIP): This network provides voice, data and video applications over an integrated network infrastructure. It offers ecommerce, voice over IP (VoIP), converged solutions, shared intranets and extranets to private businesses that require site-to-site connectivity without crossing the public internet.	Data traffic is measured for the average of ingress and egress data transferred between PIP edge and PIP Core routers. Data traffic is collected daily by polling the network every 15 minutes. Data traffic is the daily average traffic for the month multiplied by the number of days in the month.
Converged Packet Access (CPA): This network converges multiple services, IP, Ethernet, private line data and voice, over a single Ethernet interface. This network can deliver Ethernet access in bandwidth speeds ranging from 1 Mbps to 10 Gbps in various bandwidth increments.	Data traffic is measured as the average of ingress and egress data transferred across all CPA edge routers to PIP Core routers interface points. Data traffic is collected daily by polling every edge router every 15 minutes. Data traffic is added for the day and averaged for the month.
Video On-Demand (VOD): This network provides video streaming services (pay per view, subscription or free) available only to FiOS Video subscribers in the US.	Data traffic is measured for average egress (output) data from the Video Aggregation routers to VFTTP routers. Data traffic is collected daily by sample polling each interface on all VAR devices connected to a VDR every five minutes.

Network segment	Methodology[IX]
XO: Former XO network elements acquired by Verizon in April 2017. Integration of XO's backbone with the Public IP network is ongoing.	Data traffic is measured as ingress and egress data. Data traffic is collected daily by polling the network every 15 minutes. Data traffic is the ingress and egress daily average traffic for the month.
Verizon Global Management Network (VGMN) - Engineering Data Network (EDN): This network serves the Radio Access Network. The EDN is used for OAM&P (Operations, Administration, Maintenance, and Provisioning) of network elements supporting the RAN.	Higher of ingress or egress weekly utilization average factor is multiplied by total bandwidth of the router to calculate weekly usage.
Administrative/Data Center Global Technology Services (GTS) Traffic: These networks support connectivity between Verizon's administrative buildings and data centers.	Data traffic reporting is measured as egress traffic.
Voice Time Division Multiplexing (TDM) for VZT Long Distance and Local Calls: This network consists of the VZT In-Franchise footprint's Public Switched Telephone Networks (PSTN) used for voice calls using a Plain Old Telephone (POTS).	Traffic is measured in minutes of usage (MOUs) for calls originating in Verizon's Telecom network (VZT), transit calls that do not originate or terminate on the VZT network, and calls terminating on the VZT network that originated outside the VZT network. MOUs are captured hourly through all US class 5 and 4/5 access switches. Voice traffic is measured in weekly average incoming call trunks, which are then converted to centum call seconds (CCS) (CCS = Trunk multiplied by 36). CCSs are then converted to minutes of use (MOUs) per day. MOU per day is then multiplied by 20 or 25 depending on how many weekdays were in the month.
Blue Jeans: Blue Jeans is a meeting platform that allows users to join or host a meeting online. This service supports web meetings, audio meetings, and video meetings.	Traffic is measured as ingress and egress from the BlueJeans edge networks to the data centers.

Network segment	Methodology[IX]
Voice Time Division Multiplexing (TDM) for VZB Long Distance Calls: This network consists of Option 1 (fWorldcomm), 2 (fMCI), and G (Bel Atlantic) Public Switched Telephone Networks (PSTN) used for voice calls using a Plain Old Telephone (POTS).	Long distance voice traffic pulled monthly for ingress voice traffic only. CCSs are converted to terabytes using conversion factors based on circuit types (i.e. 56K or 64K circuit types).
Layer 2 iEN – Customer Circuits: Ultra Long Haul Wave Circuits that provide connectivity for customer equipment.	Total circuits are multiplied by an estimated capacity per circuit to arrive at total capacity. A 10% usage estimate is applied to calculate estimated usage per circuit.
VGMN – IDN: Verizon Global Management Network (VGMN) - Internal Data Network (IDN): This network serves the Verizon Network Operation Centers (NOC), and or Network Management Centers (NMC) Providing access from and to Verizon landline central offices and the Data Centers. The IDN is used for OAM&P (Operations, Administration, Maintenance, and Provisioning).	Data traffic is actual inbound and outbound traffic from core and data center Networks. This excludes international data traffic as this is reported in PIP.
Voice Time Division Multiplexing (TDM) for VZB Local Calls: This network consists of fMCI and 911 CLEC.	Local voice traffic pulled monthly, for ingress voice traffic only. CCSs converted to terabytes binary format using conversion factors based on circuit types (i.e., 56K or 64K circuit types).
Verizon Connect: Verizon Connect provides fleet management services and analytics insights through the use of Internet of Things (IoT) modems that provide wireless connectivity to vehicles, control system controllers, sensors, utility meters, and other connected smart devices.	Total Byte traffic is captured at edge firewall sites. Traffic captured is traffic egressing from the edge firewall to the core. Verizon circuits are not included, as these would be picked up in other segments.

