

COMMITMENT TO

PLANET

We are working to make the earth healthier so we all can be healthier. To ensure healthier outcomes for patients, we will continue to act with urgency to minimize our environmental impact, create sustainable solutions to improve public health, and work with our peers and strategic partners to foster responsible innovation to protect the planet.



A Climate-Driven Health Emergency


Climate change is perhaps the single biggest health threat facing humanity. It threatens to undo decades of progress to control mosquito-spread diseases such as dengue, chikungunya, Zika and malaria and contaminated food and water diseases like cholera.

As a global healthcare company, Takeda and our employees have the knowledge and experience to help address the disease-related impacts of climate change through our core mission of developing life-changing medicines and vaccines. We are taking urgent climate action through the three steps below.

1

Developing cutting-edge treatments for climate-accelerated diseases


Managing disease transmission on a warmer planet is critical; recent research from [The Lancet](#) estimates that by the end of the century 8.4 billion people could be at risk from malaria and dengue alone if emissions keep rising at current levels. Our efforts include developing vaccines for two mosquito-borne illnesses, dengue and Zika.

 [Learn more](#)

2

Accelerating access and equity to reach more patients impacted by climate change

The effects of climate change are having a disproportionate impact in areas that lack adequate health resources, perpetuating health inequity. We are reimagining access and working to reach more patients, including those most impacted by climate change.

 [Learn more](#)

3

Decarbonizing our operations and value chain

We are committed to achieving net-zero¹ GHG emissions related to our operations (Scopes 1 and 2) before 2035 and for our entire value chain before 2040.

 [Learn more](#)

¹ We have 2024/2025 targets approved by the Science Based Targets initiative (SBTi). The 2035 targets are aligned with the SBTi Corporate Net-Zero Standard.

Minimizing Our Environmental Impact

In 2021, we continued to make progress against our environmental goals, which span multiple aspects of our operations including waste management, water conservation, GHG emissions and product stewardship. Our environmental targets are aligned to our internal sustainability materiality¹ assessment and support the United Nations SDGs. Additionally, Takeda's climate-related goals support the Paris Climate Agreement to limit global warming to 1.5 °C and were approved by the Science Based Targets initiative (SBTi) in 2020.

GOALS AND PROGRESS FOR FY2021²

GOAL	PROGRESS IN FY2021
67% of our suppliers (as measured by GHG emissions) will have science-based GHG emissions reduction targets by December 2024	Our supply chain sustainability team continues to engage with highest impact suppliers to establish science-based targets. 24% of our suppliers have set science-based reduction targets.
Reduce 40% of GHG emissions from our direct operations by FY2025 (Scopes 1 and 2), from a FY2016 baseline, and achieve net zero by 2040.	Total GHG emissions were reduced by focusing on renewable energy sourcing and site energy efficiency, resulting in a 3% decrease in FY2021, and a 27% decrease since the FY2016 base year
Reduce our supply chain GHG emissions by 50% (currently estimated Scope 3) by FY2040, from a FY2018 baseline	Sponsoring supplier access to renewable energy power purchase agreements through non-competitive industry collaboration and enhancing tracking and measurement processes
Develop a context-based approach to water stewardship and execute water risk assessments at our manufacturing and R&D sites located in high water-stress areas by FY2021	Risk assessments completed and risk mitigation plans developed at all six sites identified as high-risk locations
Decrease water withdrawal by 5% despite projected business growth by FY2025 from a FY2019 baseline	Multiple water conservation projects completed globally including innovative high-volume water reuse technology at a large manufacturing site resulted in essentially the same water use as in FY2019 in spite of business growth
Achieve zero waste to landfill status for all major locations by FY 2030	Continued implementation of waste minimization and diversion plans resulting in a 79% waste diversion from landfills
50% of paper and paperboard content in product secondary and tertiary packaging from Takeda's manufacturing sites will be either recycled content or certified forest sustainable by FY2025	Engagement with all key paper/paperboard packaging suppliers and setting up Gensuite platform for data collection and analysis for 2021

¹ We conducted a comprehensive materiality assessment in FY2019 to better understand which non-financial issues are strategically important to Takeda and of most interest to our stakeholders.

² All goals are based on fiscal year performance.



Our environmental commitments are supported by our leadership, starting with our CEO and the TET. Our strategy to achieve these commitments is led by our Planet Steering Team, which includes executive-level sponsors. We execute our strategy through three programs: Sustainability by Design, Climate Action and Natural Resources Conservation. Within these three distinct but integrated programs, we focus our efforts where we can have the most meaningful impact.

