



LIBERTY GLOBAL'S ENVIRONMENTAL REPORTING CRITERIA 2021

Published 1 January 2022

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This document sets out the reporting criteria for Liberty Global plc's 2021 Energy Consumption and Greenhouse Gas (GHG) emissions statements as published in our UK Annual Report & Accounts and in our Corporate Responsibility Report for year ended December 31, 2021.

ACQUISITIONS AND DISPOSALS

Our policy is to include any new subsidiaries that have been acquired in the first six months of the reporting period. As such, we have included Sunrise in Switzerland acquired end of 2020 and De Vijver Media in Belgium acquired in 2019. Sunrise is therefore included for the first time in our 2021 report and De Vijver Media included since 2020.

In terms of disposals, our policy is to exclude any subsidiaries where we no longer have operational control during the reporting period. During 2017, we completed the Liberty Latin America Split-off Transaction, which included Cable & Wireless Communications, VTR and Liberty Puerto Rico and the sale of UPC Austria to T-Mobile. Furthermore, in 2019 we completed the transaction of Unitymedia in Germany and our UPC brands in Hungary, the Czech republic and Romania to Vodafone and our satellite service brand DTH in Luxemburg to M7. Therefore, we have excluded these operations from our 2021 reporting.

On April 1, 2022 we completed the divestment of UPC Poland to Iliad S.A.'s Polish mobile subsidiary Play. In line with our established criteria, we have included data from our Polish operations for 2021, however, due to data restrictions following divestment, we have estimated these amounts based on data from the previous financial year.

REPORTING PERIOD AND COMPARATIVE DATA

All reported data covers the period from January 1 to December 31, 2021 unless otherwise stated. For comparative purposes and to create new base-year values for our environmental targets, we have made adjustments to our environmental results for the acquisitions and disposals noted above.

ORGANIZATIONAL REPORTING BOUNDARIES

Liberty Global's reported environmental data follows the World Resources Institute and World Business Council on Sustainable Development's GHG Protocol Corporate Standard using the operational control approach. This covers our operations in Europe under the consumer brands Virgin Media, Telenet and UPC. We have reported 100% of the emissions from Telenet, in which we had an ownership interest of 60.8%, as of December 31, 2021. Emissions from businesses in which we have non-controlling equity stakes are not included within our reported figures with the exception of VodafoneZiggo and VirginmediaO2, starting in 2021. For these two businesses of which we have a 50% stake we have included for VodafoneZiggo 50% of their total scope1 and scope2 emissions while for VirginmediaO2 in this transition year we have included the total scope1 and scope2 emissions for only the Virginmedia part of the business and not O2, due to lack of data comparability available during this transition year. These emissions from both entities (VodafoneZiggo and Virginmedia) have been added to Liberty Global's total Scope3 emissions. As such we have added 50% of the total energy consumption for VodafoneZiggo and 100% energy consumption for Virginmedia.

THE DATA COLLECTION PROCESS

Data from our activities has been collected by the relevant providers across all market operations and entered into the cr360 system owned by UL (Underwriters Laboratories), an integrated sustainability data management system. The provided data has been reviewed and approved by the relevant subject matter experts at each of our market operations. This data was then reviewed and analyzed by Liberty Global's Corporate Responsibility team and our corporate issue area experts, before being signed off by senior management and the Legal department, as well as the Chief Financial Officer (CFO) in each of our market operations.

ENVIRONMENTAL IMPACTS

In line with the GHG Protocol, our GHG emissions have been calculated in carbon dioxide equivalent (CO₂e) using the latest, most relevant emission conversion factors according to the countries in which we operate.

For Scope 1 emission sources, we have applied emission factors produced by the Department for Environment, Food & Rural Affairs (Defra 2021) – UK Government GHG Emission Conversion Factors for Company Reporting.

For Scope 2 emission sources, the GHG intensity of electricity varies significantly among countries, and also within geographically large countries. As such, for Scope 2 'location-based' (electricity) GHG emissions, we have applied the following location-specific emission factors for our operations:

- United States – Environmental Protection Agency (EPA) - Emissions & Generation Resource Integrated Database (eGRID) 2018 (RMPA and CAMX sub-regions)
- United Kingdom – Department for Environment, Food & Rural Affairs (Defra 2021) – UK Government GHG Emission Conversion Factors for Company Reporting

For all of our other market operations, we have applied electricity emission factors from the International Energy Agency (IEA).

For our Scope 2 'market-based' (electricity) GHG emissions, we have applied supplier-specific emission factors where available, with factors from the Reliable Disclosure (RE-DISS 2020) applied to any remaining electricity consumption for our other European operations. For the U.S. we have applied the grid average from eGRID 2019.

District heating as a Scope 2 GHG emission source is not widely used, but where it is we have applied an emission factor from Defra.

For Scope 3 emission sources, we have applied emission factors produced by the Department for Environment, Food & Rural Affairs (Defra 2021) – UK Government GHG Emission Conversion Factors for Company Reporting.

