Better Health, Brighter Future

Statements and Notes on FY2022 Environmental, Health and Safety Metric

Consolidated Statement of Greenhouse Gas (GHG) Emissions Metrics

Scope 1 and 2 GHG Emissions

Metric	Quantity	Unit	
Total Scope 1 Emissions	**277**	Thousand metric tonnes (tMT) CO_2e	☑
Total Scope 2 Emissions (market-based)	**169**	$tMTCO_2e$	☑
Total Scope 2 (location-based)	**291**	$tMTCO_2e$	☑
Total Scopes 1+2 (market-based) Emissions	**446**	$tMTCO_2e$	☑
Biogenic CO_2 Emissions (Not included in Total Scope 1 Emissions)	**12**	$tMTCO_2e$	☑
Energy Metrics			
Fuel Consumption (scope 1)	**4,700**	terajoules	☑
Purchased Electricity -Non-Renewable (scope 2)	**1,600**	terajoules	☑
Purchased Electricity - Renewable (scope 2)	**1,490**	terajoules	☑
Onsite Generated Renewable Energy (scope 2)	**17**	terajoules	☑
Percent Electricity Sourced as Renewable (scope 2)	**48**	%	☑
Supplied Heating and Cooling (scope 2)	**145**	terajoules	☑
Total Energy Consumption (scopes 1 and 2)	**7,952**	terajoules	☑

Scope 3 GHG Emissions

Scope 3 Emissions by GHG Category	Quantity	Unit	
Category 1	**4,060**	tMTCO2e	☑
Category 2	**217**	tMTCO2e	☑
Category 3	**147**	tMTCO2e	☑
Category 4	**387**	tMTCO2e	☑
Category 5	**15**	tMTCO2e	☑
Category 6	**93**	tMTCO2e	☑
Category 7	**85**	tMTCO2e	☑
Category 10	**1**	tMTCO2e	☑
Category 12	**161**	tMTCO2e	☑
Total Scope 3	**5,166**	tMTCO2e	☑

Carbon Neutrality

Metric	Quantity	Unit	
Quantity of Purchased Verified Emissions Reductions (VERs)	**5,033**	tMTCO2e	☑
Quantity of Purchased Renewable Energy Certificates (RECs)	**522,693**	MWh (Megawatt Hours)	☑
Percentage of Reported FY2021 GHG emissions mitigated by VERs and RECs purchased in FY2022	**100**	%	☑

GHG Note 1 - General

The accompanying Consolidated Statement of Greenhouse Gas (GHG) Emissions Metrics include the operations of Takeda Pharmaceutical Company Limited and its consolidated subsidiaries (referenced hereafter as “Takeda” or “the Company”). The consolidated statement has been prepared in accordance with accepted GHG accounting principles as further described below. If not specifically noted, these Statements and Notes, which are related to GHG metrics, have been prepared based on the Company’s fiscal reporting year 2022, which runs from 1 April 2022 through 31 March 2023. Where applicable, base year environmental data has also been reported based on the applicable fiscal year (1 April through 31 March).

Basis of Presentation

As used in this document, GHG Inventory refers to the lists of emission sources and associated emissions quantified using standardized methods. The Scope 1 GHG Emission Inventory, which includes all GHG emissions that occur from sources under the Company’s operational control, was developed in accordance with World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition.

The Scope 2 GHG Emission Inventory, which accounts for all GHG emissions from the generation of purchased energy (for example, electricity, steam) consumed by the Company was prepared in accordance with the WRI/WBCSD GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard.

Scope 3 GHG Emission Inventory, which includes the indirect emissions occurring both upstream and downstream within the Company’s value chain, was prepared in accordance with WRI/WBCSD Corporate Value Chain (Scope 3), Accounting and Reporting Standard.

Collectively, the GHG Protocol: A Corporate Accounting and Reporting Standard, Revised Edition, the GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard and the GHG Protocol: Corporate Value Chain (Scope3) Accounting and Reporting Standard are referred to as the “GHG Protocol” in this document.

Estimation Uncertainties

Data used in the preparation of the Consolidated Statement of GHG Emissions are subject to measurement uncertainties resulting from limitations inherent in the nature and methods 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.

The preparation of the Consolidated Statements requires management to make estimates and assumptions that affect amounts reported. We base these estimates, including methodologies to calculate GHG emissions, on available information and various other assumptions that it believes to be reasonable. For example, scopes 1 and 2 emissions from small offices with less than 100 full-time occupants are estimated using emission factors from the Commercial Building Energy Consumption Survey (CBECS) (EIA, 2018).

GHG Note 2 – Organizational and Operational Boundaries

Organizational Boundaries

The Company has selected the operational control approach as the consolidation approach to define the organizational boundaries for its GHG Inventory. Accordingly, the Company includes GHG emissions from all owned sites and leased facilities over which Takeda has operational control to introduce and implement operating policies (except where specifically excluded as described in our operational boundaries below) and excludes those from minority-owned joint ventures over which the company does not have operational control for scopes 1 and 2 reporting.

