

Task force on climate-related financial disclosures (TCFD) index

TCFD voluntary climate-related disclosure recommendations have been used to guide our reporting. We believe addressing climate change is key to achieving a sustainable, just, and resilient future for all. We are committed to transparency and will continue to share progress in our annual CSR Report and [CDP submissions](#).

TCFD disclosure element	Illumina response
Governance: Describe organization's governance around climate-related risks and opportunities	
1 Governance	
1.1 Board oversight	<p>The Illumina CEO is a member of the Board of Directors (Board) and is responsible for directing all aspects of company strategy, planning, and operations. Climate-related issues and projects associated with the reduction of our environmental footprint are reviewed at least annually by the full Board and can be escalated to the Board through Illumina's CEO and the CEO's direct reports. Each direct report manages responsibilities associated with their functional area.</p> <p>The Board provides oversight to the CSR program covering environmental, social, and governance topics, including climate-related issues. The Board receives updates at least annually on current performance and future strategic plans, with additional updates provided if material changes occur.</p> <p>The Board provides oversight, guidance and direction on CSR risk and opportunities that have potential impact on reputation and long-term economic viability, including climate action.</p>
1.2 Management role	<p>The Executive CSR Steering Committee comprises a team of senior leaders from across the organization, including the General Counsel, Chief of Global Operations, Chief People Officer, Chief Technology Officer, Chief Marketing Officer, Global Head of CSR, and VP of Investor Relations. The CSR Executive Committee has overall responsibility for reviewing company activities related to CSR, including climate change programs. The CSR Executive Committee sets the strategy for environmental sustainability including establishing reduction targets and monitoring annual progress. A council of leaders from each CSR strategic focus area report to the CSR Executive Committee on a regular basis with progress updates. Reports to the broader CEO staff are scheduled as needed to provide updates on status regarding CSR elements including environmental matters. On at least an annual basis, updates on CSR projects are provided to the full Board of Directors and the Nominating/Corporate Governance Committee.</p>

TCFD disclosure element

illumina response

Strategy: Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.