SUSTAINABILITY BY DESIGN

Minimize the environmental impact of our products and services throughout their life cycles based on the principles of a circular economy.

CLIMATE ACTION PROGRAM

Decarbonize our operations and value chain.

NATURAL RESOURCES CONSERVATION PROGRAM

Empower our employees to go above and beyond to conserve the world's natural resources.



Sustainability by Design

In 2021, Takeda established a comprehensive Sustainability by Design Program guided by our Product Stewardship Team and implemented through the expertise of our R&D, Plasma-Derived Therapies, Cell Therapies, Vaccines and Global Manufacturing and Supply teams. Together, they are implementing sustainable design and material selection processes into product development for all therapies with the objective to optimize the environmental attributes of Takeda's treatments.

We use life cycle assessment methodologies to inform choices in our development of new products as a key part of our Sustainability by Design effort. As this program continues to mature, we anticipate expanding our use of life cycle thinking and methodologies to evaluate and improve our products. We will also perform environmental risk assessments during development to identify products with potential ecotoxicity to identify life cycle solution options (e.g., collection of manufacturing waste, reuse, recycling, appropriate disposal practices or incentivizing drug take-back efforts).

Beyond the product itself, we strive to reduce resources used and improve the recyclability in our packaging and medical devices.

SPOTLIGHT

PIONEERING SUSTAINABLE PACKAGING

For its environmental leadership, Takeda received two WorldStar Global Packaging Awards in 2021 from the World Packaging Organization.

One recognized our pioneering use of bio-polyethylene (bio-PE) — a plastic derived from plant-based bioethanol — in pharmaceutical primary packaging at our Hikari site in Japan. Manufacturing bottles made with bio-PE plastic emit up to 70% fewer CO₂ emissions compared to petroleum-based polyethylene bottles. The Japanese Packaging Institute and the Asian Packaging Federation also recognized Takeda's bio-PE bottle with respective awards.



“We are proud that Takeda was honored with these awards for the company's eco-friendly bio-plastic bottles,” said **Koji Nonomura**, *Senior Director, Drug Product Manufacturing Sciences and Packaging* and lead for the bio-PE Packaging Project. “At Takeda, we are committed to not only manufacturing and supplying high-quality products to patients around the world, but to also contributing to the wellbeing of the planet.”

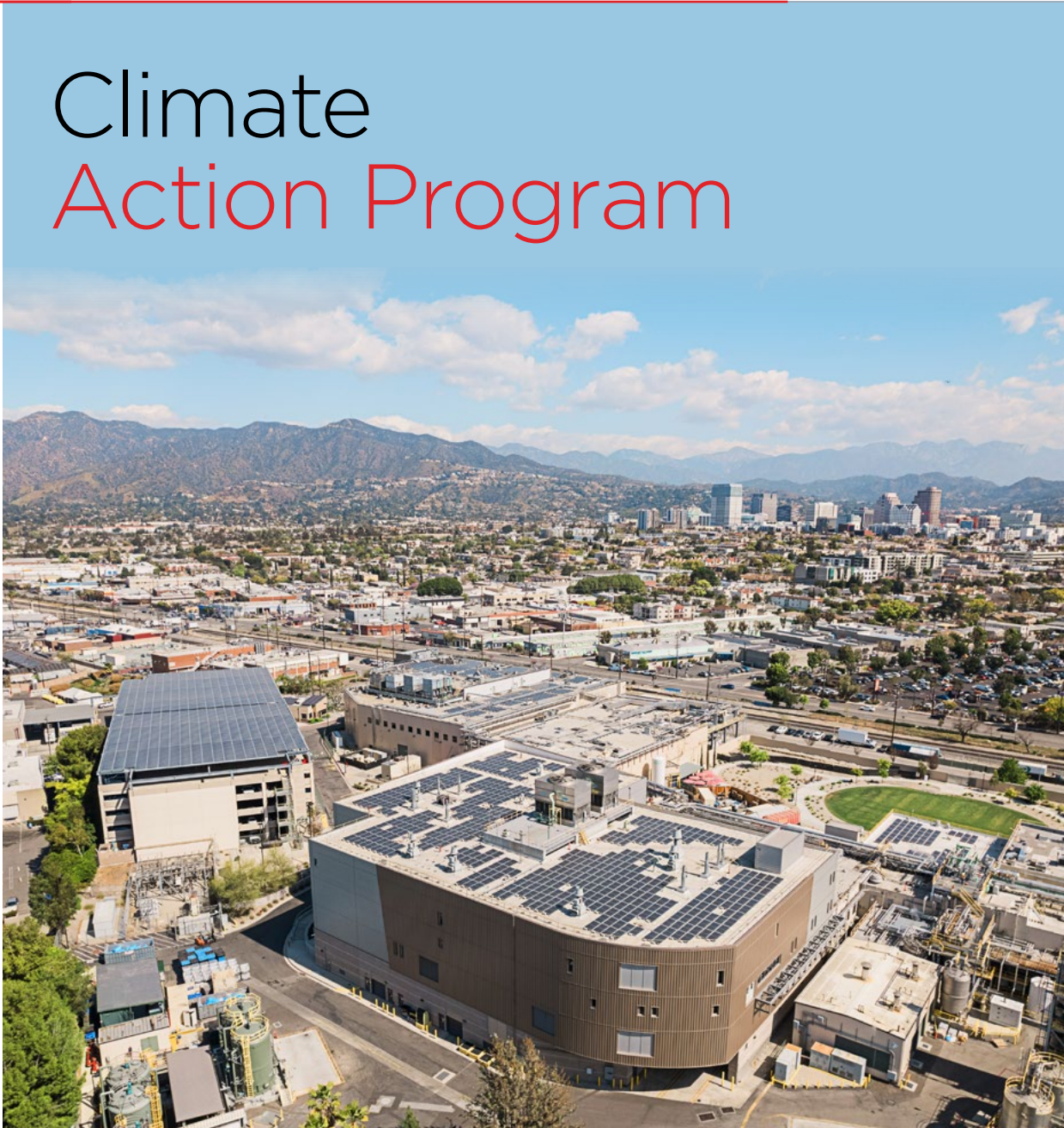
Takeda received a second WorldStar award for secondary packaging used for Takhzyro® (Lanadelumab-flyo) pre-filled syringes designed to improve patient usability, transport efficiency and recyclability.