Operational Boundaries

Scopes 1-2 Inventory

Takeda Owned Assets

The Company's GHG Inventory includes scopes 1 and 2 emissions from Takeda-owned commercial and industrial assets including manufacturing sites, R&D facilities, plasma collection centers, office spaces, and warehouses. This includes associated scope 1 emissions from the on-site use of fossil fuels and refrigerants, and scope 2 emissions from purchased electricity, heat, steam, and cooling.

Excluded from the inventory are residential properties, undeveloped land, improved land with no recognized GHG emissions sources, and newly constructed or under construction facilities that are not yet under the Company's operational control.

Leased Assets

The Company includes leased assets that fall under the "right-of-use" definition (as defined by the International Accounting Standards Board in International Financial Reporting Standard 16) in scope 1 and 2 emissions reporting. With the exception of the BioLife subsidiary, which includes all leases regardless of duration or value, short-term leases (duration less than 12 months) and small value lease contracts (total value less than $5,000 USD/668,000 JPY) are excluded from the inventory.

Scope 3 Inventory

The Company's scope 3 Inventory includes emissions from the following GHG Protocol categories: Category 1: Purchased Goods and Services, Category 2: Capital Goods, Category 3: Fuel and Energy-Related Activities (not included in scope 1 or 2), Category 4: Upstream Transportation and Distribution, Category 5: Waste Generated in Operations, Category 6: Business Travel, Category 7: Employee Commuting, Category 10: Processing of Sold Products and Category 12: End-of-Life Treatment of Sold Products.

The Company excludes Category 8: Upstream Leased Assets because emissions from leased assets are accounted for under scopes 1 and 2. The Company also excludes Category 13: Downstream Leased Assets since leasing facilities is not in Takeda's business model and there are no known Takeda-owned assets that are leased to other entities during the reporting period. The Company excludes Category 11: Use of Sold Products because the use of the Company's sold products is not believed to cause more than *de minimis* emissions, if any, and excludes Category 14: Franchises because the Company does not operate franchises. Category 9: Downstream Transportation and Distribution is not assessed as the Company currently does not have the ability to estimate distances from pharmacies or medical institutions to patients' homes. Category 15: Investments is also excluded as the Company currently lacks the data to accurately estimate GHG emissions from private equity investments.

GHG Reporting Period

Reporting Period

The reporting period for current year GHG emissions and energy use is fiscal year 2022.

Carbon offsets and renewable energy certifications are purchased each year to neutralize GHG emissions and energy use from the previous year; the reporting year for metrics associated with carbon neutrality is fiscal year 2021.

Recalculation and Restatement of Previous Year Emissions Data

In accordance with the GHG Protocol, the Company established a process for recalculating GHG emissions for previous years and set a significance threshold of +/- 5% for aggregated scope 1 and scope 2 (location-based) emissions. The Company reviews prior year emissions on an annual basis and has restated previous years' emissions to account for structural changes in the company (for example, acquisitions and/or divestitures) and revisions in accounting methodologies or emissions factors. This recalculation of GHG emissions is performed in accordance with the GHG Protocol "same-year/all-year" approach.

GHG Included in the Inventory

Emissions data are provided in metric tonnes (MT) for each GHG separately and reported as aggregated totals emissions using thousand MT CO_2e. The company assesses the emissions from all applicable Kyoto GHGs which are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and hydrofluorocarbons (HFC's). Other Kyoto GHGs, including perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3), are not considered as they are not applicable the Company's operations.

The Global Warming Potentials from the Intergovernmental Panel on Climate Change (IPCC) fifth assessment report (AR5), 100-year time horizon were used to convert the gases into CO_2e, if not otherwise specified.

GHG Metrics Definitions, Emissions Factors, and Calculation Methods

Metric Definitions

Metric	Description
Total Scope 1 Emissions	Sum of total GHG emissions from company-owned generators, heaters, boilers, vehicles, and refrigerants
Fuel Consumption	The sum in energy units of all fuel used in the current reporting year (including natural gas reported and estimated, diesel, heavy oil, LPG, propane, gasoline, biogenic fuels and gases, from the current fiscal year, excluding company fleet fueled offsite)
Biogenic CO_2 Emissions (not included in Total Scope 1 Emissions)	Direct CO_2 emissions from the combustion of biologically sequestered carbon. Note: associated CH_4 and N_2O emissions are included in Total Scope 1 Emissions
Total Scope 2 Emissions – Market-Based	Market-based purchased electricity plus emissions from all other purchased energy (for example, steam, district heat or cooling water)
Total Scope 2 Emissions – Location-Based	Location-based purchased electricity plus emissions from all other purchased energy (for example, steam, district heat or cooling water)
Purchased Electricity (Non-Renewable)	All electricity purchased subtracting Purchased Electricity (Renewable)
Purchased Electricity (Renewable)	Electricity derived from natural sources that are replenished at a higher rate than can be consumed (for example, from solar, wind, hydro, etc.)
Onsite Generated Renewable Energy	Renewable energy that is physically generated within the Company's property boundary. Currently, this includes only solar electricity.
Percent Electricity Sourced as Renewable	Calculated as per total renewable electricity divided by the sum of renewable and non-renewable purchased electricity
Supplied Heating and Cooling	Includes district heating and cooling plus purchased steam
Total Energy Consumption	Sum of all fuel sources (stationary and mobile) and electricity (excluding fuel consumed by company fleet and

	refrigerants)
Total Scopes 1+2 (market-based) Emissions	Sum of Total Scope 1 Emissions plus Total Scope 2 Emissions (market-based)

The tables below describe the GHG emission factors used by the Company, the applicable reference sources cited, and calculation methods used for each emission source included within the operational boundary.