2 Strategy

2.1	Climate risk and opportunities timeline	<p>Short (0–5 years) To ensure we hit critical milestones on our path to net-zero, we created short-, medium-, and long-term targets. These climate commitments include Science Based Targets initiative (SBTi) verified targets aligned to the 1.5 °C pathway. Our short term target outlines a 4% annual reduction in Scope 1, 2 and 3 emissions on our path towards 46% Scope 1, 2 and 3 emissions reduction by 2030.</p> <p>Under the recommendations of SBTi Net-Zero Standard, companies should go beyond their near- and long-term science-based targets to further mitigate climate change by undertaking actions or making investments that generate additional co-benefits for people and nature. To further facilitate beyond value chain mitigation, Illumina has invested in Nature Based Green-e Certified Carbon Credits while on our journey to net zero. We have applied carbon offsets for our natural gas scope 1 as a temporary mitigation. This enabled us to reach carbon neutrality in our direct operations (Scope 1 & 2) for 2022 and 2023.</p> <p>Environmental performance metrics are monitored consistently and reported quarterly. Functional groups establish projects to meet these short-term goals. Energy or carbon reduction projects are reported at project scoping level with expected impacts and timeline for returns on investment.</p> <p>Medium (5–8 years) Illumina has established a Climate Action Plan to prioritize the implementation of sustainable solutions in our facilities and products, as well as across our supply and value chain. We expanded our 2030 climate action targets to minimize risk associated with climate change, build resilience, and identify opportunities for long-term sustainable growth.</p>	<p>Illumina commits to reducing absolute Scope 1 and 2 GHG emissions 46% by 2030 from a 2019 base year. We also commit to increase annual sourcing of renewable electricity from 0.6% in 2019 to 100% by 2030. We further commit to reducing absolute scope 3 GHG emissions from the most material categories of purchased goods and services, capital goods, upstream transportation and distribution, business travel, employee commuting and investments 46% by 2030 from a 2019 base year. These targets are aligned to a 1.5 °C climate ambition and externally verified by SBTi.</p> <p>Long term targets are aligned with UN Sustainable Development Goals (SDG) 2030 timeline and science-based emission reduction approach result in functional group projects and goals for shorter term timeline.</p> <p>Long (8–28 years) With our commitment to responsible and sustainable practices, we have established targets to prioritize the implementation of sustainable solutions in our facilities and products, as well as across our supply and value chain.</p> <p>We set a long-term target of net-zero emissions by 2050 across our operations and value chain (Scopes 1, 2 and 3). This target has been verified by SBTi and is aligned with the most aggressive climate action goals of keeping global warming to 1.5 °C. On the path to net-zero, our milestone targets for 2030 will ensure we hit critical milestones. These targets have been verified by SBTi and include: 46% absolute reduction in Scope 1, 2 and 3 emissions; and 100% renewable electricity.</p> <p>We have also committed to 90% landfill diversion and 10% reduction in water intensity at core sites.</p>
2.2	Climate risk and opportunities impact	<p>Illumina defines a substantive financial or strategic impact as one with a potential financial impact greater than 5% of revenue impact. This could be the result of business interruption due to climate related risk or business operational impact. Additional factors considered include the climate related risk that would cause a business interruption and exposure to critical operations.</p>	<p>To understand the potential risks and opportunities of climate change, Illumina conducted an assessment using the recommendations of the TCFD. The assessment measured impact utilizing the following definitions:</p> <ul style="list-style-type: none"> · Low Impact- Ability to absorb financial, operational, and reputational impact. · Moderate Impact - Some impact to finances, operations, and reputation. · High Impact- Substantive financial, operational, strategic, and reputational impact.
2.3	Targets to manage climate risk and opportunities	<p>The climate change elements that have most influenced our strategy are physical risk to operations, supply chain impact, and reputation. These risks have been incorporated into business continuity planning, future product development, redundancy in supply chain where possible, and site selection for future growth. We are actively reviewing opportunities to further integrate climate into our processes and path to further expand resilience. Examples of incorporation include: targets to align with the UN SDGs and utilize the SBTi methodology for a well below 2°C scenario (2DS); holistic goals of reducing the environmental footprint of our products throughout the life cycle; incorporation of Design for Environment into our new product design; and addition of a new logistics location to our network on the east coast resulting in cost savings, improved supply chain planning, and a reduction of air emissions.</p> <p>In 2020, we evaluated three 2030 climate scenarios linked to global warming by 2100. Our goal was to better understand the implications of climate change for our business and identify opportunities to build resilience. Climate scenario analysis was completed using three plausible narrative future representations of our operating environment respectively aligned to a well below 2°C, a 3°C, and a 4°C level of warming. To map assumptions for each trajectory, we utilized standardized third-party climate modeling data, such as the Shared Socioeconomic Pathways (SSPs) and the Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathways (RCP).</p> <p>Under the 4°C scenario, global warming reaches 4°C by 2100, relative to pre-industrial temperatures. In 2030, we assume a geopolitically fragmented world with limited flows of goods or knowledge, and a challenging economic situation, worsened by disinformation and general mistrust. Limited action on climate policy will be taken and a doubling down on fossil-based energy sources will result. More frequent climate-related weather events impact most regions by 2030. This scenario utilizes data from RCP 8.5 and SSP 3 (high challenges to mitigation and adaptation).</p>	<p>Under the 3°C scenario, we assume a world in 2030 facing a slow global economy with fraught geopolitical alliances. Accelerating automation with uneven benefits leads to a focus on inequality. Society is slow to react to climate impacts, distracted by larger economic concerns. Carbon emissions have started to decline slightly: energy efficiency and renewable gains are easily offset by increased use of energy-intensive tech. This scenario causes some physical climate impacts by 2030. This model utilizes data from RCP 6.0 and SSP 4 (low challenges to mitigation, high challenges to adaptation).</p> <p>Under the well below 2°C scenario, we assume a world in which global cooperation leads to economic recovery that fully embraces the low-carbon transition, with strong climate policy and regulatory action. Some severe climate impacts felt spur coordinated risk-containment efforts. While some physical impacts are already locked in, the pace of change slows and by 2050 the world is on a well below 2°C trajectory. This model utilizes data from RCP 2.6 and SSP 1 (low challenges to mitigation/adaptation).</p> <p>The scenarios were reviewed in a cross-functional workshop that included key stakeholders across various business units. The implications for each scenario were discussed and participants identified risk and opportunity hot spots to help direct further integration of resilience planning and embed climate into our developing enterprise risk management program. We will be utilizing the climate scenario insights to expand influence on our climate planning evolution and business continuity plans.</p>