Koji Nonomura

Director, Head of DP Manufacturing Sciences & Packaging, Hikari

Climate Action Program



Takeda is one of the leading companies in our industry taking climate action by achieving carbon neutrality inclusive of Scope 1, 2 and 3 emissions.

We have done so since FY2019 through energy conservation and investing in renewable energy credits and verified emission reduction projects.

Takeda is also supported by an external Carbon Neutrality Advisory Committee comprised of representatives from environmental non-governmental organizations and academia. The independent committee informs Takeda's carbon neutrality strategy, carbon offset procurement process and criteria, and reviews past investments in carbon offset projects to ensure quality and credibility of purchases.

Within Takeda operations, GHG emissions are predominantly attributable to the use of fossil fuels at our sites and in our company-operated vehicles and through the unintended release of refrigerants at our sites (Scope 1 emissions), and from the purchase of supplied energy such as electricity and steam for our facilities (Scope 2 emissions). These emissions are estimated to contribute approximately 10% of our total GHG footprint. We estimated that the rest (90%) are value chain-related emissions outside of our direct operational control (currently estimated Scope 3 emissions). Of our Scope 3 emissions, those associated with purchased goods and services are the highest emitting categories¹.

Takeda's Climate Action Program at Sites (CAPS) drives site efficiency and emission reductions and provides tools to assist sites with finding and executing improvement projects. CAPS leaders at our manufacturing and R&D sites drive local initiatives to reduce our GHG emissions, energy and water withdrawals and help meet our waste goals. CAPS teams engage with site leaders and project sponsors to ensure that the environment is an integral consideration as they make investment decisions, manage projects and plan how they will help meet our environmental goals at their facilities.

¹ Scope 1 emissions are direct GHG emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles). Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling. Although Scope 2 emissions physically occur at the facility where they are generated, they are accounted for in an organization's GHG inventory because they are a result of the organization's energy use. Scope 3 emissions are all indirect emissions (not included in Scope 2) that occur in a company's value chain, including both upstream and downstream emissions. A lack of transparency into, and a difficulty measuring, actual Scope 3 emissions remains an important challenge to overcome.

Working with Partners

In 2021, Takeda was one of 10 inaugural members of the Energize Program, which seeks to accelerate the adoption of renewable energy and reduce GHG emissions among pharmaceutical company suppliers. A first-of-its-kind effort, it leverages the scale of pharma's global supply chain in a non-competitive fashion to drive system-level change. Partners expect the program to help hundreds of pharmaceutical suppliers learn more about renewable energy adoption and contracting and empower them to reduce their own operational Scope 2 GHG emissions.