Scope 1 and Scope 2 Emission Factors and Calculation Methods

Emissions Scope	Source Description and Underlying Data	Emission Factors	Calculation Method and Assumptions
Scope 1	Stationary combustion sources (for example, boilers, generators, space heaters) Service invoices consolidated in the Company's environmental metrics database	(EPA, 2022), https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf	Emissions from generators, heaters, and boilers under the Company's operational control are calculated by multiplying fuel volumes consumed by the corresponding emission factors.
	Mobile combustion sources (Vehicles, mobile generators) Service invoices consolidated in the Company's environmental metrics database	(EPA, 2022), https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf	Vehicle emissions are calculated by multiplying fuel volumes consumed by the corresponding emission factors.
	Fleet (Company-owned or operated vehicles that are fueled offsite) Fuel usage or mileage driven reported by country fleet managers	(EPA, 2022), https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf (U.S. Department of Transportation, 2019), https://www.fhwa.dot.gov/policyinformation/statistics/2019/vm1.cfm	Vehicle emissions are calculated by multiplying fuel volumes consumed by the corresponding emission factors. Where fuel volumes consumed are not available, emissions are estimated based on the vehicle distance driven and an estimated fuel economy taken from the US Department of

Emissions Scope	Source Description and Underlying Data	Emission Factors	Calculation Method and Assumptions
			Transportation.
	Refrigerants Quantity of refrigerants used to replace refrigerant losses as reported by sites and consolidated in the Company's environmental metrics database	GWP from IPCC (see reference Greenhouse Gases Included in the Inventory section)	Emissions from refrigerants are estimated based on the quantity of refrigerants used to replace refrigerant losses as reported by sites and consolidated in the Company's environmental metrics database. The quantity of each refrigerant is multiplied by the respective GWP100 AR5 value to calculate the CO_2e.
Direct CO_2 from biogenic fuels / gases not included in Total Scope 1	Stationary combustion Service invoices consolidated in the Company's environmental metrics database	https://ghgprotocol.org/calculation-tools#cross_sector_tools_id "other Biogas"	Direct CO_2 emissions from the combustion of biologically sequestered carbon are not included in the Total Scope 1, but are reported separately, as per the GHG Protocol. The direct methane and nitrous oxide emissions are included in the corporate scope 1 inventory, and inside of the Company's GHG reduction target boundaries.
Scope 2	Purchased Electricity Utility invoices consolidated in the Company's environmental metrics database	EPA, https://www.epa.gov/egrid International Energy Agency, 2023 (Accessed through The Company's environmental metric database)	Location-Based emissions are calculated by multiplying electricity usage at the location with geographical emission factors; US: EPA; all other countries: IEA. Market-based emissions are estimated for companies that use contractual instruments, and the Company utilizes the data hierarchy outlined in the GHG Protocol. The instruments used include RECs, green electricity certificates and PPA's. The Company uses the market-based method for tracking progress towards its GHG emissions reduction goals.
	District Heating Water	EPA 2022,	This is calculated by multiplying the energy

Emissions Scope	Source Description and Underlying Data	Emission Factors	Calculation Method and Assumptions
	Utility invoices consolidated in the Company's environmental metrics database	https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf	quantity purchased by a supplier specific emission factor, if available, or the EPA factors divided by 0.8 to account for transmission loss.
	Purchased Steam Utility invoices consolidated in the Company's environmental metrics database	Supplier Provided Factors EPA 2022, https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf	This is calculated by multiplying the energy quantity purchased by a supplier specific emission factor, if available, or the EPA factors.
	District Cooling Water Utility invoices consolidated in the Company's environmental metrics database	EPA, https://www.epa.gov/egrid International Energy Agency, 2023 (Accessed through The Company's environmental metrics database) (Thomas Hartman, 2001) All-Variable Speed Centrifugal Chiller Plants	This is calculated by multiplying the energy quantity purchased by the IEA or EPA emission factor divided by the coefficient of performance, 5. * The emissions calculation assumes a Coefficient of Performance (COP) factor of five for the chiller (including pumps and fans) (Thomas Hartman, 2001).
	Third-Party Operated On-Site Fuel Cells Third party reported energy consumed	EPA 2022, https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf	Calculated using the vendor provided emissions and included in Total Scope 2 Emissions (market and location-based).