TCFD disclosure element	Illumina response
Risk Management: Disclose how the organization identifies, assesses, and manages climate-related risks.	
3 Risk management	
3.1 Process to identify climate risk	<p>To understand the potential risks and opportunities of climate change, we conducted an assessment in 2020 using the recommendations of the TCFD. We evaluated three 2030 climate scenarios linked to global warming by 2100. Our goal was to better understand the implications of climate change for our business and identify opportunities to build resilience. Climate scenario analysis was completed using three plausible narrative future representations of our operating environment respectively aligned to a well below 2°C, a 3°C, and a 4°C level of warming. To map assumptions for each trajectory, we utilized standardized third-party climate modelling data, such as the Shared Socioeconomic Pathways (SSPs) and the Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathways (RCP).</p>
3.2 Process to manage climate risk	<p>To identify and manage climate-related issues, Illumina is integrating climate impact into our existing risk management structure using the Environment, Health & Safety team management system, the CSR materiality assessment, business continuity program management, supply chain risk reviews, and internal audit risk program. As our enterprise risk management program evolves, we plan to integrate climate as a key component. The climate change elements that have most influenced our strategy are physical risk to operations, supply chain impact, and reputation. These risks have been incorporated into business continuity planning, future product development, redundancy in supply chain where possible, and site selection for future growth. We are actively reviewing opportunities to further integrate climate into our processes and path to further expand resilience.</p> <p>Examples of incorporation include: targets to align with the UN SDG and utilization of the SBTi methodology for a well below 1.5°C scenario; holistic goals of reducing the environmental footprint of our products throughout the life cycle; incorporation of Design for Environment into our new product design; improved supply chain planning; and a reduction of air emissions.</p>
3.3 Process to integrate climate risk in overall risk management	<p>We have implemented redundant planning and maintained safety stock to provide resilience during severe weather events. For financial planning, we include risk and opportunities evaluated through our standard budget planning. Investment in energy-reduction projects that require capital expenditures are evaluated through the Capital Committee planning process. Potential indirect cost associated with supply chain, future tax, or increased operating costs from extreme weather would connect with these internal workstreams.</p> <p>In early 2021, Illumina launched our first Scope 3 emission inventory assessment across all relevant categories for our value chain. Of the fifteen categories assessed, we selected the most material categories contributing to our emission inventory that represented 7% or more were defined as material and account for 92% of our total Scope 3 footprint. These categories include, upstream transportation and distribution, purchased goods and services, capital goods be the focus of our reduction efforts, investments, business travel, employee commuting. In September of 2021, we successfully received verification from SBTi on our emission reduction approach aligned to a 1.5 °C pathway. Our verified targets include reducing absolute Scope 1, 2 and Scope 3 emissions 46% by 2030 compared to 2019</p>
	<p>and increasing annual sourcing of renewable electricity from 0.6% in 2019 to 100% by 2030. To address our Scope 3 emissions, we are working with each functional group on projects to continue to drive down the value chain impact. Initial projects and sample initiatives include updates to our investment policy, communication campaign to our supplier base, supplier mapping optimization, expanding green travel policy, and shifting purchased goods from air to ocean freight wherever possible. Illumina has created a 2030 target for 100% of strategic suppliers to have a commitment to reduce their environmental footprint. Additionally, the emissions associated with our investments accounted for 10% of the impact in our value chain in our 2019 baseline study and was one of the top five areas contributing to our Scope 3 greenhouse gas inventory. Following review of the Scope 3 data, we modified our investments policy to eliminate investing in Energy and Utilities sector bonds unless the associated issuance is identified as a Green, Social or Sustainability (GSS) Bond.</p>
	<p>In 2022 we received approval from SBTi on our long-term target to reach net-zero GHG emissions across our direct operations and our value chain by 2050 from a 2019 base year.</p>
	<p>Additional processes for identifying, assessing, and responding to climate-related risks and opportunities have been developed. We utilize our enterprise risk management program, emergency preparedness & response program, our environmental management system, and our business continuity program to leverage existing workflows.</p>
	<p>We review the environmental management system framework annually as part of the global aspect and impacts clause. Output from this data influences environmental performance and GHG reduction objectives. Illumina also uses our ISO14001 environmental management system as one of the mechanisms to monitor and reduce our environmental impacts from GHG emissions.</p>
	<p>The EHS team monitors legislation related to climate change and general environmental regulations at the global, regional, country, and local level. Supply chain data is reviewed through data collection during the RFP process, new supplier onboarding, and regular supplier reviews. Input from government affairs, EHS, regulatory, and compliance teams is also incorporated to overall risk culture and various workstream assessments. Addressing risk at the site level is performed by our site emergency management cross functional group which plan for and react to immediate and near-term physical risks caused by climate change.</p>
	<p>The following definitions apply to our assessment:</p> <ul style="list-style-type: none"> · Time Horizon: Short (0–5 years), Medium (5–8 years), Long (8–28 years) · Likelihood: Not likely, As likely as not, More likely than not, Likely, Virtually certain · Impact: Low (ability to absorb financial, operational, reputational impact), Moderate (some impact to finances, operations, reputation), High (substantive financial, operational, strategic, reputational impact).