Takeda is a proud member of the UN #racetozero campaign, the largest alliance committed to halving emissions by 2030. Takeda's President and CEO Christophe Weber is a member of the World Economic Forum Alliance for Climate CEOs, which is working across industries to find solutions and advance action. Takeda is also an active member of the Japan Climate Leaders Partnership, a coalition of Japanese companies working to advance Japanese government policy on climate and sustainability.



2021 Highlights

- We broke ground in September 2021 in Woodlands, Singapore, on the company's first building to follow the Singapore Green Mark Zero Energy certification scheme. The building will be the first net zero carbon emissions building in our global manufacturing network and the first-of-its-kind investment within the biotechnology industry in Singapore. It is expected to reduce power consumption by 34% compared to a traditional building. Renewable electricity will be provided by more than 660 solar panels to help ensure the building's energy consumption is fully met.
- Starting in September 2021, we are building all new U.S. BioLife donation centers as all-electric facilities to avoid introducing new Scope 1 emissions from natural gas.
- Our Osaka, Hikari, Izumisano, Shonan iPark and Narita sites in Japan are working toward 100% renewable electricity, which will result in a 30% annual reduction of CO₂ emissions at these five sites.

FY2021 Scope 1 and 2 Emissions Data

In FY2021, our Scope 1 and 2 emissions continued to decrease, and we are on track to eliminate 40% of our Scope 1 and 2 emissions by FY2025 compared to FY2016. Step change reductions in Scope 2 emissions were primarily due to our accelerated transition to renewable energy. Observed incremental reductions in Scope 1 emissions were the result of CAPS-driven energy efficiency projects, which were able to achieve small gains while fully compensating for business growth.

Takeda embraces the Task Force on Climate-Related Financial Disclosures (TCFD) framework and has issued our inaugural TCFD report to share results from assessing potential risks and opportunities related to physical and transitional climate impacts to our global operations. The assessment and report will help prioritize actions to minimize risks and to capitalize on business opportunities.