All calculations were based on site-specific activity data collected by our teams around the world. The majority of our environmental data comes from third party sources and we have made every effort to capture the activity data as accurately as possible. However, in some cases, it was neither possible nor practical to do so, and we have therefore estimated the consumption data based on our previous consumption, the financial cost of the energy consumed, and/or the technical specifications of the equipment. In order to ensure a consistent approach in estimating data, we implemented a hierarchy of data sources. Where estimates are updated or improved to reflect new, more reliable, or more accurate information or assumptions, this may be reflected in the previous reporting years to ensure accuracy of comparative reporting.

Prior period errors are omissions or misstatements to one or more prior periods arising from a failure to use (or misuse of) information that was available when the information was being compiled and that could reasonably have been expected to have been taken into account. Prior period errors are considered material if they exceed 5% for the specific scope. Material prior-period errors are corrected retrospectively by correcting the comparative amounts and are clearly disclosed in the relevant area for transparency.

LOCATION AND MARKET-BASED EMISSIONS

In 2015, the Greenhouse Gas (GHG) Protocol changed its guidelines for reporting Scope 2 emissions from purchased electricity. For companies like Liberty Global, this change has meant that Scope 2 emissions should now be reported as two numbers instead of one.

The first number is total Scope 2 emissions using the “location-based” methodology. This method involves applying a “grid average” emissions factor, which is an average that relates to the grid on which energy consumption occurs. In Europe, this usually relates to a country-level electricity emissions factor, and is effectively the same as the method required in the original GHG Protocol Corporate Standard.

The second number is total Scope 2 emissions using the “market-based” methodology. This method involves using supplier-specific emissions information wherever available and then applying the relevant “residual mix” emissions factor to any electricity that does not have supplier-specific emissions information. The market-based method was designed to better reflect electricity purchasing decisions, including accounting for the impact of green or low-carbon electricity.

In 2015, for the first time, we collected supplier-specific emission factors from our global operations. For our 2014, 2013 and 2012 data, we have used the residual mix emission factor due to the lack of available prior year supplier specific emission factors.

Scope 1 (Direct): emissions come from sources that are company owned or controlled, including: emissions from static combustion (i.e. fuel used in generators for heating/power); mobile combustion (i.e. vehicle and aviation fuel from company owned or leased fleet); and coolants and propellants used (i.e. in air conditioning units and fire suppression systems). This information was collected via company fuel cards, business travel expenses, third party invoices and third party site visits. Gases included: CO₂, N₂O, CH₄, hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). In the case of the headoffice in Switzerland we are one of many tenants in the building with a centralized airconditioning system managed by the landlord. The fugitive emissions for this building is excluded in our data for 2021.

Scope 2 (Indirect): emissions from purchased electricity, heat and steam. This information was collected in electricity consumption invoices, co-location service invoices (i.e. where electricity is estimated by market operations), on-site meters or inverters. Gases included: CO₂ (for the UK CH₄ and N₂O gases are also included).

Scope 3 (Indirect): emissions from business air and land travel (includes the use of employee-owned vehicles for business purposes, flights taken by employees and travel in rental cars, taxis and public transportation); emissions arising from water, waste (which includes the impact of recycling customer premises equipment) and travel by our third-party service and installation vehicles. This information was collected via third party service invoices and reporting (e.g. corporate travel agency), business travel expenses and estimations by our market operations. Gases included: CO₂, N₂O, CH₄.

Beginning in 2014, we broadened our Scope 3 emissions reporting to include travel by third-party logistics, service and installation vehicles. This data was excluded in our 2013 and 2012 reporting. In 2017, for the first time, we have included emissions from travel by third-party ‘network expansion’ vehicles at Virgin Media in the UK. This was expanded to all our country operations in 2018. The data is estimated based on either a central model or estimations provided directly by the country operations. For third party dedicated logistics, installation and service vehicles we have used 100% mineral petrol and diesel emission factors.

Our major JVs VodafoneZiggo and VirginmediaO2 we include for 2021 50% of scope1&2 of VodafoneZiggo and 100% of Virginmedia scope1&2 into Liberty Global's scope 3 emissions.

CARBON OFFSETS

Carbon offsets and their related CO₂e savings have been reported separately and they do not form part of our total GHG emissions, as per the GHG Protocol Corporate Standard.

ENVIRONMENTAL INTENSITY METRIC

Our environmental intensity metrics provide us with meaningful targets against which to measure our business operations' energy usage. We measure our Scope 1 and 2 market-based emissions per terabyte (TB) of data traffic generated as we run our networks and customers use our services. This calculation reflects internet protocol (IP) based data traffic from fixed broadband services, such as web browsing, IP streaming of video and voice services, from all of our market operations that we can reliably measure. Approximately 60% of our total revenue in 2021 was IP based.

Currently, our intensity calculations do not take into account data traffic generated through non-IP-based and non-cable services. These services include analog television, asymmetric digital subscriber line (ADSL) and others. We intend to convert all non-IP based services to IP-based over the next 10-15 years. As we migrate to full IP, our intensity metrics will reflect an increasing proportion of our total services, eventually covering our entire service offerings.

In 2021, our GHG emissions intensity was calculated on the basis of Scope 1 and 2 market-based emissions per TB of actual data traffic generated from all of our market operations. In previous years, some estimates were required to be made as actual data was not readily available. These estimates were based on actual data measured elsewhere in the network. For the first time in 2021 50% of VodafoneZiggo's total TB of data traffic is included.