Scope 3 Emission Factors and Calculations Methods

Category	Description of the types and sources of data used to calculate the emissions	Emission factors	Calculation Method and Assumptions

Category	Description of the types and sources of data used to calculate the emissions	Emission factors	Calculation Method and Assumptions
Category 1: Purchased Goods and Services	Includes all purchases related to goods and services not otherwise included in the other categories of upstream scope 3 emissions (i.e., category 2 through category 8). The Company's procurement databases are used as the data source	Ingwersen, W., & Li, M. (2022). USEEIO, Supply Chain Greenhouse Gas Emission Factors for US Industries and Commodities. Retrieved March 28, 2023, from https://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=349324&Lab=CESER Ecoinvent. (2021). EcoInvent 3.8. Retrieved March 28, 2023, from https://ecoinvent.org/the-ecoinvent-database/data-releases/ecoinvent-3-8 Pré. (2023). SimaPro. Retrieved March 28, 2023, from https://simapro.com/ Life Cycle Assessments (LCAs) or carbon footprint analyses performed on Takeda's (or similar) products and raw materials European Commission. (2016). Environmental Sustainability Assessment of Bioeconomy Products and Processes – Progress Report 2. Retrieved from https://publications.jrc.ec.europa.eu/repository/handle/JRC100766 ABPI. (2023). Retrieved March 28, 2023, from https://www.abpi.org.uk/r-d-manufacturing/abpi-blister-pack-carbon-footprint-tool	The direct and indirect purchasing activity of the reporting year were used to calculate the emissions by applying a combination of a spend-based and activity-based methodology. The activity-based approach was the preferred method for direct purchasing activity of "BioLife" and "Raw Materials", and indirect purchase of "Professional Services". For raw materials and BioLife, the material mass associated with the spend was multiplied by applicable emission factors (emission factors were derived from ecoinvent 3.8, using the IPCC 2013GWP_{100} method, from information in the public domain, and from previous LCAs or carbon footprint studies). For professional services, when possible, emissions were estimated using supplier-specific emission factors based on publicly available supplier emissions and revenue data (typically obtained via CDP or other environmental sustainability reports, and financial statements), subject to certain validation criteria, or an average factor of the supplier-specific factors recalculated using the location-based method. A pure spend-based method was used for

Category	Description of the types and sources of data used to calculate the emissions	Emission factors	Calculation Method and Assumptions
		Settanni, E. S. (2017). Exploring Generalisations for Sustainability Assessment in Medicine Manufacturing Networks. EurOMA. Retrieved March 30, 2023, from https://doi.org/10.17863/CAM.11308 Alviz, P., & Alvarez, A. (2017). Comparative life cycle assessment of the use of an ionic liquid ([Bmim]Br) versus a volatile organic solvent in the production of acetylsalicylic acid. Retrieved March 30, 2023, from https://doi.org/10.1016/j.jclepro.2017.02.107 Supplier specific factors derived from publicly reported data (i.e., GHG emissions and revenue) for high-spend suppliers of the category "Professional Services".	the remaining population, which accounted for estimating the emissions associated with ~85% of the spend. An environmentally extended input-output model was used to estimate emissions. The spend value was multiplied by the EEIO factor relevant for that category of purchase.
Category 2: Capital Goods	Includes all purchases related to capital goods The Company's procurement databases are used as the data source	Ingwersen, W., & Li, M. (2022). USEEIO, Supply Chain Greenhouse Gas Emission Factors for US Industries and Commodities. Retrieved March 28, 2023, from https://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=349324&Lab=CESER	Emissions from capital goods were estimated using a spend-based approach and applying the EEIO factors from USEEIO Supply Chain (2020) on the direct purchasing activity associated with Capital Goods.

Category	Description of the types and sources of data used to calculate the emissions	Emission factors	Calculation Method and Assumptions
Category 3: Fuel and Energy-Related Activities (not included in scope 1 or 2)	Includes emissions related to the production and distribution of fuel and energy, which are estimated based on the Company's fuel consumption and energy usage data consolidated in the Company's environmental metrics database	DEFRA. (2022 and 2021 for WTT emission factors). UK Government GHG Conversion Factors for Company Reporting. United Kingdom: UK Government GHG Conversion Factors for Company Reporting. Retrieved March 28, 2023 IEA. (2022, September). Emissions Factors 2022. Retrieved March 28, 2023, from https://www.iea.org/data-and-statistics/data-product/emissions-factors-2022	The emissions associated with this category are calculated by multiplying the Company's fuel consumption and energy usage data is multiplied by applicable emission factors from the IEA and UK government DEFRA for the relevant year.
Category 4: Upstream Transportation and Distribution	Includes third-party transportation and logistics services purchased by the Company for inbound and outbound transportation, as well as third-party transportation services between Company facilities.	Ingwersen, W., & Li, M. (2022). USEEIO, Supply Chain Greenhouse Gas Emission Factors for US Industries and Commodities. Retrieved March 28, 2023, from https://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=349324&Lab=CESER	The emissions from this category are calculated through a spend-based method by multiplying the spend from direct purchasing activities related to distribution or logistics by the corresponding EEIO factors from USEEIO Supply Chain Greenhouse Gas Emission Factors for US Industries and Commodities.
Category 5: Waste Generated in operations	Includes all non-regulated and regulated waste treatment methods; excludes third-party wastewater treatment Based on waste data consolidated in the Company's environmental metrics database	DEFRA. (2021, 2022). UK Government GHG Conversion Factors for Company Reporting. United Kingdom: UK Government GHG Conversion Factors for Company Reporting. Retrieved March 28, 2023 The Global Warming Potentials used to calculate the DEFRA factors use the IPCC fifth assessment report (AR5) for certain waste disposal methods, and the IPCC fourth assessment report (AR4) for other disposal methods.	The emissions from this category are calculated by multiplying the mass of waste per waste treatment method by the appropriate emission factor. The Ecoinvent v3.8 emission factors were used for waste sent to incineration without energy recovery including transport, whilst DEFRA emission factors were used for all other waste treatments.