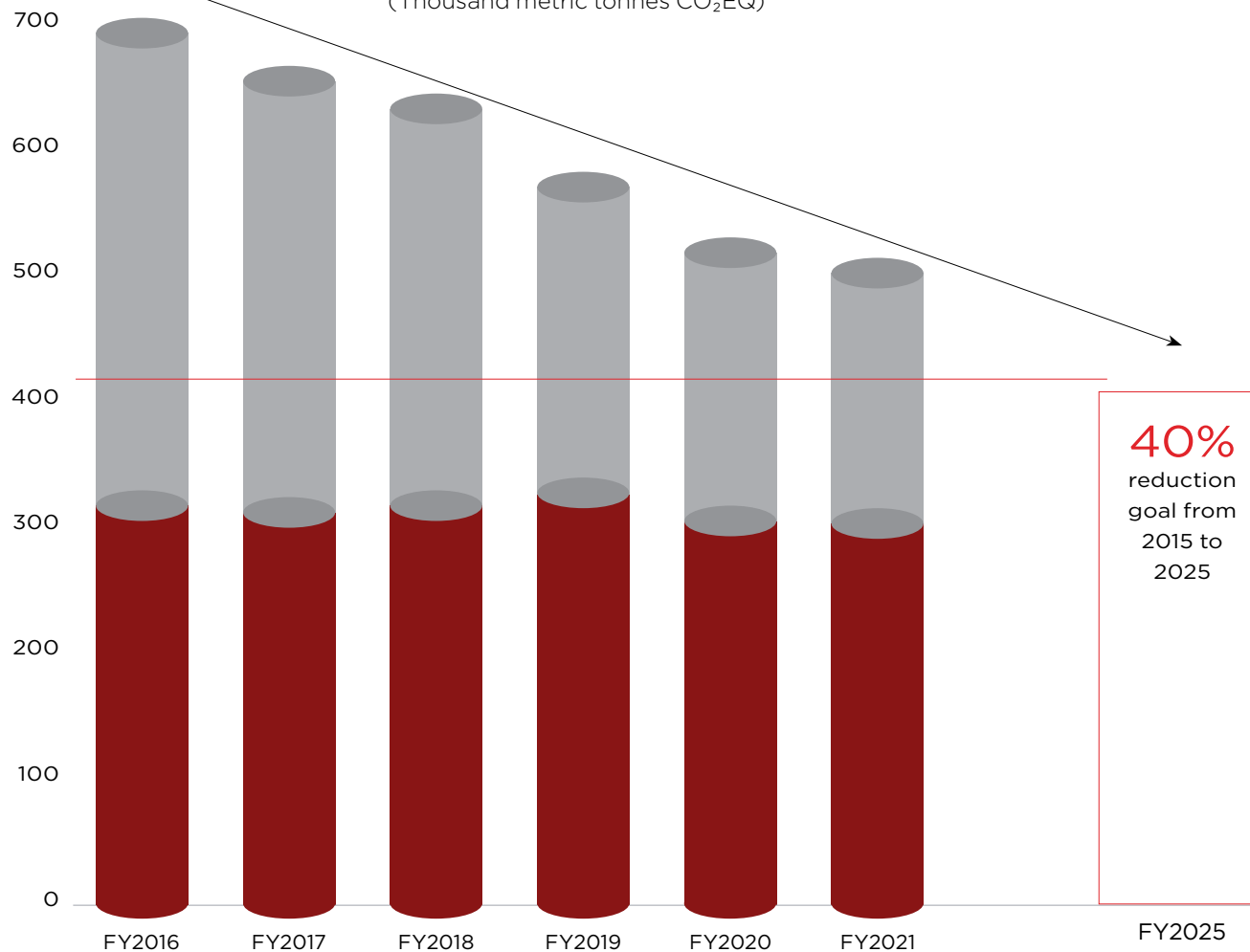


[Read more](#)



FY2021 Scope 1 and 2 Emissions Data

(Thousand metric tonnes CO₂EQ)



Empowering our Employees to Conserve Natural Resources

Takeda employees are critical to our ability to conserve the planet's natural resources.

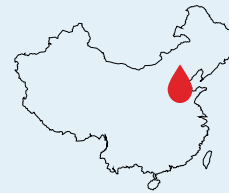
Minimizing environmental impacts from our operations is the focus of our Natural Resources Conservation program and includes focus areas such as water stewardship, responsible waste management and biodiversity. Takeda's CAPS program (page 51) also works directly with sites and drives efficiency projects and progress toward meeting our water and waste goals.

Water Stewardship

We are working to understand our water impacts enterprise-wide, product-by-product and site-by-site. Our water impact goes beyond just measuring water withdrawal. Recognizing that water stress is highly regional in nature, we assess the stress levels of water sources that service our over 30 manufacturing, R&D and hub office sites worldwide using the World Resources Institute Aqueduct, WWF Water Risk Filter Tools and local site surveys. These independent assessment tools validated that 20% of our manufacturing sites (six sites) are in areas considered to have "high" or "extremely high" water risk.

In FY2021, local teams at these six sites developed water risk mitigation plans. They will work in FY2022 to adopt local conservation goals and identify appropriate watershed protection projects. While our focus remains on locations at high water risk, we actively work to reduce water consumption across all operations.

Six Takeda sites identified as being located in regions with increased water risk.



Tianjin, China



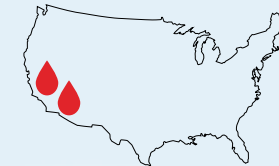
Pisa, Italy



Naucalpan, Mexico



Bekasi, Indonesia



Los Angeles, CA, USA
Thousand Oaks, CA, USA



2021 Highlights

- A lab air optimization project at our R&D facilities in Massachusetts improved occupant health and safety via air quality monitoring and dynamic ventilation control while saving energy and reducing GHG emissions. By reducing the amount of outside air that needs to be cooled in the warmer months, the facilities can save an estimated 12 million liters of water annually that would have been evaporated at the cooling towers.
- Our Tianjin, China, plant enabled infiltration of rainwater into the local aquifer by creating a subsidized greenbelt of 5,086 square meters and permeable roads of 4,543 square meters.



Responsible Waste Management

We are working to reduce the amount of waste sent to landfill, first by limiting the amount of waste we generate and then by reusing what we can and recycling the rest. To date, we have diverted 79% of our waste from landfills.

2021 Highlights

- At our facilities in Lexington and Cambridge, Massachusetts in the United States, we switched from landfill to waste-to-energy disposal.
- At our Vienna, Austria, manufacturing site, we began to use organic waste for the production of biogas for local use.
- Our Jaguariuna, Brazil, manufacturing site uses a biodigester to treat food waste that would have otherwise been sent to landfill.

Supporting Biodiversity

We seek to support biodiversity where we operate through responsible business practices and conservation efforts, many of which are employee led.

In FY2021, we initiated phase one of our planned biodiversity assessment. It included a screening desktop exercise of current potential direct/indirect biodiversity impacts at key Takeda manufacturing sites using the Integrated Biodiversity Assessment Tool. We will use the results of this initial assessment to perform a deeper evaluation at prioritized sites to better assess the potential for biodiversity impacts and determine mitigation actions, as appropriate.