2021 Taskforce on Climate-related Financial Disclosure Statement

Biogen supports the Taskforce on Climate-related Financial Disclosure (TCFD). This statement represents our first disclosure aligned with the TCFD recommendations. All global operations for which we have operational control are in scope, unless otherwise stated. Our 2020 CDP Climate Change disclosure provides further disclosures on our approach to climate change. Past and future CDP responses are available at https://www.cdp.net.

Governance

Our Healthy Climate, Healthy Lives™ (HCHL) initiative, launched in September 2020, was established as the governance framework to guide and deliver on the integration of climate-related risks and opportunities into our overall business strategy. This $250 million, 20-year initiative was authorized and approved by our Executive Leadership Team.

Our CEO is responsible to the Board for the management, development and performance of our business, including Biogen's HCHL and climate-related risks and opportunities. Reporting to the CEO, Alphonse Galdes, Ph.D., Head of Pharmaceutical Operations & Technology, is executive sponsor of the HCHL Working Group Governance Committee. We have tied a portion of our employees' and executive officers' 2021 compensation to advancing our ESG strategy which includes HCHL targets.

To guide and deliver on the commitments of the HCHL initiative, we established the HCHL Working Group Governance Committee with a cross-functional executive-level membership. The Working Group Governance Committee meets quarterly and provides regular updates to the Executive Leadership Team.

In 2020 climate was added for the first time into our Enterprise Risk Management (ERM) program, which monitors strategic risks across all aspects of our business. On an annual basis the ERM team evaluates all identified risks to the business including any climate-related physical and transitional risks posed to Biogen. The ERM team provides an update of their findings annually to the Board.

Identifying and managing climate risk and opportunity

Since 2017 we have assessed physical and transitional risk assessment related to climate change and/or the transition to a low carbon economy on an annual basis. In 2020 we began to transition this climate assessment into the overall enterprise risk management process. Additionally, we incorporated climate scenario analysis in the assessment this year. The process for this assessment is described below.

Physical assessment

In 2020 we utilized the Global Enabling Sustainability Initiative (GeSI)-CDP Scenario Analysis Toolkit (the Toolkit) to guide our screening study of two future climatic scenarios to explore our physical climate-related risks (water scarcity, inland/coastal floods, extreme heat, cyclones and wildfires). Representative Concentration Pathways (RCP) 4.5 (+2°C) and RCP 8.5 (+4°C) were the selected scenarios for this study with projected impacts out from 2020 to 2030 and 2040 or 2050 depending on the criteria data set available. As an example, the WRI's Aqueduct Water Risk Atlas provides water scarcity projections for 2030 and 2040.

These scenarios were applied to Biogen's three manufacturing and R&D locations and 10 of the contract manufacturing organization sites we rely on to manufacture our products. Our commercial sites, which consists of leased office space, were out of scope as they posed a low material risk. The outcome of these screening studies across the 13 sites was combined with a revenue-based assessment to identify short, medium and/or long-term risks.

Transitional assessment

In 2020 we utilized the same Toolkit to identify and quantify the risks and opportunities with the transition to a low-carbon economy. Using climate scenario analysis, we adopted two scenarios: the IEA INDC Scenario (~3°C) as a base case and the IEA WEO 450 Scenario (~2°C) as a higher ambition case towards meeting the Paris Agreement to understand policy and technology impacts through 2040. Risks and opportunities were assessed at an enterprise level as well as specific to our biosimilar product segment.

Outcome of the physical and transitional assessment

A few high transitional risks and opportunities were identified and will be reported to the Enterprise Risk Management team and HCHL Working Group Governance Committee for sharing with leadership, as necessary. The risk is not currently assessed to be financially material and does not impact our current business model. In many cases, mitigation measures are already or will be in place to address the risks and opportunities presented by climate change, including the transition to a low carbon economy. These risks and opportunities are explained in more detail in the table below.

Climate change and our Healthy Climate, Healthy Lives strategy

The risks and opportunities related to climate change are not only limited to the physical impacts (e.g., wildfires, floods, etc.), but also changes in policy, culture and stakeholder expectations in the markets in which we operate (e.g., expectations to align our emissions with science, reduce the environmental impacts of our products, and think equitably about how we transition to a low carbon economy). Further, as a healthcare company, we view climate as inexorably linked to health, where our opportunity to positively impact human health stretches far beyond our products.

Our response to the identified climate risks and opportunities requires cross-functional action across our organization, which was the guiding ambition of our ground-breaking HCHL initiative. The ambition of HCHL is guided by science and aims to advance our collective understanding on fossil fuels and health, including brain health. Find more information about the HCHL initiative.