Category	Description of the types and sources of data used to calculate the emissions	Emission factors	Calculation Method and Assumptions
		Ecoinvent. (2021). Ecoinvent 3.8. Retrieved March 28, 2023, from https://ecoinvent.org/the-ecoinvent-database/data-releases/ecoinvent-3-8/ Gov.uk. (2022, June 22). Government conversion factors for company reporting of greenhouse gas emissions. Retrieved March 28, 2023, from https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting "recycled content method" was used	Except for waste sent to incineration without energy recovery, the emissions from the transportation of the waste to the waste treatment facilities are included in the emission factors. For waste sent to incineration without energy recovery, a transportation distance of 50 km was assumed as a conservative estimate.
Category 6: Business Travel	Includes all business travel booked within the Company's third-party booking system for flights and rental cars Based on business travel data from Company's third-party booking vendor(s)	DEFRA. (2022). UK Government GHG Conversion Factors for Company Reporting. United Kingdom: UK Government GHG Conversion Factors for Company Reporting. Retrieved March 28, 2023	A distance-based method was used by multiplying the rental motor vehicle and air travel distance data (reported by the travel booking vendor) by the corresponding emission factor. Emissions from bus, rail, taxi/ride-share, and hotels are not included.

Category	Description of the types and sources of data used to calculate the emissions	Emission factors	Calculation Method and Assumptions
Category 7: Employee Commuting	Includes commuting emissions from all employees. Employee numbers and locations based on the Company's Human Capital Management platform	Gov.uk. (2022, June 22). Government conversion factors for company reporting of greenhouse gas emissions. Retrieved March 28, 2023, from https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Employee commute is calculated by multiplying the estimated distance employees commute by the percent per transportation mode. Respective emission factors are multiplied for each transportation mode per commute mile. Commuting distance is estimated based on the number of employees in each country and the average commute data for that country. It is assumed that all employees registered in the Company's Human Capital Management platform commuted to work 5 days a week and worked 48 weeks, taking 20 days of vacations/holidays. Emissions from contractors are excluded as are home-office emissions for employees who work remotely.
Category 8: Leased assts	EXCLUDED – This category is excluded as emissions from leased assets are accounted for under scopes 1 and 2.		
Category 9: Downstream Transportation and Distribution	EXCLUDED – This category is excluded due to the restricted access to data on the transportation from healthcare facility to the patient. This data might be considered in future years. The Company's outbound distribution and logistics are reported under Category 4.		
Category 10: Processing of Sold Products	Includes the emissions from processing of intermediate products by third parties after sale	LCAs or carbon footprint analyses performed on Takeda's (or similar) products and raw material Ecoinvent. (2021). Ecoinvent 3.8. Retrieved	The emissions from the processing of sold products were calculated by multiplying the weight of API (in kg) by the appropriate emission factor (kg CO2e/kg of processed API).

Category	Description of the types and sources of data used to calculate the emissions	Emission factors	Calculation Method and Assumptions
		March 28, 2023, from https://ecoinvent.org/the-ecoinvent-database/data-releases/ecoinvent-3-8 Pré. (2023). SimaPro. Retrieved March 28, 2023, from https://simapro.com/	The quantity of API manufactured at the Hikari plant for third parties was extracted from the Company's software and technology solution. It was assumed that the API is formatted into tablets and packed in blister packs, without losses.
Category 11: Use of Sold Products	EXCLUDED – This Category is excluded as the use of the Company's sold products is not believed to cause more than *de minimis* emissions.		
Category 12: End-of-Life Treatment of Sold Products	Includes the emissions associated with the disposal of the packaging material of the sold products The data is taken from the Company's Procurement software and technology solution.	Ecoinvent. (2021). Ecoinvent 3.8. Retrieved March 28, 2023, from https://ecoinvent.org/the-ecoinvent-database/data-releases/ecoinvent-3-8 DEFRA. (2022). UK Government GHG Conversion Factors for Company Reporting. United Kingdom: UK Government GHG Conversion Factors for Company Reporting. Retrieved March 28, 2023 Pré. (2023). SimaPro. Retrieved March 28, 2023, from https://simapro.com/	The emissions are calculated by multiplying the packaging mass (secondary and tertiary) with emission factors according to Pré's country specific municipal waste scenarios (accessed through SimaPro with data sources documented in each country's scenario process) plus the product of the primary packaging mass with the emission factors for hazardous waste incineration. The primary, secondary, and tertiary packaging mass is determined by multiplying the average mass of each (by SKU) by the number of sold SKUs. Included are all product types for which data on their primary, secondary, and tertiary packaging is available, including the mass and number of SKUs per shipping carton and pallet. Unused products are excluded, as data on these quantities is not available.