Network segment	Methodology[IX]
Voice Time Division Multiplexing (TDM) for former XO Calls: This network consists of former XO Public Switched Telephone Networks (PSTN) used for voice calls using a Plain Old Telephone (POTS).	2023 incoming voice traffic was estimated based on 2022 actuals available. CCSs converted to terabytes binary format using conversion factors based on circuit type.
FiOS Broadcast Video: This network includes video broadcasts through FiOS cable services in the US.	Data traffic is measured for all egress data transferred across all broadband multiplex routers. Data traffic is collected daily. On a monthly basis, average monthly data traffic per device is estimated by adding daily traffic captured for the entire month and dividing it by the number of days for which data was collected in that given month. Then the averages for each device are summed at month-end and multiplied by total number of days in that given month to obtain total traffic.

Water withdrawal

Water withdrawal (in billions of gallons) is based on custom criteria developed using metric definitions established by the Global Reporting Initiative (GRI) Standard 303-3a[X]. Water withdrawal represents total volume of water withdrawn from municipal water utilities for all sites that use municipal water within Verizon's operational control. Below is significant contextual information necessary to understand how the data has been compiled. The amounts have been prepared based on:

- Pro-rated monthly domestic and international billed consumption data for the fiscal year ended December 31, 2023, received from utility providers and property management companies as of January of the following year. Actual consumption data accounts for approximately 80% of total water withdrawal reported.
- Estimated usage calculated by applying Verizon's water usage intensity (WUI) factors (in kgal per square foot), by region (US state averages and US total average) and facility type, to sites [XI] without billed data available. Estimated usage accounts for approximately 20% of total water withdrawal reported.

The WUI factors are derived from billed consumption and square footage data available from comparable US sites[XII]. WUI factors are then applied to sites to estimate water usage as follows:

- For US sites without billed consumption data, the state average WUI factors by facility type are applied when available. Otherwise, the US average WUI factors by facility type are used.
- For non-US sites without billed consumption data, the US average WUI factor by facility type is applied.

[X] Equivalent to 7,410 megaliters. Verizon only withdraws an immaterial amount of surface water and does not withdraw groundwater, seawater, or produced water, and as a result those sources are excluded. Other criteria included in GRI 303-b and c (e.g., total water withdrawal from all areas with water stress and water withdrawal by dissolved solid content) are excluded.

[XI] Sites that use water (e.g., administrative offices, retail stores, data centers, central offices, equipment, garage and warehouses and motor vehicle maintenance centers) are included. Sites that do not routinely use water (e.g., network cabinets and huts, microwave equipment, towers and antennas) are excluded from the estimate due to immateriality.

[XII] Sites with billed consumption but unknown square footage data are excluded from the WUI calculation.

- For sites without billed consumption data and unknown square footage, estimated square footage is calculated based on known square footage from similar facility types. The WUI factors are then applied as described above.

Note on Non-Financial Reporting

Non-financial information is subject to measurement uncertainties resulting from limitations inherent in the nature and the methods used for determining such data. The selection of different but acceptable measurement techniques can result in materially different measurements. The precision of different measurement techniques may also vary.