Risk or opportunity	Potential impact	How it is managed
Physical risks		
Increased frequency of extreme weather and climate-related natural disasters	In 2020 we performed a screening study of two future climate scenarios to explore our physical climate related risks (water scarcity, inland/coastal floods, extreme heat, cyclones and wildfires) across three Biogen sites and 10 critical third-party manufacturing sites. Zero of our sites were projected to be exposed to an increased material risk of extreme weather through 2040, while four of the third-party manufacturing sites were identified to be 'at-risk'. The common finding between these sites was increasing extreme heat and/or wildfire risk in southern Europe and California regions.	To improve business resilience, we employ Resilinc, a cognitive supply chain risk management platform, to monitor and alert us of any environmental or social disruptions specific to our logistics and distribution operations. This tool allows us to proactively adjust and minimize product impact during events such as Hurricane Maria in 2017. In 2022 we will launch our Responsible Supplier Program, including an ESG assessment process for select suppliers. 'At-risk' suppliers will be prioritized for assessment to understand what mitigation steps are being taken. In 2021 we will continue to expand our physical risk assessment on the broader value chain, specific to our most critical suppliers.

Transitional risks and opportunities		
New expectation for sustainable low carbon products and services from healthcare providers in some countries Business opportunities will exist for products that can reduce the carbon footprint of healthcare outcomes.	Some national health systems have started to include expectations around the environmental life cycle impact of products they purchase (e.g., UK National Health Service to achieve their net-zero target). This could impact market access and revenue in some countries, should competitive alternatives with lower environmental impact become available. Improving the sustainability of our products and packaging as part of HCHL may result in business opportunities that not only deliver therapies that improve measurable health outcomes, but also reduce environmental impacts.	Biogen is initiating life cycle assessments (LCAs) for key products that includes the greenhouse gas footprint to help assess and manage risks and target interventions to reduce the environmental footprint of our products. Where we are not responsible for the manufacturing process, we are working with our manufacturing partners to initiate LCAs for those products. As part of HCHL, we are establishing our Sustainable Drug Development approach to incorporate the principles of Green Chemistry into the development processes and increase our use of more sustainable packaging and logistics. For examples of this approach in action see: • VUMERITY Green Chemistry spotlight • New 2025 sustainable packaging targets. Additionally, we are working with leading institutions, such as MIT, to evaluate alternative materials and approaches for primary medicine delivery with a lower environmental footprint.
Ban and/or restrictions on the sale of petrol and diesel vehicles in some markets	Biogen has approximately 2,000 leased vehicles as part of its commercial fleet, consisting primarily of petrol and diesel vehicles. With some local, state and national governments banning or restricting sales of internal combustion engine vehicles in the future, Biogen will need to transition to battery electric vehicles (BEVs) across its markets and there is an expectation that duties on fossil fuels associated with our fleet will increase over the next decade. There is also an increase in the number of clean air zones being established at the local and regional level either restricting fossil fuel vehicles from entering or requiring them to pay an additional charge to access those regions. A proactive shift to	As part of HCHL, we will transition to 100% BEV by 2025 for all new leases and we are signatories to the Climate Group's EV100 commitment. To date, we have completed a market readiness study across all markets we operate in and developed a phased roll out strategy, starting with seven markets that are EV ready today. With the help of existing and new e-mobility partners, the transition in those markets will be voluntary for interested employees through 2022, mandatory for all new employees starting in 2023 and for all new leases starting in 2025.

	BEVs opens up an opportunity to decrease the future cost of ownership and maintain access to these restricted clean air zones.	We anticipate some markets may not be EV ready by the 2025 timeline; however, these markets are similarly not projected to ban fossil fuel vehicles nor have clean air zones in place.
Carbon pricing and future environmental taxation	While carbon pricing exists in some of the markets we operate, there remains uncertainty over the future environmental policy and fiscal direction many countries will take moving into the future. We anticipate that carbon pricing and/or environmental taxation will increase over the medium to long term in nearly all markets.	The HCHL initiative commits Biogen to eliminating the use of fossil fuel within our operations by 2040 and transitioning our supply chain away from fossil fuels. This strategy will help to mitigate exposure to future carbon pricing and/or environmental taxation for our operations and supply chain. Managed correctly, this presents an opportunity where peers have yet to establish a pathway away from fossil fuels.
Access to capital on favorable terms	Some financial institutions are signaling a long-term shift in their approach to capital allocation away from projects or organization with higher climate risk. Additionally, growth in sustainable finance mechanisms, such as green bonds, can result in greater access to capital and more favorable terms.	Biogen has previously and will continue to the evaluate sustainable finance mechanisms as possible sources of funding, as needed.

Monitoring our progress

We are committed to public disclosure of our progress to Healthy Climate, Healthy Lives and related climate-related risks and opportunities. See our progress updates in the Environment section in our Year in Review.