Category	Description of the types and sources of data used to calculate the emissions	Emission factors	Calculation Method and Assumptions
Category 13: Leased Assets	EXCLUDED – This category is excluded as emissions from leased assets are accounted for under scopes 1 and 2.		
Category 14: Franchises	EXCLUDED – This category is excluded as the Company does not operate franchises.		
Category 15: Investments	EXCLUDED – This category is currently excluded due to limitations in data availability for equity investments in private companies.		

GHG Note 3- Carbon Neutrality and Carbon Offsets

The Company has maintained carbon neutrality across scopes 1, 2 (market-based) and 3 since 2020 (for fiscal year 2019 GHG emissions). As part of its carbon neutrality commitment, the Company purchases carbon offsets and renewable energy certificates annually to maintain its carbon neutrality. Offsets are currently purchased and reported with a one-year delay – thus the information presented herein corresponds to offsets purchased in FY2022 to compensate for FY2021 GHG emissions. Offsets purchased to compensate for scopes 1 and 3 emissions for carbon neutrality purposes are not considered when consolidating and reporting the Company's reported scopes 1 and 3 emissions.

Metric	Description
Percentage purchased verified emissions reductions (VERs)	VERs are greenhouse gas emissions reduction certificates with environmental benefits equivalent to one metric tonne of carbon dioxide, that complies with the Environmental Attribute Standard. After purchase, the Company is the exclusive owner of the emissions reduction.
Purchased renewable energy certificates (RECs)	RECs are purchased to compensate for scope 2 emissions that have not been eliminated through site conservation or renewable energy transition initiatives. RECs may be purchased during the year by sites from local utility providers or at the end of the year through a centralized process.
Percentage reported GHG emissions mitigated by purchased VERs and RECs	Calculated as the sum of VERS and RECs purchased in FY2022 divided by the FY2021 Total Scope 1, Total Scope 2 (market), and Total Scope 3 GHG emissions multiplied by 100.

Consolidated Statement of Water Metrics

Water Withdrawals and Discharge

Metric	Quantity	Unit	
Total Freshwater Withdrawal in Current Year	**10,430**	thousand cubic meters (tm^3)	☑
Water Discharged	**8,190**	tm^3	☑

Water Risk

Metric	Quantity	Unit	
% of manufacturing sites located in areas considered to have “high” or “extremely high” water risk	**34**	%	☑

Water Note 1

The accompanying Consolidated Statement of Water Metrics includes the Company’s operations as previously described in GHG Note 1. This statement has been prepared in accordance with accepted principles and methods as further described below.

Basis of Presentation

Takeda Owned Assets

The Company includes water withdrawals and discharges and assesses water risk at all owned sites over which Takeda has operational control to introduce and implement operating policies during the reporting year. Specifically excluded from these metrics are offices with less than 400 full time equivalent occupants, residential properties, undeveloped land independent of area (for example, botanical garden), subleased sites, and parking lots and garages.

Leased Assets

The Company also includes all leased sites that fall under the “right-of-use” definition (as defined by the International Accounting Standards Board in International Financial Reporting Standard 16) in water reporting. Short-term leases (duration less than 12 months) are excluded as well

as low value lease contracts (total value less than $5,000 USD/668,000 JPY). When a leased asset is divested or acquired during a reporting period, the Company accounts for its water proportionally to the duration it was under its operational control during the reporting period.

Estimation Uncertainties

Water withdrawal and discharge data used in the preparation of the Consolidated Statement of Water Reporting are subject to measurement uncertainties resulting from limitations inherent in the nature and methods 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.

The preparation of the Consolidated Statements requires management to make estimates and assumptions that affect amounts reported. We base these estimates, including methodologies to calculate water metrics, on available information and various other assumptions that it believes to be reasonable.

Reporting Period

The reporting period for these metrics consists of the fiscal year 2022.

Recalculation and Restatement of Previous Year Water Data

The Company has established a policy to recalculate water metrics for previous years if a significance threshold of +/- 5% is reached for aggregated water withdrawal or water discharge metrics.

Water Withdrawal and Discharge Metrics Sources and Calculation Methods

Metric	**Description of the types and sources of data used to calculate water volumes**	**Calculation Method and Assumptions**
Total Freshwater Withdrawal in Current Year	Water volume data from site metering and water invoices are reported to the Company's environmental metrics database	Calculated as the sum of all reported freshwater withdrawal during the reporting period. Freshwater is defined as having less than or equal to 10,000 mg/L of total dissolved solids. If not specified otherwise, the Company considers all water obtained from surface waters, groundwater, or third parties to be freshwater. Recycled wastewater and other non-freshwater are excluded.