TCFD disclosure element	Illumina response
Metrics & Targets: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	
4 Metrics & Targets	
4.1 Climate-related metrics	<p>As a science-based organization, we are compelled to ensure our reduction targets are aligned and verified to a science-based approach. In 2022, we were among the first companies in the world and our industry, and the first genomics company to receive verification of our 2050 net-zero emissions targets by the SBTi Corporate Net-Zero Standard. In 2021, our Scope 1, 2, and 3 emission targets were aligned to a 1.5 °C climate ambition and externally verified by SBTi. We set a long-term target of net-zero carbon emissions by 2050 across our operations and value chain which received validation from SBTi. Our net-zero target includes all material value chain categories: purchased goods and services, capital goods, upstream transportation and distribution, business travel, employee commuting, and investments. We have identified material categories as all relevant categories that represented 7% or more of our total 2019 Scope 3 emissions inventory baseline. These material categories represented 92% of Illumina's 2019 Scope 3 emissions and established our baseline.</p>
4.2 GHG emission data	Detailed current and historical greenhouse gas emission data is available in Key Performance Indicators
4.3 Targets to manage climate risk and performance to targets	<ul style="list-style-type: none"> · Reach net-zero GHG emissions across Illumina's direct operations (Scope 1 ,2) and our value chain (Scope 3) by 2050 from 2019 baseline levels · Reduce Scope 1, 2 absolute GHG emissions 46% by 2030 from 2019 baseline · Reduce absolute GHG emissions from material Scope 3 categories 46% by 2030 from 2019 baseline · Reduce Scope 1, 2 absolute GHG emissions 90% by 2050 from 2019 baseline · Reduce absolute GHG emissions from material Scope 3 categories 90% by 2050 from 2019 baseline · Increase annual sourcing of renewable electricity to 100% by 2030 from 2019 baseline