Metric	Description of the types and sources of data used to calculate water volumes	Calculation Method and Assumptions
Water Discharged	Water volume data from site metering and water invoices data are reported to The Company's environmental metrics database	Calculated as the sum of all reported water discharged during the reporting period. Defined as sum of water flow volumes that leave the organizational boundary of sites at measured discharge points, and includes waters discharged to surface waters, groundwater, the sea or third parties. Excluded from this metric is wastewater sent for off-site incineration and any wastewater effluent generated from the treatment of contaminated groundwater as part of a site remediation activity (cleanup).

Manufacturing Sites in "High" or "Extremely High" Water Risk Areas Sources and Calculation Methods

Metric	Description of the types and sources of data used to determine water risk	Calculation Method and Assumptions
Percent of manufacturing sites located in areas considered to have "high" or "extremely high" water risk	The Company's manufacturing sites' locations and WRI Aqueduct, WWF-DEG Water Risk Filter, Watershed specific studies	Calculated by dividing the number of sites with a validated "high" or "extremely high" water risk status by the total number of manufacturing sites and multiplying by 100. The Company's manufacturing sites' location are screened with the WRI and WWF water risk filter. Sites with "high" or "extremely high" preliminary risk status undergo a watershed specific risk validation study to confirm the final status.

Consolidated Statement of Waste Metrics

Waste Generation and Diversion

Metric	Quantity	Unit	
Total Waste Generated	**85,510**	Metric Tonnes (MT)	☑
Total Regulated Waste Generated	**37,510**	MT	☑
Total Non-Regulated Waste Generated	**48,000**	MT	☑
Percent Waste Recycled	**36**	%	☑
Percent Waste Sent to Landfill	**22**	%	☑

Waste Note 1

The accompanying Consolidated Statement of Waste Metrics includes the Company's operations as previously described in GHG Note 1. This statement has been prepared in accordance with accepted principles and methods as further described below.

Basis of Presentation

Takeda Owned Assets

The Company includes waste generated from all owned sites over which Takeda has operational control to introduce and implement operating policies during the reporting year.

Leased Assets

The Company includes leased assets that fall under the "right-of-use" definition (as defined by the International Accounting Standards Board in International Financial Reporting Standard 16) in water reporting. Short-term leases (duration less than 12 months) are excluded as well as low value lease contracts (total value less than $5,000 USD/668,000 JPY). When a leased asset is divested or acquired during a reporting period, the Company accounts for its water proportionally to the duration it was under its operational control during the reporting period.

Exclusions

Specifically excluded from this metric is waste generated as part of construction, demolition, and environmental remediation activities, and waste generated in offices with occupancies less than 400 full time employees. Residential properties, undeveloped land independent of area (e.g., open space, botanical garden), subleased sites and parking lots and garages are also excluded.

Estimation Uncertainties

Data used in the preparation of the Consolidated Statement of Waste Reporting are subject to measurement uncertainties resulting from limitations inherent in the nature and methods 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.

The preparation of the Consolidated Statements requires management to make estimates and assumptions that affect amounts reported. We base these estimates, including methodologies to calculate waste metrics, on available information and various other assumptions that it believes to be reasonable.

Waste Reporting Period

The reporting period for these metrics consists of the fiscal year 2022.

Waste Metrics Sources and Calculation Methods

Metric	**Description of the types and sources of data used to calculate waste volumes**	**Calculation Method and Assumptions**
Total Waste Generated	The information provided by waste vendor (for example, invoice or waste manifest) is generally used for data input to the Company's environmental metrics database	Calculated as the total sum of waste quantities reported in the database Total waste generated is defined as the sum of waste reported at sites where the Company had operational control during the reporting period.
Waste Diverted from Landfills	The information provided by waste vendor (for example, invoice or waste manifest) is generally used for data input to the Company's environmental metrics database	Calculated as the total sum of waste quantities reported as sent to landfill in the database subtracted from total waste generated Landfills are defined as engineered disposal sites where wastes are deposited at or below the ground level.
Total Regulated	The information provided by the waste	Calculated by summing the quantities of waste reported as regulated in the database.

Metric	Description of the types and sources of data used to calculate waste volumes	Calculation Method and Assumptions
Waste Generated	vendor on the waste invoice is generally used for data input to the Company's environmental metrics database	Waste classifications (i.e., regulated or non-regulated) are based on local regulations and determined by applicable third-party waste manifests, shipment forms, or bills of lading.
Total Non-Regulated Waste Generated	The information provided by the waste vendor on the waste invoice generally is used for data input to the Company's metrics database	Calculated by summing quantities of waste reported as non-regulated in the database. Waste classifications (i.e., regulated or non-regulated) are based on local regulations and determined by applicable third-party waste manifests, shipment forms, or bills of lading.
Percent Waste Recycled	The information provided by the waste vendor on the waste invoice is generally used for data input to the Company's metrics database	Calculated as the sum of non-regulated and regulated waste reported as recycled, divided by the total waste generated multiplied by 100. Recycling is defined as reprocessing products or components of products that have become waste (incl. composting), to make new materials and is determined by the recycling classification on the waste invoice.
Waste Sent to Landfill	The information provided by the waste vendor on the waste invoice is generally used for data input to the Company's metrics database	Calculated by dividing the total waste reported as sent to landfill by the total waste generated and multiplying by 100. Landfills are defined as engineered disposal sites where wastes are deposited at or below the ground level.

Consolidated Statement of Other Environment, Health, and Safety (EHS) Metrics

Environmental Compliance

Metric	Quantity	
Number of Written Notices of Violation (NOVs) or Citations Received	**8**	☑
Total Number of Significant Spills	**0**	☑

Health and Safety

Metric	Quantity	
Total Recordable Incident Rate (TRIR)	**1.28**	☑
Incidents with Days Lost Rate	**0.18**	☑
Number of Fatalities	**0**	☑
Fatality Rate	**0**	☑

Environmental Compliance Note 1

Basis of Presentation

The accompanying Consolidated Statement of Other Environment, Health, and Safety (EHS) Metrics include the Company's operations as previously described in GHG Note 1. In scope for environmental compliance metrics is any incident reported for the reporting period in which and NOV or citation is issued, or a significant spill occurs at a Takeda-owned or leased site where Takeda has operational control. This statement has been prepared in accordance with accepted principles and methods as further described below.

Estimation Uncertainties

EHS data used in the preparation of the Consolidated Statement of Other Environment, Health, and Safety (EHS) Metrics Reporting are subject to measurement uncertainties resulting from limitations inherent in the nature and methods 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.

The preparation of the Consolidated Statements requires management to make estimates and assumptions that affect amounts reported. We base these estimates, including methodologies to calculate EHS metric, on available information and various other assumptions that it believes to be reasonable.

Reporting Period

The reporting period for environmental compliance metrics is fiscal year 2022. An incident is reported for the fiscal year period in which the NOV/NOC is issued.

Environmental Compliance Metrics Sources and Calculation Methods

Metric	**Description of the types and sources of data**	**Calculation Method and Assumptions**
Number of Written Notices of Violation (NOVs) or Citations Received	NOVs or NOCs registered in the Company's Information Management System (beacon)	This includes any environmental NOV or NOC, regardless of the issuance or amount of a fine
Total Number of Significant Spills	Significant spills registered in The Company's Information Management System (beacon)	All environmental spills/releases which resulted in issued fines of $100,000 USD or more.

Health & Safety Note 1

Basis of Presentation

The accompanying Consolidated Statement of Other Environment, Health, and Safety (EHS) Metrics include the Company's operations as previously described in GHG Note 1. In scope for these metrics are all Company employees and Company-supervised contractors who suffer recordable inquiries, illnesses, or fatalities because of performing work-related activities globally. This statement has been prepared in accordance with accepted principles and methods as further described below.

Estimation Uncertainties

EHS data used in the preparation of the Consolidated Statement of Other Environment, Health, and Safety (EHS) Metrics Reporting are subject to measurement uncertainties resulting from limitations inherent in the nature and methods 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.

The preparation of the Consolidated Statements requires management to make estimates and assumptions that affect amounts reported. We base these estimates, including methodologies to calculate EHS metric, on available information and various other assumptions that it believes to be reasonable.

Reporting Period

The reporting period for environmental compliance metrics is fiscal year 2022.

Health and Safety Reporting

Metric	Description of the types and sources of data	Calculation Method and Assumptions
Total Recordable Incident Rate (TRIR)	Number of injury/illness cases classified as recordable, and Total Hours Worked as documented in the Company's Information Management System	Calculated as number of employees per 100 full-time employees that suffered a recordable Injury or illness. TRIR = (# of Recordable injuries/illnesses * 200,000) divided by the Total # of hours worked by all Takeda employees and Takeda supervised contractors during the current year Recordable Incidents are defined as: Death, loss of consciousness, lost time, restricted work or job transfer, medical treatment beyond first aid, significant diagnosed injury or illness. 200,000 hours is used to determine the rate as an approximate proxy to number of hours 100 employees would work in a year (100 workers x 40 hours per week x 50 weeks)
Incidents with Days Lost Rate (LTIR)	Number of recordable injury/illness cases with days lost and hours worked as documented in the Company's Information Management System	Calculated as the sum of employees per 100 full-time employees who suffered a lost time injury or illness. LTIR = (# of Incidents with Days Lost * 200,000) divided by the Total # of hours worked by all Takeda employees and Takeda supervised contractors during the current year

Metric	Description of the types and sources of data	Calculation Method and Assumptions
		Lost time injury/illness is defined as work-related injury or illness where the affected individual is absent from work for at least one full day.
Number of Fatalities	Number of injury/illness cases classified as a fatality under event classification in the Company's Information Management System	Defined as a death caused by a work-related EHS event
Fatality Rate	Number of injury/illness cases classified as a fatality and number of hours worked registered in the Company's Information Management System Fatality Rate = (# of Fatalities * 200,000) divide by Total # of hours worked by all Takeda employees and Takeda supervised contractors during the current year	Defined as the number of employees per 100 full-time that suffered a fatal injury or illness